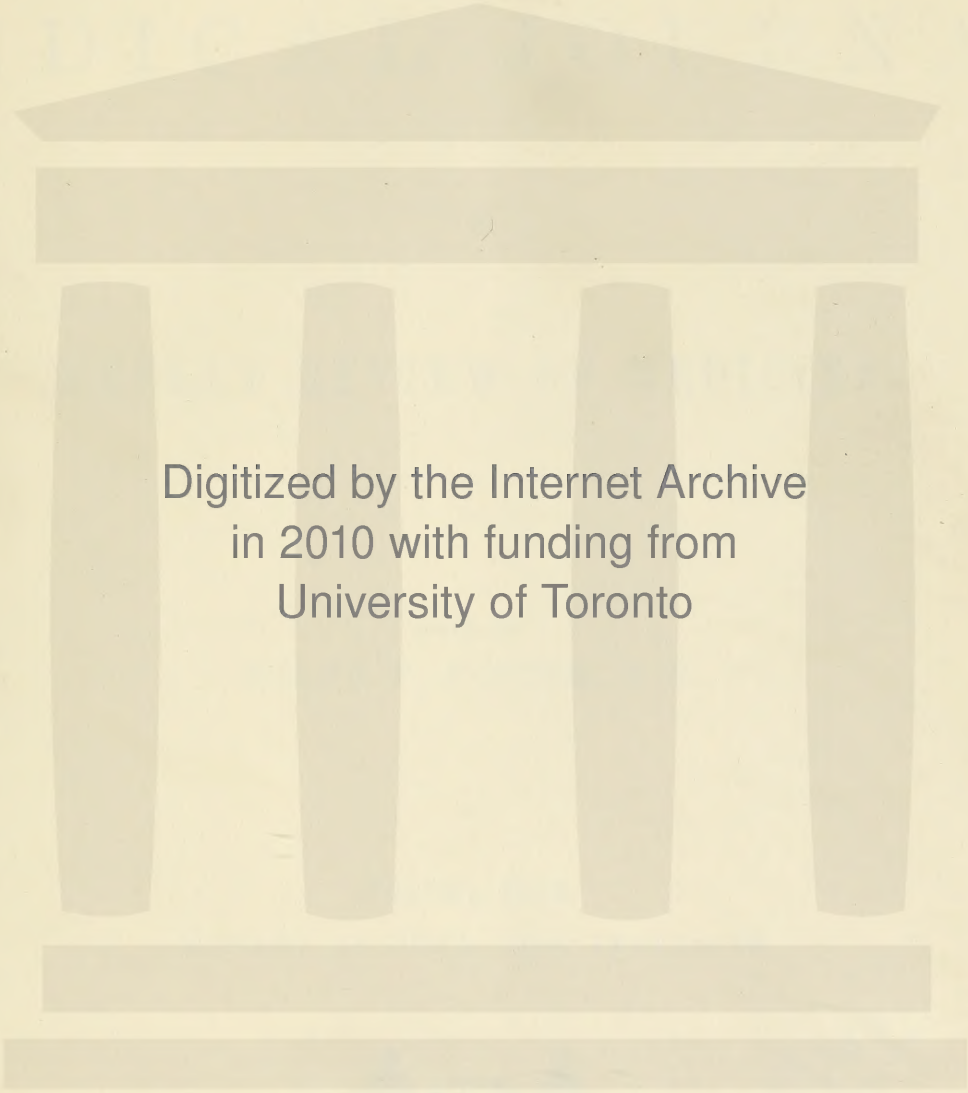
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A

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FRANK P. FOSTER, M.D.

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Original Communications.

LICHEN RUBER AS OBSERVED IN AMERICA, AND ITS DISTINCTION FROM LICHEN PLANUS.*

BY R. W. TAYLOR, M. D.,
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PRIOR to the year 1874 lichen ruber was known in Germany, mainly through the teachings of Hebra, as a rare and peculiar disease. In America nothing was known of it from actual observation, and our information was derived from Hebra's hand-book and from the descriptions brought back by Americans from Vienna. This was also the status of knowledge of the subject which existed in England at that date. About the same time lichen planus had come to be tolerably well known in Great Britain, chiefly through the writings of the late Sir Erasmus Wilson and the late Tilbury Fox. From these two eminent English dermatologists we in America gained our first knowledge of the latter disease. The state of affairs was practically this: lichen ruber was looked upon as a peculiar papular form of eruption seen quite rarely and only in Germany, and lichen planus was regarded as a rather unusual and distinctive form of papular eruption seen quite frequently in England, and also in a few instances in America. Lichen ruber, therefore, was tolerably well known by the Germans, who knew then seemingly nothing of lichen planus, and many of these authorities even to-day confound the two, while the English had clear notions of lichen planus and very hazy ones about lichen ruber. As we in those days were in reality students at the feet of the great German and English teachers, it can be readily understood that our knowledge of these not common and somewhat complex affections was not clear and precise. At this time it happened that a series of typical cases of lichen planus were published in America, together with the history of a case of very extensive eruption, which was really lichen ruber, and which, unfortunately, fell under the eyes of the American observer in the one stage of its course in which it presented points of resemblance to lichen planus. The inference was naturally drawn that the localized eruption of lichen planus represented one form, and the generalized eruption another form of the same disease—a view which had also been mildly urged by Tilbury Fox. Thus it was that in the minds of many American dermatologists the impression prevailed that these diseases were essentially one and the same; the one limited, the other general in distribution. At this time Hebra's most eminent disciple in Vienna became convinced by the facts offered in the American essay of the identity of the two diseases, a view which he has since steadily maintained. During the past eight years, however, much has been done by several American observers in the study of lichen planus, most of whom regard it as not identical with lichen ruber. The difficulty experienced in this country lay in the fact that lichen ruber is here a very rare disease, and consequently there have been few opportunities for its study. It has been my good fortune to have under prolonged observation two very characteristic cases, in one of which the disease ran its course twice, and besides to see four cases shown by friends. These two cases have afforded me exceptional opportunities for the study of lichen ruber, as seen in this country, and from them I am able to present a description of the disease based upon personal observation and illustrated by a number of very accurate colored and black and white drawings taken from life, which is the only systematic one, I believe, that has appeared in the English language, since the existing descriptions are all based on the original of Hebra. The facts presented will, I think, convince any truth-seeking and conservative observer that lichen ruber is a distinct morbid entity without the shadow of relation to lichen planus. As a corollary of the clinical description, I shall add a table of differential diagnosis of the disease from lichen planus, based upon the study of sixty-four personal recorded cases, and of many others of the latter disease. The microscopic appearances of lichen ruber in its various stages are also described and figured. This work has been done for me by Dr. Ira Van Gieson, of the Pathological Laboratory of the College of Physicians and Surgeons. The pathological changes depicted in the drawings and the conclusions drawn from them may be accepted as correct, since the figures are exact reproductions of the sections of skin examined in the light of the advanced technique of to-day and are not tinctured or modified in delineation or description by a bias for dermatological theories. These observations prove that the view held by some observers that lichen ruber is essentially an epidermal disease or hyperkeratosis is incorrect, and that the superficial lesions of the corneous layer are due to deeper-seated inflammatory and exudative processes. This fact has never before been brought out.

The details of my second case are given with all possible brevity, and, though no mention is made of the first case, the experience derived from its study will be used in this essay.

The patient is a female, aged thirty-seven, a native of Switzerland, single, a dressmaker, a woman of marked intelligence, of perfectly healthy parentage, and herself healthy throughout life, except when suffering from the skin affection. She arrived from Europe early in June, 1884, and was promptly attacked by a skin disease of extensive development, similar to the present, which lasted a year and disappeared under simple remedies without leaving any blemishes. Two years later (1886) she had another, but much less extensive, eruption which passed away in a few months.

In March of this year (1888) she was again attacked, and came to my clinic at the New York Hospital early in June. The eruption began as groups of pimples on the neck, at the top of the sternum, and about the chin, without any itching or discomfort or any accompanying systemic disturbance. When examined by me the disease had attacked the whole of the face and the neck; it had extended over nearly the entire back as far as the buttocks, over the shoulders, down to the middle of the outsides of the arms, over the clavicular regions and the axillæ, over the whole anterior surface of the trunk, sparing the prominences of the breasts, down to the labia majora, over the thighs, and ending just below the great trochanters. It existed

* Read before the American Dermatological Association at its twelfth annual meeting, September 19, 1888. (Since further elaborated.)

in patches on the flexor surfaces of the arms at the elbows, in the shape of disseminated and isolated lesions on the outer aspect of the forearms, becoming more numerous on the ulnar surface of the wrists as far as the tips of the little fingers, forming a patch covering the knuckles and extending upon the dorsum of the fingers. Both palms and soles were involved, and the scalp was the seat of a branny desquamation.

This very extensive eruption had appeared with tolerable promptitude. Upon region after region groups of papules had appeared in anatomical order, from above downward, and had coalesced and formed patches; in some cases perfect and without break, in others there being intervening spots of unaffected skin. The mode of invasion and extension was, on the whole, subacute and much less rapid than that of eczema. A given amount of surface having been invaded, a period of quiescence of a few days or weeks occurred. Then new lesions appeared in an isolated and disseminated manner on these and on unaffected parts in the vicinity. These lesions increased in numbers, coalesced and formed patches, and then the affection might rest quiescent again, or it might continue advancing in the same manner, slow, aphlegmasic, but persistent. Under all circumstances it retained its dry, slightly scaly character, and it was never complicated by the presence of vesicles or pustules. As the disease advanced over the body the nutrition of the hairs was much impaired and they became thin, short, and lanugo-like. The hair of the scalp was little if at all affected, but considerable hair fell from the axillæ. While at first no abnormity of cutaneous sensation was felt, later on, when the papules had fused and formed large patches, particularly about the neck and face, a very mild pruritus, aggravated at times when the circulation was accelerated, was complained of. There were no signs whatever of scratch-marks or excoriations. Neither mentally nor physically did the patient suffer, and the only evidence of the reaction of the disease upon the general nutrition was in a slight and gradual loss in the subcutaneous fat.

Up to the present date, December 20th, this disease has existed ten months, and has invaded the face, neck, trunk, and parts of the arms and thighs. It was confined to the face, neck, and suprascapular regions for about two months. During the remaining eight months it has extended, though not in a continuous manner, to the finger-tips and in a nearly unbroken sheet to the buttocks, the pudenda, and to the thighs and legs.

This skin affection, which I may say in advance is lichen ruber, may, I think, in the light of my studies, with propriety and strict accuracy be divided into three well-marked stages: First, the stage of isolation of the papules; second, the stage of coalescence of the papules; and, third, the resulting chronic, moderately infiltrated, slightly pigmented, and scaly stage.

The invasion of the disease begins with the appearance of distinctly isolated papules, which more or less promptly form patches by multiplication and coalescence. While infiltration and varying degrees of desquamation take place in the coalesced patch or patches, the area of the disease is further increased by new crops of isolated papules, which appear at their margins or at some distance from them. It thus occurs that we usually find all three stages existing in the same patient. For clearness of description, therefore, we shall follow this division.

The Stage of Isolation of the Papules.—This is well shown upon the arm and forearm in Fig. 4, extending from the coalesced patch at the inner aspect of the elbow, and was also observed on the external aspects of these parts, where the papules are quite widely scattered. On the hypogastrium and flanks the papules are, for the most part, isolated, but are more numerous than those on the arms. In these regions, therefore, we can study the eruption in its first stage. There are none of the classical features of inflammation to be observed, for the affection, though subacutely inflammatory in nature, evidently develops *à froid*. When first visible, the papules are of the size of the point of a pin or needle and, in fact, are so small that they can hardly be called miliary. If there were but few they might be mistaken for little collections of dirt seated very superficially in the hair and sebaceous follicles. They present to the touch a sense of firmness of structure even thus early, and give to the skin a roughened feel. They soon become miliary in size, and for the most part look like little brownish-red elevations. On parts where the skin is thin and delicate, such as the inner aspect of the arms and abdomen, when examined individually with the magnifying glass, they look like little conical masses of yellow wax, and to the eye are of a neutral orange-color. The minute conical papules are well shown in the chromo-lithograph—on the wrist in Fig. 1, on the knuckles in Fig. 3, and on the arm and forearm in Fig. 4. There is an entire absence of circumferential hyperæmia, though this feature may be observed in a mild degree upon the face, neck, and palms, usually, however, resulting from friction. In their early stage, then, the papules are miliary and conical, and I can readily understand why observers who strive for elaboration in nomenclature call the disease lichen ruber acuminatus. This conical condition of the papules is not of long duration. The lesions grow slowly but surely in area, and as they do so they increase in salience, their surface becomes rounded and obtuse, as is very clearly shown upon the hypogastrium in the chromo and in the solar-print, Fig. 5. They may retain this rounded, bee-hive shape for a period equally as long as they remained conical, and consequently it would be equally as reasonable and appropriate to call the disease in this stage lichen ruber obtusus as it would lichen ruber acuminatus. At this time the papules are still very minute bodies, but they have not yet attained their growth. They continue to increase in area until they reach a diameter of a line, or even less, when they may be said to be fully formed, since henceforth they, as papules, undergo no peripheral growth. Remaining in the obtuse condition for a short time, as they grow they become flattened, and then a depression in their centers corresponding to the orifice of the follicles may sometimes be readily noted and at other times not seen. This central depression, however, is very minute—so much so that the term umbilication can hardly be applied to it. Here again the elaborator of nomenclature has his opportunity, and he might favor us as he has done with the term lichen ruber planus. The fully formed papule then presents a rounded outline, with, perhaps, in some cases, a tendency to ovoid, but nothing akin to the angularity, star-shape, or polygonal shape of lichen planus is seen. The papules jut up sharply and vertically from the surface of the skin. There is a wonderful uniformity in the size of these lesions; each papule seems destined to

cover an allotted space, and it does it and no more. From the commencement of their development very minute, thin, more or less adherent scales are seen on the papules, and from them during their whole course a similar mild desquamation occurs.

In their fully developed condition, therefore, the papules are rounded, slightly umbilicated, and scaly. Owing to the increase of corneous cells on their surfaces, they present a slightly shining and glistening appearance which is best seen in the sunlight, in an oblique direction. They never have the decidedly micaceous silvery appearance of the lesions of lichen planus. In this stage of isolated papules their color often varies in a striking manner from a dark-yellow to a brownish-red, according to the condition of the circulation. They never have the deep violaceous-red and even crimson-red color of the papules of lichen planus, which further differ so markedly from those of lichen ruber in the fact that they convey to the eye the impression that they result from much more profound morbid changes.

When the papules of lichen ruber are thus fully developed, when they are not very numerous and are distinctly isolated and clustered in groups, they may perhaps be mistaken, for a short time, for lichen planus, particularly if they should occur on the inner surfaces of the arms and near the wrists, on the abdomen, or on the antero-inner surface of the thighs or legs. Under no other circumstances whatever, I think, can a trained observer confound the two diseases. But, even under these conditions, time and the natural course of the papules will soon settle the question as to their nature, if it has not already been cleared up by the history of the eruption and of its concomitant features. A study of the myriads of maturing and mature papules on the hypogastric region, as shown in the chromo-lithograph, fortified by the facts already brought out, would, I think, be sufficient to convince the observer that the case was one of lichen ruber, and not of lichen planus, whereas all possible doubt would be removed by an inspection of the parts above.

When a portion of the body thus becomes the seat of these scattered papules, new crops continue to appear, more or less rapidly, and become intermingled among the older ones, until, in the end, they are so closely aggregated that they fuse together, and may cover the whole surface, but sometimes little oases of unaffected skin are left. While this is going on new papules, distinctly isolated, form at the periphery or on parts of territory beyond, and run a subacute course until, in the end, nearly, if not the whole, body becomes covered. The extension of the disease is therefore progressive from one or more parts; it rarely or never jumps from the upper to the lower extremities, nor does it run the erratic course of eczema.

The Stage of Coalescence of the Papules.—The transition of the isolated papules into diffuse patches of eruption is shown in the chromo on the abdomen and on the chest-walls in a more graphic manner than pen can depict. When, by reason of maturity of growth and multiplication of numbers, the papules have coalesced, it will be seen that they are arranged in distinct and symmetrical rows, corresponding to the direction of the surface furrows and the connective-tissue frame-work of the parts.

A very accurate idea of the course of lichen ruber papules is conveyed by a study of Fig. 5. This figure was taken directly from life. A solar print was made from a photograph of the anterior abdominal wall, just as is shown in the chromo-lithograph. A portion of this photograph, two inches wide by three inches in length, at a point just below and external to the umbilicus, where the papules were in a discrete, coalescing, and coalesced state, was magnified by solar print into a figure sixteen inches by thirty-two inches long, and from this large figure the smaller one, No. 5, was cut out.

In this figure, at the region marked *a*, the papules are shown in an isolated state, of uniform size, round in outline, no longer conical, but semi-globular on their surface. In the region *b* just beyond the papules are seen after they have reached their maturity and have become flattened, and still preserve their roundish outline, though clustered close together. In the territory just above, marked *c*, it will be seen that the papules have lost their primordial form entirely, and have become fused together. The lesion there seen is a general moderate thickening of the skin in its upper layers. What were papules have become fused together into a patch, which is traversed with parallel lines with shorter and less distinct transverse markings. These lines are the natural furrows of the skin, broadened and deepened by the disease. They are admirably well shown in the chromo-lithograph, particularly on the left-hand side over the ribs and abdomen. They vary in direction according to the conformation of the part, and are, as is well known, arranged in conformity with the deep connective-tissue frame-work of the skin. For a time the individuality of the papules seems preserved in this linear arrangement, but it is gradually lost by fusion. It results from this process of fusion that the skin of a person suffering from lichen ruber comes to present in its chronic stage a miniature semblance to alligator's hide.

For some time, therefore, the contour of the individual papules in the stage of coalescence may be quite clearly made out, as is well shown in the lower portions of the eruption in the chromo-lithograph, just below the umbilicus. In this stage of the eruption lichen ruber may be said to be fully developed, since beyond it retrograde changes are observed. It is then a vast conglomeration of fused papules of a characteristic warm brownish-red color, giving forth their branny scales in moderate quantity. When the fingers are passed over an extensive surface, a dry, smooth, leathery feel is communicated. There is not as yet observed that harsh sensation which has been, I think, rather extravagantly compared to that of a nutmeg-grater or of a file, a condition which, however, may occur later.

There is in this stage decided infiltration of the skin, but it is evidently superficial, and not seated in the derma and connective tissue. It is comparable to that of dermatitis exfoliativa, and not to that of eczema. Later on it may be more pronounced, particularly on the palms and soles and on the fingers.

More or less rapidly the tendency of the disease shows

itself in the effacement of its papular elements. These little bodies become more and more indistinct individually, until at last the eruption consists of a uniform brownish-red, slightly scaly, superficial thickening of the skin, which is traversed by the minute natural furrows of the skin in longitudinal, circular, oblique, and transverse directions. Owing to the increase in the corneous elements of the skin, these furrows become deeper than normal, and they divide up the morbid areas into various shapes, some very noticeable, others less so, and corresponding to their direction, after the manner of the hide of an alligator. This constitutes the third stage, in which the disease is chronic, indolent, infiltrated, scaly, and slightly pigmented, all signs of previous papulation having disappeared and no new lesions then showing themselves. In this stage, judging from my experience with cases seen on this side of the Atlantic, the disease may undergo involution after considerable periods. The previous attacks in the present case are said to have subsided spontaneously. In Germany, however, the disease frequently persists until a dry, file-like, harsh, infiltrated skin results, the superficial disease having then caused a true inflammation of the whole thickness of the skin.

With these facts in mind, I think that a very clear idea of the disease may be obtained by a study of the chromolithograph. Below are seen the reddish-yellow discrete papules, and just on a level with the iliac crest they are seen to be coalescing, whereas above that they are lost in vast expanses of thickened skin. The oases of healthy skin on the side over the ribs are very characteristic.

In this stage the brownish-red color of the eruption becomes deeper, the itching may be rather more pronounced, the infiltration is greater, the skin surface decidedly rougher and more scaly, and the minute hairs are either destroyed or their nutrition is much impaired.

It can readily be imagined that, in inveterate cases, such as Hebra first observed, the whole integument was transformed into a harsh nutmeg-grater or file-like tissue. It will be seen, therefore, that the roughened feel of the skin can only be noticed in the very early papular stage and in the late infiltrated stage, and that it is smooth and leathery in the middle stage.* As involution occurs, the suppleness and natural glossiness of the skin return, but a diffuse, brownish-yellow pigmentation of mild character is left, accompanied for a time with moderate desquamation. This pigmentation is, in a measure, characteristic of the disease in that it has not the red tinge of a departed eczema, nor the brownish-red hue of a vanished psoriasis. More particularly it differs wholly and radically from that of lichen planus in being uniform in sheets, rather than blotchy, patchy in spots, and in not being of a rusty brown, a brownish-red, or a crimson-red color, which are so constant in the latter affection. In lichen planus pigmentation there is evidence of much quite deep effusion of the red corpuscles; in lichen ruber it is very trifling and superficial.

In Fig. 1 are shown, with admirable fidelity, the appearances of the palm in my case, which are essentially those of chronic, scaly, and infiltrated eczema. The patient, moreover, complained of the sensation of tension and impairment of movement so constant in the latter affection. In Fig. 2 the epidermal thickening is shown in a very marked degree upon the sole of the foot. The increase of the corneous cells was very great. Such a condition is never seen in lichen planus.

Finally, I would call particular attention to the condition of the nails, which, in Fig. 3, are shown to be opaque, of a dull-white or dirty-yellow color, rough and serrated on their surfaces, and fully four times their normal thickness, as is clearly shown in Fig. 1. It is natural to suppose that a disease the acme of which is seated in the corneous layer of the skin should work a radical change in the nutrition of these kindred appendages. There is no concomitant nail affection in lichen planus.

The foregoing facts, I think, very clearly and forcibly show that in America lichen ruber presents precisely the same clinical characteristics that it does in Germany, with, perhaps, the qualification that it has not been seen here as yet in such an inveterate and deadly form as Hebra first described. I think that it has been shown that the disease has striking peculiarities, and that only in one stage, and that a short one, can it by any possibility be mistaken, at least by a trained clinician, for lichen planus. In order, however, to settle this question of the supposed relationship of lichen ruber and lichen planus beyond doubt and cavil, I have prepared the following table, which presents all the points of distinction:

LICHEN RUBER.	LICHEN PLANUS.
1. A very rare disease.	A not uncommon disease.
2. A disease of remarkably constant uniformity of type-form, its lesions passing through definite stages of evolution without the slightest tendency to polymorphism, and finally being lost in a general thickened condition of the skin.	A disease sometimes showing much deviation from the type-form, chiefly by reason of the not uncommon great increase it causes in the epidermal layers which convert the patches into dense, hard, rough, dark-brown, even crimson-brown, uneven, rugose patches of irregular outline (knees, elbows, and sometimes wrists).
3. Symmetrical in its distribution, spreading from the	As a rule, symmetrical in its distribution, beginning usu-

* My studies have convinced me that the main reason why lichen ruber is not clearly understood by dermatologists lies in the fact that too much stress is laid on the conical condition of the papules, which is thought by many to exist throughout the whole course of the disease. According to my reading and experience, the file-like condition of the skin in the third stage of lichen ruber is supposed by most observers to be the direct outcome of the early conical papular stage. In other words, it is thought that the multiplication and growth of the conical papules result in the harsh, file-like condition of the chronic stage. The facts presented in this essay show very clearly that this is not the case. The disease does begin by the appearance of conical papules, which soon become rounded and then flat, and are finally lost in a general thickening of the integument, mainly of the epidermis. The resulting file-like and harsh condition of the skin is simply due to its quite deep corrugation, which condition is produced by the deepening of the natural surface furrows or lines; in other words, by a greater or less superficial fissuration in a uniformly thickened skin. The loss of elasticity consequent upon the thickness and harshness of the skin tends to accentuate the condition of corrugation, even to the production of deep fissures, when the part is submitted to much movement and stretching.

LICHEN RUBER.	LICHEN PLANUS.
upper parts of the body downward, in anatomical succession.	ally on the inner aspects of the forearms near wrists, on lower parts of abdomen and inner parts of thighs and legs, chiefly near knees. Beginning on a region or regions, it tends to spread in a more or less discrete manner over them alone.
4. Shows a tendency to attack a large extent of surface, and even to invade the whole body in a uniform way. Face almost as a rule affected.	Shows a tendency to limitation on the extremities, lower abdomen, and neck; not known to attack the face. Rarely involves large surfaces in a uniform eruption, and never the whole body, even in a discrete manner.
5. Morbid changes seem to begin superficially in corneous layers.	Morbid changes begin in the substance of the corium.
6. Not perceptibly inflammatory in early stages; no hyperæmic areola.	Consists of circumscribed inflammatory spots and patches; hyperæmic areola usually present, though not extensive, and may be absent.
7. Slowly but surely tends to extend.	May extend to other regions, but very commonly remains indolent and localized.
8. Begins as small conical papules of waxy appearance and of neutral orange or slightly brownish-red color which, in due time, become obtuse, then flat, with a slight central depression and very moderate desquamation; surfaces smooth and shiny, but not silvery or micaceous.	Begins as red papules, not markedly conical, which flatten out into round, oval, angular, and star-shaped outlines, with silvery surfaces covered with much-thickened corneous layers, and with noticeable central depression; surfaces very frequently shiny and micaceous; never having a waxy look.
9. Papules reach their full development (a line or less in area) and never grow larger. Large patches always formed by the multiplication and fusion of papules of uniform size.	Papules increase by peripheral growth until usually they attain a diameter of one to four lines; may develop into true patches, chiefly from irritation, friction, and pressure (scratching, irritation of coapting surfaces, strong applications, garters and bands around body); may develop *de novo* on scratch-marks. Large patches formed by fusion after moderate or excessive peripheral growth of papules.
10. Papules seem destined to reach maturity after a due process of growth and then to fuse into patches which may, later on, undergo involution. No exceptionally early or premature involution occurs in a single or several papules. They all seem to "hang together."	Old papules may show a tendency to undergo involution sometimes quite early, while new ones appear close by or at a distance. Each papule seems to run a course entirely irrespective of its fellows, either of short or long duration. They do not as a rule "hang together."
11. Color of papules at first of a neutral orange, and as they grow in size and in proportion as they become aggregated they are of a warm brownish-red, which is often heightened by acceleration of the circulation.	Color of papules at first of a deep-red, which soon becomes of a purplish, violaceous, or lilac hue. On lower limbs sometimes of a deep, even bluish-red color. Not much influenced by the circulation.
12. In chronic stage all traces of papules lost; the surface is rather rough to the touch, but of an even plane and of a brownish-red color.	In chronic stage, particularly where the epidermis is thick (knees, ankles, elbows (rare)), epidermal hypertrophy results in dense, hard, uneven, sometimes rugose surfaces, even to a marked verrucous condition, with a deep-red, even bluish-red, color. Traces of original lesions entirely gone.
13. Patches diffuse, even involving whole regions, not very scaly, of uniform, even surface, traversed by the deepened and much exaggerated natural furrows of the skin; of remarkable uniformity of color.	Patches, covered with much abnormal adherent epithelium, desquamating moderately; very irregular in outline and size, of decidedly uneven surface, without uniformity of color, which may even vary from day to-day from silvery hue to a dull red.
14. Invades the palms and soles in totality in uniform patches.	Not common on palms and soles; when present, consists of localized patches.
15. Attacks the nails, causing hypertrophy, impairs their nutrition, and may even destroy them.	Nails unaffected, except very rarely in inveterate cases by extension from the backs of the hands.
16. Causes impairment of nutrition and loss of hairs, chiefly of body.	Hairs unaffected.
17. Not known to attack mucous membranes.	May attack mucous membranes (mouth and glans penis).
18. Leaves a diffuse, uniform, not accentuated yellowish-brown pigmentation, in large expanses.	Leaves dull-red, brownish-red, rusty-brown, crimson-brown pigmentation in spots and irregular-shaped patches.
19. Itching very mild, if ever present, at its early evolution; may be moderate in chronic stages. Never severe or in proportion to the extent of lesion and of surfaces involved.	Itching very often severe at time of invasion; is present afterward in mild or intense form, usually in exacerbations.
20. Attended with concomitant emaciation; in inveterate cases, death by exhaustion.	No emaciation nor, as a rule, any serious systemic reaction.

Prognosis.—The earlier writings of Hebra produced the impression upon the mind that lichen ruber was a deadly disease; that it was chronic in nature and that it gradually became complicated with asthenia and emaciation, over which all treatment was powerless. Later observations convinced this observer that at least some cases were curable by means of the long-continued administration of arsenic. Kaposi,* in his lectures, says that we can with certainty promise a cure in all cases of this disease except those generalized ones in which severe marasmus has supervened. My experience with the disease in this country, where it is very rare indeed, is of course rather limited; but it has not

* "Pathologie und Therapie der Hautkrankheiten," Wien, 1883.

convinced me of its inevitably deadly nature, nor of its relentless progression from bad to worse. In my first case, the patient, at the age of thirty eight, became attacked with lichen ruber, which extended nearly over the whole body. Yet he did not fall sick, nor did his nutrition in any manner apparent to the senses suffer. In one month the disease nearly covered the body, and under treatment he presented no evidence of the disease at the end of three months. Six years later, without known cause, he had a second generalized attack, similar as to the extent of the lesions and the absence of sickness and emaciation, and this was cured by energetic treatment in about two months. Since that time (1879) the man has remained free from the disease.

The history of my second case shows very clearly that the first attack of lichen ruber was very extensive, lasted a full year, and then disappeared under the use of simple domestic remedies. A second attack, two years later, less extensive, however, lasted only a few months and then disappeared spontaneously. The third attack, which began in March of this year (1888), is now, December 23d, practically cured, and during its existence the woman, though she became somewhat thin during the summer, did not suffer from a condition of ill health greater than she had experienced in past years when her skin was free from disease. I do not wish to be understood as drawing conclusions as to the modified severity, and I may almost say ephemeral course, of the disease in this country from these two cases, for I simply put on record the facts as they presented themselves.

Treatment.—German authorities since Hebra's time have used arsenic in full and long-continued doses in the treatment of lichen ruber, and the remedy is looked upon by them as unique and specific in its action. While I have faith in the therapeutical action of this drug in many skin diseases and have no doubt of its efficacy in some cases of lichen ruber, I am far from the opinion that the treatment can be summed up in one word—arsenic—as German writers seem to imply. In my first case, during two attacks of the disease, the patient was treated by alkaline diuretics with the view of reducing cutaneous hyperæmia, and by a well-regulated system of external medication. In my second case neither arsenic nor alkaline diuretics were beneficial, and I may say that they were even harmful. A combination of citrate of iron, quinine, phosphoric acid, and strychnine improved the patient's appetite, allayed nervousness, and increased nutrition. Such was the benefit that she thought she derived from this combination that she showed a zeal to use it even to excess. My experience with the treatment of lichen ruber has thoroughly convinced me that sufficient stress has not heretofore been laid upon external treatment. The disease being a moderately exudative one with much epidermal increase, the indications for baths and cutaneous stimulation are, I think, clearly marked. Stated briefly, my experience teaches me that frequent hot alkaline baths (sal soda and borax, 100°–115° F.) are of the greatest value. They relieve cutaneous hyperæmia, soothe the pruritus, carry off the effete epidermis, and undoubtedly cause absorption of the products of inflammation. After numerous trials, I have come to place high esteem upon brisk and thorough frictions of the affected surfaces with the compound tincture of green soap. These may be made every day. If possible, this tarry liquid should be rubbed into the skin two or three hours before the bath is taken, and, where the surroundings of the patient will admit of it, a mild friction after the bath should be made and the skin then left unwashed. If during the day the patient can not allow the film resulting from such frictions to remain on the body, the parts should be very sparingly anointed with vaseline. I am convinced that much of the chronicity of the disease may be mitigated and shortened by oily inunctions, and that the inelastic, roughened condition of the skin incident to the disease tends of itself decidedly to perpetuate its existence. Alkaline baths as hot as can be borne with comfort at night, followed by the tarry frictions, and in the morning repetition if possible of the same—but under any circumstances, by the inunction of some bland oily preparation, such as vaseline—constitute, in my experience, the most decidedly valuable therapeutic measures. About the hands and fingers, and indeed on all parts where the epidermis is much thickened, especially where there are fissures (sometimes deep and painful), the greatest care should be exercised that the parts are fully and continuously covered. For this purpose I know of no remedy so beneficial as freshly made diachylon ointment with balsam of Peru (℥ j and 3 j). The action of this ointment may be enhanced when used upon the fingers or limbs, or indeed on any parts where a roller bandage can be applied, by moderate and graduated pressure. When the disease is severe about the nails, great care is necessary in removing epidermal increase and in keeping the parts well invested in the ointment.

Microscopical Examination and Pathology.—Portions of the excised skin from the hypogastric region and from the outer and upper surface of the thigh were hardened in alcohol; other portions from these places were prepared with chloride of gold (Chrzonszczewsky's method); other pieces were treated with a one-per-cent. solution of osmic acid for twenty-four hours, this giving the best results. The sections were stained with hæmatoxylon and eosin. The patches of skin taken from the hypogastric region were covered with papules in varying stages of closeness of packing, while that from the outer surface of the thigh was studded with discretely placed lesions.

1. *The changes in the epidermis* consist of a hypertrophy of all its layers, with infiltration of the rete mucosum with leucocytes, of a localized destruction of some of the more superficial cells, and a pigmentation of many of the deepest cells of the rete.

The surface of the skin from the thigh and hypogastric region is very uneven and corrugated. In all the portions examined there is a thickening in varying degrees of the epidermis, with inward prolongations here and there of the interpapillary portions of the rete mucosum (Figs. 9, 6, and 10). In places the corneous layer is very much thickened (Fig. 9), and often its superficial laminæ are packed together rather densely, as though flakes or crusts were being formed. The stratum lucidum is also thicker than in check sections



FIG. 9.—From the hypogastric region, showing a moderate hypertrophy of the epidermis, and including one of the deep furrows lined w partially degenerated epidermis. *a*, corneous layer; *k*, stratum lucidum; *b*, rete Malpighii; *c*, papillary derma; *d*, subcutaneous connec tissue; *e*, clusters of small round cells around the blood-vessels; *f*, hypertrophied smooth muscle-bundles; *g*, bottom of the furrow f which the epidermis at *i* has apparently been excoriated mechanically; *h*, degenerated zone of the rete resembling the stratum lucidum; small cavities beneath the stratum lucidum filled with granular material; *s*, sweat-glands.



FIG. 10.—From the thigh, showing hypertrophy of the epidermis, and at *a* collections of small round cells around the vessels of the papillary derma, and at *b* larger clusters of small round cells.

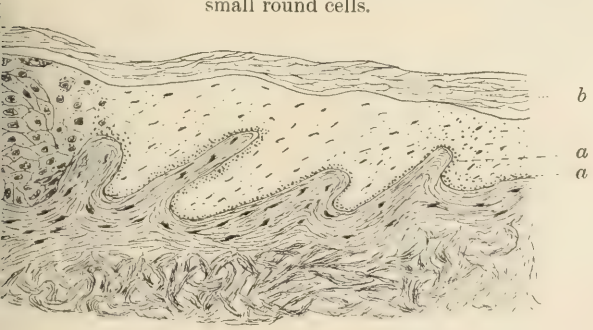


FIG. 12.—Showing a portion of the rete Malpighii which converted into a zone resembling the stratum lucidum. is zone is transparent, slightly granular, and contains a flattened nuclei; *a*, layer of brownish pigment-granules the junction of the degenerated rete Malpighii with the ma; *b*, stratum corneum.

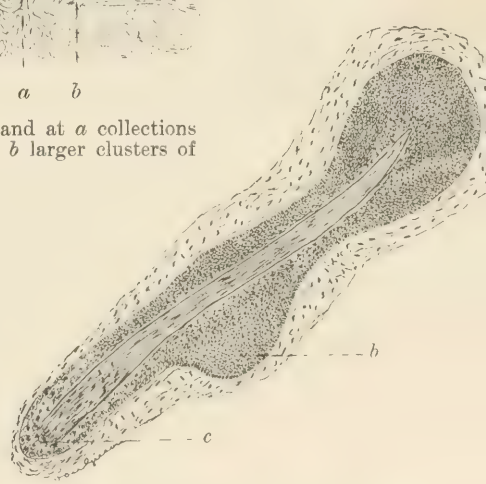


FIG. 11.—Oblique section of an atrophic hair. *a*, th dermic coat; *b*, false or secondary bulb, composed of of epithelial cells, corresponding to the cells of th root-sheath, which pouches out slightly the dermi *c*, atrophied bulb and papilla. Above the false-ha there is a thickening of the outer root-sheath.

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Fig. 1.—Showing infiltration and scaling of the palm, and thickened condition of the nails; over the wrist numerous discrete comeal papules of recent development.



Fig. 2.—Showing great thickening of the epidermis of the sole.

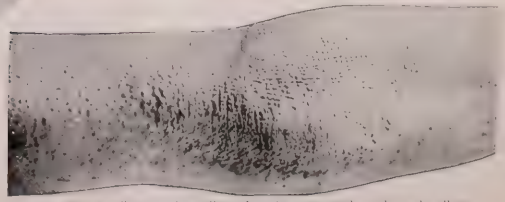


Fig. 4.—Showing old, infiltrated, scaly, corrugated patch at the elbow, and newly appearing discrete corneal papules on the arm and forearm



Fig. 5.—Reproduction of a greatly magnified solar print of a patch of lichen ruber. Lower third (*a*) shows the rounded, discretely placed papules. In middle third (*b*), papules are shown flattened out and confluent. In upper third (*c*), the confluent papules have become arranged in the lines of the natural furrows of the skin.



Fig. 6.—From the hyp
of the rete by leucocytes
uloum, and the oedema
stratum corneum; *b*, st
losum; *d*, small cavity w





Figs. 7 and 8.—Illus
dinal section of two sma
with their perivascular
and at *b* a few larger c
reticulum.

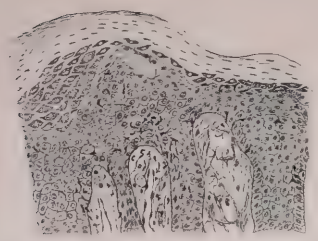


FIG. 6.—From the hypogastric region, showing an invasion of the rete by leucocytes, a deepening of the stratum granulosum, and the œdematous condition of the papillæ. *a*, stratum corneum; *b*, stratum lucidum; *c*, stratum granulosum; *d*, small cavity with granular contents.

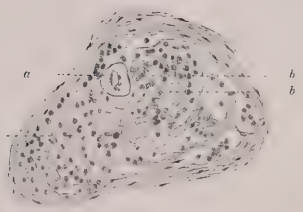


FIG. 7.

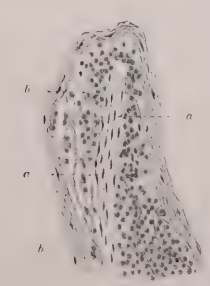


FIG. 8.

FIGS. 7 and 8.—Illustrating a transverse and a longitudinal section of two small vessels *a*, *a*, of the pars papillaris with their perivascular spaces filled with small round cells, and at *b* a few larger cells lying in the meshes of a delicate reticulum.

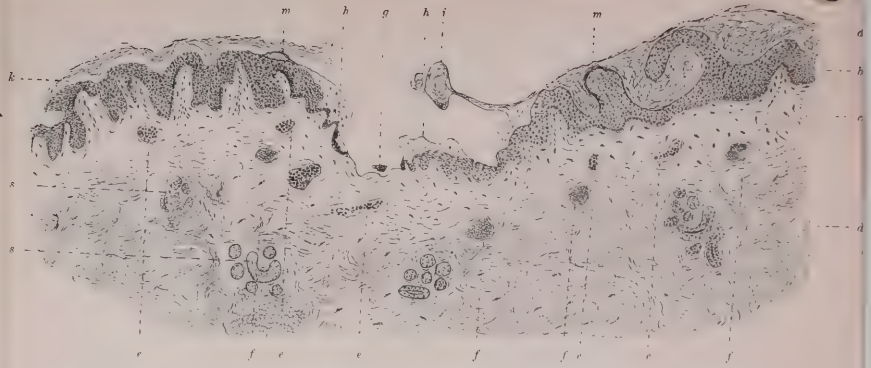


FIG. 9.—From the hypogastric region, showing a moderate hypertrophy of the epidermis, and including one of the deep furrows lined with partially degenerated epidermis. *a*, corneous layer; *k*, stratum lucidum; *b*, rete Malpighii; *c*, papillary derma; *d*, subcutaneous connective tissue; *e*, clusters of small round cells around the blood-vessels; *f*, hypertrophied smooth muscle-bundles; *g*, bottom of the furrow from which the epidermis at *i* has apparently been excoriated mechanically; *h*, degenerated zone of the rete resembling the stratum lucidum; *m*, small cavities beneath the stratum lucidum filled with granular material; *s*, sweat-glands.

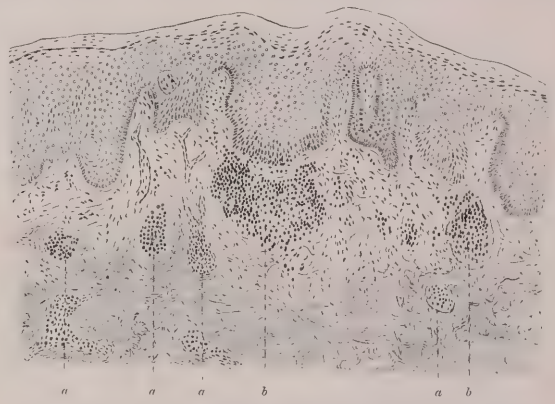


FIG. 10.—From the thigh, showing hypertrophy of the epidermis, and at *a* collections of small round cells around the vessels of the papillary derma, and at *b* larger clusters of small round cells.

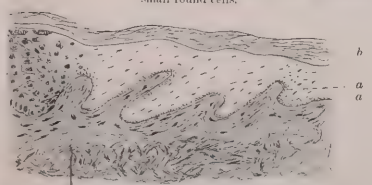


FIG. 12.—Showing a portion of the rete Malpighii which is converted into a zone resembling the stratum lucidum. This zone is transparent, slightly granular, and contains a few flattened nuclei; *a*, layer of brownish pigment-granules at the junction of the degenerated rete Malpighii with the derma; *b*, stratum corneum.

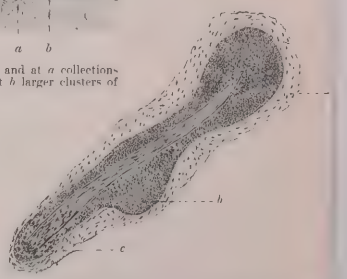


FIG. 11.—Oblique section of an atrophic hair. *a*, thickened dermic coat; *b*, false or secondary bulb, composed of a mass of epithelial cells, corresponding to the cells of the outer root-sheath, which pouches out slightly the dermic coat; *c*, atrophied bulb and papilla. Above the false-hair bulb there is a thickening of the outer root-sheath.

of normal skin from the hypogastric region (Figs. 6 and 10).

There is a premature keratosis of many of the cells of the rete mucosum, as the cells of the stratum granulosum, which contain the eleidin droplets of Ranvier * (keratohyalin substance of Waldeyer), extend in places to a considerable extent into the rete Malpighii (Fig. 6, *c*). Frequently these cells lie as deep as a line midway between the lower surface of the stratum lucidum and the level of the apices of the papillæ. This eleidin substance is believed to be intermediate in its chemical composition between the cell protoplasm and the corneous material.† There is a general slight invasion of the rete with leucocytes. These are most abundant in the lower layers of the cells, as is seen best in osmic-acid preparations (Fig. 6).

In the superficial layers of the rete, just beneath the stratum lucidum, are a limited number of small cavities almost completely filled with granular detritus (Figs. 9, *m*; 6, *d*). These cavities seem to be produced by a disintegration of some of the superficial epidermis cells, as there are groups of these cells with indistinct outlines and shrunken nuclei. Their protoplasm is transparent, and does not stain with eosin.

The skin from the hypogastric region is grooved with a few deep, narrow furrows lined with a degenerated layer of epidermis cells, resembling the stratum lucidum in structure, which extends, in some sections, nearly to the derma (Fig. 9, *h h*). The partially degenerated epidermis seems to have been loosened from some places in these furrows by a cracking or stretching of the skin, leaving the corium bare (Fig. 9, *g*). The degenerated zone is composed of a degenerated, slightly granular translucent substance which does not stain with hæmatoxylon or eosin, and contains a few flattened scale-like nuclei. In the skin from the hypogastric region there are a few small patches in which the entire breadth of the rete mucosum is converted into a zone resembling the stratum lucidum in structure (Fig. 12). The papillæ and papillary derma beneath these patches of degenerated rete are slightly denser than the surrounding corium (Fig. 12).

2. *The lesions in the derma* consist of changes in the blood-vessels of the papillæ and pars papillaris and their perivascular spaces, in the smooth muscle-fibers, and in the hairs.

The endothelium of many of the smaller vessels is swollen and granular. The perivascular spaces of the vessels of the pars papillaris are uniformly filled with an exudation of serum and small round cells in varying proportions (Figs. 9, *e*; 7; 8; 10, *a*). Among the small round cells are a few larger rounded granular cells, some of them having a cell wall (Fig. 7, *b*; 8, *b*). The perivascular spaces contain a delicate reticulum, composed partly of the adventitia of the blood-vessels and partly of the stroma of the fat columns of Collins,‡ which accompany the vessels from the panniculus through the derma. Many of the larger granular cells are probably metamorphosed fat cells of the atrophic fat columns. In the papillary derma, lying often close to the rete, are a few larger clusters of small round cells, in the vicinity of which the connective-tissue cells are increased in number.

The papillæ in osmic-acid specimens from the hypogastric regions are very œdematous. Their interfibrillary spaces are distended with fluid and contain a few leucocytes.

The smooth muscle-bundles are hypertrophied.

Only a very few hairs were found in the sections, and in a longitudinal section of one hair the dermic sheath is thickened, and the bulb of the primary hair is shrunken and fused with its papilla. Just above and at one side of the primary hair-bulb is a secondary or false hair-bulb, composed of a group of outer root-sheath cells which pouch out slightly the dermic coat (Fig. 11).

Sections stained with Herxheimer's method for elastic fibers show no abnormity in their number or arrangement.

The small nerve-bundles in the subcutaneous connective tissue are normal (osmic-acid staining). In sections prepared with chloride of gold only a few of the fibers of the sub-epidermal plexus were stained.

The sweat-glands are normal, except that the orifices of some of them show a funnel-shaped dilatation. No sebaceous glands were found in the sections.

No bacteria were found either in the sections or cover-glass preparations of the blood.

Conclusions.—There is, then, in this case of lichen ruber an hypertrophy of all the layers of the epidermis, associated with an exudative inflammation in the papillæ and papillary derma.

* "Sur une substance nouvelle de l'épiderme et sur le processus de kératinisation du revètement épidermique." "Comptes rend. de l'acad. des sciences," 30 Juin 1879.

† C. Toldt, "Lehrbuch der Gewebelehre," 1888, p. 579.

‡ Satterthwaite's "Histology," p. 421.

SOME TENOTOMIES FOR THE CORRECTION OF HETEROPHORIA,

*WITH RESULTS.**

By DAVID WEBSTER, M. D.

Since the first of July, 1886, a period of a little over two years, I have performed the operation of tenotomy for the correction of heterophoria, or latent or dynamic squint, in forty cases. Twenty-five patients were operated upon only once each, while sixteen had a second tenotomy performed, making fifty-five tenotomies in all.

These tenotomies are classified as follows:

Tenotomies of the inferior rectus..... 3;
Tenotomies of the superior rectus..... 7;
Tenotomies of the external rectus..... 19;
Tenotomies of the internal rectus..... 26.

Three of the patients had been previously operated upon by Dr. C. R. Agnew, one by Dr. E. G. Loring, and one by Dr. G. T. Stevens. Dr. Stevens had done two tenotomies on his patient, and Dr. Agnew and Dr. Loring one each on theirs, so that in the forty cases sixty-one tenotomies were done.

The tenotomies performed by me were all, or nearly all, done according to the method described by Dr. George T.

* Read before the American Ophthalmological Society at a special meeting held in Washington, September 19, 1888.

Stevens in his paper read before the New York Neurological Society in April, 1886. The tendon was button holed at its center, and divided both ways until its attachment to the sclera was entirely severed, and then, if necessary, it was further freed from its attachments at either side until the heterophoria was corrected. I always aimed at a slight overcorrection and generally hit the mark. But in three cases there was too great an overcorrection and I had to do the operation which I had seen Dr. Stevens do for readjustment.

Nearly all the patients operated upon were more or less benefited—some only temporarily, some apparently permanently. In only one case had I reason to regret that I had operated, and that was a case in which, having cut both externi, I got an overeffect after the second tenotomy and had to readjust the muscle. The patient has since complained of diplopia on looking far to the right or the left. I have seen a case of irremediable diplopia produced by tenotomy, but I think the operation performed must have been like the old one for squint. The diplopia came on after such an operation by a western ophthalmologist, and Dr. Stevens had failed to remedy it by nineteen subsequent operations, according to the patient's statement, so that I thought the case might properly be set down as incapable of cure. I think there is little if any danger of diplopia following an operation done after Stevens's method. The operation should always be done under cocaine and the effect produced should be measured at intervals during the operation, and the surgeon should be ready to stop cutting when he has got just enough effect. Three of my tenotomies were done under ether or chloroform—two in the case of a child, and one in the case of a man whose continued semi-convulsions prevented him from keeping still enough for a delicate operation upon the eye.

Four of the patients operated upon were epileptics. The epilepsy was not cured by the operation in any case, though the fits were temporarily suspended in one case. In another case the fits were favorably modified, although the epilepsy was organic; in a third case there was temporary improvement, but subsequently the patient was worse than ever. In the fourth case the fits had been suspended for over six months, and the operation was done more for the relief of asthenopia than for epilepsy, and with very good result.

Two of the patients were the subjects of chorea. One of them, a child, six years and nine months old, had both externi cut under ether, to correct a divergence which occurred on his attempting to fix, and which seemed to interfere with the comfortable use of his eyes. He seemed to have derived a considerable amount of benefit from the tenotomies. His mother was sure that he "walked better and looked better." He was also more quiet. The other, a girl of twenty-six, had both externi cut, and, when orthophoria was produced, reported that she was much improved.

There certainly can be no objection to restoring the proper balance of the ocular muscles, when it has been lost, in cases of epilepsy and chorea, but, judging from my *personal* experience, it does not cure either disease. Aside from the cure of the disease, however, enough good results in relieving asthenopic symptoms to justify the procedure.

One or two hysterical patients were operated upon at Dr. E. C. Seguin's suggestion with surprisingly good results. One gentleman, a civil and mining engineer from the West, had come to Dr. Seguin with a diagnosis of "incurable spinal disease." Dr. Seguin found "spinal irritation" of extreme degree. He had been unfitted for business by "semi-periodical paroxysms of excruciating pain in which he made contortions, semi-involuntary, which had been termed convulsions." I found him in one of these attacks when I went to his room prepared to operate upon one of his interni. I sat with him over an hour, during which the agony and the plaintive cries and the apparent convulsions continued without remission, the patient constantly writhing in the most intense pain, until Dr. Seguin arrived and we gave him chloroform and divided the tendon. From that time to the present, so far as I can learn, he has had but one attack and that a very mild one, and after sufficient physical abuse to account for a recurrence.

Another gentleman who suffered from attacks which Dr. Seguin thought were hysterical was much relieved by the operation.

A physician who had five or six years before been subject to frequent attacks simulating *petit mal*, and who now had developed blepharo-facial spasm with asthenopia, was operated upon, first by Dr. Agnew and afterward by myself, with some relief of his asthenopia, but none of his nervous disorder.

One man, who had been an inmate of an insane asylum and who had sailed around Cape Horn for the rest it would afford his nervous system and his eyes, had an internus cut by me, but without relief.

But the majority of the cases operated upon and relieved were cases of headache, varying in degree, character, and location. It would lengthen out this paper beyond all reasonable limits were I to go on commenting on the cases.

I have written them out with some care, and hope to have them printed in their completeness for reference for those who wish to know all about them. But I shall read here only brief notes of each one, unless the society wishes otherwise.

I may, before proceeding to read my cases, be allowed to formulate my present opinions in regard to tenotomy for heterophoria:

1. No person should have a tenotomy performed simply and solely because he is the subject of heterophoria; that is, unless some annoying symptom, local or general, is present that *may* be due to the want of harmony in the action of his ocular muscles. There must be a reason for the operation in addition to the existence of the condition to be corrected.

2. Very slight degrees of heterophoria may and should be corrected where troublesome symptoms exist which may be due to the too great use of nervous force in co-ordinating the eyes.

3. It is well that all other means that afford any prospect of relief should be tried before resorting to a tenotomy,

although no time should be lost by unnecessary dilatory treatment.

4. Tenotomies for the correction of heterophoria should always be performed under cocaine, so that the effect of the operation may be accurately measured and properly limited.

5. In judiciously selected cases, where the operation is properly performed, the average results will be quite as satisfactory as the results of most other surgical operations.

Cases of Epilepsy.

Case I.—Mrs. B. A. H., aged forty-seven, was referred to me by Professor M. Allen Starr, M. D., at the New York Polyclinic, October 19, 1887. She had been subject to epilepsy for many years, the attacks occurring with varying frequency and severity. Dr. Starr had diagnosticated hypermetropia and hyperphoria, and desired that the patient might have the benefit of their correction.

Upon examination I found:

R. V. = $\frac{20}{20}$; Hm. $\frac{1}{24}$. L. V. = $\frac{20}{30}$ +; Hm. $\frac{1}{20}$. Hyperphoria, R. 2°. No esophoria or exophoria. Fundus normal.

On November 3, 1887, I performed a tenotomy of the right superior rectus, and two pairs of glasses were prescribed—one correcting the hypermetropia, to be worn constantly for distant vision, and a stronger pair for near work, taking into account the patient's presbyopia. She remained free from epileptic seizures for several weeks after the operation and then relapsed and was as bad as before. Another examination showed a recurrence of the hyperphoria of the same eye and in about the same amount as before the tenotomy. This I corrected by dividing the inferior rectus of the left eye. Again the fits were suspended for several weeks, but then returned and were quite as frequent and as severe as before any operation had been done. Several subsequent testings showed a condition of orthophoria, so that no indications existed for further operative interference. The patient was heard from about a year later, when she was said to be no better, but, if anything, worse.

Case II.—C. W. B., aged sixteen, American, reported at my office, September 14, 1887, with a letter from Professor W. S. Kendrick, M. D., of Atlanta, Ga. He had been an epileptic since the age of three years and a half. No cause was known. The fits have occurred as often as twenty-five in twenty-four hours. They last from a few seconds to a minute or two. He is said never to have bitten his tongue and ordinarily does not froth at the mouth. He is as bright as ever after an attack, when not under the influence of bromides. Three or four years ago he had no fits for a period of over six months. Master B. had just recovered from an attack when he came to my office, and, being also pretty thoroughly brominized, was so stupid that I examined his eyes with great difficulty. Both eyes had vision $\frac{20}{20}$ and were emmetropic. No hyperphoria, esophoria 2°, abduction 6°, adduction 12°. Atropine developed hypermetropia 1 D. each eye, and esophoria 12°. I referred him to Dr. E. C. Seguin for examination and got the following reply:

"Your patient has organic epilepsy, as is shown by the presence of remains of infantile hemiplegia (small right hand and short right leg; attacks beginning on the right side). Consequently it is clear that nothing can cure him. The tenotomy may be useful as a help, removing one strain on the nervous system. I should advise it."

September 15th.—Esophoria 10°. I now placed the right eye under cocaine and divided the internus, thus correcting the esophoria.

17th.—Esophoria 3°, abduction 10°, adduction 18°.

The patient soon after returned to his home and I did not hear from him until April 2, 1888, when Dr. W. S. Kendrick wrote me as follows:

"C. W. B. was not very much improved by the tenotomy. His mind is quite active and his attacks somewhat modified. Of course he will never be well, but we only hoped for some amelioration of the attacks, which has, in a measure, been attained."

Case III.—Samuel Q. B., aged seventeen, American, came to me on September 15, 1887, with the following letter from Dr. Seguin:

"The bearer, young Mr. B., has had an occasional attack of nocturnal epilepsy (?) in the last four months. Five years ago I apparently cured him of similar attacks, and he had no relapse for four years. He has had no bromides or other medicines for two months. His last attack occurred in the night of the 10th inst. I think I find astigmatism. Will you kindly examine his eyes fully and let me know the result?"

Upon examination I found:

R. V. = $\frac{20}{30}$ +; $\frac{20}{15}$ with + 0·75 D. cyl. ax. 90°. L. V. = $\frac{20}{30}$ +; $\frac{20}{15}$ with + 0·75 D. sph. Hyperphoria R. 1°, esophoria 1°, abduction 5°, adduction 8°.

Ophthalmoscopically, no lesion.

Under homatropine I found R. V. = $\frac{20}{40}$; $\frac{20}{15}$ with + 0·75 D. s. + 0·75 D. c. ax. 90° L. V. = $\frac{20}{100}$; $\frac{20}{15}$ with + 1·75 D. S. No hyperphoria, esophoria 2°, abduction 4°, adduction 8°. September 16th, esophoria 3°. Ordered glasses Rt. + 0·50 D. s. + 0·75 D. cyl. ax. 90° prism 1° base out. Lft. + 1·25 D. s. prism 1° base out. April 10, 1888, has not been especially benefited by the glasses. The attacks now occur every night. He is nervous and jerks all over for a few moments and then the convulsions confine themselves to his right arm. These spasms continue a minute or two. He seldom loses consciousness, the last time being three or four weeks ago. Tested to-day.

R. V. = $\frac{20}{15}$ with + 0·75 D. s. + 0·75 D. c. ax. 90°. L. V. = $\frac{20}{15}$ with + 0·75 D. s. + 0·50 D. c. ax. 180°.

No hyperphoria, esophoria 3°, in accommodation, none. Abduction 2°, adduction 14°.

April 12th.—Abduction 3°, adduction 14°.

13th.—Esophoria 3°, adduction 17°.

14th.—Esophoria 3°, adduction 18°.

16th.—Adduction 21°.

19th.—Adduction 19°.

23d.—Adduction 19°, abduction 4°, esophoria 2°.

24th.—Adduction 19°, abduction 3°, esophoria 5°.

26th.—Abduction 3°, adduction 19°, esophoria 3°.

Under cocaine I divided the right internus, leaving orthophoria with abduction 9°.

27th.—Esophoria 1°, abduction 6°, adduction 21°.

28th.—Esophoria 5°, abduction 4°, adduction 23°.

May 1st.—Esophoria 2°, exophoria in accommodation 2°, no hyperphoria.

R. V. = $\frac{20}{17}$ with + 1·50 D. S.

L. V. = $\frac{20}{15}$ with + 1·25 D. S.

3d.—Esophoria 4°, abduction 3°, adduction 22°. The left eye was now placed under cocaine, and just before operating there was esophoria 2°, and abduction 5°. I divided the left internus, leaving orthophoria with abduction 9°.

4th.—Esophoria 1°, abduction 8°, adduction 19°. Ordered glasses without prisms.

8th.—Esophoria $\frac{1}{2}$°, abduction 6°.

24th.—The patient says he seemed to be considerably improved until last Monday, since which he has been worse than ever, having had four or five bad attacks every night. He is now under the influence of the bromides.

His muscular condition is orthophoria with abduction 6°. I

gave him a wash for a slight conjunctivitis he had developed, and he went to his distant home.

October, 1888.—When last heard from at end of June, young B. had more attacks than ever before—several every night, in spite of treatment by bromides and tonics. After a careful consideration of the nature of the seizures and their resistance to ordinary treatment, I am strongly inclined to consider them (as I did those "cured" in 1882) of hysterical nature.—E. C. S.

Case IV.—P. J. M., aged twenty-six, American, came with a letter to Dr. Agnew from Dr. W. R. Pryor, January 2, 1888:

"Mr. M. has had several attacks of a true epileptic character; but one which he has recently had leads me to believe that possibly some of his trouble comes from errors in the eyes. Therefore I send him to you. He had a chancre six years ago. His first epileptic attack was on September 10, 1887. His loss of consciousness was complete. His second attack was in October last, beginning as weakness in left leg, then left hand, and general loss of nervous sensation. Muscular action all right. Tendon reflexes all exaggerated. Ankle clonus not marked. Co-ordination perfect. He is taking hydrarg. iodid., gr. $\frac{1}{4}$ t. i. d.; potas. iodid., gr. xxx t. i. d.; and potas. bromid., gr. xxx at bedtime. Please let me know the result of your examination."

Has trouble when he reads. It brings on a tired feeling, as though he was going to have an epileptic attack, not so much in eyes as head. Four years ago Dr. Knapp treated him for catarrh of the eyes. Being myopic, he wears glasses for distant vision, but reads without. Has some twitching of his lower lids.

R. V. = $\frac{20}{100}$; $\frac{20}{15}$ with — 1·75 D.

L. V. = $\frac{20}{200}$; $\frac{20}{15}$ with — 2·25 D.

February 3d.—Hyperphoria L. $\frac{1}{4}°$, esophoria 2°, none in accommodation. Abduction 6°, adduction 25°, sursumduction R. 2°, L. 2°. Ophth. myopia 2 D. both. No lesion.

4th.—Under atropine the vision and refraction remain unchanged.

Hyperphoria R. 1°, esophoria 2° to 3°, abduction 8°.

6th.—Esophoria 1° to 2°, abduction 8°, adduction 20°.

Dr. Agnew communicated with Dr. Pryor in regard to Mr. M., and he did not return until July 26th.

Examination then showed:

R. V. = $\frac{20}{15}$ with — 1·75 D.; L. V. = $\frac{20}{15}$ with — 2 D.

No hyperphoria, esophoria 3° to 4°, exophoria in accommodation 4°. Sursumduction R. 2°, L. 2°, abduction 5°, adduction 32°. He complained that reading caused him to have vertigo.

July 27th.—If he reads a few minutes there is a slight pain through his temples, and upon continuing to read, vertigo comes on. He can sometimes read for ten minutes without vertigo.

Esophoria 3° at 1′. Ordered prisms R. 1°, L. 2°, base out; these having enabled him to read fifteen minutes in the office without vertigo.

August 7th.—Esophoria, with or without correction of refraction, 3° to 4°; abduction 4° to 5°, adduction 30°. He reports that he now reads with more difficulty than ever before.

Tenotomy of right internus, leaving esophoria $\frac{1}{2}°$, with abduction 10°. On the 8th, 9th, and 10th his esophoria was 2° and his abduction 8°. He says he "gets along with less uncertainty," and that he "walked more yesterday than he had in any day for several months."

11th.—Says he does not get about with the same certainty to-day. Esophoria 2° to 3°, abduction 8°.

13th.—Esophoria 2°, abduction 8°.

17th.—Esophoria and abduction unchanged. Read twenty-five or thirty minutes this morning with no pain other than the headache he got up with. He has vertigo just about the same as before the operation. Dr. Pryor has diagnosticated "syphilitic endarteritis of the right middle cerebral artery." The diagnosis has been confirmed by Dr. E. G. Janeway.

24th.—Esophoria 2°, abduction 7°, adduction 24°.

30th.—The patient says he can read much better than before the operation, but not so well as before he had any head trouble. Writing gives him more trouble than reading.

September 15th.—Esophoria $\frac{1}{2}°$, exophoria in accommodation 2°, abduction 8°. The patient says he can read much better than before the operation and, on the whole, considers himself very much benefited.

October 9th.—Esophoria 1°, abduction 6°. Patient can read much better than when here last, and considers himself greatly improved.

Cases of Chorea.

Case V.—Jack S., aged six years and nine months, was brought to me, April 9, 1887, with a letter from Dr. E. C. Seguin, who said:

"Mr. and Mrs. S. bring you their little boy, Jack, whose chorea, not due to organic disease I believe, has resisted a thorough arsenical treatment with rest tried last fall. He has never had converging power, and there is a probability that this insufficiency and consequent strain is the chief cause of the chorea. Some doubts have been expressed as to his acuteness of vision, but I think he sees fairly well. You will notice that his mother has the same ocular defect to a less degree. Will you examine the eyes thoroughly and undertake the operation? The parents understand that not too much is expected from the operation. The child takes no medicine now. His mother says he never walked well, and did not walk at all until he was over two years old. He was circumcised a year ago, but it had no effect on the chorea."

It was somewhat difficult to test and examine Jack, as his eyes rolled about on attempting to fix, and were altogether uncontrollable. With the right eye he counted fingers correctly at three feet. With the left I could not get him to count fingers at all. Homatropine was dropped into both eyes to facilitate an ophthalmoscopic examination. It was found that there was atrophy of both optic nerves, the left being the whiter of the two.

Dr. Seguin gave the child ether and I divided the left externus.

April 29th.—His mother says he "talks better and walks better" since the operation.

May 19th.—Tenotomy of right externus under ether.

October, 1888.—The final result in this case was very satisfactory as regards the motor disorder. The chorea entirely passed away, leaving a slight atonic condition of hands, and some uncertainty in walking. This I believe was present from the start and was obscured by the chorea. It should be added that the child had systematic treatment by rest, arsenic, and gymnastics, besides the ocular treatment. Vision not improved, though fixation is better done.—E. C. S.

Case VI.—Miss Annie W., aged twenty-six, came to consult me, on March 29, 1887, on account of chorea with asthenopia. Her eyes had troubled her "quite some time." She had "quite a good deal" of pain in them, and black spots floating before them all the time. There is a heavy feeling about the eyes constantly, and a "miserable feeling down the back of the head and neck." She used to think she would "go crazy" with it. She has been nervous and run down for over a year, and most of that time she has been under the treatment of various physicians for general chorea. Catamenia normal, bowels regular, eats well and sleeps well.

R. V. = $\frac{20}{15}$; Hm. $\frac{1}{72}$. L. V. = $\frac{20}{15}$; Hm. $\frac{1}{60}$. No hyperphoria. Exophoria 5°, in accommodation 5° to 9°. Abduction 10°, adduction 10°. Ophthalmoscopic examination shows physiological excavation and venous pulsation, both eyes, but no lesion.

April 5th.—Under atropine, R. V. = $\frac{20}{10}$ with + $\frac{1}{42}$. L. V. = $\frac{20}{10}$ with + $\frac{1}{48}$.

14th.—Exophoria 3°, abduction 10°.

V. = $\frac{20}{10}$ each; no Hm.

Tenotomy of left externus, leaving orthophoria with abduction 4°.

16th.—Abduction 8°. Has been more quiet since the operation.

25th.—Abduction 10°, adduction 8°, exophoria 3°.

May 16th.—Exophoria 3° to 5°, abduction 9°, adduction 14°, hyperphoria L. 1°.

Tenotomy of right externus, leaving orthophoria.

18th.—Much less nervous and back of head and neck better. Abduction 8°, exophoria 2°, no hyperphoria.

August 10th.—Was quite a good deal better before the warm weather. Has the chorea "not nearly so badly," and has had very little headache. Orthophoria, abduction 8°, adduction 10°. Put on increasing reading tasks.

September 10th.—Chorea was better all summer, but has been pretty bad for the last week.

R. V. = $\frac{20}{10}$; made clearer by 0·25 D. cyl. ax. 180°.

L. V. = $\frac{20}{10}$; Hm. 0·25 D. Sph.

Hyperphoria L. 2°. Exophoria 2°. Ordered R. + 0·25 D. cyl. ax. 180°. L. + 0·25 D. s. prism 1½° base down, for all the time.

December 6th.—Chorea decidedly improved. Exophoria 3°, in accommodation 8°, abduction 9°, adduction 5°, hyperphoria L. 1°. Sursumduction R. 0°, L. 1°. Put upon prism gymnastics.

January 7, 1888.—The patient writes that she overcomes prisms 50° base out.

March 19th.—Orthophoria. Is much improved.

Hysterical Cases.

Case VII.—E. S. A., aged forty-one, civil engineer, came to me on May 8, 1887, with the following letter from Dr. E. C. Seguin: "This note will be handed you by Mr. A., who came to me from the West a few days ago with a diagnosis of incurable 'spinal disease.' I find that he has spinal irritation of extreme degree, most developed in sacral region, but also marked in occipito-cervical region. He has quasi-periodical paroxysms of excruciating spinal pain in which he makes contortions which have been termed 'convulsions.' He has suffered much from using his eyes, and a partial examination made some time ago revealed some faults. I hope that many of Mr. A.'s symptoms are due to eye-strain, and shall not give him much treatment until after you have had a fair chance at his eyes."

May 9, 1887.—R. V. = $\frac{20}{200}$; $\frac{20}{50}$ with + $\frac{1}{42}$ c. ax. 180° − $\frac{1}{15}$ c. ax. 90°. L. V. = $\frac{20}{20}$; $\frac{20}{15}$ with − $\frac{1}{60}$.

Hyperphoria 0°, esophoria 3°, in accommodation 3°, abduction 2°, adduction 9°, and sursumduction R. 0°, L. 0°.

Ophthalmoscopic examination shows congenital cataract in right, no lesion of left.

11th.—Under atropine:

R. V. = $\frac{20}{40}$ with + $\frac{1}{24}$ c. ax. 15° − $\frac{1}{15}$ c. ax. 105°.

L. V. = $\frac{20}{50}$; $\frac{20}{15}$ with + $\frac{1}{60}$ s. + $\frac{1}{72}$ c. ax. 145°.

Esophoria 3°, abduction 1°, adduction 9°.

12th.—Tenotomy of right internus under cocaine and chloroform after three hours of fearful semi-convulsions, writhing with pain referred more especially to "small of back," which Dr. Seguin had failed to relieve by hypodermic medication.

13th.—Patient more comfortable to-day than for years.

14th.—Orthophoria, abduction 8°, adduction 9°. He has diplopia on looking to the left.

21st.—Ordered glasses. R. + $\frac{1}{42}$ c. axis 5° − $\frac{1}{15}$ c. ax. 95°. L. + $\frac{1}{60}$ s.

The state of orthophoria remains.

September 21st.—Orthophoria, abduction 8°. Chalazion right lower lid, excised. He had only one slight attack of semi-convulsions since the tenotomy, and has attended to business as before the attacks began.

October, 1888.—The suffering of this patient in his attacks was manifested in such an extraordinary way as to suggest exaggeration or self-delusion. He had a nurse with him whose duty it was to give him chloroform whenever an attack occurred. Hypodermic injections of $\frac{1}{60}$ grain of hyoscyamine undoubtedly controlled the attacks in my hands. He was given strychnine in large doses for several weeks and went away perfectly well, except that the lumbar spine was still tender. In a day after the tenotomy, the patient expressed himself as feeling better than for two years, saying that almost immediately after the operation "something gave way" or relaxed in the spinal region. After a severe piece of railroading, a short relapse took place in September, 1887, relieved by medical treatment, and I heard in June last that the attacks of Mr. A. had once more returned, under the observation of a physician in Colorado.—E. C. S.

Case VIII.—E. S. K., aged thirty-five, came to me, October 11, 1887, with a letter from Dr. Seguin, who wrote:

"I have treated Mr. K. for general symptoms of cerebral fatigue and peculiar attacks which I trust are hysterical. He also has occasional occipital headaches. I find out to-day, by cross-examination, that for several years moving objects—such as scenery out of a car-window, vehicles in a crowded street, revolving machinery, etc.—have caused distress in the head, nervousness, and almost dizziness. He has instinctively avoided such sights for two years or more. I think that this justifies an examination of Mr. K.'s ocular muscles."

Examination showed:

R. V. = $\frac{20}{20}$; $\frac{20}{15}$ with — 0·25 D. cyl. axis 90°.

L. V. = $\frac{20}{20}$; $\frac{20}{15}$ with — 0·25 D. cyl. axis 90°.

No hyperphoria, esophoria 2° to 3°, abduction 5°, adduction 20°.

October 13th.—Under homatropine:

R. V. = $\frac{20}{40}$; $\frac{20}{15}$ with + 0·50 D. s. + 0·50 D. cyl. axis 180°.

L. V. = $\frac{20}{70}$; $\frac{20}{15}$ with + 0·75 D. s. + 0·50 D. cyl. axis 180°.

Esophoria, 4° to 5°.

18th.—Pupils normal.

R. V. = $\frac{20}{15}$ + with + 0·25 D. cyl. axis 180°.

L. V. = $\frac{20}{15}$ + with + 0·25 D. cyl. axis 180°.

Esophoria 2° to 3°, abduction 5°.

19th.—I cut the right internus in presence of Dr. Agnew, Dr. Townsend, Dr. Eliot, and Dr. J. B Knapp, leaving his eyes in a condition of orthophoria.

20th.—The patient reports that he slept well last night, and "feels like a fighting cock."

28th.—Orthophoria, abduction 7°. The patient states that he felt well until he went to work at his desk day before yesterday; then when he went home at night he had a tired head, but not the old headache.

December 21st.—Esophoria 1°, abduction 7°. The improvement seems to be permanent.

Blepharo-facial Spasm with Asthenopia.

Case IX.—T. J. C., aged thirty-two, physician, came to Dr. Agnew, May 13, 1887. He stated that from the age of twenty-two to the age of twenty-seven he had had frequent attacks simulating *petit mal*. Sometimes while going about he would hear a sound like a thunder-clap, sometimes in both ears simultaneously, sometimes in one ear after the other, and sometimes in one ear only. These attacks would often be accompanied by no other symptoms. Sometimes a feeling of "rush of blood to the

head," with vertigo and a feeling as though he would fall, but he never fell. These attacks sometimes came half a dozen times a day, and sometimes not for a week, seeming to depend upon the condition of his digestion. He had a great deal of sick headache, usually coming on in the afternoon and lasting until he went to sleep at night. He slept badly, ate moderately, and has a tendency to constipation. He has had an occasional chill; never venereal disease.

His eyes were perfect, so far as he knows, up to seven or eight years ago, when he first noticed blurring of vision in reading. He consulted a New Orleans oculist, who gave him "slight myopic glasses." Seven or eight months later, as his eyes still troubled him, he had them examined under atropine, and got an order for "hypermetropic glasses." He has had one or two changes in his glasses since, but has never gotten along satisfactorily. He has had frequent attacks of conjunctivitis, and has for several years been subject to spasm of the eyelids and cheeks, which, he says, is largely *voluntary*, or under his control. He uses no tobacco, and alcohol only very moderately.

R. V. = $\frac{20}{30}$ + ; Hm. $\frac{1}{24}$.

L. V. = $\frac{20}{30}$ + ; Hm. $\frac{1}{20}$.

Esophoria 8°, none in acc., sursumduct. R. 0°, L. 0°, abduction 4°, adduction 19°. He is wearing Right + $\frac{1}{36}$. Left + $\frac{1}{24}$.

The ophthalmoscope shows no lesion.

May 14th.—Dr. Agnew divided what he estimated to be nine tenths of the left internus, leaving esophoria 1°, abduction 8°, and adduction 15°.

15th.—Esophoria 3° to 4°, abduction 8°. Changed glass over right eye to + $\frac{1}{24}$.

19th.—Esophoria 5°, abduction 7°.

He does not yet appreciate any improvement from the operation.

22d.—Esophoria 3°, abduction 7°.

June 21st.—Extracts from letter of this date from Dr. J. L. Minor: "He was at first largely relieved, but is now suffering as much as ever. I inclose the results of my testings on June 3, 1886, and on June 2, 1887.

"*June, 1886*, + 1·50 D. S. V. = $\frac{20}{20}$ + o. u. Without glasses at 20′ with vert. dipl. 2° convergence, adduction 15°, and abduction 7°. With glasses at 20′ with vert. dipl. equilibrium, abduction 6°, and adduction 20°. At 14″, vertical dipl. 2° convergence, abduction 22°, adduction 40°.

"*June, 1887.*—R. and V. unchanged. Without glasses at 20′, vert. dipl. 3° convergence, adduction 30°, and abduction 4°. At 20′, with glasses, vert. dipl. 2° convergence, abduction 4°, adduction 30°. With glasses at 14″, vert. dipl. equilibrium, abduction 20°, adduction 40°."

May 14, 1888.—Dr. C. returned to me, saying that he had not been permanently improved by the tenotomy. Esophoria 4°, abduction 4°, adduction 24°.

15th.—Adduction 24°.

16th.—Adduction 25°.

17th.—Tenotomy of right internus, leaving exophoria 2°, abduction 10°.

20th.—Exophoria 10°, abduction 18°. I now readjusted the cut tendon by a stitch, and got homonymous diplopia 6°. There was some reaction following the readjustment—far more than I have seen in any other case of the kind. I had to give him a hypodermic of morphine, and apply iced cloths and atropine, and leeches to the temple.

23d.—The reaction has passed off, and the patient comes to the office. Esophoria 1° to 2°, abduction 8°.

24th.—With his glasses, orthophoria at 20′ and in accommodation. Abduction 8°.

June 2d.—Esophoria 1°, abduction 5°.

The blepharo-facial spasms seem unaffected by the operation, but the patient can already read with more comfort than before.

INSANITY.

CASE X.—T. M. M., aged thirty, was referred to me, at the Manhattan Eye and Ear Hospital, by Dr. Seguin on October 31 1887.

Mr. M., who was a mechanical engineer and whose business involved the most trying use of his eyes, had completely broken down some years before in his eyes and in his nervous system. He was unable to use his eyes for more than a minute or two at a time, and his ocular disability wholly unfitted him for professional work. He had, in consequence, developed melancholia, and had attempted suicide. He had been kept for some time in an insane asylum by his friends, and after his discharge had been sent on a voyage round Cape Horn. He returned in better condition mentally, but still could not resume work on account of his eyes.

Examination showed:

R. V. = $\frac{20}{15}$; Hm. $\frac{1}{60}$. L. V. = $\frac{20}{15}$; Hm. $\frac{1}{48}$.

Esophoria 1°, in acc. 0°, abduction 10°, adduction 18°, sursumduction R. 4°, L. 5°.

Ophthalmoscopically, normal.

November 4th.—Under atropine:

R. V. = $\frac{20}{15}$ with + $\frac{1}{72}$. L. V. = $\frac{20}{15}$ with + $\frac{1}{60}$ cyl. ax. 90°.

Esophoria 3°.

11th.—Esophoria 1°.

18th.—Esophoria 20°, in acc. 10°.

R. V. = $\frac{20}{15}$; Hm. 0·50 D. L. V. = $\frac{20}{20}$ + ; $\frac{20}{15}$ with + 0·50 D. cyl. ax. 90°.

The right internus was now divided, leaving a condition of orthophoria, or of slight esophoria.

December 1st.—Esophoria 2°, in acc. 0°, abduction 7°, adduction 35°, sursumduction R. 1°, L. 1°.

31st.—Esophoria 1°, abduction 10°. Ordered R. + 0·50 D. L. + 0·50 D. cyl. axis 90° for constant use.

The patient was kept under observation for some time, and, although placed upon reading tasks which he failed to perform, he finally disappeared without having been especially benefited so far as we could tell.

(*To be continued.*)

THE ÆTIOLOGY AND TREATMENT OF ACUTE ABSCESSES.

BY H. BOYLE RUNNALLS, M. R. C. S.,
BEDFORD, PA.

IT has always struck me with what an off-hand manner these painful conditions are described by our various surgical authorities, and how their styles of treatment resemble each other. It was therefore with great pleasure that I read the almost exhaustive article of Dr. Hubbard upon the subject which appeared in a recent issue of this journal, and a desire to state my observations upon some facts which he has not thoroughly explained must be my excuse for troubling you.

Dr. Hubbard states in his article that "no attempt is made to explain why an inflammation at one time results in suppuration and at another disappears and leaves no trace, or why in one instance the process of suppuration is rapid and in another slow."

For a long time it puzzled me why two such opposite results should terminate from apparently the same primary condition, and I began to look about for some like occurrence in the denser structures. One, first of all, has to consider the cause of the interference in the circulation, for of course it must be granted that an abscess—"*that is, the accumulation of pus*"—is disintegrated tissue, resulting from the blood-supply to that tissue when in a healthy state being cut off. If the blood-supply has not been completely cut off, as is so frequently seen in a bruise or a black eye, the escaped corpuscles are quickly absorbed and new blood-channels take the place of the damaged ones; but if any part of the body becomes deprived of its food, then death follows with the instantaneous presence of other life cells, which may be called disease germs, but they are, all the same, very important factors in the economy of life. Dr. Hubbard might have taken a step further back and asked why the same outside influence should at one time cause inflammation and at another prove innocuous. One has to consider here, then, the condition of the subject at the time the outside influence was brought to bear upon him.

In my opinion, therefore, the presence of suppuration demonstrates that complete separation has taken place between the healthy and damaged tissue. His second question is more easily answered, I think, or conjectured at. The progress of suppuration in any tissue depends upon the density of the surrounding structures, and also upon the position of the body where it has displayed itself. If it occurs where the surrounding tissues are subject to much movement, then you might necessarily expect the process of suppuration would go on more rapidly than in a part which is not subject to much muscular contraction. This, to me, shows that the first and all-important factor in the treatment of an abscess is "rest." Then, again, never incise any tissue until you are sure of the presence of pus. When you are sure that pus is present, then provide an outlet varying in size according to the position and capacity of the abscess cavity. If the position of the abscess is such that it is difficult for it to drain itself, then provide a free outlet, and *vice versa*.

In my opinion, it is far better to make an early incision when pus has displayed itself, than to wait for it to come to the surface, as this only produces the loss of more tissue, by the accompanying pressure, as is so frequently seen in "periosteal abscess" causing necrosis.

After you feel sure that complete strangulation of any tissue has occurred which must result in disintegration of the strangulated part, then anything that hastens the process of separation and repair must be grasped at, and poultices, in my opinion, are valuable adjuncts in the treatment, inasmuch as they dilate the blood-vessels and increase the blood-supply. After this, I believe, judging from my own experience and observation, it is not necessary to do more; but of course this depends a great deal as to whether the sufferer is surrounded by pure or vitiated air. To sum up, rest, early incision, cleanliness, and the avoidance of any irritation whatever, are safe rules to follow in the treatment of an acute abscess.

WIRING THE OLECRANON PROCESS.

By THOMAS H. MANLEY, M. D.,
VISITING SURGEON TO THE HARLEM HOSPITAL.

As this method of dealing with the broken articular end of the ulna at the elbow is on trial, and from my experience yields much better results than the older method of fixing the joint either in the flexed or extended position, and with bandages endeavoring to secure as perfect coaptation as possible, I report another successful case, my first having been reported in the "Pittsburgh Medical Review."

John T., a Norwegian, single, painter, aged thirty-three years, was brought into the Harlem Hospital, August 1, 1887, with a compound fracture of the right olecranon process of the ulna, Colles's fracture of the left arm, and fracture of the frontal bone, extending into the orbit of the same side. All the above-named injuries were caused by a fall from the elevated-railroad structure while painting. It will be seen that this man's anatomy was pretty well smashed, but, as we were concerned with the injury to the elbow, I shall not describe the others.

The fracture through the olecranon was transversely through the greater sigmoid cavity, quite close to the diaphyseal line of the shaft of the ulna. The integument and connective tissue in the vicinity of the opening into the joint were much contused and lacerated. Blood and synovial fluid blended together and glazed the surface of the wounded parts.

On admission, the parts were thoroughly cleansed and irrigated with mercuric-chloride solution, well dusted with iodoform, and wrapped up in heavy folds of antiseptic gauze.

The following day, when he had well recovered from the effects of shock, the dressings were removed, and the parts again well irrigated; and now both ends of the broken bone were drilled, a piece of strong patella wire was carried through the perforations made by the drill and well twisted together, the twisted ends being cut short and hammered over on to the bone. Horse-hair drains were used, and the limb was again covered with the Gamgee absorbent dressings. A right-angled iron brace was now carried from the hand to the shoulder, and the whole covered with a plaster-of-Paris bandage, except over the elbow joint, which was not included, as we wished to have convenient access to it for purposes of inspection and dressing.

We were very apprehensive about the result, as the patient was covered with a syphilitic eruption, and did not seem of a very vigorous physique. He complained little of pain when he recovered from the effects of ether. The dressings were not disturbed for four days. In the mean time he was placed on constitutional treatment with a view of eliminating the venereal taint and building up his strength. On the fifth day the wound was exposed and looked anything but encouraging; the animal ligature had torn or ulcerated out, leaving the ends of the bone quite exposed.

The margins of the wounds were swollen and exuded purulent matter. We attributed this unpromising state of the soft tissues to the taint in his system, and hoped that, as soon as his condition improved, the wound might take on healthy action. His general condition, however, remained fair, there being very little pain and hardly any fever. After a week's time healthy granulations sprung up, and the process of healing continued till the edges of the wound were firmly united, which was in about four weeks' time. At the end of the fifth week the plaster cast was removed, when it was found that there was moderate ankylosis, due, no doubt, to inaction of the limb for so long a time, and to the effusion into the joint of inflammatory material, which had become partly organized, and formed fibrous adhesions.

The work of passive motion was now begun, and it gave the patient much pain at first, but after a time he bore it without much difficulty. We took care to bandage the arms from the fingers up after each effort, being cautious to make firm but equable pressure at the elbow, and using care not to do too much each day, fearing that inflammatory action might be lighted up by violence, and being content to gain a little each day.

Just two months from the time of entering the hospital he left with firm union at the point of fracture and able to flex and extend the arm remarkably well for the time since the accident happened.

This case presented many features of interest, which, I think, will justify me in hastily going over them.

At the outset it will be seen that he suffered from many fractures at the same time; that his system was thoroughly saturated with syphilis, which, with its well-known power to derange nutrition and interfere with union of bone, was quickly subdued with large and frequent doses of potash and mercury, and the standard of health raised by stimulants and good food. Then it has been noted that the joint at the elbow was split open by the fall from the railroad structure, so that there was no necessity, as in a simple fracture of the olecranon, of making an opening into the joint with the knife. Here we simply cleansed and brought the bones into apposition and retained them with wire, using antiseptics vigorously, the drainage-tube, and Gamgee packing.

This being the second case of fractured olecranon—one simple and the other compound—which I have wired with good results, I think I am not saying too much when I maintain that the operation has a legitimate place in surgery, and that it should be *the treatment* for a fracture in this situation, with few exceptions.

The operation is simple, requiring no complicated instruments and no unusual manual skill in operating; the only great precaution necessary is to avoid septic trouble by cleanliness and antiseptics.

In my case here reported there was considerable reaction—inflammatory—due to injury to the capsule and soft tissues at the time of accident.

We may get along fairly well with an ankylosed knee, but with a flail-like elbow joint, due to want of union of the bone, or with a motionless, stiff elbow, particularly in the straight position, one might nearly as well be without the arm altogether; hence the necessity of adopting such means of treatment as will insure the most useful limb without adding any danger to life.

I should advise that after the third week of treatment passive motion of the elbow be instituted, and continued gradually until good use of the joint is secured.

I may mention, in conclusion, that I have lately wired several shafts of bone in adults, but with unsatisfactory results; the patella, olecranon, and inferior maxilla being the only bones in which the wire has not caused irritation requiring its removal before ossification was established.

The Philadelphia Academy of Surgery.—The annual meeting will be held on Monday, the 7th inst., at the hall of the College of Physicians. Dr. John B. Roberts is announced to deliver an address on the "Science of Successful Surgery."

ANTIPYRINE DURING THE FIRST STAGE OF LABOR.

BY J. O. VAN WINKLE, M.D.,

ACTING HOUSE SURG., MATERNITY HOSPITAL.

In an article published in this Journal for July 14, 1888, Dr. Egbert H. Grandin, visiting surgeon to the Maternity Hospital, called attention to the use of antipyrine in the first stage of labor. He stated that he had used it for the past year with gratifying results, and that the pains were rendered much less severe, while at the same time the progress of the labor was not interfered with.

In accordance with Dr. Grandin's suggestion, and during his term of service, Dr. T. H. Rockwell, house surgeon at the Maternity Hospital, used it in each case of labor where applicable. The first dose was given when the os was about one third dilated, except in cases where the pains were very severe from the outset, when it was ordered earlier. Antipyrine, gr. xv, and spt. ammon. aromat., ♏ xxx, were administered every two hours during the first stage for three doses. The temperature and the pulse were noted at the time the first dose was administered, and every hour thereafter until dilatation was complete.

In almost every instance the patient said she felt greatly relieved, and this was evident from her behavior. In some cases the patient would fall asleep for an hour or so after the first or second dose. These observations were all the more important since the class of patients delivered in the hospital includes many nationalities and social conditions, conspicuous among them being many Polish Jewesses and Bohemians, who, as a rule, are very restless and demonstrative during confinement, and the effect on these was quite noticeable.

Incidentally it was observed that generally the temperature fell from half a degree to a degree and a half F. The pulse became somewhat more frequent and the respiration slightly increased. Occasionally, if the pulse was rather rapid before administering the drug, it decreased in frequency. Thus an ordinary case taken from the history-book shows:

At 4.45 A. M., patient's temperature was 98·6° F., pulse 100; 5 A. M., patient was given antipyrine, gr. xv, spt. ammon. aromat., ♏ xx; 6 A. M., temperature 98·2°, pulse 68; 7 A. M., temperature 98·2°, pulse 68. Patient was given antipyrine, gr. xv, spt. ammon. aromat., ♏ xxx. 9 A. M., temperature 99°, pulse 64; 10 A. M., temperature 98°, pulse 80.

Case II.—1 P. M., antipyrine, gr. xv, spt. ammon. aromat., ♏ xxx; 1.20 P. M., temperature 98, pulse 64, respiration 20; 3 P. M., antipyrine, etc., repeated; temperature 97·4°, pulse 66, respiration 19; 4 P. M., temperature 97·4°, pulse 70, respiration 19; 5 P. M., temperature 97·2, pulse 68, respiration 22.

In order to ascertain the effect of antipyrine in decreasing or lessening the duration of labor, comparative statistics were taken where the drug was not and where it was used. Comparing a number of consecutive cases (of primiparæ) where the drug was administered with a similar number of same cases where it was not, we obtain the following data:

Primiparæ with Antipyrine.

First stage.	Second stage.	Operation.
Hrs. min.	Hrs. min.	
12 20	35	
18 55	1 35	
8 30	2 40	Low forceps.
17 30	45	
6 40	2 45	Low forceps.
16 50	1 40	
10 45	2 45	Low forceps.
5 30	30	
17 00	2 10	Low forceps.
11 55	30	
15 00	50	
10 00	1 35	
8 00	2 00	
Aver. 12 13	1 34	Forceps, 4.

Primiparæ without Antipyrine.

First stage.	Second stage.	Operation.
Hrs. min.	Hrs. min.	
10 00	3 25	Low forceps.
25 15	15	
9 35	10	
9 00	3 00	Low forceps.
11 45	1 15	
20 00	2 35	
12 40	1 50	
3 20	1 10	
15 45	1 20	
3 05	1 05	
26 40	30	High forceps.
11 25	2 45	Low forceps.
6 50	45	
Aver. 12 43	1 33	Forceps, 4.

From the preceding data it is apparent that antipyrine does not increase the duration of labor, but, on the contrary, tends to lessen this stage on an average of about half an hour, while the second stage remains practically the same, and in no case was there any injury done the mother or child.

Thus we see that the results of carefully kept statistics go to substantiate the statement made by Dr. Grandin—namely, that antipyrine very materially lessens the severity of the pains during the first stage without increasing the duration of the labor and without in any way injuring either the mother or child. The drug has never given rise to alarming symptoms, and this immunity is doubtless due to the fact that we have always associated it with a stimulant, and further to the fact that during labor there exists a physiological stimulation of the heart's action.

Dr Van Wadle in N. Y. Med. Jour.

AN INEXPENSIVE CELL FOR GALVANISM.*

By A. H. BUCKMASTER, M. D.,
BROOKLYN.

Up to within a quite recent period the use of electricity in a scientific manner was relegated to the neurologist. The gynæcologist has awakened to the possibilities of this potent agent, and, while there are some who believe they can use the current without a school-book knowledge of electricity, many are giving their earnest attention to the subject. Many are deterred from testing its merits on account of the cost of the necessary paraphernalia, and of this the cost of the cell itself is no small item, and it is for the purpose of showing how a battery may be made at home at a comparatively slight cost that I trespass upon your time this evening. The glass jar is a common fruit-jar, and can be bought in cases of eight dozen at a cost of about four cents a piece. It is only four inches in diameter, so that it may be placed on shelves between the jambs of the windows, etc., without projecting into the room in an unsightly manner. The jar holds a quart of fluid. The cover consists of six discs of pasteboard of two sizes tacked together. The three lower ones fit into the mouth of the jar, and the three upper and larger ones project slightly over the sides. There are two perforations in the cover to permit of the passage of the carbon and zinc. The aperture for the carbon is best made with a chisel, and that for the zinc can readily be made by a hollow punch. The zincs are six inches long, and have a transverse aperture near one end. A thread for a screw passes from the end, so that when a wire is passed through the aperture a few turns make it fast. The cost at wholesale of these zincs is about four cents. The carbons, $5\frac{3}{4} \times 1\frac{7}{8} \times \frac{1}{4}$, cost about six cents. Each should be bored near the top with a bit that is of uniform diameter, to make an aperture for fastening the wire. The exciting fluid is chloride of ammonium in solution, and it is sold in quantities for this purpose at about ten cents a pound. Two to three ounces is enough for each cell. If to this list we add the wire necessary for making the connections, we have all that is required for the construction of the battery.

A battery, to be useful to the gynæcologist, should conform to the following conditions:

1. The electro-motor force should be fairly constant.
2. It should not work on an open circuit.
3. It should be simple in its mechanism, so that the operator may readily provide for any irregularity in its working.

This cell conforms well to these requirements. The verdict of professional electricians to whom I have showed it has been that it would do the work required very well, but that perhaps more surface of carbon might make it more durable. If this should prove to be true, it would be a very simple matter to use two carbon plates with the zinc between them.

* Presented at a meeting of the Section for Obstetrics and Diseases of Women of the New York Academy of Medicine, November 22, 1888.

Erysipelas and Tuberculosis.—"As the result of experiments, M. Solles concludes that erysipelas retards the evolution of experimental tuberculosis in the guinea-pig; the animals may survive twice as long as when erysipelas is not produced in them. This survival is all the more remarkable since experimental tuberculization in the guinea-pig causes a general tuberculosis which is much more rapid and much more serious than human pulmonary phthisis. The antituberculous action of erysipelas is double: it has a general influence, as shown by the prolongation of life; and it has a local influence limited to the erysipelatous area, causing the induration, ulceration, and lymphatic swelling due to the tubercle to disappear. This localized action, clearly antagonistic to tubercle, is of such a nature, argues M. Solles, as to encourage the search after some parasite which shall have the power of destroying the bacillus tuberculosis."—*Lancet.*

THE
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NEW YORK, SATURDAY, JANUARY 5, 1889.

HIRSUTIES.

The occurrence of generalized hirsuties in human beings is considered by Darwin as a reversion to the type of the hairy ancestors of the race. Unna has cleverly suggested that it is merely an arrest of development. It is well known, for example, that the fœtus becomes thickly covered with hair. This usually falls off before birth, but it may persist until the child is several weeks old. The new growth of hair is of a totally different type. In hypertrichosis this change of type in the growth of the hair does not take place. Hence the primitive or antenatal type becomes permanent. As there is no standard of hairiness, the terms referring to it are merely relative. What is considered excessive development in one race, individual, or class, may be thought normal in another. There may be a wide range of degree within perfectly natural limits. The subject is of great interest to the dermatologist, especially hypertrichosis occurring in women, constituting a blemish that is peculiarly repulsive when appearing about the face. French women and women of the Hebrew race are afflicted with this unfortunate development rather oftener than others. Max Nordau says, probably with some exaggeration, that the Provençal women generally have beards, mustaches, and whiskers. Facial hypertrichosis among Jewish women is a matter of daily observation. The bridge of hair connecting the eyebrows across the root of the nose is frequently seen in entire families, irrespective of race or nation, transmitted from generation to generation. An efficient remedy exists in the electrolytic current, first suggested by Michel, of the Hôpital St. Louis, and further developed by Hardaway, Fox, and others.

In a paper upon this subject read by Dr. George H. Rohé, of Baltimore, before the recent International Congress, and in the discussion following, there is much that is interesting and suggestive. Hirsuties, whether general or localized, seems to be a hereditary trait, although it may be acquired. Certain neurotic and irritative conditions favor its development. The facial hirsuties of insane women is of the neurotic type. Irritative hypertrichosis frequently appears upon portions of the skin subjected to the constant and long-continued use of irritants. Hirsuties is accompanied by another peculiarity—defective development of the teeth. Especially is this true when the tendency to hairiness is inherited. In several pronounced cases, certain teeth never appeared at all, while others were indicated merely by traces. One boy had six teeth in the upper and four in the lower jaw. A curious pendant to this anomaly occurs in hairless dogs, according to Darwin. It is said these animals always have defective teeth. The history of hirsuties shows that its heredity is always direct, and generally in the male line. It is also true that the hairy character is not always transmitted to the descendants. These apparent exceptions to the laws of heredity in hypertrichosis are not more difficult to account for than exceptions in the matter of malformations and diseases. Pigmented nævi may exist for generations, yet certain members of the family escape. Psoriasis and xanthoma present similar peculiarities.

Our present ignorance of the laws of heredity makes it impossible to explain such deviations. It must be remembered that two factors enter into the production of offspring—the male and the female element. Recent embryological research seems to indicate that these two elements give rise to different germinal layers, the epiblast being chiefly derived from the male element, while the hypoblast and mesoblast are derived from the female pronucleus. This, if established, would explain some of the phenomena of heredity. Abnormities of the epithelial structures would be more likely to be transmitted in the male line, while those of the connective tissue and vascular structures would be received from the female. The fact that hair on the face in women does not appear till puberty or after the menopause does not in any way contradict the views here expressed. Hereditary susceptibility to disease or other peculiarity often appears late in life. The chief difficulty, says Rohé, lies in explaining how the parental influence is exercised in producing similar physical traits in the offspring. In the perfect physiological type the hairy regions are sharply marked and divided from the non hairy. Disorderly growth of hair indicates either coarseness and defective development of the individual or deficiency of sexual differentiation. Hypertrichosis about the limbs, commonly considered a sign of strength, is said, on the contrary, to be associated with constitutional weakness; but this is denied by Rohé, and, we think, with justice. Sir James Paget, examining a patient with a form of tubercular disease, considered the great hairiness of the man's legs corroborative evidence of the scrofulous taint. He remarked that a recruiting officer of large experience had always found the hairy recruits less resistant to exposure and disease.

Although a disorderly growth of hair upon a woman's upper lip does not necessarily coincide with sterility, it very often does. There are curious facts concerning the disappearance of hirsuties upon the establishment of some feminine function, such as menstruation after suppression from unknown causes, or the secretion of milk after parturition. These, says Thin, favor the idea of imperfect sexual differentiation.

PERITYPHLITIS.

Under this name and others intended to convey more or less distinct conceptions of the essential condition of things, the inflammatory, ulcerative, and gangrenous affections of the vermiform appendix and surrounding parts have, for a number of months past, both in this country and in Europe, been made a subject of much careful investigation and discussion. From the papers that have been read at meetings of medical societies and

from the remarks made upon them, a substantial advance of our knowledge ought to take place. One of the most striking statements in connection with perforation of the appendix that we remember to have seen was lately made by both Dr. Biggs and Dr. Prudden, at a meeting of the New York Pathological Society, to the effect that although they had both for years been on the lookout for post-mortem evidence that the lesion was due to the lodgment of a foreign body, they had not found such evidence in a single instance. This is consolatory to persons who can not restrain themselves from swallowing grape-seeds and the like. Moreover, rare as the entrance of a foreign body into the appendix is thus made to appear, the occasional innocuousness of foreign bodies when they do gain access to the appendix is strikingly illustrated by the condition in which that organ was found after death in the case of an old gentleman who, having been for many years an ardent sportsman and having eaten many of the game birds that he shot, finally died of some disease having not the remotest connection with his vermiform appendix, which, however, was found literally filled with bird-shot. This statement has the sanction of one of the best-known surgeons in New York.

Cases of disease starting in the appendix follow, as is well known, a various course, some ending in recovery and others in speedy death. This diversity of result is commonly recognized as depending not only upon the different plans of treatment employed, but likewise upon differences in the diseased condition itself. These differences were recently stated by one of the most experienced of our New York surgeons to be in the main as follows: When perforation takes place by a process of simple ulceration, a plastic exudation forms about the aperture, and protects the general cavity of the abdomen against the ingress of material from the intestine. Under these circumstances, the worst thing that is likely to happen is the formation of an abscess. When such an abscess forms, the patient's safety is best insured by postponing the operation of opening the abscess until it has shown recognizable signs of pointing. To open such an abscess prematurely, at a time when the protective wall of lymph is yet thin and perhaps incomplete, carries with it almost certain death. There are cases, however, in which the perforation takes place by sloughing, and in such instances the efforts made by nature to shut off the extruded matter from the general peritoneal cavity amount to little or nothing. Here there is no alternative but to perform laparotomy at once, and, unfortunately, not much is to be hoped for from its performance.

MINOR PARAGRAPHS.

UNIVERSITY MEDICAL COLLEGE.

As had been given out, the students held a meeting on Wednesday, the 2d inst., for the purpose of receiving the faculty's answer to their request mentioned in our last issue. The faculty did the students the honor of asking the vice-chancellor of the University to appear before them and explain the action that had been taken and to which it had been decided to adhere. We are glad to see that the vice-chancellor took occasion to express the regret felt by the authorities of the University and of the medical faculty at Dr. J. Williston Wright's resignation of the professorship of surgery, and to set right an impression that seems to have prevailed in some quarters to the effect that Dr. Wright had been forced to resign in consequence of failing health. The truth is, as the vice-chancellor stated, that Dr. Wright, like many another popular and effective teacher, gave up his position in order that he might be able to devote more time to his private practice.

DEATH BY HANGING.

The inhabitants of the largest city of India seem to do homage to the hemp plant in rather an eccentric manner—they swing themselves into eternity with it. Surgeon-Major S. Coull Mackenzie, M. D., police surgeon of Calcutta, in a recent number of the "Indian Medical Gazette," gave his experience of about nine years in 130 cases of suicide by hanging. Of the persons, 65 were men and 65 women; 91·54 per cent. died from asphyxia, 6·15 per cent. from asphyxia with apoplexy, 1·53 per cent. from syncope, and 0·76 per cent. from apoplexy. In 81 cases the position of the tongue was noted, and in 50·61 per cent. it was found to be protruded between the teeth but not injured. In 61 cases a note was made as to whether the tongue was found bitten, and of these the tongue was injured in 16, or 26·22 per cent. A note was made in 40 cases in regard to the eyes. In 37·15 per cent. the eyes were open and the eyeballs were protruded. In 20 cases out of 21 frothy mucus was observed around the mouth and nostrils; 40·47 per cent. of a total of 42 victims were found with the fingers flexed or clenched. The nails were blue; 32·60 per cent. of a total of 92 had vaginal or urethral discharges; 34·78 per cent. of a total of 23 had a discharge of fæces from the rectum. The penis was found to be erected in 37·50 per cent. of 8 cases in which it was examined. The hyoid bone was found fractured in 24 cases out of a total of 93. The thyreoid cartilage in 64 and the cricoid cartilage in 11 were found not to be fractured. Notes were made in 77 cases regarding fracture and dislocation of the neck, and in not a single instance was there any injury of the vertebræ. Of the 90 cases in which the coats of the carotid arteries were observed, in 34·44 per cent. they were found to be ruptured. In a total of 91 cases, congestion of the small intestines had occurred in 89·01 per cent., limited in 43·20 per cent. to the serous coats; in 55·55 per cent. all the coats were congested, and in 1·23 per cent. the mucous coat only. The mucous membrane of the larynx, trachea, and large bronchi was found congested in 56 out of 71, a percentage of 78·87.

ABSOLUTE SIGNS OF DEATH.

The "Lancet" gives an account of an able paper read at an

> In October, 1887, Dr. Bailly (de Chambey), in a communication to the Paris Academy of Medicine, recommended that, instead of applying the spray directly to the skin, a small pledget of absorbent cotton, enveloped by a covering of silk and held by means of a dressing forceps, be exposed to the action of the spray and applied. These methylized pledgets, retaining

specified, (*a*) changes of color of the dead body; (*c*) retention of life-like expression after death; (*d*) prolonged preservation of the body from putrefactive decomposition; (*g*) suspension of the ordinary phenomena of vital action after some forms of induced narcotism; (*h*) the cataleptic state, idiopathic or traumatic. The various circumstances which might lead to a doubt as to absolute death were described in detail; then followed the actual proofs that had to be made in order to demonstrate satisfactorily that life was extinct. These were ten in number: 1, Respiratory failure;

2, cardiac failure; 3, reduction of the temperature below the natural standard; 4, the presence of rigor mortis and muscular collapse; 5, coagulation of blood in the veins; 6, the presence of putrefactive decomposition; 7, absence of a red color in semitransparent parts under the influence of a powerful light such as that from a magnesian lamp; 8, absence of muscular contraction under the stimulus of an electric or galvanic current; 9, the absence of a red blotch under the skin after the subcutaneous injection of ammonia; 10, absence of signs of rust on a bright steel needle after plunging it deep into the tissues.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending December 31, 1888:

DISEASES.	Week ending Dec. 26.		Week ending Dec. 31	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	15	5	17	4
Scarlet fever	133	59	203	35
Cerebro-spinal meningitis	4	4	6	3
Measles	115	25	257	12
Diphtheria	153	59	130	28

The New York Neurological Society.—At the next meeting, to be held on Tuesday evening, the 8th inst., Dr. G. M. Hammond will show a male patient with traumatic hysteria and read the history of the case; Dr. Isaac Ott, of Easton, Pa., will read a paper entitled "The Thermo-polypnœnic Center and Thermotaxis"; Dr. Henry Bergh will read a paper on "Eclampsia Infantum in its Relation to Fever." The meeting will be held in the large hall of the Academy of Medicine.

The Ambulance Service of the National Guard, State of New York.—By an order, dated Albany, August 28, 1888, at the suggestion of the Surgeon-General, the following-named medical officers were designated to serve on examining boards to the service: For the First Brigade—Major Robert V. McKim, Surgeon, First Brigade; Major Daniel M. Stimson, Surgeon, Seventh Regiment; Major Nelson H. Henry, Surgeon, Twelfth Regiment. For the Second Brigade—Major George R. Fowler, Surgeon, Second Brigade; Major John F. Valentine, Surgeon, Thirty-second Regiment; Major William E. Spencer, Surgeon, Twenty-third Regiment. For the Third Brigade—Major Herman Bendell, Surgeon, Third Brigade; Major Lewis Balch, Surgeon, Tenth Battalion; First Lieutenant Daniel S. Burr, Assistant Surgeon, Twentieth Separate Company. For the Fourth Brigade—Major Roswell Park, Surgeon, Fourth Brigade; Major Charles G. Stockton, Surgeon, Seventy-fourth Regiment; Major Albert H. Briggs, Surgeon, Sixty-fifth Regiment.

acquired. Certain neurotic and irritative conditions favor its development. The facial hirsuties of insane women is of the neurotic type. Irritative hypertrichosis frequently appears upon portions of the skin subjected to the constant and long-continued use of irritants. Hirsuties is accom-

The Health of Kansas City, Mo.—According to the Health Department's "Weekly Return" for the week ending December 29th, there were 36 deaths, including 2 from croup, 2 from scarlet fever, 1 from meningitis, and 5 from pneumonia. This corresponds to an annual death-rate of 10·04 in a thousand of the population.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the two weeks ending December 22, 1888:*

Hamilton, John B., Supervising Surgeon-General. Granted leave of absence for sixty days. December 20, 1888.

Bailhache, P. H., Surgeon. To inspect unserviceable property at New York Marine Hospital. December 17, 1888.

Wyman, Walter, Surgeon. To proceed to New York, N. Y., and transfer public property. December 15, 1888.

Carter, H. R., Passed Assistant Surgeon. Granted leave of absence for fifteen days. December 10, 1888.

Magruder, G. M., Assistant Surgeon. Upon expiration of leave of absence to proceed to New Orleans, La., for temporary duty. December 21, 1888.

Cobb, J. O., Assistant Surgeon. Leave of absence extended ten days. December 14, 1888. To proceed to Evansville, Ind., for temporary duty. December 20, 1888.

Stoner, J. B., Assistant Surgeon. When relieved to proceed to New York, N. Y., for duty. December 13, 1888.

Geddings, H. D., Assistant Surgeon. Upon expiration of leave of absence to proceed to New York, N. Y., for temporary duty. December 21, 1888.

Society Meetings for the Coming Week:

Monday, *January 7th:* New York Academy of Sciences (Section in Biology); Medico-chirurgical Society of German Physicians; Morrisania Medical Society (private); Brooklyn Anatomical and Surgical Society (private); Utica Medical Library Association; Boston Society for Medical Observation; St. Albans, Vt., Medical Association; Providence, R. I., Medical Association; Hartford, Conn., City Medical Association; Chicago Medical Society.

Tuesday, *January 8th:* New York Medical Union (private—election); Medical Societies of the Counties of Chautauqua (semi-annual), Chenango (annual), Clinton (annual—Plattsburgh), Erie (annual—Buffalo), Genesee (semi-annual—Batavia), Greene (quarterly), Jefferson (annual—Watertown), Livingston (semi-annual), Madison (semi-annual), Oneida (semi-annual—Rome), Onondaga (semi-annual—Syracuse), Ontario (quarterly), Oswego (semi-annual—Oswego), Schenectady (annual—Schenectady), Schuyler (annual), Steuben (semi-annual), Tioga (annual—Owego), Wayne (semi-annual), and Yates (semi-annual), N. Y.; Newark, N. J., and Trenton (private), N. J., Medical Associations; Norfolk, Mass., District Medical Society (Hyde Park); Baltimore Gynæcological and Obstetrical Society.

Wednesday, *January 9th:* New York Pathological Society (annual); American Microscopical Society of the City of New York; New York Surgical Society; Medical Societies of the Counties of Albany and Dutchess (annual—Poughkeepsie), N. Y.; Tri-States Medical Association (Port Jervis, N. Y.); Pittsfield, Mass., Medical Association (private); Hampshire, Mass. (quarterly—Northampton), and Worcester, Mass. (Worcester), District Medical Societies; Bennington, Vt., and Hoosick, N. Y., Medical Society (annual—Arlington, Vt.); Philadelphia County Medical Society.

Thursday, *January 10th:* Society of Medical Jurisprudence and State Medicine; Brooklyn Pathological Society (annual); Medical Societies of the Counties of Cayuga, Fulton (annual—Johnstown), and Rensselaer (annual), N. Y.; South Boston, Mass., Medical Club (private); Pathological Society of Philadelphia.

Friday, *January 11th:* New York Academy of Medicine (Section in Neurology); Yorkville Medical Association (private); Medical Society of the Town of Saugerties.

Saturday, *January 12th:* Obstetrical Society of Boston (private); Worcester, Mass., North District Medical Society.

Letters to the Editor.

THE INOCULABILITY OF LEPROSY.

102 East Fifty-seventh Street, New York.

To the Editor of the New York Medical Journal:

Sir: Since my article on "Leprosy in the United States" appeared in your Journal last March I have received a number of letters in reference to the subject. Dr. Berger, of Tampa, Fla., who has made extensive personal investigations of leprosy in Key West, Cuba, and Nassau, as well as in this country, writes me that he is convinced that there are over a hundred cases in Key West alone, and that he has personally inspected thirty advanced cases in that island.

Dr. Augustin A. Crane, who has recently gone to the Hawaiian Islands from New Haven and become a government resident physician in the midst of lepers, wrote me under date of October 29th. From the interesting information the letter contains I make the following extracts: "Father Damien, referred to on page 348, is now dying, having had a rather short course of the disease. He gives as his theory of the contagion that he was performing the last rites in an extremely foul case; that the flies were very annoying during the sacrament, and that he thinks he was inoculated upon an abrasion on the scalp by the flies." Dr. Crane describes the sufferer as being in a horrible condition. He further says: "The convict you speak of on page 349 is now distinctly leprous. These two points are slight in themselves, but, as far as they go, they seem to throw whatever weight they may have on the side of inoculation as against contagion."

It is very gratifying to me that some interest has been awakened in the subject, and I hope this report may prove equally so to some of your readers. I can not agree with Dr. Crane that the point in relation to the inoculation experiment by Dr. Arnoing upon a healthy convict is a slight one. To my mind it is the one thing needed to settle the question definitely. Furthermore, if lepra is an inoculable disease, it is quite probable that a fly-bite could become the means of inoculation, as Father Damien supposed, and in this case lepers must be regarded as dangerous to a community, and it is useless to bandy words about contagion and infection.

Charles W. Allen.

HARRISON'S OPERATION FOR PROSTATIC ENLARGEMENT.

Massillon, Ohio, *December 31, 1888.*

To the Editor of the New York Medical Journal:

Sir: J. A. Freeman, M. D., of Brooklyn, writes you, November 7, 1888 (published in your December 8th issue), concerning "Harrison's Operation for Prostatic Enlargement," and states that "I do not know of the operation having been performed in this country previously, unless the case reported in the Journal of September 29, 1888, by Dr. Abner Post, of Boston, was the same." Please allow me to copy from my record-book: "August 29, 1882, operated on Patrick M., aged sixty-two, for chronic cystitis and enormous enlargement of all lobes of the prostate gland by perineal section, entering the bladder through the middle and left lobe, making complete section of the same. This patient has made a good recovery; the prostate gland has atrophied so that three months after operation it can scarcely be felt through the rectal walls, no pain in bladder, and he can retain urine as long as desired. This is a new field, and is comparatively unexplored, but I am emboldened by success in this case to prosecute my studies and operations in these cases."

But in 1879 I had made my first attempt in this field. The patient died, however, five days after, from uræmic coma. I have made two successful operations since, and as late as last week one more for chronic cystitis and enlarged prostate, the result of stricture of eighteen years' standing, result of perineal injury, wherein I was compelled to first dilate the stricture with Gouley's dilator before I could introduce the staff, using first the hair thread, and found the perinæum the seat of numerous canals and pouches filled with pus, leading into the urethral canal, with hard infiltration of inflammatory products, involving five inches of the canal and extending to the bladder. The patient is making a good recovery under the care of the local doctor, Baker, of Louisville, this county. I reported my earlier operations in this field to the Northeastern Ohio Medical Association meetings, but did not report them to any journal. I, further, lay no claim to priority, as I think the operation has been done occasionally for a great many years.

Very respectfully, A. W. Ridenour.

CHLORIDE OF METHYL AS AN ANODYNE.

100 East Fifty-eighth Street, New York, *December 24, 1888.*

To the Editor of the New York Medical Journal:

Sir: In your Paris letter dated November 19th a few remarks are made concerning the chloride of methyl. The object of my writing to-day is to direct the attention of American physicians to this paragraph, as it contains statements which are of great practical importance. In reference to the favor with which the chloride of methyl is looked upon abroad, your correspondent says "constant practice only increases the confidence in it." This also has been my experience. I have now used this remedy for the treatment of neuralgias and various forms of pain for about two years, and certainly give it the preference over all other freezing methods. Here in America the chloride of methyl has not received the trial which it deserves, and this was to be foreseen on account of the expense and the difficulty of obtaining it. It was for this reason that, in my paper before the American Neurological Association in 1887, on "The Treatment of Neuralgias by Means of Intense Cold," I suggested the use of the condensed carbonic-acid gas as a substitute in certain cases for the chloride of methyl. The above-mentioned objections to its use have now been entirely obviated, and the filled cylinders can be obtained in this city, and replenished when empty, at a cost considerably smaller than at the time at which I wrote. In consequence of this, although the methyl is still not so cheap as it might be, I have entirely abandoned the use of the carbonic-acid gas.

In regard to the methods of application, your correspondent refers to the tampon method and the glycerin coat. As I have had considerable experience with the one and some with the other, I may be pardoned for giving my opinion concerning them.

In October, 1887, Dr. Bailly (de Chambey), in a communication to the Paris Academy of Medicine, recommended that, instead of applying the spray directly to the skin, a small pledget of absorbent cotton, enveloped by a covering of silk and held by means of a dressing forceps, be exposed to the action of the spray and applied. These methylized pledgets, retaining the cold for quite a period of time, can thus be applied to the painful points, and their action limited or increased according to the time that they are allowed to remain in contact, and according to the amount of pressure exercised.

In neuralgias of smaller nerves, or whenever it is desirable to confine the action of the chloride of methyl to a single point, this method, in my opinion, presents certain advantages, but I can not agree with Dujardin Beaumetz when he says that since the introduction of this method the direct spray must be

abandoned. The old method is still, in my opinion, the only one to be employed where a large territory is to be acted upon at once, as in cases of sciatica, the action of the cotton pledgets being comparatively superficial, and consequently the counter irritation not intense. The chief advantage of the "stypage," as it is called, seems to me to lie in the applications to the face—first, on account of the facility of localization, and second, the discoloration of the skin, which is such a great objection to the use of the spray, is, in my experience, avoided by this means.

The second method is that employed by Bardet. He brushes the part to be acted upon with a coating of glycerin, and then applies the spray. The glycerin is at once turned into ice, and the counter-irritation is prolonged for a much greater period of time than by the application of the spray directly to the skin. As soon as it becomes desirable to arrest the action of the methylized glycerin the coating can be wiped off with a cloth. This method also has its practical objection. The frozen glycerin obscures a clear view of the underlying skin, and it is thus impossible to note the changes in color which this undergoes, and which constitute so important a gauge of the action of the methyl. For this reason it has several times happened to me to produce comparatively deep eschars, an occurrence which with a little care need never occur with the direct spray. This experience with the glycerin coat has led me to avoid its use in all first applications. I now always endeavor to gain an idea as to the susceptibility and powers of reaction of a patient's skin by means of the direct spray before using the glycerin. Once possessing this knowledge, I can easily employ the glycerin coating, leaving it upon the skin for a longer or shorter period of time, according to the effects obtained by the direct application, always bearing in mind, however, that the methylized glycerin acts more intensely in the same space of time than the methyl alone.

Since making use of these methods, each cylinder of chloride of methyl serves me for about three times as many applications as formerly. George W. Jacoby.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN THEORY AND PRACTICE OF MEDICINE.

Meeting of October 16, 1888.

Dr. R. C. M. Page, Chairman.

Neurasthenia; its Differentiation and Treatment.—Dr. L. C. Gray read a paper on this subject. (See vol. xlviii, page 421.)

Dr. M. E. Brill agreed with the views taken by the reader, and considered the classification excellent. He remarked that the reason why Germans had said that they did not find neurasthenia in their country to any such extent as it existed in America was that Dr. Beard had placed under the term all the similar nervous disturbances due to reflex influence from other disordered functions, and the mental disorders, including insanity, which Germans recognized, but under other names. The fact that often a typical neurasthenia appeared for a short time with diarrhœa or other wasting diseases showed to him how easily general symptoms in the nervous system arose.

Dr. E. C. Reeves, of St. Paul, Minn., spoke in praise of the classification made by Dr. Gray and its simplicity. He thought the well-known maxim that neurologists should be good clinicians should read that they should be good diagnosticians as well. A large amount of the practice in the West had to be done by men without much training in diagnosis, mistakes in which were there not so discreditable as in the East. Thus he had been called in consultation to see a patient suffering from vomiting, headache, and aphasia, which were supposed to be due to neurasthenia, apoplexy not having been thought of. In another instance the speaker had made a diagnosis of neurasthenia in the case of a girl who was slowly wasting away. Before her death, however, there had been a general agreement of physicians that a large malignant tumor overlay the thoracic duct. The autopsy showed that this tumor was merely an unusual forward curvature of the lumbar vertebræ; and no cause appeared. The lithæmic state had given him much trouble until he had learned to recognize and treat it accordingly. In one point his experience differed from Dr. Gray's: After railroad accidents he had quite commonly found a condition of disordered nervous action, resulting from the jar and internal concussion, which he believed due to a real molecular disturbance, and not one that was remedied at once by the awarding of damages. These patients presented disturbance of circulation, depression, mental confusion, exaggeration of reflexes, and liability to be easily tired, making a real neurasthenia, and one which sometimes went on to nervous degeneration. In his treatment of neurasthenic cases he assumed a malnutrition of the nervous centers, and had succeeded best with measures directed to improving nervous nutrition. In the cases with vertigo and fullness of blood in the head he had used ergot and bromides with success. Where he found spinal disorder of nutrition, galvanism of the spine had given good results in his hands. He had obtained also very good general effects from an agent which physicians in New York seemed to attach little value to, and that was static electricity. It might be that psychical influence was at the bottom of it, and that there was no tonic influence as there seemed to him to be. If the effect were a purely psychical one, like that of hypnotism, even then it was a real aid.

Dr. W. R. Birdsall remarked that he had always regarded the term neurasthenia with suspicion. He believed such a condition might exist, but always felt ashamed of a diagnosis going no further than that word; at least he always recognized that it was insufficient. He believed there was a neurasthenic element in disease, but when we tried to apply the term to a group of symptoms it did not in practice give satisfaction. Nervous symptoms were always prominent, in disease and out of disease. Thus in any community the persons forming it could readily be classified as those who had stable and those who had unstable nerves. Inheritance explained many cases of neurasthenia, doubtless; local and temporary causes explained many more. The lithæmic condition he believed a prolific cause; overwork and bad nutrition covered other classes. When we came to study insanity, the degenerative types, paranoia and the like, taught us that many cases of melancholia were based on a low grade of structure and nutrition of the nervous system which came by inheritance. As to treatment, he thought it important to recognize that it was often not enough to remove the abuse or the local disorder in the nose, eye, or digestive tract, which might at first sight seem the sole cause, for the neurasthenic condition, whether inherited or acquired, meant an unstable nervous system. Even with the exciting cause or causes remedied, we must take the general state into account, or, after a little, if he had called himself well and lived like those about him and without reference to his neurotic constitution, the patient would be sick again. He thought Dr. Gray's classification of the condition according to cause—whether a reflex disturbance, the lithæmic state, or malnutrition—at least a convenient one. What he meant by his simple form he had not understood.

He seconded all that Dr. Gray had said about the lithæmic form. He also believed that complete rest and forced feeding were indicated in certain cases, but that at the same time there was a large class who needed increased activity, and that of a sort to stimulate respiration, as walking on pavements would not do. For these, mountain climbing, rowing, or other outdoor sport, undertaken very gently at first of course, was indicated to develop the arms, chest, and breathing power, to quicken tissue changes, and especially to give pleasant mental occupation. He believed the lithæmic state particularly needed this diversion of the thoughts, usually turned completely inward and hypochondriacal, and good company was one of the most important aids in this direction. He thought neither inheritance nor overwork caused as much neurasthenia as worry or other emotional disturbances, and that sexual excesses, natural or unnatural, explained a very large number of cases by making the whole nervous state unstable, the circulation uneven, and digestion imperfect. He always looked carefully in this direction, judging by sensitiveness of the eye to light, moisture of the palms and the feet, and a poor cutaneous circulation—all resulting as they did from deficient heart action, and that from deranged nervous centers.

Dr. W. H. Thomson remarked that he thought the only good use to make of the term neurasthenia was for either quieting or interesting patients, pronouncing it slowly, and adding that it was not fatal. Otherwise he abominated the word as being second only to the word "tonic" in the looseness of its application, the latter being applied indifferently to bitter drugs, strychnine, electricity, cod-liver oil, cold water, sea voyages, and horseback riding. It led to more poor practice than "anæmia" as a dignosis. He constantly had cases, however, which he was forced to recognize as "neurasthenia," because he could not find the real disease. He always had four questions to put in his mind, besides that of nervous functional debility. They related to the possibility of virtual starvation, of overstrain, of drain on the system, and of self-poisoning. Virtual starvation explained many cases among women, where coffee and a piece of bread constituted the breakfast, a midday meal was taken still deficient in amount, though of fair quality, but at supper a piece of bread again, tea, and preserves or cake. These women might not be thin or pale, but, nevertheless, had neurasthenic symptoms, because food enough was not taken to support the functions of the body. These recovered by compulsory feeding, combined with rest and attention to circulation and respiration —the Weir Mitchell plan. The overstrained were usually the overworried, and often showed signs of deficient sleep, such as running on one idea too long. Here he tried to feed as well as possible, and changed the surroundings completely. Drains on the system were often the causes, and must be detected; but he believed the most common cause of all was self-poisoning. In a number of instances in his experience severe mental and neurotic disturbances had yielded to a few doses of bismuth, calumba, and naphthaline, or, in a word, intestinal antisepsis. Some years ago diseases of the thorax had engrossed the attention of physicians, afterward diseases of the kidney had done the same, and quite lately nervous diseases had been prominent; but he thought we were now on the eve of returning to the ideas of the medicine of a former century, when the bowels were made the prime seat of all disorders of a general sort. Here was the great laboratory of the blood. Ferments were always present here, even in health, whose poisonous products were thrown out at the kidney. Nothing was more apt to occur than that unnatural products should arise which the kidney did not easily throw out, or that the antiseptic elements normally present in the bowel should be unequal to the amount of fæcal matter constantly tending to undergo internal change into poisonous matters. A very significant symptom presented when the urine lost its color, as we knew that the source of the latter was in the intestine. Uræmia the speaker had found not to be uræmia at all, but a prolonged self-infection by other elements than urea or its direct antecedents, and due to loss of the natural antiseptics. He believed that this was the true cause of lithæmia in most cases. The pulse and the urine mainly guided him to a detection of this state. The pulse of starvation, overstrain, or drain on the system was weak and noticeably compressible. But in the lithæmic state it was just the opposite, especially immediately after meals, when high arterial tension was developed. In the three former conditions we had a low specific gravity, with neutral or even alkaline reaction, while the lithæmic state often had high specific gravity and acid reaction or many urates. As to treatment, he believed there was only one cure or means of giving lasting help, and that was to have the patient camp out in the woods or mountains, sleeping in a tent and changing all his previous conditions and occupations in a radical manner. Neurasthenia was not found among nomadic tribes, nor were gout, inflammation of mucous membranes, and increase of connective tissue, the presence of which in civilized races meant deficient breathing and oxidation of tissue.

Dr. A. Jacobi wished to add to Dr. Gray's mention of the German idea which made neurasthenia an American disease the fact that they had also once called infantile paralysis and hay-fever distinctively American diseases. He then mentioned a number of the older German authorities who gave good accounts of all these nervous states now ascribed to Americans, under somewhat vague names, such as neurosis, but showing a perfect comprehension of their essential features. Dr. Beard had hit on a good name for a disease which had very variable aspects. It was the inevitable tendency of progressive medicine to drop names which did not represent our diagnosis of diseased conditions—such as paralysis, dropsy, and apoplexy. No complex of symptoms should be honored with a name, as if it could be called a disease *per se*. Neurasthenia we elevated to such a place only when we had excluded every possible primary disorder to which it might be secondary. But the difficulty arose from the fact that it was a result of so many other diseases. Mere weakness of the nerves could not constitute neurasthenia, or every convalescent would be in that state. We had been told that was a chronic malnutrition of the nerves. It was hard to believe this could exist as a special condition so as to need a name. We constantly saw such a general deficiency of nutrition and vital activity coming by inheritance and showing itself in babyhood, in childhood, and in the man or woman. They simply did not have nerve power, and what should we call it in these cases? In like manner we had cases where chlorosis appeared early and persisted, no recovery from which was possible. Congenital smallness of the arteries determining deficient nourishment of all functions was another such organic defect, more than disease. He believed that in every such case we needed to look to subjacent conditions, and the sooner we got rid of the word "neurasthenia" the better it would be for our pathology. In regard to Dr. Gray's treatment, he thought the doses of cascara sagrada and of nitro-hydrochloric acid too large, and that the latter ought to be of more use some time after meals, when the lactic-acid stage of digestion was past. The fatty acids usually present in the stomach previous to meals needed alkalies more than acids.

Dr. A. D. Rockwell believed in the existence of neurasthenia as much as in that of malarial poisoning as a disease, and thought the term had a use, although it had been abused. He thought nervous exhaustion and lithæmia the most important causes. When he saw patients with cold hands and feet, irritability, and a peculiar depression shown in the expression, he

looked to a toxic state arising from a bad digestion as at the root of the trouble. He thought people varied much as to what diet would insure perfect digestion, especially with reference to the amount of meat; and self-study was needed. In this sense he believed that every one at forty became either a fool or a physician—to himself.

Dr. Simon Baruch believed in the existence of the disease as such. He believed the aim in treatment should be to bring on more rapid tissue changes. He employed to this end mild purgatives, mechanical and thermic irritations of the skin, and especially the cold douche or plunge taken in the morning. He always made it short enough to insure full reaction, which he aided by rough towels and warm clothing.

Dr. E. D. Fisher approved of the term as conveniently covering a number of irregular symptoms. As we came to understand the nervous system better it would probably be discarded. He advocated the use of nitro-hydrochloric acid before meals, which he had found unequaled for improving the appetite and restoring nervous tone.

Dr. Gray said that his object had been to call out opinions. In regard to the question of neurasthenia being itself a disease instead of a symptom of one, he thought if we attempted to fill the mind with all the rarely observed but possible diseases to which a neurasthenia was secondary we should miss recognizing many veritable cases of primary neurasthenia where no other morbid condition was present, and which recovered more or less quickly. Such a disturbance we called functional or simple. While there was undoubtedly an anatomical change in the cellular elements, it was not visible to us, and was temporary. As to the use of nitro-hydrochloric acid before meals, he had used it so for ten years, and had obtained more improvement than followed the giving of any other drug. The clinical results outweighed any *a priori* considerations with respect to giving it before or after meals. He knew of three cases of neurasthenia which had ended in death. Autopsies had been made in two of them and no visible lesions found.

AMERICAN GYNÆCOLOGICAL SOCIETY.

Thirteenth Annual Meeting, held at Washington, September 18, 19, and 20, 1888.

The President, Dr. Robert Battey, of Rome, Ga., in the Chair

(*Concluded from vol. xlviii, page 724.*)

The Importance of the Microscope in the Treatment of Sterility in Women.—Dr. H. Marion-Sims, of New York, in this paper remarked that the gynæcologist was consulted more frequently for sterility than on account of any other symptom. Simpson affirmed that one marriage in eight was unfruitful. Impotence in both the male and the female might be either real or apparent. In the male it might be congenital or acquired; spermatozoa might be absent in consequence of disease, especially gonorrhœa with accompanying orchitis. In deciding upon the cause of sterility in a given case, we should ascertain if both the male and the female were competent to have connection, if the spermatic fluid contained zoosperms, and if they lived after being deposited in the vagina. In order to determine the latter point a drop of semen was examined microscopically soon after coition.

Sterility was sometimes curable and sometimes not. If it was shown that the male was healthy, the female should be examined with a view to determining if there was any obstacle to the passage of the semen into the uterus. With regard to the physiology of ovulation, it was probable that the ovum was fructified in the Fallopian tube. Spermatozoa had been found alive in the tube, and even at the fimbriated extremity, within ten hours after copulation. If there was any obstruction to the passage of the ovum into the uterus, sterility would result, as in constriction or torsion of the tubes by pelvic adhesions. Any marked and permanent uterine displacement would interfere with conception. Disease of the endometrium, and tumors, were also causes. The os tincæ might be so small that the spermatozoa could not enter the uterus; in that case it should be dilated according to one of the usual methods. In cases of acute cervical anteflexion, incision was the best treatment; the reader had never seen an accident follow this operation, while sterility had frequently been cured. Many gynæcologists failed to accomplish the desired result, because they did not treat the patient after the operation, so as to remove from the cervical canal the abnormal secretion that killed the spermatozoa. The cervical mucus should be translucent. A drop should be removed a few hours after intercourse and examined with the microscope; this was best done by means of a curved glass tube attached by rubber tubing to a uterine syringe. If the spermatozoa were found in a dead or dying condition, the secretion must be in an abnormal condition, and hence the endometrium must be diseased. At the same time the general health of the patient might be perfect. Sometimes the insertion of a properly fitting pessary was enough to insure conception; again, the treatment might consist in curetting or in intra-uterine applications and the introduction of boroglyceride tampons. In any case the patient must not be dismissed as cured until the cervical mucus was restored to a healthy condition, as evidenced by the fact that live zoosperms could be found in it from twelve to twenty-four hours after intercourse. The reader cited a case in which sterility persisted for ten years after an abortion, due to the persistence of an unhealthy discharge from the uterus, and was cured by appropriate treatment.

Dr. Barker said that conception might occur after the limit which was usually assigned, but that in his experience the case of Sara, Abraham's wife, was the only authentic one in which it had taken place after the age of fifty-five. In 1852 he had attended a lady, aged fifty-two, who was in labor for the first time, and had delivered her by version of a living child; ten months later she had a premature labor, and fourteen months after this she again became pregnant. She was now in good health at the age of ninety. Sir James Simpson had affirmed that women who married late in life seldom conceived; the speaker questioned the truth of this statement.

Dr. Hunter had found that more patients conceived after gradual than after forcible dilatation of the cervix.

Dr. Wilson agreed with the author that division of the cervix for the cure of sterility must be followed by treatment directed to the diseased endometrium.

Dr. A. W. Johnstone, of Danville, Ky., called attention to the fact that in the case of the infantile uterus the microscope would afford no aid in the recognition of the true cause of sterility. This condition of the uterus was probably due to disease of the sympathetic nerve-system, which was incurable. In such cases, where menstruation was very scanty and irregular, sterility was absolute.

Dr. Coe agreed with the last speaker in regard to the uselessness of treatment in cases of infantile uterus, and cited examples that had come under his observation. He believed that the obstructions of the tubes from previous pelvic inflammation, alluded to by the reader, were quite frequent, since they were often observed by the laparotomist and pathologist. Here was an unsuspected cause of sterility, which eluded the gynæcologist, who might in vain direct his treatment to visible disease or displacement of the uterus.

Dr. Skene asked Dr. Johnstone if the anatomical change in the infantile was not similar to that in the senile uterus? Was

there any change in the secretion which might be recognized by the microscope?

Dr. JOHNSTONE replied that the senile uterus contained more fibrous or cicatricial and less adenoid tissue than the infantile. More epithelial elements were present in the discharge from the latter.

The PRESIDENT had found that in his native State women often conceived at a more advanced age than seemed to be usual in some localities. It was not unusual for women to conceive at fifty, and cases of persistent menstruation at fifty-five were by no means rare. A relative of his own had been delivered at fifty-six. He cited a case of sterility in which the only cause had seemed to be an unusual depth of the posterior fornix. He gave the husband some instruction in mechanics, and pregnancy promptly resulted.

Dr. KINLOCH, of South Carolina, cited two cases in which patients were delivered at the age of fifty-three. The late Dr. Budd had mentioned the case of a woman who bore twenty-two children, the last when she was sixty-two years and eight months of age.

Dr. SIMS said, in closing, that he had been glad to hear the testimony of the speakers with regard to the value of division of the cervix for the cure of sterility. His father had been criticised for performing the operation, because it had been done so frequently in unsuitable cases that the operation had been brought into disrepute. Fatal results had followed because patients had been operated upon in the office and allowed to go home afterward. He was accustomed to keep them in bed for ten days. He always used a rubber stem, which effectually checked hæmorrhage.

The Influence of Pregnancy on Pelvic Diseases. — Dr. HUNTER read a paper with this title in which he opened with the remark that it was the popular opinion that pregnancy was a remedy for many of the diseases of women; on the other hand, patients with pelvic troubles were often advised by their physicians not to marry, as pregnancy would increase the local affection. It was important to remember at the outset that during pregnancy there was a permanent congestion of the pelvic organs, which would naturally tend to exert even more of a deleterious influence on local disease than did the menstrual periods when the congestion was only temporary. Affections of the external genitals, such as were aggravated by hyperæmia, were always worse during pregnancy, especially pruritus. Malignant disease of the vagina usually progressed more rapidly. Prolapse of the vaginal wall became more marked. Erosions of the cervix were aggravated in early pregnancy, but lacerations were not particularly affected. Epithelioma grew rapidly during this period, and sometimes impeded delivery. Among uterine displacements, congenital anteflexion was usually relieved or cured, while retroflexion led to abortion. In some cases of retroflexion with fixation, in which pregnancy progressed to term, the uterus became more movable after involution had occurred, but more often subinvolution resulted and the original displacement was aggravated. In general, the influence of a normal pregnancy on displacements was good, but abortion led to serious results. Subperitoneal fibroids were not much affected by pregnancy, but sessile growths were apt to undergo changes under its influence, seen especially in their increased vascularity and their enlargement. Small tumors might undergo atrophy or fatty degeneration in consequence of pressure. Endometritis was usually aggravated, and, in consequence of septic absorption after abortion, salpingitis might occur. Adherent ovaries and tubes might be torn as the gravid uterus enlarged; there was apt to be severe pain which might simulate that due to extra-uterine pregnancy.

Oophoritis was likely to be aggravated by the hyperæmia attendant on pregnancy; prolapse of the ovary commonly resulted from imperfect involution. Ovarian cysts probably grew more rapidly during gestation, and there was evidence that malignant disease made rapid progress at this time, although it had not been proved that it originated then. Among the injuries to which ovarian cysts were subject during pregnancy were torsion of the pedicle, rupture, hæmorrhage, and suppuration; abortion was a secondary result.

A laceration of the cervix was not necessarily increased by a subsequent delivery, but there seemed to be some danger that malignant disease might develop in such a cervix. In some instances the induration in the angle of the tear seemed to grow softer, but it did not appear to have undergone any change when the patient was examined after delivery. If a patient with parametritis became pregnant she might have severe pain during the period of gestation, simulating that of extra-uterine pregnancy, though more constant. If she passed the third month without aborting she might be cured. Parametritis was more apt to follow abortion than labor at term. In conclusion, it might be said in cases of malignant disease of the cervix, endometritis, and diseases of the ovaries and tubes, that pregnancy was a positive evil.

Dr. SKENE said that the subject was one of great practical interest, since the physician was often called upon to decide what the effect of pregnancy would be in a given case of pelvic disease. Pregnancy exerted a marked influence on the general nutrition. Delicate women with scanty menstruation might be greatly improved. Certain displacements, especially flexions, which were aggravated by malnutrition, might be corrected by utero-gestation. As regarded old pelvic adhesions, the speaker thought that the risks of ensuing pregnancy more than counterbalanced the occasional benefits. Cases of retroversion, if properly treated, might be cured, but, if the patients were not carefully treated after delivery, the displacement was apt to recur. The speaker had verified the author's statement with regard to the influence of pregnancy upon hyperæmic and prolapsed ovaries; the prolapse might be relieved, but usually recurred after confinement.

Dr. B. MCE. EMMET thought that in cases of slight pelvic disease pregnancy might do some good by giving rest to the parts. Displacements were often relieved, provided the patient received proper care after delivery.

Dr. KAMMERER, of Montreal (a guest of the society), cited two cases, one of uterine fibroids and one of disease of the ureter, which were complicated by pregnancy. The second patient died of uræmia after delivery.

New Methods of Electrotherapy in their Bearing on Gynæcological Practice.—Dr. ENGELMANN read a paper thus entitled, in which he said that ultra-enthusiasm in regard to the use of electricity had led to frequent failure. Not enough attention had been given to the pathological indications in individual cases. The reader was obliged to confess that he had not obtained as remarkable results as some gynæcologists in cases of large uterine fibroids. In this paper galvanism alone was considered; it was proposed as an adjuvant, not as a substitute, for surgical operations. Its use was not attended with so much *éclat* as an operation, but the advantages were that the patient was able to be about and attend to her work while under treatment.

The cases most suitable for electricity were those in which there were neoplasms or inflammatory products that admitted of a healthy retrograde metamorphosis. The results of galvanism might be imperfect, but they were always satisfactory, and did not prevent a subsequent resort to the knife. We should always give electricity a trial before attempting oophorectomy.

In many cases of stenosis of the uterine canal, especially if

there was much induration, a cure might be obtained by a few painless applications. The author was accustomed to introduce at first a small probe; dilatation was continued until a large sound could be passed. Pelvic exudates and even abscesses could be treated with electricity without puncture. In one instance the reader employed this treatment in the case of a patient whose pelvis was filled with a hard mass, the uterus being prolapsed and fixed. One week after the second application he was able to replace the uterus, although the mass was not much smaller. Although he had not been as successful as others in the electrical treatment of fibroids, he had frequently seen them grow smaller, although they never entirely disappeared. In using electricity we sought to establish a healthy retrograde metamorphosis; if the tumor had already entered upon this change, the process might be hastened. If fatty degeneration had begun, the tumor would diminish in size; on the other hand, the application of electricity to a fibroid that was the seat of cystic degeneration would do harm. Subserous pedunculated tumors were less likely to be affected by galvanism. The reader had punctured tumors several times *per vaginam*, and had only had one case of hæmorrhage; he had even done this operation at the clinic, and allowed the patient to go home afterward. In puncturing he used a stylet instead of a needle; he had never introduced an electrode into the uterine cavity. In conclusion, he would say, always give electricity a trial before undertaking a serious operation. The recent position taken by the Keiths, as well as by Martin, should lead us to follow their example.

Dr. H. P. C. Wilson said that he had used electricity extensively during the past year, and found that success depended upon the selection of cases, the same as in laparotomy. The benefits derived from the remedy might not appear until some time after it had been used. Apostoli and Keith said that if no result was obtained after thirty sittings it was useless to continue. The former did not puncture if he could introduce an electrode into the uterine cavity. Electricity was frequently used in unsuitable cases, hence accidents occurred, but in proper cases great good would be done.

Dr. Hewitt thought that electricity was destined to be a powerful agent in gynæcology. The present zeal for operating should be moderated. The effect of galvanism should be tried whenever there were any doubts as to the performance of a serious operation.

Dr. Parrish had seen pelvic exudations disappear rapidly under the use of electricity, but never after suppuration had occurred.

Dr. Engelmann, in closing, said that Dr. Keith had stated that he would consider a surgeon as almost criminal if he operated upon a fibroid tumor without first trying electricity. Galvanism had no effect on a suppurating sac, especially a pyosalpinx. It was most valuable where there was an old induration of the pelvic tissues.

A Specimen of Ovarian Pregnancy.—Dr. Matthew D. Mann, of Buffalo, presented a specimen which had been removed post mortem and sent to him by Dr. Freeman, of Pennsylvania. When first examined there was a thin-walled cyst occupying the site of the ovary, through the wall of which a fœtus could be distinctly seen; the latter was destroyed through carelessness in preserving the sac, so that when Dr. Mann opened it he found in it only a quantity of milky fluid and a flattened disc attached to the cyst-wall. Section of this disc, when examined microscopically, presented the structure of placental tissue. It had been said that all extra-uterine pregnancies were primarily tubal, and some had gone so far as to deny the existence of the ovarian and abdominal varieties. A review of the literature by Spiegelberg showed that thirteen authentic cases had been reported, and one or two more had been observed since his paper was published.

The Indications for Primary Laparotomy in Tubal Pregnancy.—Dr. Joseph E. Janvrin, of New York, read a paper on this subject. The author referred to a case which he had already reported, in which the patient died from rupture of an artery in the sac after electricity had been applied. The attacks of colicky pain that preceded final rupture of the sac were due to partial lacerations. The latter constituted a clear indication for primary laparotomy, to which it was preferable to resort instead of to electricity. By "primary laparotomy" he understood the performance of abdominal section for removal of the tube and contained fœtus before the fourth month, and before rupture had occurred, the diagnosis of extra-uterine pregnancy having been made before the operation.

Cases had been reported by Dr. Joseph Price, of Philadelphia, and Dr. John S. Hawley, of New York. The author quoted from Dr. Hawley's paper to the effect that, although this operation had been proposed and carried out several years before, it had really not been primary, as the sac had ruptured before laparotomy was performed. It was highly important to recognize the existence of the ectopic pregnancy as early as the fourth week. The symptoms were as follows: The patient missed her expected period, and about a week after had a slight show which might be repeated a week later. An examination of the discharge would reveal pieces of decidual membrane. The usual symptoms of early pregnancy would then develop. On examination, the os would be found to be patulous and the uterus enlarged (to the depth of three inches and a half) and pushed a little to one side of the median line by a mass, globular, semi-elastic, slightly movable, and very sensitive on manipulation. The sensitiveness of this tumor was a very important point, as distinguishing it from a hydrosalpinx or a pyosalpinx. The enlarged tube might be prolapsed behind or on one side of the uterus. It was a fact that ectopic pregnancy was most likely to occur in women who had not borne children for some time, as well as in those who engaged in illicit intercourse. When the existence of this condition was recognized, the question arose, "Should we apply electricity, or resort to laparotomy at once?" If the former method was adopted the fœtus was destroyed and left in the abdominal cavity, where it might do harm subsequently. Laparotomy at the present day involved but slight risks. In conclusion, the author expressed the opinions that extra-uterine pregnancy began in the tube in the majority of cases; and that it was exceptional for the sac to rupture and discharge its contents between the layers of the broad ligament. He believed with Tait that the placenta continued to grow after the death of the fœtus.

The Early Diagnosis of Ectopic Pregnancy, with a Report of Two Cases successfully treated with Electricity.—Dr. Horace T. Hanks, of New York, read a paper thus entitled in which he said that during the past three years ninety-seven cases of extra-uterine pregnancy had been reported in English medical journals alone. In thirty-one cases no operation had been performed, and eighteen patients had died; one half of them before the third month of pregnancy. The author thought that in at least 95 per cent. of these cases the condition should have been recognized before rupture occurred. Two cases were then cited in which there was a typical history of extra-uterine pregnancy. The growth of the fœtus in each instance was entirely arrested by a moderate galvanic current. In diagnosticating this condition it was first necessary to obtain a clear history, then to make a thorough physical examination. Electricity was the proper agent to be used before the fourth month. In twenty cases in which it had been employed, only two patients had died, which was certainly a better result than could have been ob-

tained by any other method of treatment. Of course it should not be applied after symptoms of rupture had appeared. The author was far from seeking to decry operative interference at the hands of experienced surgeons, but he believed that electricity was a safer agent, and one which could be used by the general practitioner. Laparotomy could be performed just as well after electricity had been tried. If rupture occurred, we must operate at once.

The following rules were laid down: Before the fourth month, when there may be only premonitory symptoms of rupture, use electricity; if rupture occurs, perform laparotomy at once. After the fourth month perform laparotomy. After the fifth month wait, but be prepared to operate if an emergency arises. If the pregnancy advances beyond the ninth month, operate according as serious indications appear.

Discussion on all Three Papers.

Dr. HARVEY, of Calcutta (a guest of the society), said that laparotomy was still in its infancy in India, owing to the fact that the natives were very conservative and averse to surgical operations. He had seen several cases of tubal pregnancy, but most of the specimens were obtained post mortem. American physicians had shown that the fœtus could be killed by electricity, and that this agent was especially useful to the general practitioner. Expectant treatment alone was not justifiable, since most patients, if left to themselves, would die.

Dr. REEVE referred to the work which the society had accomplished in advancing our knowledge of this subject. A few years before he had reported the fourth recorded case in which the fœtus of an ectopic gestation had been killed by electricity. He had been much criticised at that time because he had no fœtus to show, and doubt had been thrown upon his diagnosis because *ballottement* (!) was absent in his case. He had been struck by two important diagnostic points—the pulsation in the vessels of the sac, and its rapid growth, as well as the sudden cessation after the use of electricity. As regarded treatment, he did not see how any harm could result from leaving the remains of the sac in the abdominal cavity. It should not be forgotten that the application of electricity might cause rupture of the cyst; this risk should be explained to the patient, and the attendant should be prepared to perform laparotomy at the shortest notice.

Dr. S. C. GORDON, of Portland, Me., thought that there must be many cases in which laparotomy was performed too late to save the patient. He gave an instance in which he had been called to a long distance to see a case of ruptured tubal-gestation sac, and operated successfully sixteen hours after the accident. If, as Dr. Hanks had affirmed, 95 per cent. of these cases could be diagnosticated, it seemed unjustifiable to run the risk of hæmorrhage by waiting, when laparotomy could be performed with comparative safety. The after-history of many cases in which the sac remained in the cavity showed that there was a subsequent risk of suppuration.

Dr. JOHNSTONE thought that the specimen exhibited by Dr. Mann was a dermoid cyst of the ovary; if it had been an ovarian pregnancy, the sac would have been more vascular. Even placental tissue might be expected in a dermoid growth. With regard to the treatment of extra-uterine pregnancy, Mr. Tait had told the speaker that in only one out of seventy cases had he operated before the occurrence of rupture. Colicky pains and symptoms of shock nearly always indicated rupture. In a case operated upon by himself the patient had had three distinct attacks of this nature; at the operation three blood-clots were found of different ages, corresponding to three ruptures of the tube. He had observed the same thing in Mr. Tait's operation, and Tait himself had called attention to it.

Dr. PRICE had stated that it was only a matter of luck to find a sac that had not ruptured; hence the risk in using electricity. Since the placenta continued to grow after the death of the fœtus, it was necessary to kill the former, too. He could recall cases in which suppuration of the sac had occurred after the death of the fœtus. Such a fœtus tended to become a lithopædion, and the presence of the latter in the abdominal cavity was always a source of danger.

Dr. KOLLOCK, of South Carolina, cited a case of ectopic pregnancy in which the patient had two attacks of shock, and at the autopsy evidences of two distinct hæmorrhages were revealed.

Dr. WYLIE said that the diagnosis of extra-uterine pregnancy was often uncertain. In any case an explorative laparotomy was advisable, and was, in fact, the only method to be pursued after rupture had occurred. Electricity might kill the fœtus, but it did not insure the safety of the patient. Patients were treated by electricity who did not have extra-uterine pregnancy at all, as in a case of salpingitis cited in which a post-mortem was obtained.

Dr. ENGELMANN believed that the use of electricity was preferable, at least for general practitioners, in the early weeks of ectopic gestation; its use could hardly be attended with serious results.

Dr. COE said that the idea had suggested itself to him, as well as to Dr. Johnstone, that Dr. Mann's specimen might be a small ovarian cyst. The diagnosis turned upon the presence of the placenta within the sac. How a placenta could exist except as a product of conception he could not understand; it would certainly be unique, even in a dermoid cyst. The speaker desired to add to the two cases of primary laparotomy credited to Dr. Price and Dr. Hawley one by the latter gentleman at which he had assisted. The patient was under observation for some time, and the diagnosis was confirmed by several gentlemen who saw the patient. There was a history of pain and collapse two or three weeks before the operation. On opening the abdomen, the sac was found surrounded by an old clot, although no rupture could be found. He agreed with Dr. Wylie that the diagnosis of this condition was often very uncertain; cases were recorded in which it was discovered when the trouble had been supposed to be pyosalpinx, and *vice versa*. When a patient was seen for the first time after rupture had taken place, and the previous history of the case was not clear, we could not decide positively whether there was a ruptured sac or an hæmatocele from other causes. He cited a case, which he had seen in consultation, which illustrated this difficulty.

Dr. KINLOCH favored a radical operation, but thought that much depended upon the patient's environment and the skill of her attendant. There was danger to the woman as long as the sac remained within the abdomen, especially in the event of a subsequent pregnancy.

Dr. A. P. DUDLEY, of New York, thought that it was highly important for the younger men to have more precise rules for diagnosis. He cited the case of a patient who had every symptom which was ordinarily laid down as indicating the existence of extra-uterine pregnancy, associated with a tender mass on the left of the uterus. On performing laparotomy, he found an adherent tube and a small parovarian cyst. In such a case electricity would have been used to kill a fœtus which did not exist, and it would have been said that the patient was cured. Explorative laparotomy was such a safe and easy method of confirming the diagnosis that it was better to do it in every doubtful case.

Dr. MANN said that he could not understand how Dr. Johnstone could say that placental tissue might be found in a dermoid cyst. The absence of all trace of sinuses on the inner lining of the sac was due to the fact that the fœtus had been so

long dead and the specimen was nearly destroyed before being placed in alcohol. He also questioned Dr. Johnstone's statement that the tendency was for the fœtus, after being killed, to form a lithopædion. The experience had been in these cases that the sac was gradually absorbed. So far from a lithopædion being dangerous, the speaker knew a woman who had had one for ten years, during which time she had borne three children. Dr. Dudley's case was rather an argument in favor of electricity, since laparotomy had been unnecessary.

Dr. Kelly had operated successfully at the fourth month for the removal of a tubal gestation sac.

Dr. Janvrin said that he was inclined to doubt the statements regarding some of Mr. Tait's cases. He had carefully studied all the cases reported by that gentleman, and must confess that the details were often extremely meager. There was seldom anything said about the finding of a fœtus or placenta. There was otherwise no positive evidence that a case was not one of simple hæmatocele. The speaker agreed with Dr. Hanks that, if the general practitioner was to treat these cases, electricity was the best agent; but, for laparotomists, explorative incision was now so simple that it was better than any other procedure. It did not matter whether the condition was found to be extra uterine pregnancy or enlargement of the tube and ovary.

Dr. Hanks reaffirmed his confidence in the value of electricity, especially for general practitioners. He had never heard of any case in which subsequent trouble had resulted after the destruction of the ovum before the third month. Beyond this time electricity should not be used, as there would of course be ill effects. It was highly important to recognize cases in which symptoms of rupture had appeared.

The following papers were read by title:

"In Memoriam—Dr. John Scott," by Dr. H. Marion-Sims, of New York; "Adenoma of the Fundus Uteri," by Dr. James R. Chadwick, of Boston; "The Value of the Operation of Shortening the Round Ligaments, from an Experience in Twenty-one Cases," by Dr. Paul F. Mundé, of New York; "Some Cases of Nerve-prostration, in which the Remote Effects of Anæsthesia by Ether were Bad," by Dr. William Goodell, of Philadelphia; "Cystocolpocele complicating Labor and Pregnancy," by Dr. Samuel C. Busey, of Washington; "The Infertility of Women," by Dr. Henry F. Campbell, of Augusta, Ga.; "Laparotomy for the Reduction of the Inverted Uterus," by Dr. Paul F. Mundé, of New York; "A Case of Subinvolution cured by the Removal of the Appendages," by Dr. Howard A. Kelly, of Philadelphia; "The Use of Chlorate of Potassium in Obstetrics," by Dr. Alexander Simpson, of Edinburgh; "Some Points Learned from an Experience of Thirty-four Ovarian Operations, with but one Death," by Dr. Joseph Taber Johnson, of Washington; "A Case of Extra-uterine Pregnancy," by Dr. B. F. Baer, of Philadelphia.

Book Notices.

Transactions of the Academy of Medicine in Ireland. Vol. V. Edited by William Thomson, M. A., F. R. C. S., General Secretary, etc. Dublin: Fannin & Co., 1887. Pp. xxxv-367.

This volume makes a good showing for a society that has been in existence only four years. The number of interesting and scientific papers it embodies indicates a healthy activity of the members. Of the more important articles are to be mentioned: "A Case of Myxœdema," by Dr. C. J. Dixon; "Trephining of the Mastoid Process," by Mr. Henry Fitzgibbon; "Pylorus Resection," by Mr. J. S. McArdle; "Two Cases of Sarcoma of the Tonsil," by Mr. Henry Gray Croly; "Placenta Prævia," by Dr. R. H. Fleming; "Abscess of the Uterus opening at the Umbilicus," by Dr. J. R. Kirkpatrick; "Report of the Rotunda Hospital for the Three Years ending November 3, 1886," by Dr. J. L. Lane; "Case of a Liver with Two Gall-bladders," by Dr. J. M. Purser; "Aneurysm of the Abdominal Aorta in a Female," by Dr. A. W. Foot; "On the Prevalence and Distribution of Phthisis and other Diseases of the Respiratory Organs in Ireland," and "Varieties in the Mode of Origin of the Phrenic Nerve, with some Notes on Nerve Variations in the Superior Extremity," by Dr. H. St. John Brooks. We must express not a little disappointment with the papers on obstetrics from a center which used to be the teacher of the world in that branch of medicine, and which still has the Rotunda Hospital.

Prescription Writing. Designed for the Use of Medical Students who have never studied Latin. By Frederic Henry Gerrish, A. M., M. D., Professor of Anatomy, and formerly Professor of Materia Medica and Therapeutics, in Bowdoin College, etc. Seventh and Revised Edition. Portland: Loring, Short, and Harmen, 1888. Pp. 6–7 to 55. [Price, 50 cents.]

This little book will no doubt be found useful by those for whom it is intended. But we hope the day will soon be in the past when such an anomaly exists as "medical students who have never studied Latin."

BOOKS AND PAMPHLETS RECEIVED.

Accidental Hæmorrhage in Labor. By Stanley P. Warren, M. D., Portland, Maine. [Reprinted from the "American Journal of Obstetrics and Diseases of Women and Children."]

Phthisie laryngée. Par le Dr. A. Gouguenheim, médecin de l'hôpital Lariboisière, et de la clinique laryngologique, etc., et Paul Tissier, interne des hôpitaux de Paris. Avec 13 figures dans le texte et 5 planches hors texte dont 3 en chromolithographie. Paris: G. Masson, 1888. Pp. 11–339.

Physician's Pocket Day-book and Ledger combined. By Dr. S. L. Kilmer, South Bend, Ind.

The "Medical News" Visiting-list, 1889. Philadelphia: Lea Brothers & Co.

Annual Report of the Health Department of the City and County of San Francisco. For the Fiscal Year ending June 30, 1888.

Medical Communications of the Massachusetts Medical Society. Vol. xiv, No. 11, 1888.

A New Method of Feeding in Cases of Intubation of the Larynx; by Position, Head downward, on an Inclined Plane. By W. E. Casselberry, M. D., Chicago. [Reprinted from the "Chicago Medical Journal and Examiner."]

The Diagnosis and Treatment of Diseases of the Rectum. By William Allingham, Fellow of the Royal College of Surgeons of England. Edited and revised, with much additional New Matter and Numerous Diagrams, by Herbert W. Allingham, Fellow of the Royal College of Surgeons of England, etc. Fifth Edition. London: J. & A. Churchill, 1888. Pp. 16–366.

On the Treatment of Cystic Goître. By T. Mark Hovell, F. R. C. S. E. London: J. & A. Churchill, 1888. Pp. 5–26.

Report on Hydrophobia. By Charles W. Dulles, M. D., of Philadelphia. [Reprinted from the "Transactions of the Medical Society of the State of Pennsylvania."]

The Physician's Visiting List for 1889. Philadelphia: P. Blakiston, Son, & Co.

Clinical Lectures on Albuminuria. By Thomas Grainger Stewart, M. D. Edin., Fellow of the Royal College of Physicians of Edinburgh, etc. New York: William Wood and Company, 1888. Pp. xi–250.

Double Ovariotomy during Pregnancy; Subsequent Delivery at Term. By William Warren Potter, M. D., Buffalo, N. Y. [Reprinted

from the "American Journal of Obstetrics and Diseases of Women and Children."]

A Manual of Dietetics for Physicians, Mothers, and Nurses. By W. B. Pritchard, M. D., New York City. Published by the Dietetic Publishing Co. Pp. 5–88. [Price, 50 cents.]

Mineral and Thermal Springs of California. By W. F. McNutt, M. D., M. R. C. S., etc., San Francisco, Cal. [Reprinted from the "Transactions of the Ninth International Medical Congress."]

Heart with Three Cavities. Partial Transposition of Abdominal Viscera. By M. Howard Fussell, M. D., of Manayunk, Philadelphia. [Reprinted from the "Medical News."]

Public Health Resorts *versus* Institutions for the Treatment of Bacillary Phthisis. By Paul H. Kretzschmar, M. D., of Brooklyn. [Reprinted from the "Medical Register."]

Thirty-third Annual Report of the Government Hospital for the Insane, to the Secretary of the Interior, 1888.

Proceedings of the Academy of Natural Sciences of Philadelphia. Part II. March–September, 1888.

On an Experimental Demonstration of the Value of Gaseous Enemata in the Diagnosis of Perforations of the Intestines, and their Repair by the Rubber Ring and Decalcified Bone Plate Method. By B. Harvey Reed, M. D., Mansfield, O. [Reprinted from the "Transactions of the Ohio State Medical Society."]

The President's Annual Address. By Robert Battey, M. D., of Rome, Georgia. [Reprinted from the "Transactions of the American Gynæcological Society."]

Estudio Clínico de los Tumores de la Vejiga. Par el Doctor Alejandro Settier, Director de la Gaceta de Enfermedades de los Órganos genito-urinarios. Madrid, 1888.

Cæsarean Section, necessitated and justified by Hypertrophic Elongation of the Cervix; Removal of a Living Female Child of Seven Pounds' Weight. By Jno. S. Coleman, M. D., Augusta, Georgia. [Reprinted from the "American Journal of Obstetrics and Diseases of Women and Children."]

Local Treatment of Diphtheria. By J. Henry Fruitnight, A. M., M. D., New York. [Reprinted from the "Archives of Pædiatrics."]

Why Electrolytic Treatment of Stricture does not succeed in all Hands. By G. C. H. Meier, M. D., Member of the New York State Medical Association. [Reprinted from the "International Journal of Surgery and Antiseptics."]

The Contagiousness of Phthisis (Tubercular Pulmonitis). By Lawrence F. Flick, M. D., of Philadelphia. [Reprinted from the "Transactions of the Medical Society of the State of Pennsylvania."]

Report on Animal Vaccination. By Henry A. DuBois, Ph. B., M. D., of San Rafael, California.

The Chemical Factor in Disease. By Hugh Hamilton, M. Sc., M. D., of Harrisburg. [Reprinted from the "Transactions of the Medical Society of the State of Pennsylvania."]

The Chemical Philosophy in Remedy. By Hugh Hamilton, M. Sc., M. D., of Harrisburg. [Reprinted from the "Transactions of the Ninth International Medical Congress."]

Experimental Researches respecting the Relation of Dress to Pelvic Diseases of Women. By J. H. Kellogg, M. D., Battle Creek, Mich. [Reprinted from the "Transactions of the Michigan State Medical Society."]

Nystagmus in Connection with Diseases of the Ear. By Charles J. Kipp, M. D., Newark, N. J. [Reprinted from the "Transactions of the American Otological Society."]

The Treatment of Heart Disease. By James Barr, M. D., Physician, Northern Hospital, Liverpool, etc. [Reprinted from the "Liverpool Medico-chirurgical Journal."]

Transactions of the Louisiana State Medical Society at its Tenth Annual Session, held at Monroe, La., April 25 and 26, 1888.

Inebriate Asylums and their Work. By T. D. Crothers, M. D., Superintendent of Walnut Lodge, Hartford, Conn.

Description of a Case of Coloboma of the Iris, Lens, and Chorioid; with a Study of the Visual Fields. By Charles A. Oliver, M. D., Philadelphia, Pa. [Reprinted from the "Transactions of the American Ophthalmological Society."]

A Case of Typhlitis, with Double Perforation of the Cæcum, and Peritonitis, in which Laparotomy and Suture of the Gut were followed by Recovery. By L. S. McMurtry, A. M., M. D., of Danville, Ky. [Reprinted from the "Journal of the American Medical Association."]

Transactions of the Colorado State Medical Society, Eighteenth Annual Convention, Colorado Springs, June, 1888.

The Sixty-sixth Annual Report of the Montreal General Hospital, with a List of the Governors, Officers, and Subscribers. For 1887–'88.

The Treatment of Peritonitis by Abdominal Section. Some Illustrative Cases. [Read before the Kentucky State Medical Society, July 12, 1888.] By L. S. McMurtry, A. M., M. D., etc.

Contribuzione alla casuistica della tuberculosi dello stomaco. Pel Dott. Alessandro Serafini. [Estratto degli "Annali clinici dell' Ospedale degl' Incurabili."]

Commotion, contusion, tétanos, syphilis et traumatisme. Par le Dr. A. Verneuil, Membre de l'institut, professeur de clinique chirurgicale à la faculté de médecine de Paris, etc. Paris: G. Masson, 1888. Pp. 111–897. ["Mémoires de chirurgie," tome cinquième.]

La mort par la décapitation. Par le Dr. Paul Loye, Préparateur du laboratoire de physiologie de la Sorbonne, etc. Préface de M. le Dr. P. Brouardel, Professeur de médecine légale et doyen de la faculté de médecine de Paris. Paris: Lecrosnier et Babé, 1888. Pp. 8–285. [Publications du "Progrès médical."]

Hunterian Lectures on Tension, as met with in Surgical Practice, Inflammation of Bone, and on Cranial and Intracranial Injuries. Delivered before the Royal College of Surgeons of England, June, 1888. By Thomas Bryant, F. R. C. S., M. Ch. (Hon.) Roy. Univ. I., etc. London: J. & A. Churchill, 1888. Pp. 146.

Lectures on Ectopic Pregnancy and Pelvic Hæmatocele. By Lawson Tait, F. R. C. S. Edin. & Eng., LL. D., etc. Birmingham: The "Journal" Printing Works, 1888. Pp. 3–107.

The Vest-pocket Anatomist (founded upon "Gray"). By C. Henri Leonard, A. M., M. D., etc. Fourteenth Revised Edition. Containing Dissection Hints and Visceral Anatomy. Detroit: The Illustrated Medical Journal Co., 1888. Pp. 5–297. [Price, $1.]

Considerações sobre a lepra, e sua influencia na pathogenia das molestias das vias respiratorias. Pelo Dr. Tiberio d'Almaida. [Publicações da "União medica."]

Pathologie und Therapie der Alopecia areata. Von A. R. Robinson, M. B., L. R. C. P. & S. Edin., Professor der Dermatologie an der New Yorker Poliklinik, etc. [Sonder-Abdruck aus "Monatshefte für praktische Dermatologie."]

The Radical Cure of Varicocele, attended with Redundancy of Scrotum, demonstrated by Time. By Morris H. Henry, M. A., M. D., LL. D., etc. [Reprinted from the "Journal of the American Medical Association."]

Report of the Board of Trustees of the Eastern Michigan Asylum, at Pontiac. For the Biennial Period ending June 30, 1888.

Lectures to Practitioners on the Diseases of the Kidney amenable to Surgical Treatment. By David Newman, M. D., Surgeon to the Western Infirmary (Out-door Department); Pathologist to and Lecturer on Pathology at the Glasgow Royal Infirmary, etc. London: Longmans, Green, & Co., 1888. Pp. xv–472.

The Son of a Star. A Romance of the Second Century. By Benjamin Ward Richardson. New York: Longmans, Green, & Co., 1888. Pp. 11–470.

Alpine Winter in its Medical Aspects; with Notes on Davos Platz, Wiesen, St. Moritz, and Maloja. By A. Tucker Wise, M. D., L. R. C. P., M. R. C. S., etc. Fourth Edition. London: J. & A. Churchill, 1888. Pp. vi–9 to 160.

The Pedigree of Disease. Being Six Lectures on Temperament, Idiosyncrasy, and Diathesis, delivered in the Theatre of the Royal College of Surgeons in the Session of 1881. By Jonathan Hutchinson, F. R. S., etc. Lectures on the Treatment of the Common Diseases of the Skin. By Robert M. Simon, M. D. Cantab., M. R. C. P. London. Clinical Lectures on the Varieties and the Treatment of Bronchitis. By Dr. Ferrand, Physician to the Laënnec Hospital, etc. New York: W. Wood & Co., 1888. Pp. 2–5 to 259. [Wood's Medical and Surgical Monographs.]

A Treatise on Hysteria and Epilepsy, with some Concluding Obser-

vations on Epileptic Insomnia. By J. Leonard Corning, M. A., M. D., etc. Detroit: John S. Davis, 1888. Pp. viii-176. [The Physician's Leisure Library.]

Curabilidad del ictero grave primitivo. Tesis para el doctorado presentada y sostenida el 18 de Setiembre de 1888 por Emilio Martinez y Martinez. Habana: Alvarez y Compañia, 1888.

Improprieties of Dress an Important Ætiological Factor in Many of the Diseases peculiar to Women. By Sebastian J. Wimmer, M. A., M. D. St. Mary's, Pa. [Reprinted from the "Medical Register."]

Report of Proceedings of the Conference of Local Health Officials held by Invitation of the State Board of Health of Missouri, at St. Louis, December 4, 1888.

The Homing Instinct. An Explanation suggested. By George M. Gould, M. D. [Reprinted from "Progress."]

The Psychological Influence of Errors of Refraction and their Correction. By George M. Gould, M. D., Philadelphia. [Reprinted from the "Medical and Surgical Reporter."]

A New Style of Bi-focal Lenses. By George M. Gould, M. D., Philadelphia. [Reprinted from the "Medical and Surgical Reporter."]

A Peculiar Case of Herpes zoster ophthalmicus, Serous Iritis, or "Ophthalmo-neuritis." By George M. Gould, M. D. [Reprinted from the "Polyclinic."]

Is the Electric Light Injurious to the Eyes? By George M. Gould, M. D., Philadelphia. [Reprinted from the "Medical News."]

Repression of Menstruation as a Curative Agent in Gynæcology. By Eugene C. Gehrung, M. D., St. Louis. [Reprinted from the "American Journal of Obstetrics and Diseases of Women and Children."]

Nineteenth Annual Report of the Manhattan Eye and Ear Hospital, September 30, 1887, to October 1, 1888.

Third Annual Report of the New York Post-graduate Hospital, including the Babies' Ward. For the Year ending May 1, 1888.

Valves in the Veins of the Human Intestines. By W. S. Bryant, A. M., M. D. [Reprinted from the "Boston Medical and Surgical Journal."]

Transactions of the American Otological Society. Twenty-first Annual Meeting, Pequot House, New London, Conn., July 17, 1888. Vol. IV. Part 2.

The Influence of Morbid States or Conditions of the Body on Local Diseases. By H. Christopher, M. D., St. Joseph, Mo. [Reprinted from the "St. Joseph Medical Herald."]

Relations of certain Meteorological Conditions to Diseases of the Lungs and Air-passages as shown by Statistical and other Evidence. By Henry B. Baker, A. M., M. D., of Lansing, Mich. [Reprinted from the "Annual Report of the Michigan State Board of Health," for the Year 1888.]

Malaria and the Causation of Periodic Fever. By Henry B. Baker, M. D., of Lansing, Mich. [Reprinted from the "Journal of the American Medical Association."]

State Board of Health. Report of Willis G. Tucker, M. D., Ph. D., Analyst of Drugs. [Extract from the Eighth Annual Report.]

The Introductory Address to the Eighth Lecture Course of the Albany College of Pharmacy. Delivered October 1, 1888, by Willis G. Tucker, M. D., Ph. D., Professor of Chemistry.

Report of the Chief of the Bureau of Medicine and Surgery to the Secretary of the Navy, 1888.

Inflation of the Stomach with Hydrogen Gas in the Diagnosis of Wounds and Perforations of this Organ. With the Report of a Case. By N. Senn, M. D., Ph. D., of Milwaukee, Wis. [Reprinted from the "Medical News."]

Diseases of the Nose and Pharynx and their Treatment. By W. Cheatam, M. D., Louisville, Ky. [Reprinted from the "Virginia Medical Monthly."]

Double Chorio-retinitis with Partial Degeneration of the Optic Nerve, associated with Curious Lymph Extravasation into the Retina and Vitreous. By Charles A. Oliver, M. D., Philadelphia. [Reprinted from the "Transactions of the American Ophthalmological Society," 1887.]

Hæmorrhoids and their Treatment. By G. H. Kirwan, M. D., Wilkesbarre, Pa. [Reprinted from the "Medical and Surgical Reporter."]

Two Cases of Gunshot Wound of the Abdomen illustrating the Use of Rectal Insufflation with Hydrogen Gas as a Diagnostic Measure. By N. Senn, M. D., Ph. D., of Milwaukee, Wis. [Reprinted from the "Medical News."]

Miscellany.

The Northwestern Medical and Surgical Society has elected officers for the ensuing year as follows: Dr. A. M. Jacobus, president; Dr. S. Baruch, vice-president; Dr. E. S. Peck, secretary.

The New York Academy of Medicine.—At the next meeting of the Section in Neurology, on Friday evening, the 11th inst., Dr. L. C. Gray will present "A Case of Locomotor Ataxia" and "A Case of Central Myelitis," each with specimens.

Change of Address.—Dr. Thomas Linn, the well-known American physician of Paris, has changed his residence to No. 16, rue de la Paix

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

A SECOND SERIES OF ONE HUNDRED CONSECUTIVE OPERATIONS SHOWING THE RESULTS OF ANTISEPTIC METHODS OF WORK.

By ROBERT T. MORRIS, M. D.,
INSTRUCTOR IN SURGERY AT THE POST-GRADUATE MEDICAL SCHOOL, NEW YORK.

As the object of presenting this list of histories is chiefly to show the effect of certain methods of wound treatment which were employed in the management of the cases, it seemed advisable to omit from the "consecutive" list such of my minor operations as tapping the chest, abdomen, joints, and head; divulsions of the cervix uteri and of the male urethra; straightening deviated nasal septa; circumcision, amygdalotomy, tenotomy, opening acute abscesses, suturing small accidental wounds, small operations for recurrent malignant growths, and short incisions in cases of small tumors, warts, moles, and nævi. The general antiseptic method employed consisted of the following details: The patient's skin in the field of operation was shaved and scrubbed with 1-to-1,000 bichloride-of-mercury solution. Towels wrung out in this solution were so arranged that hands and instruments engaged in the operative work would touch nothing that was not sterilized. Hands were washed in the same solution before work began, and wounds were flushed from time to time during the course of operation with 1-to-2,000 bichloride-of-mercury solution. The sponges that were used had been simply cleaned and stored in 1-to-20 carbolic-acid solution.

No other material besides catgut was used for any suture or ligature, and a perusal of the subjoined cases will show that this material was put to the most severe tests. Chromic catgut was used for operations upon the perinæum and cervix uteri, for suturing abdominal walls, and for wounds in a few other places where coaptation by sutures for a period of more than a week was desirable. For almost all other suturing and ligating, catgut prepared according to Kocher's method * was used.

Drains were of catgut or of absorbable bone; but I have used less and less drainage-apparatus, and now seldom employ it at all in aseptic wounds.

Dressings consisted of a sprinkling of iodoform along the line of sutures, a strip of sterilized Lister oiled silk next the wound region, a large wad of bichloride gauze or cotton to catch and dry exuded serum and lymph, and finally a gauze bandage to hold the rest of the dressing snugly. Fourteen days was the length of time that a dressing was usually allowed to remain before removal.

Instruments were soaked in 1-to-20 carbolic-acid solution for at least fifteen minutes before being used, and they were carefully cleaned afterward. All of my instruments are boiled occasionally, to remove any suspicion of danger.

* Raw catgut placed in oil of juniper for three or four days, and then transferred to a bottle of commercial alcohol, from which the gut was used.

Special features of the antiseptic work were the application of iodoform from day to day on wounds which for any reason could not be covered by bulky dressings—as the wound after removal of piles, for instance—and the particular method which was employed in intra-urethral operations. In preparing for internal urethrotomy, the circulation was cut off from the penis until the four or five minims of ten-per-cent. cocaine solution injected with a hypodermic syringe anywhere into the tissues of the penis had removed sensibility. The urethra anterior to the triangular ligament was then washed out with 1-to-5,000 bichloride solution, and the urethrometer and urethrotome, taken out of carbolic-acid solution, were lubricated with a solution of equal parts of boroglyceride and glycerin. Hæmorrhage was controlled by external pressure, and the urine was made to act as an antiseptic wash by keeping it loaded with boric acid given internally. Patients kept about their work after such treatment and did not consider themselves as invalids.

The physical condition of patients was not usually taken into consideration in preparing for the operations of various sorts, as under antiseptic methods of operating and modern plans for controlling shock it is advisable, as a rule, to operate first, in order to get the patient in such condition that he can improve physically afterward.* This is the reverse of the former plan, of laboring first to get the patient into better physical condition in order that the operation may be better borne afterward. The kidneys were the only organs examined with reference to the expected influence of anæsthetics, and chloroform was substituted for ether when nephritis was discovered.

In very few of the cases did the temperature reach 100° F. at any time during the interval between operation and recovery.

The majority of the patients were operated upon at their own homes in various towns in New York and New England, and the cases, left to the care of the physicians who had kindly invited me to operate, were practically as well cared for as they would have been at the hospital in the city. In only one of the cases, that of exsection of intestine for cancer of the caput coli, did I regret that hospital facilities for managing the condition of shock were wanting.

The word "recovery" in the following list refers to the operative wound rather than to the case as a whole. In some of the cancer cases the disease has reappeared, and consequently the word could not properly be applied in its full meaning.

NOTES.

In the case of closed jaws (No. 2) the ankylosis followed parotitis of scarlatina three years previously. I could not do Mears's operation on account of the smallness of the buccal cavity, and was consequently obliged to make an external incision along the inferior border of the zygomatic process. The case illustrates very well the fact that a joint may remain at rest for a long period without becoming ankylosed, as the child opened her mouth to nearly if

* Sentiment first expressed by Stephen Smith.

HEAD AND NECK.

No.	Name, age, and sex.	Case.	Operation.	Intermediate result.	Final result.
1	H. P., 10, M.	Compound depressed fracture of skull, left frontal region.	Long incision; elevation; removal of fragments size of half-dollar.	Primary union.	Recovery.
2	E. T., 12, F.	Closed jaws; bony ankylosis, right side.	Exsection of condyle and coronoid process.	Primary union, except drainage-opening.	Recovery.
3	H.W., 42, M.	Epithelioma of lower lip.	Removal of V-shaped segment.	Primary union.	Recovery.
4	M. M., 4, M.	Double hare-lip, cleft palate; projecting Wolffian bone with four teeth.	Repair of lip by Phelps's incision; removal of Wolffian bone; obturator for palate to be made.	Primary union.	Recovery; straight lip-line.
5	F. D., 8 mo.	Single hare-lip to nostril.	Repair by Phelps's incision.	Primary union.	Recovery; straight lip-line.
6	F., 60, F.	Chronic neuralgia of inferior dental nerve.	Letievant's operation; ¾ inch of nerve removed.	Granulation.	Recov'y; neuralgia ceased; nearly year elapsed.
7	H. J., 40, F.	Multiple fibro-sarcoma of neck, left, involving large blood-vessels.	Long incision; removal of tumor; ligation of int. and ext. carotids and int. jugular.	Primary union, except at drainage-opening.	Recov'y. Apparently complete temporary anæmia of left brain hemisphere
8	S., 1½, M.	Diphtheria.	Tracheotomy.	Wound left open.	Relief from dyspnœa; death 24 hrs. later from extension to lungs.
9	M. M., 18, F.	Tuberculous adenitis of neck, right side.	Long incisions; caseous glands enucleated.	Primary union.	Recovery.
10	M. M., 19, F.	Tuberculous adenitis of neck, left side principally.	Long incisions.	Primary union, except one small wound left open.	Recovery.
11	W. B., 41, M.	Recurrent cancer of neck.	Long incision; removal of enlarged glands.	Primary union.	Recovery.
12	W. B., 41, M.	Recurrent cancer of neck.	Long incision; removal of indurated tissue; partial ligation of opened int. jugular vein.	Primary union.	Recovery; died 6 months later.
13	C. G., 50, M.	Recurrent cancer of neck.	Long incision; dissection of indurated tissues.	Primary union, except at drainage-opening.	Recovery; died 3 months later.
14	G. K., 9, M.	Idiopathic epilepsy.	Ligation of both vertebral arteries.	Primary union.	Recovery, with no effect on epilepsy.
15	S., 30, F.	Single sarcoma of neck.	Long incision; removal of tumor, hen's-egg size.	Primary union.	Recovery.
16	F., 32, F.	Necrosis of perpendicular plate of ethmoid, tri-cartilage, vomer. Disappearance of nose.	Restoration of nose; flaps from cheeks.	Primary union.	Recovery.
17	L. M., 78, M.	Large protuberant epithelioma of nose.	Removal.	Granulation.	Recovery.
18	Clinic, 20, F.	Lobes of ears split and gaping.	Plastic operation.	Primary union.	Recovery.
19	E. B., 33, M.	Fibroma of whole nuchal region.	Long incision; removal of all portions that could be enucleated.	Granulation; had to be left open.	Recovery.
			EXTREMITIES.		
20	L. T., 3, F.	Bow-legs.	Chiseled through just below tuberosities of tibiæ; fibulæ fractured.	Primary union.	Recovery; straight legs.
21	H., 4, M.	Bow-legs.	Similar to preceding case.	Prim. union, except where dressing slipped on part of left leg.	Recovery; straight legs.
22	Clinic, 8, F.	Bow-leg.	V-shaped segment from greatest convexity of femur.	Primary union.	Recovery; little gain.
23	Clinic, 2, M.	Club-foot; talipes equino-varus of left.	Phelps's open incision.	Healing by clot - replacement.	Recovery; straight foot; apparatus applied.
24	T. U., 6, M.	Club-foot; talipes equino-varus of both.	Phelps operated by invitation; open incision.	Healing by clot - replacement.	Recovery; straight feet; apparatus applied.
25	W. C., 14, M.	Club-foot; contracted ham-strings	Tenotomy of Achilles tendon; all ham-strings cut through long incis.	Primary union.	Recovery; apparatus.
26	B. D., 46, M.	Varicose veins; varicose ulcer; large.	Long incision from ankle to knee, internal; long external incision; veins dissected out; flap turned over ulcer site.	Primary union of sutured part; part of ulcer left uncovered granulated.	Recovery.
27	M., 18, F.	Bunions.	Bursæ dissected out.	Primary union.	Recovery.
28	F., 45, M.	Abscess of whole calf of leg.	Long incision.	Primary union, except at drainage-opening.	Recovery.
29	G., 30, M.	Dermoid cyst of right buttock.	Incision 3 ins. long; removal of cyst-wall and bunch of hair.	Primary union.	Recovery.
			TRUNK, UPPER SEGMENT.		
30	V., 26, F.	Phlegmonous abscess of axilla and chest.	Long incision.	Granulation.	Recovery.
31	K., 26, F.	Sarcoma of left breast.	Amputation of breast; axilla clean'd out.	Primary union.	Recovery.
32	H., 42, F.	Recurrent cancer of axilla and supra-clavicular space, left side.	Long incisions; removal of growths; ligated axillary vein.	Primary union.	Recovery.
33	H., 42, F.	Recurrent cancer of axilla and supra-clavicular space, right side.	Long incisions; removal of growths.	Primary union.	Recovery.
34	K. R., 61, F.	Carcinoma of left breast.	Amputation of breast; axilla cleaned out.	Primary union, except 2 ins. left to granulate.	Recovery.
35	S., 50, F.	Carcinoma of right breast.	Amputation of breast; axilla cleaned out.	Primary union, except small part.	Recovery.

TRUNK, UPPER SEGMENT—(*Concluded*).

No.	Name, age, and sex.	Case.	Operation.	Intermediate result.	Final result.
36	U., 8, F.	Lipoma of right breast.	Incision 2 inches; removal of tumor.	Primary union.	Recovery.
37	H. M., 36, F.	Lipoma below right breast.	Incision 3 inches; removal of tumor.	Primary union.	Recovery.
38	W. van N., 45, F.	Lipoma of right shoulder.	Long incision; removal of tumor, 1½ pounds.	Primary union.	Recovery.
39	W. H., 33, M.	Tuberculous adenitis and fistula of axilla.	Incision 3 inches; removal of glands.	Primary union, except at drainage-opening.	Recovery.
40	H. McF., 6, M.	Empyema.	Incision; drainage.	Granulation.	Recovery.
41	J. P., 22, M.	Bullet-wound of chest; cavity full of blood and pus; no air.	Incision; drainage.	Granulation.	Recovery.
			TRUNK, LOWER SEGMENT.		
42	H., 25, F.	Ovarian cysts.	Laparotomy; drainage.	Primary union, except at drainage-opening.	Recovery.
43	C., 38, F.	Parovarian cyst, left; weight, 8 lbs.	Laparotomy; removal of tumor.	Primary union.	Recovery.
44*	H., 60, F.	Ovarian cyst, right; weight, nearly 50 lbs.; two pediculated fibroids of uterus.	Laparotomy; removal of all tumors.	Primary union.	Recovery.
45	C., 13, F.	Fibroma of falciform ligament of liver; weight, 5 ounces.	Laparotomy; removal of tumor.	Primary union.	Recovery.
46	M., 26, F.	Pyosalpinx; ovaritis; left.	Laparotomy; removal of ovary and tube; drainage.	Primary union, except ab't drainage-opening.	Recovery.
47	S., 25, F.	Cystic ovary, left.	Laparotomy; removal of ovary and tube.	Primary union.	Recovery.
48	H., 40, F.	Cystic ovary, left.	Laparotomy; removal of ovary and tube.	Primary union.	Recovery.
49	B., 38, F.	Cystic ovaries; lacerated cervix uteri.	Laparotomy; removal of ovaries and tubes; cervix repaired at same sitting.	Primary union of all wounds.	Recovery.
50	R. R., 42, M.	Intra-abdominal sac following abscess of liver; fistula.	Laparotomy; removal of lining membrane of sac and concretions.	Primary union, except at fistulous opening.	Recovery.
51	E. B., 22, F.	Parovarian cyst, left; weight, 16 lbs.	Laparotomy; removal of tumor, ovary, and tube.	Primary union of greater part of wound.	Recovery.
52	H., 28, F.	Ovarian cysts; left, size of small hen's egg; right, size of English walnut.	Laparotomy; removal of both ovaries and tubes.	Primary union, except where skin sloughed under one suture.	Recovery.
53	F. T., 34, F.	Pyogenic sac, following empyema, extending to liver intra-abdominally, nearly to crest of ilium extra-abdominally.	Laparotomy; long external incision; lining membranes of sacs removed.	Primary union, except at drainage-opening, but lower part of old sac suppurated later.	Recovery.
54	T., 39, F.	Cancer of cervix uteri.	Laparotomy; removal of uterus by way of vagina.	Primary union of all w'nds except small vaginal drainage-opening.	Recovery.
55	S. F., 50, F.	Cancer of caput coli.	Laparotomy, exploratory.	Primary union except about fistulous opening.	Recovery.
56	S. F., 50, F. Month later.	Cancer of caput coli.	Laparotomy; exsection of one foot of intestine.	.....	Death from shock.
57	A. K., 38, M.	Perityphlitis; septicæmia.	Laparotomy; evacuation of 3 ozs. greenish pus and necrotic appendix; drainage.	No union.	Death six days later from septicæmia.
58	C., 20, M.	Perityphlitis; septicæmia.	Long incision not including peritonæum; evacuation of 2 quarts of pus and fæces, and necrotic appendix; wound left open.	No attempt at repair by nature.	Death three weeks later from septicæmia.
59	E., 58, F.	Femoral hernia; large irreducible sac.	Macewen's operation; sac folded up; canal sutured together.	Primary union.	Recovery.
60	M., 33, F.	Old ruptured perinæum, third degree; piles.	Repair of perinæum; piles ligated and removed.	Primary union of perinæ'm; granulation of pile-w'nds.	Recovery.
61	G., 30, F.	Old ruptured perinæum, second degree.	Repair of perinæum.	Primary union.	Recovery.
62	T., 30, F.	Old ruptured perinæum, second degree; laceration of cervix uteri bilateral; piles; fissures of anus.	Repair of perinæum and cervix; ligation and removal of piles; floors of fissures rent. All at one sitting.	Primary union of all of perinæum, but only half of cervix; pile and fissure wounds granulated.	Recovery.
63	B., 56, F.	Vaginal cystocele.	Ellipse of mucous membrane removed from protruding part.	Spasm tore stitches out in few hours; granulation.	Recovery.
64	B., 56, F.	Vaginal cystocele two months later.	Ellipse of mucous membrane from protruding part.	Primary union.	Recovery. Still has some cystocele.
65	B., 42, F.	Bilateral lacerat'n of cervix uteri.	Repair of gaps.	Primary union.	Recovery.
66	I. L., 26, F.	Fibroid of left labium major.	Incision 2½ inches long.	Wound left open; granulated.	Recovery.
67	W., 35, F.	Stricture of rectum following tuberculous ulcer.	Divulsion of 3½ inches of rectum; tuberculous tissue scraped out.	Granulation.	Recovery. Death nearly year later, from tuberculosis of lungs.
68	Van O., 40, F.	Fistula in ano; wide pocket, 4 inches deep.	Long incision; pyogenic membrane dissected out; deep sutures.	Primary union, except ab't external drainage-op'ning.	Recovery.
69	M., 19, F.	Fistula in ano; tuberculous ulcer.	Long incision; pyogenic membrane and ulcer removed; sutures.	Primary union, except at external drainage.	Recovery.

* Previously reported in "New England Medical Monthly."

TRUNK, LOWER SEGMENT—(*Concluded*).

№	Name, age, and sex	Case.	Operation	Intermediate result.	Final result.
70	W., 43, F.	Fistula in ano.	Removal of pyogenic membrane; sutures.	Primary union.	Recovery.
71	D. W., 22, M.	Multilobular papillary tumor of anus, fist size.	Removal of tumor.	Granulation of wound (left open).	"
72	P., 2, F.	Imperforate anus; rectum had small opening into vagina only.	Incision from vagina to coccyx; end of gut brought down and sutured in proper place; vagina and perineal body built up.	Primary union, except where two stitches gave way.	"
73	H. B., 47, M.	Internal piles.	Ligation and removal.	Granulation.	"
74	T., 35, M.	Internal and external piles.	Ligation and removal.	Granulation.	"
75	S., 36, M.	Internal piles.	Ligation and removal.	Granulation.	"
76	C., 64, F.	Coccygodynia.	Removal of coccyx by long incision.	Primary union.	Recovery; relief from symptoms.
77	B., 40, M.	Varicocele, very large.	Excision of mass of veins by long incision.	Primary union.	Recovery.
78	J. F., 52, M.	Fibroid induration of penis.	Amputation of half of penis.	Primary union.	"
79	H., 49, M.	Hydrocele of left tunica vaginalis; sac "cured by injection"; was as large as a turkey's egg, and solid.	Removal of sac and atrophied testicle.	Primary union, except at drainage-opening.	"
*80	C. C., 12, M.	Hydrocele of left tunica vaginalis; right testicle undescended.	Removal of sac entire and unbroken, without injury to testicle or cord.	Primary union.	"
81	H., 35, M.	Hydrocele of left tunic, size of large hen's egg; and of right tunic, size of butternut.	Von Bergmann's operation through one incision.	Primary union, except at drainage-opening.	"
82	B., 40, M.	Close stricture behind triangular ligament; anterior stricture at 4½ inches.	External perineal urethrotomy, without guide; internal urethrotomy.	Granulation; wound left open.	"
83	F. S., 36, M.	Close stricture at triangular ligament; infiltration of urine into perinæum and buttocks.	External perineal urethrotomy; no guide; long incisions in buttocks.	Granulation; closure of all wounds except small pyogenic fistula of buttock.	Recovery; pyogenic fistula remained until death 5 months later, from tuberculosis of lungs.
84	E., 21, M.	Hypospadias; urethra undeveloped for 2½ ins., leaving very narrow, inelastic channel.	Internal urethrotomy.	Granulation.	Recovery.
85	M. S., 16, F.	Pelvic abscess; small opening into neck of bladder.	Urethra dilated; abscess cavity widely dilated at opening; drainage.	"	"
86	R. K., 35, M.	Urethral strictures at 2½ and 4 ins. from meatus.	Internal urethrotomy, including meatus.	"	"
87	N., 26, M.	Strictures at 1½ and 4½ ins.	" " "	"	"
88	E. S., 26, M.	Strictures at 1 and 3 ins.	" " "	"	"
89	B., 23, M.	Strictures at 1½ and 4 ins.	" " "	"	"
90	Clinic, 25, M.	Strictures at 2 and 3½ ins.	" " "	"	"
91	W. N., 32, M.	Strictures at 1½ and 4 ins.	" " "	"	"
92	K., 43, M.	Strictures at 2½ and 4⅝ ins.	" " "	"	"
93	Clinic, 30, M.	Strictures at 2½ and 4 ins.	" " "	"	"
94	F. D., 44, M.	Strictures at 1½ and 3 ins.	" " "	"	"
95	G., M.	Strictures at 1½ and 4 ins.			
96	B. B., 32, M.	Stricture at 3¾ ins.	" " "	"	"
97	F., 45, M.	Stricture at 3 ins.	" " "	"	"
98	E. A., 26, M.	Stricture at 2½ ins.	" " "	"	"
99	H., 34, M.	Stricture at 4 ins.	" " "	"	"
100	T., 37, M.	Stricture at 3½ ins.	" " "	"	"

SUMMARY.

Whole number	100	Cases in which the wounds were purposely allowed to heal by granulation	46
Cases in which an attempt at gaining primary union was made	64	Cases with intercurrence of pyæmia, septicæmia, erysipelas, or tetanus	0
Cases in which primary union was obtained in the whole or greater part of the wound (exceptions, Nos. 57, 63, and 56)	61	Deaths resulting from operation (No. 56)	1

* Previously reported in "New England Medical Monthly."

not quite its full normal extent on coming out of the ether, and the articulation of the left side continued to fulfill its function without trouble afterward.

In the case of multiple sarcoma of the neck (No. 7) the walls of the large blood-vessels were involved in the substance of the new growth, and, being situated deeply out of sight, it was not possible to ligate them before removal of the larger part of the tumor. In trying to separate the external carotid with my finger the brittle walls gave way, and, placing one finger upon the spouting openings, an attempt was made to rotate the tumor so that the vessel could be ligated. This movement ruptured the internal carotid artery and the internal jugular vein at their points of entrance. All of the opened vessels being out of sight, there was a furious rush of blood for an instant until I had placed a finger on each opening. The assistants, Dr. Wheeler and Dr. Hill, of Farmerville, N. Y., then separated the tumor from its attachments and the vessels were ligated. No external jugular vein could be found, and the blood circulation to the left hemisphere must have been limited to the vertebral and

profunda cervicis vessels. After the operation the entire right side of the body was paralyzed. The patient recovered the use of the right leg so that she could walk quite well a month later. The right arm and the muscles of the right side of the face are recovering more slowly. She has not recovered her normal mental condition and is simple, using only a few words in conversation.

The club-foot cases (Nos. 23 and 24) illustrate the advantages of the new method of working for clot replacement instead of primary union or granulation. On removing the dressings, the clots, which were purposely allowed to fill the gaping wounds, had formed strong new tissue, and this was covered with epithelium.

Case 32 is interesting in view of the fact that no harm followed ligation of the axillary vein. Dr. Kirkendall, of Ithaca, N. Y., who had charge of the case, writes me that the veins of the arm stood out very prominently for a few days, but that full collateral circulation was soon established.

It requires some courage to direct particular attention to one's mistakes, but case No. 42 is too instructive to pass by without notice. The patient belonged to a markedly tuberculous family. Her abdomen contained several pints of fluid, and she was emaciating rapidly. The subjective symptoms and objective signs led me to make a diagnosis of tuberculosis of the peritonæum—in which diagnosis the family physician concurred. I withdrew the fluid with a trocar and cannula and found it to be of the grayish opaque color characteristic of the fluid of tuberculous peritonitis. I made an exploratory incision; found that the peritonæum looked normal, but that a peculiar mass low down in the pelvis among adherent intestines might pass for tuberculosis of the ovaries and tubes until a better diagnosis was obtained. Some of the mesenteric glands were enlarged and the finger brushed over small nodules that were taken to be tuberculous studdings of the peritonæum. A permanent drainage-tube, which proved to be a failure, afterward was inserted. The patient gained for a few weeks, but fell away again and died, greatly emaciated, four months from the time of operation. A post-mortem specimen of the pelvic mass, sent to Dr. H. M. Biggs at the Carnegie Laboratory, was discovered by him to be a piece of typical papillo-fibromatous cyst.

The case of fibroma which involved the falciform ligament of the liver (Case 45) presented all the clinical features of a case of distension of the gall-bladder with gall-stones before the tumor was removed, and the most distressing attacks of biliary colic had been caused by the pressure upon the common bile-duct.

In the operation for removal of the uterus (No. 54) it occurred to me that a suprapubic incision in connection with the vaginal incisions would allow of more rapid and easy manipulation of the uterus and its appendages, and such proved to be the case. The entire operation ought to be done in an uncomplicated case in twenty-five minutes. Brännekе's uterus tractor is an invaluable instrument in this operation. In another and similar case I should close all wounds completely, instead of leaving the corners of the wound in the vagina open for drainage.

Case 56 was a typical one of cancer of the caput coli. It was a very easy matter to ligate and separate the attached omentum, and to insert the end of the ileum into the invaginated portion of the colon. Given a patient in fair physical condition with a comparatively small portion of intestine destroyed by cancer, and the operation is one of the most promising in our new abdominal work. The patient was very weak, and she died from shock about ten hours after the operation—an accident which would not have happened if resources for relieving the condition of shock had been at hand.

In the two perityphlitis cases (Nos. 57 and 58) the patients were suffering from symptoms of septicæmia at the time of operation. In the first the dullness in the right iliac fossa was not very marked, and the character of the pain and of the vital signs was depended upon for diagnosis. Laparotomy just above Poupart's ligament was made, and peritoneal adhesions were found to be quite firm between the loop of colon and of ileum and parietal peritonæum, which presented. Taking care not to separate adhesions more than necessary, the finger was pushed directly down to the region of the appendix vermiformis, and its withdrawal was followed by a little burst of fœtid, greenish pus and gas, with some fragments which looked like necrotic pieces of the appendix. The cavity was gently washed out with a saturated solution of boric acid, and a very large double drainage-tube was introduced. The patient was much relieved, and continued to improve for five days, when general septic peritonitis supervened suddenly, and the patient died twenty-four hours later. In the second case the dullness in the iliac fossa was very decided, and characteristic symptoms of septicæmia had persisted, according to the history given by the family physician, for a week. The disease had been in progress for two weeks. A long incision, parallel with Poupart's ligament and just above it, evacuated at least two quarts of fœtid pus, containing several round, bean-like masses of fæcal matter and a necrotic piece of appendix. The peritonæum was not opened. The wound was left open, a large glass drainage-tube inserted, and the cavity washed out daily with antiseptic solutions. Nature made no attempt at repair of the wound, and, symptoms of septicæmia persisting, the patient died exhausted three weeks from the date of the operation.

In almost all of the laparotomies no antiseptics were used within the peritoneal cavity, as the peritonæum, on account of its free lymphatic circulation, disposes of microbes so readily that antiseptic solutions are unnecessary, if not injurious, there. Simple hot water was used for cleaning the peritoneal cavity when necessary, or for the purpose of avoiding shock. Although the peritonæum does not need to be handled antiseptically, it is undoubtedly obligatory upon modern surgeons to approach and to withdraw from that membrane under an ambush of the strictest antiseptic methods. Drainage was employed only in Cases No. 42, 46, 53, and 57. The peritoneal margins were always sutured first with Kocher's catgut, the muscular and fibrous tissues were then united with chromic catgut, and the skin and fatty tissues with a third series of Kocher's or chromic catgut. There is good reason to believe that

hernia will not appear at the site of operation in any of these cases.

In the laparotomies in male patients the abdomen was tightly bandaged, as the abdominal respiratory movements in the male introduce an element of danger from which female patients are free.

After a laparotomy had been performed morphine was given a few hours later to quiet restlessness, but was not continued on the second day, and the bowels of all the patients were kept freely opened with hydragogue cathartics, with the help of glycerin enemata when necessary.

Two cases sent for operation were not operated upon, and proved to be more interesting than any of the others for that very reason. Both patients were young women with excessively tender ovaries, and who suffered from ovarian neuralgia, hysteria, headaches, and other neurotic symptoms. My attention having been attracted to the publications of Dr. George T. Stevens on the subject of reflex neuroses from eye strain, the patients were sent to oculists who were familiar with that author's ideas. Both of the patients were found to be suffering from eye strain, and proper treatment of the eyes quickly stopped the hysteria, headaches, and ovarian demonstrations in the worst case, and modified the symptoms decidedly in the other.

In one of the laparotomy cases (No. 48) the patient had been menstruating for several hours before the operation was performed. The Graafian-vesicle sac contained a large, soft blood-clot. Menstruation continued, in a normal way, for five days after the operation.

In an external urethrotomy case (No. 82) the patient's bladder filled with blood-clots after the operation, and these were successfully dissolved out with a pepsin injection by the patient's physicians, Dr. Deane and Dr. Zabriskie, of Greenfield, Mass.

SOME TENOTOMIES FOR THE CORRECTION OF HETEROPHORIA,

WITH RESULTS.

By DAVID WEBSTER, M. D.

(*Continued from page 12.*)

Headaches, Asthenopia, etc.

Case XI.—Nellie C., aged twenty, came to me at the Manhattan Eye and Ear Hospital on February 17, 1888.

For several years she had suffered from severe headaches, which occurred almost every other day. The pain was principally across the forehead, and very seldom extended to the back of her head. The headaches last two or three hours and are usually brought on by reading, but sometimes occur without any exciting cause. She has a great deal of facial neuralgia also. Within the past seven months she becomes sleepy after using her eyes in reading or sewing any length of time. She is very often taken with fainting spells, fainting away and becoming quite unconscious. Eight days ago she had two or three such fainting spells. The first fainting spell was about four years ago, when she was attacked with it while grinding coffee. She has usually had these spells not more than once or twice a month. She was ill during the whole of last summer. She was cashier in a store at the time and got very weak.

R. V. = $\frac{20}{30}$; $\frac{30}{20}$ with + $\frac{1}{72}$. L. V. = $\frac{20}{30}$; Em.

Hyperphoria R. 3°, esophoria 2°, abduction 3°, adduction 16°, sursumduction R. 4°, L. 5°.

February 25th.—Divided the right superior rectus, leaving the hyperphoria exactly corrected. The patient fainted twice during the operation.

26th.—She had some headache after reading this morning.

27th.—Orthophoria, abduction 6°, adduction 16°, sursumduction R. 3°, L. 3°.

March 2d.—Orthophoria.

September 14.—The patient states that she has had no headaches or fainting spells since the operation, a period of nearly a year.

R. V. = $\frac{20}{20}$ —; $\frac{20}{20}$ with + $\frac{1}{60}$ cyl. ax. 90°. L. V. = $\frac{20}{20}$; Hm. $\frac{1}{60}$.

Orthophoria, abduction 5°, adduction 16°, sursumduction R. 3°, L. 3°.

Case XII.—Rev. F. D. G., aged thirty, missionary to China, was referred to me by Dr. E. C. Seguin, with the following letter, dated December 27, 1887: "Rev. Mr. G. has congestive symptoms about the head and a degree of nervous prostration, now relieved. Since eight years he has noticed occipital pain and distress on the prolonged use of his eyes, symptoms suggestive to me of muscular insufficiency in accommodation. He has good vision, and to me his eyes are about emmetropic."

Upon testing Mr. G. I found: R. V. = $\frac{20}{15}$; E. L. V. = $\frac{20}{15}$; Hm. 0·25 D. Hyperphoria L. 1°, esophoria 1°, exophoria in acc. 4°, abduction 4°, adduction 14°, sursumduction R. 3°, L. 2°.

December 28th.—Under homatropine, R. V. = $\frac{20}{15}$ with + 0·50 D. L. V. = $\frac{20}{15}$ with + 1 D. Hyperphoria L. $\frac{1}{4}$°, abduction 7°.

Ophthalmoscopic examination shows physiological excavation of both discs and pulsation of the retinal veins in both eyes. There was no lesion of either eye except a small white spot just above the right macula.

30th.—Hyperphoria L. 1°. *Tenotomy of the left superior rectus*, slightly overcorrecting the hyperphoria.

January 3, 1888.—Abduction 7°.

6th.—Esophoria 2°, hyperphoria L. $\frac{1}{4}$°, abduction 5°, adduction 18°, sursumduction R. 4°, L. 3°. He was instructed to exercise his interni daily with prisms.

9th.—Abduction 1°, adduction 50°, esophoria 6°, in acc. 6°.

13th.—Abduction 5°, esophoria 2° to 5°.

20th.—Abduction 7°, hyperphoria L. 1°. Ordered glasses, R. + 0·25 D., L. + 0·25 D., prism 1°, base down, to wear all the time.

27th.—Abduction 6°, hyperphoria L. 1°. He said he had experienced relief from the use of the glasses, although reading with them for three hours brought on occipital headache, and after continuing the use of them four hours longer the headache was as bad as ever. *Tenotomy of the right inferior rectus*, leaving a slight overcorrection.

February 10th.—He reported that his headache had been better and that he read six or seven hours the day before without headache. The tests show orthophoria. Ordered glasses + 0·25 D., both eyes, without any prism.

March 15th.—The patient says his head symptoms have almost disappeared. For a month or more the eyes have been "sore to the touch," and more or less red, especially on rising in the morning. The redness disappears after a while. He has had these inflammatory symptoms since wearing the glasses. He was now advised to stop wearing the glasses, and the camphor and borax wash was prescribed for him. Examination showed orthophoria.

June 15th.—I met the patient outside my office, and he informed me that he had had no special trouble with his head,

although he had been hard at work for some months, and that he anticipated a speedy return to his missionary duties.

October 2d.—Orthophoria, exophoria in accommodation 6°, abduction 5°, adduction 30°, sursumduction R. 2°, L. 2°. Mr. G. was unavoidably detained in this country. He considers himself greatly benefited by the tenotomies, and is doing full work with his + 0·25 D.

Case XIII.—Miss Carrie M., aged twenty-seven, teacher, American, was referred to me by Dr. J. B. Harrison on March 31, 1888. She complained of frontal headache, and that her "eyes get very tired after reading, and that she requires a very strong light."

R. V. = $\frac{20}{15}$; Em.; L. V. = $\frac{20}{30}$; improved by + 0·50 D. cyl. axis 90°. Hyperphoria R. 1°, exophoria in accommodation 4°, sursumduction R. 3°, L. 2°, abduction 10°, adduction 13°.

Ophthalmoscopic examination shows old corneal opacities of left eye. Ordered for right eye a plane glass, and for left eye a prism 1° base up. Ordered, also, an eye-wash for a slight conjunctivitis.

On May 14th, following, Dr. Harrison wrote: "Miss M. is about the same. She has used the glasses constantly, has faithfully applied the eye-wash, and favored her eyes all a schoolteacher could. She complains still of constant discomfort and imperfect vision."

July 20th.—R. V. = $\frac{20}{15}$; Em. L. V. = $\frac{30}{30}$; made $\frac{20}{20}$ — with + 0·50 D. cyl. axis 90°. Hyperphoria R. $\frac{1}{2}$°, exophoria 3°, in accommodation 4°, sursumduction R. $2\frac{1}{2}$°, L. 2°, abduction 10°, adduction 15°.

21st.—Under atropine, R. V. = $\frac{20}{15}$; E. L. V. = $\frac{20}{40}$; $\frac{20}{30}$ with + 0·50 D. cyl. axis 90°. Hyperphoria 0°, exophoria 2°, sursumduction R. 3°, L. 2°, abduction 9°, adduction 19°.

31st.—Exophoria $\frac{3}{4}$°, in accommodation 5°. Ordered for right eye plane glass and for left eye + 0·50 D. cyl. axis 90°.

August 20th.—Patient says she has had a great deal of pain for the last ten days. It seems to be right across the balls of both eyes. She also has a very annoying *burning* sensation in the eyes, which is worse when she is out in the open air.

Hyperphoria R. $\frac{1}{2}$°, exophoria 3°, sursumduction R. 3°, L. 2°, abduction 10°, adduction 15°.

Tenotomy of right superior rectus, very slightly overcorrecting the hyperphoria and leaving exophoria 1°.

21st.—No hyperphoria, exophoria 1°.

23d.—No hyperphoria, exophoria 1° to 2°. Patient has had no pain since the operation.

30th.—The patient says she has a peculiar feeling in her eyes. She tried to sew, and that feeling came over them and she had to stop. No hyperphoria, exophoria 1°, abduction 10°.

September 13th.—Eyes have the same peculiar feeling, though not so often. No hyperphoria, exophoria 2°, in accommodation 6°, abduction 12°, adduction 15°, sursumduction R. 2°, L. 3°.

Tenotomy of left externus, leaving esophoria 1°, and abduction 6°.

14th.—Orthophoria. Eyes feel very comfortable. To go on with her teaching.

October 2d.—No hyperphoria, exophoria $\frac{1}{2}$°, abduction 10°. The patient volunteers the statement that for several years she has been subject to attacks of nausea and vomiting. These attacks have been worse in the last two years. She has had only one attack since the tenotomy, and that immediately after.

Case XIV.—Miss Sadie B., aged twenty-seven, came to my clinic at the Manhattan Eye and Ear Hospital on April 11, 1887, with granular lids and pannus of three years' standing. R. V. = $\frac{20}{200}$; Hm. $\frac{1}{36}$. L. V. = $\frac{20}{40}$ with + $\frac{1}{40}$ c. axis 90°.

January 23, 1888.—The trachoma and pannus have been cured for some time, but with resulting corneal opacities. For more than a year she has had almost constant pain through her temples and in the back of her eyes. Her eyes feel as if they were "rolling about," even when closed. R. V. = $\frac{18}{200}$; no improvement with glasses. L. V. = $\frac{20}{40}$; no improvement with glasses. Hyperphoria L. 2°.

25th.—Hyperphoria L. 2°. *Tenotomy of left superior rectus*, making an accurate correction of the hyperphoria.

26th.—The hyperphoria remains corrected.

27th.—Hyperphoria L. 1°. The patient states that she has had less headache since the operation, and that the rolling sensation has disappeared.

February 3d.—Hyperphoria L. 1°. The headaches are better.

13th.—Hyperphoria L. 1°. The eyes still roll some, but within the last week there is less pain back of them.

29th.—Hyperphoria L. 1°. The patient says the pain in the left eye is less, but as bad as ever in the right.

March 9th.—Hyperphoria L. 2°, exophoria, 3°. Her eyes have felt very well up to to-day, when both "have hurt her a great deal."

20th.—Hyperphoria L. 3°. *Tenotomy of right inferior rectus*, correcting the hyperphoria.

May 25th.—Orthophoria; considerable conjunctivitis. There has been no sensation of rolling since the last operation, but the eyes feel sore and ache and tire easily.

Case XV.—Josephine C., aged twenty-three, came to my clinic at the Manhattan Eye and Ear Hospital complaining of having been disturbed for the last two years by "wavy lines, up and down," which appeared at a distance of three or four feet out, on either side of the head.

September 9, 1887.—R. V. = $\frac{20}{70}$; $\frac{20}{50}$ with + $\frac{1}{14}$. L. V. = $\frac{20}{20}$; Hm. $\frac{1}{18}$. Exophoria 5°, in accommodation 9°, abduction 2°, adduction 6°, sursumduction R. 16°.

September 12th.—Hyperphoria R. 12°, exophoria in accommodation 9°.

November 2d.—Tenotomy of right superior rectus. After the tenotomy there remained hyperphoria R. 3°, exophoria 3°, in accommodation 3°, sursumduction R. 9°, abduction 8°, adduction 7°.

7th.—Hyperphoria R. 3°, esophoria 2°.

9th.—Hyperphoria R. 5°, esophoria 10°, abduction 10°, adduction 30°, sursumduction R. 5°, L. 6°.

Case XVI.—Mrs. Dr. E. C. H., aged twenty-one, consulted me about her glasses on December 30, 1880. Her myopia came on at the age of eight or ten. She complained that her eyes bothered her when doing fancy worsted work and when reading at night, and she thought she was becoming more nearsighted. She had been subject to sick-headaches and had a peculiar sensitiveness along the dorsal spine. V. = $\frac{20}{200}$ with her glasses, — $\frac{1}{18}$. Ophthalmoscopic examination showed a high degree of compound myopic astigmatism. Homatropine was dropped into both, when we found:

R. V. = $\frac{6}{200}$; $\frac{20}{50}$ with — $\frac{1}{12}$ s. — $\frac{1}{12}$ c. ax. 45°.

L. V. = $\frac{8}{200}$; $\frac{20}{50}$ with — $\frac{1}{11}$ s. — $\frac{1}{16}$ c. ax. 160°.

January 7, 1881.—Ordered:

R. — $\frac{1}{11}$ s. — $\frac{1}{16}$ c. ax. 60°.

L. — $\frac{1}{11}$ s. — $\frac{1}{15}$ c. ax. 160°.

July 21, 1884.—R. V. = $\frac{20}{40}$ with — $\frac{1}{10}$ s. — $\frac{1}{15}$ c. ax. 50°.

L. V. = $\frac{20}{40}$ with — $\frac{1}{12}$ s. — $\frac{1}{15}$ c. ax. 150°.

The above glasses were ordered for all the time.

January 7, 1888.—The patient, having broken her glasses, came to see if any change should be made in them before ordering another pair. She incidentally spoke of her severe and frequent headaches, and I proposed to test the muscular condition of her eyes, which had heretofore been overlooked. I found hyperphoria R. 2°, abduction 9°, no esophoria or exophoria.

9th.—Hyperphoria R. 3°, exophoria 1°, in acc. 14°, abduction 10°, adduction 33°, sursumduction R. 5°, L. 3°.

R. V. = $\frac{20}{20}$ + with − $\frac{1}{10}$ s. − $\frac{1}{15}$ c. ax. 50°.

L. V. = $\frac{20}{15}$ + with − $\frac{1}{12}$ s. − $\frac{1}{24}$ c. ax. 150°.

This patient saw in consultation Dr. W. Oliver Moore, Dr. J. S. Norton, and Dr. George T. Stevens, all of whom found from 6° to 8° of hyperphoria of right eye, and all of whom advised its correction by tenotomy. Dr. Moore found that the red glass over one eye brought out vertical diplopia.

January 28th.—Tenotomy of right superior rectus, Dr. Harwood and Dr. Gruening being present. Immediately before the operation the hyperphoria was 8°, immediately after it was less than ½°. There was an unusual amount of bleeding under the conjunctiva.

The next day I visited this patient at her house and found her reading the newspapers.

30th.—She called at my office, was examined, and then went down town.

31st.—Hyperphoria R. 1°.

February 9th.—Hyperphoria R. 3°. She had a severe headache a week ago—the only one since the day after the operation

June 2d.—Hyperphoria R. 1°. The patient had a severe attack of *erythema nodosum* coming on soon after her last visit to my office and confining her to bed for several weeks. She has had only two headaches—one eight weeks ago and one yesterday.

September 13th.—Hyperphoria R. 3°. She has suffered a good deal with facial neuralgia through the summer. She had a headache caused by a long ride on the rail-cars.

23d.—Tenotomy of left inferior rectus, leaving a correction of the hyperphoria. The bleeding was excessive, as before.

24th.—Confined to her bed with a severe cold and bronchitis.

25th.—Is better, though still confined to her room.

26th.—Hyperphoria R. ½°.

October 5th.—Hyperphoria R. 2°; has had no headache or neuralgia since the attack she was suffering from at the time of the last operation.

Case XVII.—Dr. W. S. K., aged thirty-two, consulted Dr. C. R. Agnew on April 25, 1877. He stated that he had no trouble with his eyes until September, 1876, when neuralgic pains about the root of his nose set in while reading. Then there was a feeling of severe tension over his brow while reading. He used belladonna ointment over his brows until his accommodation grew weak and he had to give up reading altogether. He then became excessively nervous all over. He consulted Soelberg Wells, who dilated his pupils and found his fundus normal, but that he had Ht. $\frac{1}{30}$, each eye. He has worn + $\frac{1}{30}$ constantly since.

Dr. K. says his eyes first "broke down" while working all day with the ophthalmoscope and microscope, and then reading late at night. At Christmas he observed that he would become worse when the gas was lighted. He went to church on one occasion and the bright light caused great infra-orbital neuralgia and neuralgia of the third division of the fifth nerve. This has been confirmed a dozen times. Reading or walking in bright sunlight invariably brings on pain in the inferior maxillary region, the pain being more especially referred to the front teeth below. His teeth were never tender in mastication, and he has only one carious tooth, the first molar on the right side, and that is well filled. He is troubled with spasms about his internal canthi when he lies down. His digestion seems to be good. Never had venereal disease. His father was rheumatic, and perhaps gouty. He says he is as nervous as a hysterical woman. He jerks and starts when he goes off to sleep. He suffers from sciatica of the left hip, but attributes that to a fall from a horse when a boy.

V. = $\frac{20}{30}$ each with + $\frac{1}{24}$. No insufficiency.

Ophthalmoscopic examination gives him excruciating pain, lasting twenty-four hours or less.

The patient was referred to Dr. E. C. Seguin for an opinion. Dr. Seguin wrote:

"*April 25, 1877.*—Dr. K.'s case has seemed very interesting to me. I am disposed to look upon his hyperæsthesia (face and limbs) as due primarily to insufficient nutrition. He has worked hard and used a diet which I look upon as perfectly fitted to develop anæmia and neuralgia. I would suggest beefsteak and roast meats twice a day, ale or claret for dinner, and not much starchy food. Thompson's solution of phosphorus may also do good, and relief may be had by the positive pole of the galvanic battery. I don't find the usual symptoms of asthenopia."

26th.—Hm. $\frac{1}{24}$ each. Cooper and Wells and Purvis, of London, all examined his eyes under atropine and found that his Ht. was + $\frac{1}{24}$.

April 19, 1887.—The patient returns to me with a letter from Dr. A. W. Calhoun, of Atlanta. He stated that he got no relief from his glasses, and finally discarded them altogether. Since ten years ago he has suffered agony every hour that he has been awake, and he has been kept awake many nights with pain through the temples, through the root of the nose, and through the teeth and malar bones. The main pain is through the malar bones and nose. No pain in the top of the head or in the occipital region.

R. V. = $\frac{20}{20}$ − ; $\frac{20}{20}$ with + $\frac{1}{40}$.

L. V. = $\frac{20}{20}$ − ; $\frac{20}{20}$ with + $\frac{1}{48}$.

No hyperphoria, esophoria 2°, abduction 2°, adduction 12°.

May 7th.—Esophoria 4°, in acc. 0°, hyperphoria R. 1°, abduction 4°, adduction 13°, sursd. R. 0°, L. 0°.

The patient was now referred to a physician skilled in diseases of the nose, who found that he had a deviated septum, and operated upon it. He also operated upon his hypertrophied turbinated bone, but without much apparent benefit.

12th.—Tenotomy of right internus, leaving orthophoria, with abduction 8°, as found on testing half an hour after the operation.

13th.—Went to bed last night with a freedom from pain which he has not experienced for years. Esophoria 4°, abduction 8°.

21st.—Orthophoria, abduction 7°, adduction 19°. Much improved.

April 2, 1888.—The patient writes: "I have done a hard winter's work in the college and with my practice, and my eyes have held up very well."

Case XVIII.—J. P. S., aged twenty-five, came to the clinic at the Manhattan Eye and Ear Hospital in November, 1887, complaining of an almost constant pain in both eyes. He was a theological student, and the pain was much worse at night after studying all day. His eyes felt hot and inflamed, and the heat of the fire seemed to aggravate the condition. We found:

R. V. = $\frac{20}{20}$; $\frac{20}{10}$ with + $\frac{1}{60}$ c. axis 75°.

L. V. = $\frac{20}{20}$; $\frac{20}{10}$ with + $\frac{1}{60}$ c. axis 105°.

Abduction 6°, adduction 6°, sursd. R. 2°, L. 2°.

The above glasses were ordered for constant use.

December 27th.—The symptoms are only partially relieved by the glasses.

Under atropine:

R. V. = $\frac{20}{30}$; $\frac{20}{10}$ with + $\frac{1}{48}$ c. ax. 75°.

L. V. = $\frac{20}{30}$; $\frac{20}{10}$ with + $\frac{1}{48}$ c. ax. 105°.

Abduction 9°, adduction 8°.

Put on prism exercises daily of his interni.

28th.—Adduction 13°.

29th.—Adduction 14°.

30th.—Adduction 19°.

31st.—Adduction 23°.

January 1, 1888.—Adduction 28°.

2d.—Adduction 56°.

4th.—Adduction 90°.

5th.—Adduction 108°.

6th.—*Tenotomy of right internus*, leaving abduction 8°, with exophoria 2°.

7th.—Abduction 8°, esophoria 3°, adduction 58° prisms over one eye, 108° prisms over both.

13th.—Orthophoria, abduction 8°, adduction 120°.

The patient now uses his eyes in studying without pain, and expresses himself as satisfied with the result.

March 1st.—The patient says his asthenopic symptoms are now as bad as ever.

Orthophoria, abduction 7°.

Ordered the cylindrics which corrected his astigmatism under atropine for constant use.

28th.—He still has some pain in his eyes, though not so severe as formerly.

Case XIX.—B. M. G., aged twenty-two, consulted Dr. Agnew and myself, on October 27, 1887, on account of his eyes. He was a theological student, and had got so that he could not read "any length of time," with or without glasses, without bringing on headache and nausea. His glasses, which were ordered by Dr. Culver, of Albany, and were a good correction, were:

R. + 0·75 D. cyl. ax. 45°.

L. + 0·50 D. cyl. ax. 150°.

These glasses raised his vision from $\frac{20}{40}$ to $\frac{20}{20}$ with his right eye, and from $\frac{20}{30}$ to $\frac{20}{15}$ with his left eye.

Ophthalmoscopic examination showed physiological excavation and venous pulsation of both.

Hyperphoria R. 1°, esophoria 4°, abduction 4°, adduction 30°, sursd. R. 1°.

October 28th.—Under homatropine:

R. V. = $\frac{20}{30}$; $\frac{20}{15}$ with + 0·75 D. axis 45°.

L. V. = $\frac{20}{40}$; $\frac{20}{20}$ with + 0·50 D. axis 150°.

Abduction 3°, adduction 9°, esophoria 9°, with or without his glasses.

31st.—Dr. Agnew did a careful tenotomy of the right internus at the Manhattan Eye and Ear Hospital. Immediately before the operation he had esophoria 6°, abduction 5°, adduction 25°, hyperphoria R. 1°, sursd. R. 2°, L. 1°.

November 3d.—Esophoria 5°, hyperphoria R. 1°, abduction 6°, adduction 25°, sursd. R. 2°, L. 2°.

9th.—Esophoria 2°, abduction 5°, adduction 32°, sursd. R. 2°, L. 2°, hyperphoria 0°.

January 18, 1888.—Esophoria 2°, abduction 4°, adduction 43°. No hyperphoria.

19th.—No hyperphoria, esophoria 5°, abduction 5°.

20th.—Muscular conditions unchanged. The patient can now do near work for more than an hour without discomfort.

March 13th.—Mr. G. writes: "Before I went to the hospital I got so I was unable to read fifteen minutes without severe headache and a peculiar feeling that seemed to prevent my brain from operating. Sometimes this was accompanied by nausea, and I was under a constant nervousness that was very trying. For a time after the operation was performed the headaches continued. Then they gradually decreased until at the present time I am able to use my eyes for from two to three hours with very little unpleasantness. For the past three weeks I have been assisting in revival services, and have during that time done the study and work required to get up a sermon without once thinking of my eyes."

May 29th.—Esophoria 4° to 10°, abduction 5°, adduction 90°, hyperphoria 0°, sursd. R. 2°, L. 2°.

As there was some return of the asthenopic symptoms, I now *divided the left internus*, leaving abduction 8°, with esophoria 12°.

30th.—Esophoria 14°, abduction 5°.

31st.—Esophoria 4° to 9°, abduction 7°.

August 24th.—A letter from Mr. G. says: "My eyes are now in a condition of orthophoria. Of prisms, base out, I can overcome as much as ever; base in, I have gone as high as 10°, but that varies. I have more use of my eyes than just before the last operation. I can use them for a couple of hours a day for a week or more, and then they gradually run down, and I have to rest them again."

(*To be continued.*)

A REPORT OF A CASE OF SUPRA-ACROMIAL DISLOCATION OF THE CLAVICLE

IN WHICH AN EXCEPTIONALLY GOOD RESULT WAS OBTAINED BY A SIMPLE METHOD OF TREATMENT.

By CHARLES A. POWERS, M. D.,
SURGEON TO OUT-PATIENTS, CHAMBERS STREET HOSPITAL.

Upward dislocation of the outer end of the collar-bone is of such frequent occurrence that no reference need be made to its causes or its evidences. Its treatment is, however, of exceptional interest. Complete retention of a proper position after thorough reduction is a matter of no

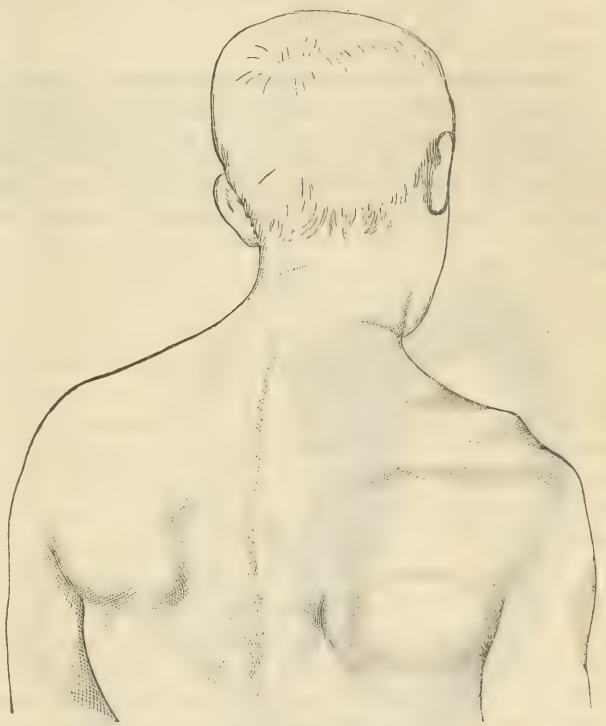


Fig. 1.

little difficulty, and I think that surgeons agree that in very many cases a certain amount of deformity persists even though the functions are completely restored. In the male this loss of contour is of little moment, but to the young woman whose shoulders adorn society it is a matter of no inconsiderable importance.

Reference to the cuts will show that the patient, whose

history is briefly appended,* presented an unusually marked degree of deformity. His cure was no less exceptionally perfect.

T. F. K., an elevator boy, twenty-three years of age, on the afternoon of October 7, 1888, fell forcibly to the floor, striking heavily on the postero-external aspect of the right shoulder. Half an hour thereafter he sought treatment at the Chambers Street Hospital.

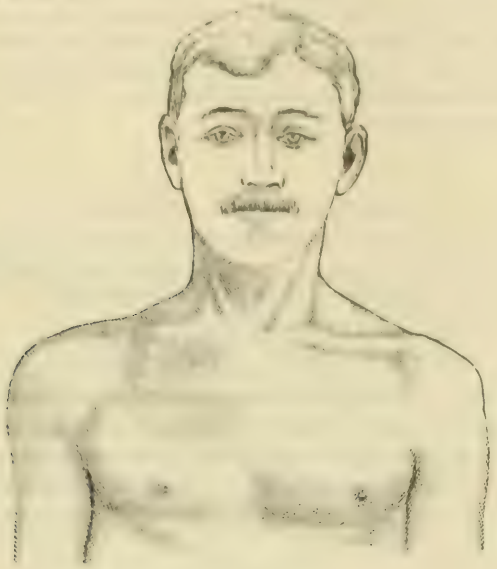


Fig. 2.

Examination revealed a complete supra-acromial dislocation of the right clavicle. The shoulder fell downward, slightly inward, and forward, and was the seat of almost complete disability. The outer end of the clavicle rode on the superior surface of the acromion, and its articular surface could plainly be felt. The long axis direction of the collar-bone differed but slightly from that exhibited by its fellow. The deformity is very well shown in Figs. 1 and 2.

The upper third of the arm being firmly grasped, the humerus could be used as a lever with which to pry the shoulder up and out. The deformity being very thoroughly reduced, Dr. Harris, the house-surgeon, applied a plaster dressing as advised by Dr. L. A. Stimson.

A small, firm pad was placed over the outer end of the clavicle.

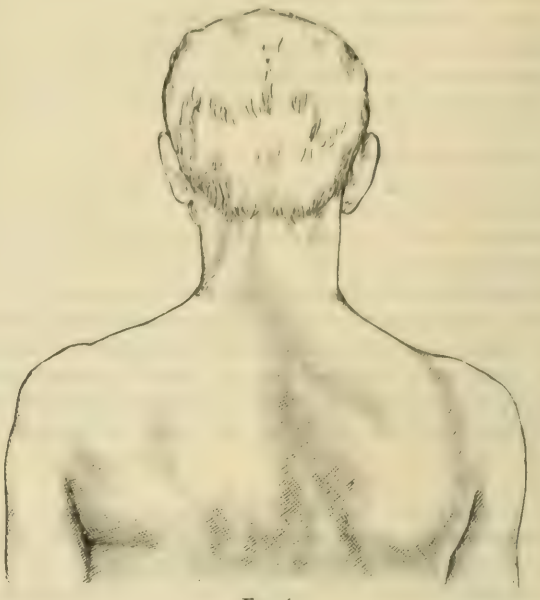


Fig. 4.

A strip of rubber plaster, three inches in width, was applied beneath the flexed elbow and carried up the back of the arm over the outer end of the clavicle to the front of the chest, up the front of the arm, and over the clavicle to the back of the



Fig. 3.

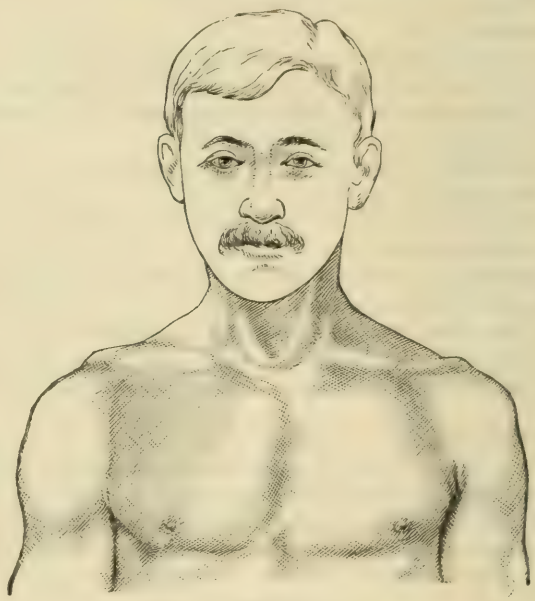


Fig. 5.

chest. (A glance at Fig. 3 will show that the plaster, when firmly applied in the manner described, holds the shoulder up and the collar-bone down.) The elbow was adducted to the chest and a roller bandage carried about the body.

* This patient was exhibited before the Surgical Section of the Academy of Medicine, November 12, 1888.

The dressing was left in place ten days, removed, the position of the parts noted as perfect, and the dressing reapplied and left on until the twenty-seventh day. That the contour of the parts was restored perfectly is shown in Figs. 4 and 5. Ten days after removal of the dressing the functions were in every way complete, and the only difference between the joint and its fellow was found to be a moderate degree of thickening on the affected side.

18 East Twenty-fourth Street.

ARE QUADRUPEDS SUBJECT TO THE HÆMORRHOIDAL DISEASE?

By WILLIAM BODENHAMER, A. M., M. D.

To those who are in the pursuit of knowledge, it is no less interesting and profitable to observe and to study the origin, primary cause, and development of diseases of animals than of those of man; and it is this very subject that is more especially at this time engaging the profound attention of able men, both in our own and in foreign countries. The writer should therefore not be required to make any apology for introducing the subject particularly comprised in the question, *Are quadrupeds liable to hæmorrhoids?* which some may consider of no practical value or importance whatever; but if such there are, they should know that some of the most eminent men of our profession have not considered the subject of this very question to be beneath their attention and observation. And, furthermore, this is pre-eminently an inquisitive age, and everything pertaining to the science of medicine is being investigated, from the most trivial to the most profound.

Whether quadrupeds are subject to hæmorrhoids is a question which can, in the opinion of the writer, be safely answered in the negative; so that it may truly be said of the animals which live in our midst that while they are subject like ourselves to many analogous diseases, yet there is one very troublesome, distressing, and painful affection universal among us from which they are exempt—namely, the *hæmorrhoidal disease.*

This question, however, is one which can only be decided by observation and by pathological anatomy; and as a preliminary to such an investigation it will be necessary to explain exactly what the hæmorrhoidal disease in man is, so as to be prepared to ascertain whether such a disease obtains in quadrupeds. This course is the more requisite inasmuch as there are a few diseases which have been discovered in quadrupeds which somewhat resemble hæmorrhoids, and which have been diagnosticated as such by some authors; such are the tumors of the anus and rectum and the hæmorrhages by the same medium which are not hæmorrhoidal; for it is well known that in the human subject such tumors and hæmorrhages occur and are well calculated to be confounded in either case with hæmorrhoids by superficial observers.

Differential Diagnosis.—Now, the hæmorrhoidal disease does not consist, as some authors maintain, of tumors alone, or of hæmorrhage alone; these are the mere accessories; but it consists in reality of an inflamed and relaxed condition of the hæmorrhoidal veins and capillaries of the inferior portion of the rectum from some exciting cause. This is the primary affection. This disease of the blood-vessels, then, may result in tumors, in hæmorrhage, or in both. Indeed, in the opinion of the writer, so far as the structure of the true hæmorrhoidal tumor is concerned, it is always the result of the morbid state of the blood-vessels, and is a regular organized growth caused by the extravasation of blood or serum or both into the cellular tissue, there assuming an organized form. Let it therefore be remembered as a fact that the cellular parenchyma is never absent in true hæmorrhoidal tumors, being essential to their very formation and development. Hæmorrhoidal tumors can easily be distinguished from all other tumors of the rectum and anus; so can the hæmorrhoidal flux be distinguished from all other hæmorrhages from the same organs.

Tumors that are not Hæmorrhoidal.—Next in frequency to the hæmorrhoidal tumors are the circum-anal growths denominated condylomata or polymorphic excrescences of the anus. These are not hæmorrhoidal tumors, although, singularly enough, many so call them. They, however, differ essentially and completely, both in their formation and in their structure, from hæmorrhoidal tumors. Condylomata originate in the cutis about the verge of the anus, and are alone the production of the cuticular covering of the part, without involving the cellular tissue beneath them. While the entero-external hæmorrhoidal tumor is seated in the cellular tissue beneath the skin which it involves, the condyloma is seated only in the skin itself or in the contiguous muco-cutaneous tissue. The condylomata of the anus are often caused by inflammation of the fine and delicate skin and muco-cutaneous tissue about the anal orifice; they are generally the result of friction, compression, contusion, or erosion arising from filth and acrid secretions.

The condylomata of the anus and their treatment are minutely described by Hippocrates ("Hæmorrhoïdibus liber") and by Celsus ("De medicinæ," lib. vi, cap. 18, et lib. vii, cap. 30). Both these illustrious ancients recognized the difference between the hæmorrhoidal tumor and the condyloma.

M. Lieutaud, speaking of tubercles or condylomata of the anus, was aware of the importance of the distinction between them and hæmorrhoidal tumors. He says: "Ces tubercules qu'on doit bien distinguer des hémorroïdes frétries occupent les bords de l'anus" ("Précis de la médecine pratique," tome iii, 12mo, Paris, 1776).

Polypoid Tumors of the Rectum.—Next come the polypoid tumors of the rectum, of which there are many varieties, and which in several respects resemble hæmorrhoidal tumors, and are frequently diagnosticated as such. In origin and structure, however, they differ entirely from hæmorrhoidal tumors. They originate in and are produced entirely by the mucous lining of the rectum, and they are composed of tissue resembling that of the mucous membrane from which they sprang. They are pedunculated, and when large they are generally solitary, but sometimes, when quite small, they are multiple, the mucous membrane being studded with them.

Villous Tumor of the Rectum.—The villous tumor of

the rectum comes next in importance, and is considered a rare disease. This singular growth is liable to be confounded with the hæmorrhoidal tumor. It originates in the mucous membrane of the rectum, and is similar in character to the villous growths of the bladder, and of other mucous surfaces. It generally has a broad base, and sometimes a short, thick pedicle; has a soft and spongy feel, and is of a dark-red color; its growth is slow, and it often attains a large size. It is composed of numerous projecting papillæ or villi, the villous prolongations, which are long and fine, often exceeding several lines in length. In its minute structure it closely resembles the adenomatous or soft mucous polypoid of the rectum. Its principal peculiarity consists in its very remarkable disposition or tendency to bleeding, which takes place within the rectum, without the tumor being protruded, by a more or less constant internal dripping or *stillicidium*, and in this respect contrasts widely with the internal hæmorrhoidal tumor, which frequently never bleeds, even when protruded, and when it does bleed it is only when protruded.

Hæmorrhage of the Rectum.—Bleeding by the rectum sometimes proceeds from other sources besides hæmorrhoids; therefore hæmorrhage from this medium must not be taken alone as a positive evidence that it proceeds from the hæmorrhoidal vessels or from hæmorrhoidal tumors. The bleeding in hæmorrhoids is generally passive, scarcely ever active; the character of the blood is fluid, it is usually of a bright vermilion color, and it may be arterial, purely venous, or a mixture of both; it may be discharged at or immediately after a dejection, and may cover the fæces, but never mixes with them. The bleeding only occurs when the straining efforts are being made to evacuate the bowels, and may be effected by exhalation or exudation through the extremities of the morbid capillaries; or it may flow from one or more points, and be seen to spin out in a fine, continuous stream, as from ruptured vessels; or it may issue from the organized hæmorrhoidal tumors *per saltum*, or in jets—whereas bleeding from the intestines or viscera beyond the rectum is manifested by the blood being dark, coagulated, and mixed with the fæces. When the bleeding is the result of dysentery, the blood is generally mixed with more or less mucus, and attended with pain and tenesmus in evacuating it.

The writer has in the foregoing given an abstract of the hæmorrhoidal disease, and has clearly pointed out those tumors of the rectum and anus, and those hæmorrhages from the same, that simulate hæmorrhoids, but which are not. He will now show that some medical authors and veterinary surgeons declare that animals are subject to and have hæmorrhoids, notably that most noble, assiduous, and intelligent of all animals, the horse; but they do not adduce any positive evidence of the existence of hæmorrhoids in the horse, or in any other animal. It is true, as they assert, that they have occasionally seen tubercles or tumors at the verge of the anus of the horse which they call hæmorrhoids, and that they have also seen in other animals tumors of the rectum and hæmorrhages from the same; but they have not demonstrated, by dissection or otherwise, that such tubercles or tumors were hæmorrhoidal, or that such bleeding proceeded from hæmorrhoids; but seem to know but little of the origin and structure of the tumors, or the character of such hæmorrhages, which they call hæmorrhoidal. It is evident that these authors have not derived their opinions of these tubercles or morbid growths from dissection, but from other sources merely. But no theory, no authority, can be accepted upon this subject unless derived from and founded upon pathological anatomy. The *onus probandi* will therefore devolve upon those who assert that quadrupeds have hæmorrhoids.

Mr. Hill, a distinguished veterinary surgeon of London, says that bovine animals, including both sexes, have hæmorrhoids, either in the form of rectal tumors or rectal hæmorrhage; but he does not give the anatomical character of the tumors or the kind of hæmorrhage; indeed, he gives no description whatever of either one or the other. The tumors may have been rectal polypi and the hæmorrhage dysenteric. He is entirely too indefinite ("The Principles and Practice of Bovine Medicine and Surgery," p. 116, imp. 8vo, London, 1882).

Mr. Armentage, a London veterinary surgeon, says that animals have hæmorrhoids, but he does not verify his declaration by any reasonable evidence; indeed, he says but little upon the subject ("Every Man his own Cattle-doctor," p. 293, 8vo, London, 1882).

Mr. Gamgee also says that animals have hæmorrhoids, but he does not demonstrate it ("Our Domestic Animals in Health and Disease," vol. i, p. 303, 8vo, Edinburgh and London, 1875).

In 1848, at Louisville, Ky., the writer's attention was first called to the subject of hæmorrhoids in quadrupeds by his friend, the late Dr. Nathaniel Field, of Jeffersonville, Indiana, who presented him with several tumors which had been brought to him for examination by a butcher whom he knew, who said he had removed them, with their connection, from the rectum of an ox he had killed, remarking that he thought they were piles, and that all others who had seen them were of the same opinion. The tumors were pyriform in shape and of the size of large almonds, of a purplish color, smooth exterior, and soft feel. They were carefully examined anatomically by the naked eye and by the microscope, and proved to be polypoid tumors of the adenomatous or soft mucous variety. Subsequent to this the writer for several years occasionally observed in the horse the same circum-anal growths, tubercles, elevations, or prolongations of the skin, as described by some veterinary surgeons, but he was always of the opinion that they were polymorphic excrescences of the anus, the same as in the human subject. This fact he was on one occasion able and fortunate enough to verify by carefully examining, by dissection, three such preternatural growths taken from the dead body of a horse. They had been noticed for years previous to the death of the animal, and always declared to be hæmorrhoids. The tumors were located at the verge of the anal orifice, of different forms, of the size of pullet's eggs, of a pale-red color, and a hard and firm feel. They consisted of a highly condensed, thickened, and hypertrophied condition of the common integument of the part, and proved to be condylomata and not hæmorrhoidal tumors.

The learned veterinary surgeon, Professor Gohier, of Lyons, France, considers that some animals are sometimes affected with hæmorrhoids, as he has occasionally seen what seemed to him to be hæmorrhoids in the horse. He says: "It is a tumefaction, of a pale-rose color, which immediately appears at the internal face of the rectum, and which projects more or less outside of the anus. This swelling, which has quite a resemblance to polypoid tumors, is often divided into small portions of the size of small hen's eggs. It appears to consist of a lymphatic substance, interposed in considerable quantity between the mucous membrane and the epidermis at the end of the rectum. This disease does not appear to have yet been described. May not these tumors be hæmorrhoidal mariscas?" ("Mémoires et observations sur la chirurgie et la médecine vétérinaires," tome i, p. 326, Paris, 1813). The tumors described by Professor Gohier were evidently either condylomatous or polypoid, and not, according to his own description, hæmorrhoidal.

Professor Gohier, when speaking in relation to hæmorrhoids in dogs, says: "In more than four thousand dogs, which I have already had occasion to treat, I have not seen a single one affected with hæmorrhoids. The blood which it is not rare to see these animals pass, either alone or with the excrements, is the effect of a dysentery or an inflammation of the intestines, and especially of the rectum, diseases which are frequently fatal" (*op. cit.*).

Professor Chaussier says: "We believe we have once or twice noticed hæmorrhoidal tumors in the anus of the horse" ("Dissertation sur les hémorroïdes," par J. B. Lavedan, 8vo, Paris, 1814).

M. de Montègre at one time thought that he had noticed hæmorrhoids in the horse, but subsequent observations convinced him that he had been mistaken (*op. cit.*, p. 352).

Ætiology.—The question will now be considered why man is subject to hæmorrhoids and why quadrupeds are not. The only reason or cause some authors give why man is subject to hæmorrhoids is the upright position of his body; and the only reason or cause they assign why quadrupeds are not subject to them is the prone position of their bodies. But may not this cause, in either case, be too mechanical, as it were, to be strictly correct?—may it not tend too much to limit the vast resources of nature within the bounds of our own deficient comprehensions?—for it is a well-known fact that there are other causes why man is subject to hæmorrhoids besides the erect posture of his body; so there are doubtless other causes why quadrupeds are not subject to them besides the horizontal position of their trunks. The peculiar manner of their life, which differs so essentially from ours, is, without doubt, the main if not the only additional cause why they are exempt from this disease.

Now, the chief predisposing cause of hæmorrhoids in the human subject, according to some authorities, is an anatomical one; and, in order to fully estimate the importance of the subject, this cause must be explained anatomically, which is the more necessary inasmuch as just the reverse of it obtains in quadrupeds; and in this explanation regarding the large vascular supply to the rectum, it will be perceived that hydraulics plays the most important part.

Anatomists know that in the inferior portion of the rectum in the human subject a large number of hæmorrhoidal veins exist; these veins are comparatively of large size; they occupy a peculiar depending position; and they receive but little support from the loose cellular tissue which surrounds them. Together with the foregoing facts we must consider the entire absence of valves in the depending plexus of the vena portæ. These several conditions of the veins of this part consequently tend to a retarded or sluggish circulation, the blood being more or less detained in them and favoring stasis. Whenever the body is erect, the blood therefore accumulates in these veins, so that under the most favorable circumstances they are subjected to more strain and pressure than any others of the body, and, in consequence of the want of valves in the portal system, the whole weight of the column of blood in them reaches from the liver or the heart without any interruption downward. These several circumstances act no inconsiderable part in the pathogeny of hæmorrhoids. They necessarily give rise either to hæmorrhage, vascular turgescence, hyperæmia, congestion, or hæmorrhoidal tumors. Indeed, any mechanism whatever which opposes the free circulation of the blood in that hybrid blood-vessel of the liver, the *vena portæ*, may prove a predisposing or an efficient cause of the hæmorrhoidal disease. According to authority, therefore, the depending situation of the veins of the portal system must always be a predisposing cause of hæmorrhoids in man so long as he maintains the erect posture. The absence of this cause in quadrupeds because of the horizontal position of their bodies is not, in the opinion of the writer, sufficient alone to prove that they are on this account entirely exempt from hæmorrhoids, as some authors maintain; but this cause may be a real one, so far as it goes, and have some bearing on the fact that animals are not subject to hæmorrhoids.

The writer will now give the views of the illustrious Boerhaave, who was of opinion that it was entirely owing to the prone position of the bodies of quadrupeds that they were exempt from hæmorrhoids; that this position of their trunk does not allow of the afflux of the blood into the veins of the rectum, as occurs in man, whose body is almost always erect ("Prelectiones academicæ in proprias institutiones rei." Edidit et notis addidit a Albertus Haller. Sec. 112 et sec. 774, 8vo. Gœttingæ, 1739).

The celebrated Morgagni confirms the opinion of Boerhaave with regard to the cause why animals are not subject to hæmorrhoids. He reasons that, in consequence of the great length of the superior hæmorrhoidal vein, it is much more difficult for the blood to be carried upward in this than in the other veins of the vena portarum, especially as the upright posture of the human body requires it, which, without doubt, he says, is one of the reasons why animals are not subject to hæmorrhoids ("De sedibus et causis morborum, per anatomen indagatis," lib. iii, epist. xxxii, art. 10, folio. Venetiis, 1761).

M. de Montègre, who has written an able article on this subject under the head "Hémorrhoïdes animaux" ("Hæmorrhoides bestiarum"), when speaking of the upright post-

ure of man and the depending position of the hæmorrhoidal veins, says: "There is no doubt that the dependent situation of the parts favors the collection of the blood. One may convince one's self of this by trying alternately, allowing the hands to hang down or elevating them above the head; in the former case the veins of the arms will be seen swollen and very salient, while in the other they become empty and disappear very rapidly. There is no one who does not know that the horizontal position very much diminishes the tension and the pain of an engorged member; and what physician can be ignorant of the relief which this position of the body affords in hæmorrhoidal fluxions?" ("Des hémorrhoides ou traité analytique de toutes les affections hémorrhoïdales," p. 351, 8vo, Paris, 1830).

Animals, says the distinguished M. Récamier, are neither subject to hæmorrhoids nor to the other kinds of hæmorrhages which attack man, notably epistaxis, the source of which is in a much more dependent part in them than in him ("Essai sur les hémorrhoïdes," 8vo, Paris, 1800).

M. de Montègre, in reply, says: "Another cause must therefore be assigned for this difference, the more so because, if the animals which we can observe are in fact less subject than ourselves to hæmorrhages, they do not fail, however, to be affected by them, especially those that happen in the sheep, called *le coup de sang*, *le sang de rate*, *le pissement de sang*, etc." (*op. cit.*, p. 351).

Professor Van Buren says: "I do not remember ever having seen an Indian with 'piles,' although in early life I saw something of their ailments; and there is no analogous disease in quadrupeds where the trunk of the body is prone and not upright in position. In view of this 'predisposing cause,' therefore, the disease would seem to be an appanage of civilized humanity" ("Lectures upon Diseases of the Rectum," p. 12, 8vo, New York, 1881).

The writer has often heard that the quadrumanous animals—the monkeys—have hæmorrhoids, but he never saw such a case and has seen nothing authentic on the subject. In examining the mortuary report, as published in the papers, of the late Mr. Crowley, the celebrated chimpanzee of the Central Park, no mention is made of his having suffered from hæmorrhoids, although he appears to have died of a complication of other diseases.

The distinguished anatomist, Douglas, when speaking of the different location of the internal sphincter ani in man and in the dog, says: "In the dog the circular fibers composing the internal sphincter ani do not embrace the extremity of the rectum so high up as in man, and the reason of it is plain, because the pressure and weight of the excrement is not so great on this part in the dog, the position of its body being prone, as it must be in man, whose posture is erect" ("Descriptio comparata musculorum corporis humani et quadrupedis," cap. xxiii, 8vo, Lugduno-Batavorum, 1758).

It will be observed that, according to Mr. Douglas, Nature, for the reasons given, made ample and equal provision for both man and dogs with regard to the different location in each of the internal sphincter of the anus.

The writer will now conclude by remarking that if it is true that the erect position of man is the only predisposing cause why he is subject to hæmorrhoids, and why quadrupeds in consequence of their prone position are not, it affords a strong argument in favor of the Darwinian theory that we were originally quadrupeds—that the position of our bodies was prone, not upright as now. In view of this predisposing cause, it would appear, then, that hæmorrhoids are alone the heritage of man in his present *exalted* posture.

27 East Forty-sixth Street, *November 3, 1888.*

BLACK TONGUE.

By FREDERICK J. LEVISEUR, M. D.

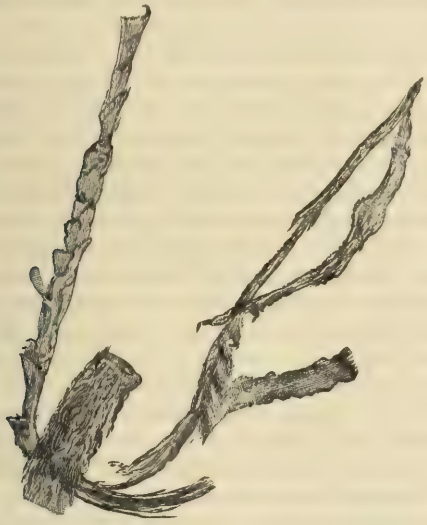
In a recent interesting monograph,* Dr. F. Brosin, of Berlin, has given an exposition of the present state of our knowledge of a subject as yet but little understood—"black tongue."

Lingua nigra, nigrities linguæ, glossophytia, langue noire, nigritie de la langue, schwarze Zunge, schwarze Haarzunge, is a disease characterized by an enormous hypertrophy of the filiform papillæ and their epithelial cover, and a grayish-black or fully black discoloration on the upper surface of the tongue. It usually appears in patches, which look as if covered with black hair or wool, matted together, or as resembling closely a field of wheat thrown down by the wind. Being a purely local disease, without any gravity, it is only liable to cause a feeling of dryness in the mouth of the patient. When it covers the tongue to a large extent, as is sometimes the case, it is extremely annoying on account of the disagreeable-looking discoloration, which often proves refractory even to the most energetic treatment. The duration of the disease may be from ten days to twenty years, or it may come and go for a period of years. Black tongue is one of those rare diseases which are liable to puzzle the physician, who, unaware of its existence, will invariably be inclined to treat the disfiguring discoloration as a trifling matter easily to be got rid of. But he will be surprised to see the patient come back to him after a time with the same amount of "black tongue," but with decidedly less confidence in the ability of his medical adviser. I therefore think it is not only of theoretical but also of practical interest to call attention to this peculiar affection, which may often escape medical observation, and, in fact, is probably not so rare as the statistics seem to indicate. A case of "black tongue" which I have recently seen was in a patient of the New York Hospital, out-door department, to whose abnormal condition of tongue Dr. L. D. Bulkley kindly directed my attention.

A young man, about twenty-eight years of age, came to the skin department with florid symptoms of syphilis. Under adequate specific treatment the maculo-papular eruption which was present promptly disappeared, but numerous mucous patches began to develop on the lips and tongue. These latter proved very refractory to treatment. In spite of the most careful and skillful cauterizations with nitrate of silver and chromic acid and the repeated application of solutions of chlorate of potassium,

* Ergänzungsheft zu Dr. Unna's "Monatshefte für prakt. Dermatologie," 1888.

sulphate of copper, and permanganate of potassium in varying strength, and though internal specific medication and hygienic measures were not neglected, the mucous patches were very slow to disappear, and new ones kept on showing themselves. The affection finally seemed to yield to treatment, there remaining only a diseased spot in the center of the organ of the size of a five-cent piece. When the patient returned a week later his tongue presented the appearance described above. A spot, looking as if covered with short, black hair or wool, was situated in the middle of the tongue, extending a little to the right, irregularly shaped, about an inch in length and three quarters of an inch in width, with its base toward the root of the tongue. Some of the black mass, which was removed with a pair of curved scissors, proved under the microscope to consist of enormously elongated filiform papillæ, covered with hypertrophied epithelial cells, loosely overhanging each other, not unlike an ear of corn the grains of which have been taken out. (See figure.) The unstained specimen had a diffuse sepia-brown color, the epithelia, however, having a darker hue than the underlying connective tissue.



Elongated papillæ covered with hypertrophied epithelia, showing diffuse pigmentation. × 200.

I had no further opportunity of following up the case, but what I had seen of the clinical as well as microscopical aspect of the case was sufficient to convince me that this condition was "black tongue." There are about forty cases of this peculiar disease on record. They include both sexes and all ages, but show that "black tongue" principally affects those who are debilitated by age or disease. First described by the famous Rayer in 1835, then by Hyde Salter (London, 1849), Eulenburg (1853), St. Germain (1855), it has been made the subject of observation by Raynaud, Clarke (1873), Féréol (1875) and others, Lancereaux, Dessois in 1878, Rayer (1883), Sell (1885), Schech (1886), etc., and recently by Dr. Brosin as mentioned above. Dr. Solis-Cohen, of Philadelphia, is, so far as I know, the only American writer who has reported a case of "black tongue." In regard to the ætiology of the disease, it has been maintained, especially by French writers, that "black tongue" is caused by the vegetation of a peculiar fungus. Dessois described spores (sporules) of about 0·005 millimetre diameter, surrounding the elongated papillæ principally on their bases. Inoculations of the micro-organisms on the author's tongue, and another on the arm of a patient, had a negative result. Only very large accumulations of these spores exhibited a sepia-brown color. Dr. Brosin, who, like others, found the same micro-organisms, has proved, by carefully cultivating and examining them, that they are a form of *Oidium albicans* poorly developed. The result of his researches is, furthermore, that neither the hypertrophy of the papillæ nor the black color is due to parasitic vegetations.

The black color is caused by the accumulation of pigment, the nature of which is not definitely known. It is (as it was in my case) diffusely distributed, not granular, and of a light-brown color—facts which indicate that it is of that kind of pigment which, not originating from the blood, chemically does not contain iron, but a considerable amount of sulphur. It is probably the same pigment which, as Dr. Unna has shown, produces the black color in comedones or in ichthyosis histrix seu nigricans. The analogy which the latter disease presents with "black tongue" is most strikingly apparent, hypertrophy of the papillæ and horny modification of the epithelial layer forming the main features of both pathological processes. It can not be denied that the drying or oxidizing influence of air, the chemical properties of certain food, and numerous drugs play an important part in bringing about the black color, which (it has to be borne in mind) is absolutely different from a superficial and accidental stain. That the agencies above mentioned are liable to have this peculiar effect only on those places where there is a pronounced degeneration of the papillæ and their epithelia seems to prove that the pathological condition is the *conditio sine qua non* of the black pigmentation. I will conclude these few remarks with the suggestion that there is no reason why the excessive growth of some fungus, traces of which may be found in every mouth, should not act very much in the same manner as chemical preparations, and consequently, in some instances, be an essential ætiological factor.

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LETTER FROM VIENNA.

Congenital Ptosis treated after the Method of Panas.—Prolapsus Recti cured after a New Method.—On Diabetes Mellitus as an Anomaly of Assimilation.—The Formation of Sugar in the Animal Organism and its Importance.—Kraske's Operation.—The late Professor v. Bamberger.

Vienna, *December 13, 1888.*

At a recent meeting of the Imperial Royal Society of Physicians of Vienna, Professor Fuchs showed a case of congenital ptosis which he had treated with success after the method devised by Panas, of Paris. The ptosis in this case was not produced by a congenital paralysis, but was due to the absence or atrophy of the *levator palpebræ superioris.* The speaker maintained that the disease was hereditary, though not in the special case under consideration. He possessed notes of cases in which the disease was hereditary in several generations. A woman

had normal eyes, but her sister suffered from ptosis. The former had a son and a daughter, both of whom suffered from ptosis. Her sister had three children, two of whom had normal eyes and a third was affected with ptosis. The third afterward had first a daughter affected with ptosis, then a son with normal eyes, finally a second son and a second daughter who were subjects of ptosis. The eldest daughter had a daughter with ptosis, a son with normal eyes, and a second daughter with ptosis. The heredity of this disease was thus to be observed through four generations. The result of operation in the case under consideration was one which Professor Fuchs had not hitherto observed. The former methods of operation consisted in shortening the upper eyelid by excision of a segment of the skin with consecutive excision of the *orbicularis palpebrarum* (v. Graefe). This procedure had no good results, as the eyelid became too short. In the case in question, Professor Fuchs had availed himself of Panas's method. A pedicle a centimetre broad was formed out of the skin of the upper eyelid; another segment of skin was formed by two sections parallel to the eyelashes, the lower one of which was made near the upper margin of the pedicle and the superior one above the arch of the eyelashes. This second segment of skin was undermined, and the first-mentioned pedicle was passed through the cutaneous bridge thus formed and attached to the upper margin of the eye. By this operation the eyelid was not only raised and the ptosis thus corrected, but the frontalis was also availed of for the execution of the movements of the eyelid. The operation of Panas had, moreover, the advantage of re-establishing the normal covering-fold of the eye. The operation in the case under consideration was performed six months ago, and, as the patient now saw perfectly well, the success obtained could be looked upon as permanent.

Dr. v. Hochenegg, Professor Albert's assistant, at the same meeting showed a patient, fifty-two years old, who, in 1886, had been successfully operated upon at Professor Billroth's clinic for carcinoma of the rectum, and dismissed cured a month afterward. Prolapsus of the rectum, however, was reproduced in a short time, and gradually increased to such a degree that reposition could be made by the attending physician only in the knee-elbow position. The patient was very much troubled by involuntary defecations and the copious discharge of pus. In order to remove these conditions, the speaker performed the following new operations: He made a section behind the orifice of the anus, enucleated the coccyx, resected the sacrum, and established an *anus præternaturalis sacralis*. The prolapsus itself was cut through and removed, the opening of the peritonæum was closed by sutures, and tampons of iodoform gauze were introduced into the anus. On the second day after the operation a serious accident occurred. The patient had, during micturition, pressed out a part of the convolutions of the small intestine, and thus presented the symptoms of severe incarceration. The prolapsed intestine was cleaned with a warm solution of salicylic acid, dusted with iodoform powder, and reposition was made in the knee-elbow position. The patient soon recovered and was dismissed as cured on the twenty-ninth day after operation.

At a recent meeting of the Vienna medicinisches Doctoren-Collegium, Professor Seegen read a paper on diabetes. According to the opinion of Claude Bernard, the sugar in the animal organism was formed by a ferment contained in the liver, which changed the glycogen of the liver into sugar. This opinion of Claude Bernard was opposed by several other investigators. Among them was Pavy, who stated that the formation of sugar was a post-mortem phenomenon, and that no sugar was ever formed *in vivo*. The experiments which Professor Seegen had carried out, together with Kratschina, of Vienna, showed that there was neither a ferment nor any acid present in the liver which would be able to transform glycogen into sugar. Professor Seegen, moreover, tried to find out whether the glycogen of the liver could be regarded as the material for the formation of sugar. With this object in view, he made the following experiments: He excised pieces of the livers of rabbits, cats, dogs, calves, and a fox at different intervals of time, and compared the quantity of the sugar contained in the liver of the living animals with that which had been found at a certain time after the excision. The results showed that the parts excised from the living liver invariably contained sugar, and the quantity of the sugar was found gradually to augment from the date of the excision. The quantity of the sugar detected in the liver ten minutes after the excision was $\frac{1}{10}$ of one per cent., but an hour later it was found to be $\frac{5}{10}$ of one per cent., and after seventy-eight hours the quantity amounted to 3 per cent.; the quantity of the glycogen, however, did not change. Thus the discovery of Claude Bernard that sugar was formed in the liver was confirmed, but the supposition that the sugar was formed from glycogen was refuted. The speaker, furthermore, examined the quantity of the sugar which was contained in the portal vein, and that contained in the hepatic veins, as this was the fundamental experiment of Claude Bernard. These experiments were performed on more than a hundred living dogs, and the result was that the quantity of sugar contained in the blood of the hepatic veins exceeded that of the portal vein by 50 per cent., and sometimes even by 100 per cent. and 200 per cent.

In order to appreciate the importance of the formation of sugar in the organism thoroughly, Professor Seegen tried to determine the quantity of sugar which was formed in twenty-four hours. Direct measurement showed that in a dog weighing forty kilogrammes, three hundred litres of blood circulated through the liver in twenty-four hours, and, as the blood of the hepatic veins contained at least $\frac{1}{10}$ of one per cent. of sugar, it thus became evident that three hundred grammes of sugar were formed in the liver and introduced into the circulatory system. As the quantity of the blood was in a direct proportion to the weight of the body, it was to be inferred that in the case of a man weighing eighty kilogrammes about six hundred grammes of sugar were conveyed to the circulatory system in the course of twenty-four hours. In regard to the question as to from what material sugar was formed, Professor Seegen stated that the results of his various experiments showed that the animal organism formed sugar out of fat and albuminates. There was no doubt about the fact that our mixed food formed sugar which underwent the same changes in the organism as coal in the machine—namely, it became oxygenated and thus produced warmth and work. The fact that the blood always contained a certain quantity of sugar (from 0·13 per cent. to 0·15 per cent.) was an evidence of the combustion of the sugar. The experiments of Professor Seegen also showed that the combustion not only took place in the blood itself, but that the oxygenation was without doubt present in all the tissues.

In the second part of his paper on diabetes mellitus as an abnormity of assimilation, Professor Seegen discussed the different forms of diabetes. He mentioned two forms—first, the mild form, which was to be observed only when amylaceous food had been taken, and, second, the severe form, which occurred under all conditions, even when no amylaceous food had been taken by the patient. The latter form was most frequently observed in youth, whereas the former was characteristic of old age. In regard to sex, the majority (about 70 per cent.) was represented by male patients. This disease was more frequently met with in Jews than in people of other nations. Among the eight hundred cases of diabetes which the speaker had observed, 25 per cent. were Jews. Pavy had made the same observation and was

of the opinion that we had, in this respect, to do with a peculiarity of the race. Professor Seegen, however, differed on the ground that such an observation could not be made among the other nations of the Semitic race. He was rather inclined to believe that this fact was connected with the conditions of life and the whole history of the Jews; the disease was closely related to the nervous system, and it could fairly be imagined that the Jews' everlasting struggle for existence had predisposed them to diseases of the nervous system.

Respecting the duration of the disease, it could be stated that the severe form was of shorter duration than the mild one, and that at the utmost it lasted from four to five years. In exceptional cases diabetes had also an acute course, and disappeared in a few weeks. The mild form lasted, on an average, for thirteen years. The occurrence of diabetes in several families was a very important fact. In some of them diabetes and mental diseases alternated with each other. In 90 per cent. of the cases of diabetes the nervous system was not normal. With reference to the prognosis of diabetes it was of importance to know with what form of the affection we had to deal. For this purpose Professor Seegen advised physicians first to examine the urine and next to prescribe for the patient an absolute meat-diet for two days; the urine should then be examined again. If no sugar was found in the urine after these two days, the form of the diabetes was mild; when sugar was found to be present, though in small quantities, the form was severe. Sometimes it happened that but small quantities of sugar were detected in the urine, and that the diabetic symptoms were rather considerable; such cases were to be regarded as nervous diseases and not as simple diabetes.

In regard to the rarer symptoms there were to be mentioned: (1) pruritus vulvæ; (2) eye-diseases; (3) frequent abortion in the case of women; and (4) a peculiar appearance of the tongue.

As to the treatment of diabetes, Professor Seegen said that morphine had an influence only as long as it was taken; the alkaline mineral waters, such as Carlsbad, Vichy, etc., had no effect at all in the severe form; the effect of these waters in the mild form, however, was excellent and of great importance; the assimilation of the amylaceous food persisted also for a long time after the cure. Professor Seegen had not hitherto observed any case of absolute cure of diabetes—that is to say, so that the patient would have been able to eat with impunity as much of amylaceous food as in the healthy condition. With reference to the explanation of the appearances of diabetes Professor Seegen pointed out that, in relation to the two forms, two different processes had been considered. In the mild form the sugar only which had been introduced from without was secreted; in this case the liver had lost its capability of transforming the amylaceous food into sugar; the hepatic cells were affected. In the severe form not only the sugar which had been introduced from without was secreted, but also the sugar which was formed in the organism and which was otherwise conveyed to the blood. In such a case the transformation of the sugar was hindered, and not only a single organ was at fault in causing the disease, but all the cells of the body were affected. This theory was in conformity with all clinical experience.

At a recent meeting of the Imperial Royal Society of Physicians, of Vienna, Dr. Liholzky, assistant to Professor Breisky, showed a patient who, a year and a half before, had been operated upon by Dr. Hochenegg after the method of Kraske for carcinoma of the rectum. The patient had since been free from relapses, and on the 26th of October she was delivered of a child weighing 4,300 grammes. Owing to the operation after the method of Kraske, the pelvic outlet had undergone some changes of form, as the os coccygis was extirpated, the sacrum resected, and the pelvic ligaments and muscles cut through. The rotation of the head of the child during the act of delivery was nevertheless quite normal. This case was interesting because it showed that the rotation of the occiput toward the front took place in the middle of the pelvis, and that the influence which was in this respect attributed to the pelvic outlet had been exaggerated. This case, furthermore, showed that women upon whom the operation of Kraske had been performed were still able to become pregnant.

Professor v. Bamberger, our eminent and ingenious clinician and investigator, succumbed here on the 9th of November to a neoplasm of the lungs. Professor v. Bamberger was born on the 27th of December, 1822, in Prague, where he also took the degree of M. D. In Prague, Bamberger became Oppolzer's assistant, and was, later on, Oppolzer's assistant in Vienna. In 1854 he was called to Würzburg as an ordinary professor of medicine, and in 1872, after the death of his master, Oppolzer, he went to Vienna in the same capacity. There Professor v. Bamberger acted as ordinary professor of medicine and as director of the Second Clinic in the General Hospital until his last illness. Among his chief works may be mentioned "The Diseases of the Chylopoietic System" and "The Diseases of the Heart." The death of Professor v. Bamberger is much lamented by physicians and students as well as by patients.

Tobacco Vertigo.—"Having investigated sixty-three cases of excessive use of tobacco," says the "Lancet," "Decaisne finds forty-nine to be over fifty years of age. More than half the cases presented, besides digestive derangements, alternating constipation and diarrhœa, an exaggeration of the urinary secretion and more or less abundant sweats, insomnia, and palpitation. In thirty-seven cases the smokers pursued the habit fasting, and in these vertigo was present, especially in the morning. The appearance of the vertigo coincides in one third of the cases with the suppression of the profuse sweats and marked diminution of the urinary secretion. Sometimes the vertiginous symptoms have been confounded with those due to cerebral congestion, and even to heart disease. Besides the absolute suppression of the use of tobacco, laxatives, warm baths, magnesia, and bitters are prescribed. Injections of ether subcutaneously also appeared to stop the vertigo in a few minutes."

Double Athetosis.—Although hemiathetosis has received much consideration, neither its pathology nor that of bilateral athetosis is properly understood. In bilateral athetosis, M. Brousse has observed transient contractions causing the foot to change its posture, being alternately like talipes varus and talipes equinus. Oulmont has recorded similar intermittent spasms in hemiathetosis. Articulation is also interfered with, and muscular atrophy may occur, though in double athetosis neither hypertrophy nor atrophy is the rule. A quasi-rhythmic spasm was also noticed in the shoulders in his case by M. Brousse. Tetany is sometimes followed by muscular atrophy. Cerebral wasting is the cause of most cases of bilateral athetosis, and probably this is accompanied by irritation of the pyramidal tracts. In some cases of chronic Bright's disease the atrophy of the brain occurs in patches corresponding to arterial disease.—*Lancet.*

Post-epileptic Exhaustion.—"Hemiplegia, paralysis and diminution of sensation, and perversion of the function of perspiration," says the "Lancet," "have long been known to occur after epileptic discharges. M. Féré has injected into the subcutaneous tissues of epileptic patients seven milligrammes of pilocarpine into the mid-line of the body immediately after a fit, or sometimes in the interval between the fits. Straus had previously employed pilocarpine as a means of detecting nervous degeneration. Féré found that the epileptic patients scarcely sweated at all when the pilocarpine had been injected immediately after a fit, thus pointing to the inference that the nervous centers controlling perspiration had been temporarily exhausted by the epileptic discharge. In hysterical hemianæsthesia, pilocarpine also fails to cause sweating in the anæsthetic areas."

THE
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SPONTANEOUS RUPTURE OF THE RECTUM.

In a recent number of "La semaine médicale" Quénu reports another case of this rare accident to be added to the list already collected by himself and Englisch. This case was that of a woman, aged sixty, thin and cachectic, who had suffered for six years from a prolapse of the rectum which she had always been able to reduce without difficulty. Being very constipated and addicted to the abuse of purgatives, she had frequently passed blood at stool. For six weeks before the accident she had suffered more than usual and had kept her bed as much as her household duties would permit.

On the day of the accident the patient made great efforts to have a passage, and suddenly felt something come out of the fundament, at the same time experiencing a severe pain all over the abdomen and losing a large quantity of blood from the anus. A physician was called at once and contented himself with prescribing a pill, and it was not until the next day that the patient was carried to the hospital.

Quénu, on being summoned, found the woman pale, feeble, and cold, but with her intelligence intact, and answering his questions distinctly but slowly. On raising the chemise, he found between the thighs a loop of intestine nearly a metre in length, shriveled up, escaping from the anus, and presenting by its serous surface. The part furthest removed from the anus for an extent of about 60 ctm. was black, shriveled, withered, and perfectly cold. The rest, composing the two ends of the loop, measuring 15 to 20 ctm. on each side, was swollen, red, bleeding, and marked with grayish spots. Soft adhesions united contiguous portions. The finger in the rectum along the hernial intestine easily reached a perforation in the anterior wall at the level of the *cul-de-sac* of Douglas. The belly was soft, only slightly painful even on pressure, and the pulse 120. The patient was anæsthetized in the ward, all antiseptic precautions being observed. He made a median abdominal incision, and found the intestine not at all distended and Douglas's pouch free from blood. He then surrounded the intestinal loop at the level of the anus with a heavy carbolized silk ligature and resected all the part beyond.

Having washed out the rectum, he passed the ends of the ligature through the rent in the rectum and brought them out through the abdominal wound. After an unsuccessful attempt to suture the rent in the rectal wall, he made the toilette of the peritonæum and carefully fixed with fifteen sutures of catgut the two ends of the resected loop to the lower angle of the abdominal wound. This done, the silk ligature was removed and the two ends of the gut were smoothed down to the level of the skin with the thermo-cautery. The rectum and vagina were stuffed with iodoform tampons, iodoform was sprinkled on the superior angle of the wound, and boric-acid compresses were placed over the artificial anus. The operation lasted an hour. In spite of efforts to revive the patient, she remained with subnormal temperature as before the operation, and died eighteen hours afterward. At the autopsy, a rent of 3 or 4 ctm. in length was found in the anterior wall of the rectum just below the peritoneal *cul-de-sac*. The veins of the rectum were varicose, and on the edges of the rupture the mouths of several torn veins were plainly to be seen. The rectal wall was infiltrated with blood and the mucous membrane presented the appearance of having been dissected up all around the rent.

This, so far as our information extends, is the nineteenth case of this peculiar accident on record, Kelsey ("Diseases of the Rectum and Anus") having previously collected eighteen from all sources. In most of them the pathology was the same as in this—an old prolapsus containing within its peritoneal sac loops of hernial small intestine. Quénu insists that the rupture, as in this case, is due in almost all cases to a previously existing varicosity in the hernial sac which has softened the rectal wall. But the question of treatment is the one of greatest interest, for the accident has generally proved a fatal one; and yet there seems no reason why, under favorable conditions, a patient with this injury should not be saved. The first indication has always been held to be the reduction of the prolapsed gut without laparotomy if possible, otherwise by means of it; and after this the sewing up of the rent in the rectum, also either with or without laparotomy. But Quénu now divides the cases into two classes and states the indications for treatment as follows: The intestine may present an appearance of health, owing to the rupture having been of very recent date or to the precautions taken to protect the hernial loops, or the intestine is changed in its appearance. The treatment varies in the two cases. The intestine being normal, the first care should not be to reduce it, but to make a proper toilette of the parts with warm water, or boric acid or carbolic-acid solutions, and protect them from further exposure by warm compresses. Next, the abdomen should be opened and, the rent being found, a tube should be passed into it from the abdomen, and the rectum and parts around the rent also washed. The prolapsed loop should then be gently drawn back into the abdominal cavity while the washing from the abdomen is continued. This procedure has the double advantage of cleaning the recto-vesical pouch, which generally contains blood, and also insuring the cleanliness of the loop as it is drawn back through the rectum. It remains then to suture the rent in the rectum, and this, as in the case reported, has not always been found possible. In the other class of cases the hernial mass has become altered by its sojourn between the patient's legs. As long as the lesions consist only of distension of the loop, with deepening of the color and ecchymotic spots, the previous line of treatment may be carried out as if the gut were healthy. But if the intestine has lost its vitality, if it is cold, black, swollen, and sphacelated, there is only one line to be followed—resection and the establishment of an artificial anus. If it were manually possible, the best plan

would be to suture the ends of the gut to the rent in the anus, and establish an artificial anus in the rectal wall. It is not safe merely to open the prolapsed gut and leave nature to unite the hernial mass and the rent in the rectum, for fatal communication is liable to result between the rectum and peritonæum, as in a case reported by Stein, which proved fatal by general peritonitis on the sixteenth day.

Probably, all things considered, the safest plan would be the one followed by Quénu—the formation of an anus at the lower angle of the abdominal wound. It is not too much to expect a recovery from this accident under favorable conditions for operation. Most of those already reported have been neglected too long before operation. Smith's case occurred while he was operating for prolapsus with the clamp and cautery, and being, of course, immediately recognized, the hernia was replaced and the patient did well.

MINOR PARAGRAPHS.

ON THE IMMUNITY OF LIMEKILN-WORKERS FROM CONSUMPTION.

In the "Berliner klinische Wochenschrift" Dr. Halter publishes an account of his observations on the immunity which laborers in limekilns enjoy from tuberculosis, an abstract of which appears in the "Centralblatt für klinische Medicin." According to his observations, the causes are: 1. The great relative dryness of the air inhaled in and around the ovens. 2. The great heat of the latter, which results in (*a*) freedom from tuberculous germs; (*b*) considerable rarefaction of the air; (*c*) daily raising of the temperature of the laborer during the acclimatization; (*d*) a notable acceleration of the pulse, respiration, perspiration, and tissue changes during and after acclimatization.

A MEDICAL CURIOSITY.

"Memorabilien" cites the following case from "Aerztliche Mittheilungen aus Baden": A farm-laborer and criminal, thirty-two years of age, who up to the time of the occurrence had always been in good health, after confinement for nine months began to pass large pieces of tape-worm. The usual treatment produced after four hours an enormous convolution of tape-worms, in which a whole row of heads was plainly visible. Careful examination revealed the presence of not fewer than twenty-five well-marked examples of *Tænia solium* in different stages of development, and all with the heads attached. Inquiry revealed that the patient had for years been in the habit of eating as much as half a pound of raw pork daily, which was sufficient explanation of the origin of the trouble. It seemed strange, however, that the bearer of this brood of tape-worms had not only shown no symptoms of their presence, but for the nine months of his confinement had grown fat on the prison fare.

THE TELEPHONIC SOUND AND INDUCTION BALANCE.

It is gratifying to observe that Dr. Gidner's employment of the telephonic probe and induction balance for the purpose of detecting the precise situation of foreign bodies of a metallic nature is getting to be recognized as among the most efficient measures that can be resorted to for the purpose. This is abundantly evident from the way in which the device was spoken of, at a recent meeting of the surgical section of the German Congress of Naturalists and Physicians, by Dr. Kaufmann, of Zurich, an abstract of whose remarks appeared in the "Centralblatt für Chirurgie."

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending January 8, 1888:

DISEASES.	Week ending Dec. 31.		Week ending Jan. 8.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	17	4	22	7
Scarlet fever	203	35	341	52
Cerebro-spinal meningitis	6	3	4	3
Measles	257	12	552	23
Diphtheria	130	28	166	65

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from December 30, 1888, to January 5, 1889:*

Waters, William E., Major and Surgeon. Leave of absence granted in S. O. No. 129, November 9, 1888, Department of the Columbia, is extended one month. Par. 9, S. O. No. 2, A. G. O., January 3, 1889.

Ainsworth, Fred. C., Captain and Assistant Surgeon, will, by direction of the Acting Secretary of War, proceed to New York city, N. Y., and Brooklyn, N. Y., on business connected with the Medical Department. Par. 20, S. O. 302, A. G. O., Washington, December 29, 1888.

Society Meetings for the Coming Week:

Monday, *January 14th:* New York Academy of Medicine (Section in Surgery); Lenox Medical and Surgical Society (private); New York Ophthalmological Society (private); New York Medico-historical Society (private); New York Academy of Sciences (Section in Chemistry and Technology); Boston Society for Medical Improvement (annual); Gynæcological Society of Boston; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private); Baltimore Medical Association.

Tuesday, *January 15th:* New York Academy of Medicine (Section in Theory and Practice of Medicine); New York Obstetrical Society (private); Medical Societies of the Counties of Franklin (annual), Kings (annual), Otsego (semi-annual—Cooperstown), and Westchester, N. Y.; Ogdensburgh Medical Association; Connecticut River Valley Medical Association (Bellows Falls, Vt.); Baltimore Academy of Medicine.

Wednesday, *January 16th:* Harlem Medical Association of the City of New York; Northwestern Medical and Surgical Society of New York (private); New Jersey Academy of Medicine (Newark); Philadelphia County Medical Society.

Thursday, *January 17th:* New York Academy of Medicine; Brooklyn Surgical Society; New Bedford, Mass., Society for Medical Improvement (private).

Friday, *January 18th:* Chicago Gynæcological Society; Baltimore Clinical Society.

Saturday, *January 19th:* Clinical Society of the New York Post-graduate Medical School and Hospital.

OBITUARY NOTES.

Nathan Allen, M. D., LL. D., of Lowell, Mass., died on the 1st inst. in the seventy-sixth year of his age. The deceased was born in Princeton, Mass., in 1813, received his early education at Amherst College, from which he was graduated in 1836, and

was graduated from the Pennsylvania Medical College in 1841. In 1847 he received the honorary degree of M. D. from the Castleton, Vt., Medical College. He settled in Lowell in 1841, and resided there up to the time of his death. He was for many years a member of the Massachusetts State Board of Charities, and from 1862 until within a few years an examining surgeon for pensions. His contributions to medical literature were numerous and related principally to the questions of physical degeneracy, longevity, the physiological laws of human increase, and subjects of a like nature. He was a member of the Massachusetts Medical Society.

Thomas Goodwillie, M. D., of Vernon, Vt., a brother of Dr. D. H. Goodwillie, of New York, died of pneumonia on Saturday, December 22, 1888. His health had been infirm for some years previous to his death, but this was not permitted to shade his intercourse with the outside world. His skill as a physician was widely recognized, although he was unassuming and somewhat reserved in manner. He had much practical knowledge of the questions of the time, and was a member of the Legislature at the time of his death. He was strong in his convictions, without wounding the feelings of his opponents. His genial presence and elevated professional character had endeared him to a wide circle of patients and friends.

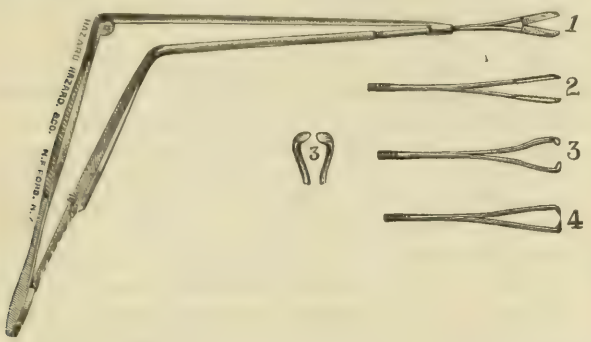
Letters to the Editor.

AN IMPROVED CANNULAR AURAL FORCEPS.

12 West Thirty-fifth Street, New York, *December 28, 1888.*

To the Editor of the New York Medical Journal:

Sir: In the "New York Medical Journal" of December 15, 1888, is described and pictured "an improved cannular aural forceps, combined with scissors," by Dr. W. H. Carmalt, of New Haven. This instrument is almost identical (see accompanying cut) with the "combination ear forceps" introduced by Dr.



Sexton and made by Mr. W. F. Ford, the surgical instrument manufacturer, excepting the handle on Dr. Carmalt's forceps, which may be found cumbersome by many. Dr. Carmalt states that neither he nor his instrument-makers have been able to discover the publication of anything "just like it"! Of course, no instrument "just" like the one he presents can be found described anywhere, but this scarcely warrants the omission to mention the combination forceps which his so nearly resembles. Descriptions of Dr. Sexton's instrument may be found in the "Transactions of the American Otological Society" for 1885, and also in his brochure on the "Classification and Treatment of over Two Thousand Consecutive Cases of Ear Diseases," etc., published by George S. Davis, Detroit, Mich., 1886.

C. J. Colles.

THE ORGANIZATION OF THE ROOSEVELT HOSPITAL.

581 Fifth Avenue, New York.

To the Editor of the New York Medical Journal:

Sir: Will you not yield me space to correct a serious error of statement made by the Medical Board of the Roosevelt Hospital in the tribute paid, and entered on the minutes, to their late distinguished colleague, Dr. Sands?

"On May 30, 1882, he was appointed the sole attending surgeon to the hospital. He had long advocated the plan of organization with a single responsible head to each department—a plan till then untried in any large hospital in the United States."

I held the same relative position—that of chief surgeon, having sole control of the surgical division—of the State Emigrant Hospitals at Ward's Island from 1873 to the end of the year 1880. The hospital has 800 beds, with a capacity for 1,200. At no time during my term of eight years' attendance had I less than double the number of patients than the Roosevelt Hospital at the time of Dr. Sands's service.

Morris H. Henry.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN SURGERY.

Meeting of November 12, 1888.

Dr. Robert Abbe in the Chair.

Supra-acromial Dislocation of the Clavicle.—Dr. C. A. Powers showed a man who had had a complete dislocation of the clavicle in which a full restoration had been accomplished. (See page 37.)

The Chairman thought, on examination of the callus, that there had been a disruption of the ligaments about the articulation, which, in healing, had aided in this somewhat rare result of complete restoration of a dislocated clavicle.

Cerebral Hæmorrhage.—Dr. Powers then presented a man who had been brought to the Chambers Street Hospital suffering from a hæmorrhage on to the brain from a rupture of the middle meningeal artery. The site of the effusion had been located by a study of the aphasia from which the patient suffered; the skull had been opened over the clot, and another opening through the cranium had been made at a little distance from the first opening to secure drainage. Quite a portion of bone near the first opening had undergone necrosis and sloughed away, so that altogether a piece as large as a silver dollar had been removed at that point. Nevertheless, the man had made a good recovery, and the wounds had healed over without difficulty, although the man had been working in a dissecting-room not long after the operation, and without any special dressing over the site of the operation. No attempt had been made to restore the portions of bone removed.

The speaker attached all importance to the making of a counter-opening in these cases to secure full drainage, and gave a history of this plan of procedure. The idea had first been suggested by Dr. R. F. Weir.

Tetanus Hydrophobicus.—Dr. G. B. Phelps read the history of a case where the patient, a lad, had been struck on the head with a stone. Examination showed a contused wound in

the frontal bone, above the zygoma and level with the eyebrow. Redness and swelling appeared after a time, which were subdued by appropriate applications. Some time later a paralysis of the left facial nerve appeared, then the jaws closed by a spasm of the masseters, and on the eleventh day attempts at swallowing produced very painful spasms in the throat and neck. These continued to the last, but subsequently other parts became rigid, and the boy died on the sixteenth day with embarrassed breathing and heart failure. The autopsy showed œdema of the lung and cerebral congestion only. The speaker considered it as a typical case of head-tetanus, so called. This was an affection of the nervous system, due, as generally believed, to a wound received in a region supplied by some one of the cranial nerves. It was usually on the same side as that supplied by the injured nerve. In one recorded case, where the wound had been on the nose, the spasm had been developed on both sides. In only one or two cases out of twenty-two which he had collected, the spasm had been on the opposite side. In thirteen out of twenty-five cases on record there had been spasms and pain on attempts at swallowing. Chloral had given the best results in treatment. Autopsies had revealed nothing as to the cause of the spasms. The affection had developed only once after a surgical operation. If we favored the idea that the infectious matter causing it came from the horse, it could not be denied that the missiles producing the wounds leading to head-tetanus had in many cases been taken from the streets, where contamination by the droppings of horses was always possible. Roser had thought the paralysis of the facial due to a pressure brought to bear on the seventh nerve in its passage through the temporal bone as a result of the external injury. Bernhardt thought the disease might be connected with the growth of a tumor in the medulla. It mostly came after slight wounds, but sometimes in wounds which were doing well, and sometimes, though not more frequently, in wounds which were doing badly. It came indifferently in the several stages of healing, and sometimes after healing was complete. It was comparatively a rare affection, and the proportion of cases of injuries to the head in which it appeared was exceedingly small compared with those in which it did not appear.

The Chairman said that the paper and the questions raised in it recalled to his mind the many cases of tetanus which came into our hospitals a few years ago which were caused by slight wounds from toy pistols.

Dr. R. W. Amidon discussed at length the mode of origin of the disease, and especially its relation to the site of the injury. There was no doubt that tetanus was a septic disease, but the question naturally arose in the case of this so-called head-tetanus why the symptoms should be so local, and confined, for a time at least, to the region of the head, and especially why the paralysis usually appeared on the same side as the injury. While there was much about the affection that was hard to understand, the speaker did not think that it could be sharply divided off from other forms of tetanus. Although head-tetanus usually appeared after injuries to the face, there was one instance in which it had followed a wound received in the shoulder, and, taking this in connection with the two instances of opposite-sided paralysis, the speaker thought it safe to conclude that the disease was a general one, and that a better name for it would be *trismus lateralis*. He considered that tetanus and hydrophobia were much alike in many points, the main difference being that tetanus came early. The same nerves were affected largely—that is, the eighth pair. Was it not significant that the cases of tetanus which we called head-tetanus went on to death in general convulsions? In one case of tetanus in which an autopsy had been made changes had been found in the spinal cord and medulla, and especially about the origin of the spinal accessory, hypoglossal, and glosso-pharyngeal nerves; also areas of softening in the medulla about the motor nuclei of the fifth pair of nerves. He believed that study of the medulla and cord would in time show lesions present in all forms of tetanus which by their presence caused the symptoms of the disease. The facial paralysis of tetanus hydrophobicus came on so early and so suddenly, he believed, owing to the position of this lesion in the nervous centers. The dysphagia and spasm on attempts at swallowing might depend on a similar irritation of the centers for the glosso-pharyngeal, hypoglossal, and spinal accessory nerves. It was well known that with the progress of the disease more and more of the various groups of muscles became involved throughout the trunk and extremities.

The Chairman observed that head-tetanus was probably not a different thing essentially from general tetanus. It involved the trifacial nerve, and so was carried into the medulla.

Improved Endoscopic Apparatus.—Dr. W. K. Otis read a paper in which he gave an account of various instruments which have been devised for making the urethra accessible to sight and to limited and localized medication. He then proceeded to exhibit an improved apparatus which he had arranged, in which illumination was furnished by a small Edison incandescent light. His obturator had its edge at the end of the tube faced with rubber and could be introduced without pain or bleeding, the rubber being afterward withdrawn through the tube. He had an attachment specially designed to remove the secretions on the urethral wall, which so obscured the field, without the labor of constant swabbing.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN NEUROLOGY.

Meeting of November 9, 1888.

Dr. W. R. Birdsall in the Chair.

Report of a Case of Syringomyelia with Autopsy, and Exhibition of Microscopical Sections of the Spinal Cord.—Dr. Ira Van Gieson read a paper with this title. He remarked that it was the first case of the kind in this country where an autopsy had been held and specimens preserved. The patient had been affected with soreness in the epigastrium and the left foot, numbness and tenderness from the waist down, a girdle sensation, loss of power to walk, dragging of the left foot, incontinence of urine, œdema of the feet, and disturbed reflexes. Constipation had been very marked much of the time, bedsores had developed toward the last, and he had died in the twentieth month, completely bedridden, with a high temperature. On autopsy, the cord was found enlarged in the upper lumbar region by a sarcomatous neoplasm of a fusiform shape. This glio-sarcoma was surrounded by areas of parenchymatous myelitis, with a connective-tissue boundary wall, and small white nodules of sarcomatous cells scattered in the substance of the cord below the larger growth. In the interior of the tumor was a tubular cavity, with degenerated matter in the form of pus at its bottom, representing what had been the core of the neoplasms now in degeneration owing to the loss of circulation at points above and below.

Dr. M. Allen Starr remarked that the diagnosis of the condition could not be made during life. In the pure form of the disease—that where only the anterior gray horns and the anterior columns of the cord were involved—no diagnosis would be possible between this disease and progressive muscular atrophy; nor between it and tabies, if the posterior horns and columns were involved. In the case described by Dr. Van Gieson, where the cord had been invaded both anteriorly and posteriorly, there could have been no distinctive symptoms. He asked

the opinion of Dr. Van Gieson as to the mode of formation of the central cavity.

Dr. Van Gieson replied that he thought we ought to have in mind two possible modes of formation for these cavities: the first a non-apposition of the walls which normally closed in to form the cord and its central cavity; and the second a cavity remaining from the degeneration of the core of the neoplasm. The two might occur together; and it would not be a surprising matter to have a pre-existing tubular cavity, with a small mass of embryonal matter somewhere in its wall forming the basis for a tumor to start from. The latter might naturally have a wall of connective tissue about it of a different sort from that about the upper part of the cavity, where the hydromyelitis had thrown out its products, as in the case he had described.

Preliminary Report on Experiments made to locate the Sight Centers in Various Animals, with Exhibition of Animals and Specimens.—Dr. W. G. Thomson, assisted by Dr. Sanger Brown, placed before the section an account of the methods he had used in the experiments above named, and gave a *résumé* of the conclusions which they had partially arrived at. He remarked that the results reached by many experimenters had been doubted because they had not been verified at the time by competent outside witnesses. He reviewed the manner of decussation of the optic tract at the chiasma, and gave the theories of von Gudden, Kellerman, and others as to the arrangement of the crossing fibers. Michael had maintained that the decussation was total for monkeys, cats, rabbits, and sometimes for man. His experiments had led him to think it total in dogs and cats, but not in monkeys. Contrary to Dr. Dalton's theory, they had found that extirpation of the occipital sight-center was followed in time by a slow recovery of sight, after a period of total blindness, in case the amount removed was small. If it was large, the sight did not return even after three months, although complete health might be otherwise regained. If it returned at all it would do so after a month's time. Only six of twenty-three animals experimented on had died of the operation on the brain.

The conclusions reached at this stage of their experiments were as follows: 1. The cortical center for perception of sight was in the occipital lobe in cats, dogs, and monkeys. 2. Lesions in this region which were exclusively behind the angular gyrus, and which did not affect it, invariably produced blindness of the opposite eye in cats and dogs, and homonymous hemianopsia in monkeys in the same side as the lesion. 3. In some monkeys there was apparently greater blindness on the side opposite to the lesion. 4. Removal of one angular gyrus in the monkey produced no disturbance of vision of a permanent character. 5. In cats and dogs the visual center occupied a considerable area, for complete recovery resulted in about a month from lesions which might affect as much as two occipital convolutions. No changes in intellect or pupillary reflexes had seemed to him to be consequent on any of his operations.

Dr. Sanger Brown thought that operations in the temporosphenoidal region, on account of an interference with the transverse connection of the two halves of the brain, did produce a species of idiocy, as shown in the manner of eating and the curiosity with which the monkeys would examine their cage and surroundings, as if seen for the first time.

Dr. J. E. Weeks discussed the question of the manner of decussation of nerve-fibers at the optic chiasma in various animals, in fishes, and in man; and concluded that in man the manner of distribution varied much in different individuals. The optic chiasma had been divided in kittens at its center, without destroying the sight entirely in each eye, showing there could not be a complete decussation there.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN OBSTETRICS AND GYNÆCOLOGY.

Meeting of October 25, 1888.

Dr. J. E. Janvrin in the Chair.

The Value of Hysterorrhaphy as a Primary or Consecutive Operation in Uterine Displacement.—Dr. C. C. Lee read a paper with this title. The operation, he said, was comparatively a new one, but was not difficult, and it gave relief in a class of cases which had been hitherto entirely intractable. It consisted in sewing a displaced uterus to the anterior abdominal wall. It had first been done as a supplementary operation, after the performance of ovariotomy. Of late it had become a primary operation for the relief of severe cases of prolapsus and retroflexion, and was thus somewhat allied to Alexander's operation in its object. It took the place of the latter, and also gave relief in a class of cases in which the latter was excluded from use.

Omitting any allusion to a large number of cases in which he had done the operation as a secondary one to ovariotomy, the speaker then gave an account in detail of six cases in which he had done the primary operation, with complete recovery in four of them. All were cases of retroflexion with adhesions, some accompanied by lacerations incidental to childbirth, others by prolapse of the tubes and ovaries, salpingitis, and dysmenorrhœa, others by severe hæmorrhages. All these women had been in a miserable condition from constant suffering, which ordinary measures in the hands of the best physicians had entirely failed to relieve. He had found the operation easier than that for the removal of the appendages. It relieved conditions that were fully as serious as those for which the latter was performed. In no instance had he had a marked rise of temperature following hysterorrhaphy. At the present day the operation might be considered as a safe one. In making the sutures he used fine Chinese silk. The suture was passed, not through the vascular fundus of the uterus, but on each side of the fundus, through the proximal ends of the broad ligament and including the round ligament; and in making the suture through the anterior abdominal peritonæum he included the subperitoneal fat as well. This suture he left in. He much preferred the Chinese silk to silk-worm gut, catgut, or silver wire. In breaking up the adhesions he used only his fingers. The only other radical procedure which gave relief in the same class of cases as hysterorrhaphy did was the method of stretching out the adhesions by massage, as now practiced in Europe. As for Alexander's operation, that was of value only in the cases where the uterus was freely movable.

Dr. Howard Kelly, of Philadelphia, thought the operation a valuable addition to our resources, but that it must not be done until all ordinary means had been tried without success. The operation was a safe one. Of ninety-two operations of which we had record, only one had proved fatal, and that had been in his own hands. In this case the intestine became adherent at the point where the suture was passed, and death took place from ileus in spite of a special operation for the repair of this accident which he had done. He considered the mechanical basis or principle of the operation unexceptionable. The merest thread was sufficient to keep the uterus tilted forward in a position where the pressure of the abdominal respiratory rhythm came upon it from behind and kept it there. He thought there were four conditions in which the operation should be employed: 1. Where Alexander's operation had failed to relieve. 2. Where there were adhesions binding the uterus in retroflexion, unless the operator preferred the method of stretching them by massage, and here he thought an effective pressure could be

brought to bear on the uterus from the fingers in the rectum. 3. Where the uterus was prolapsed. 4. When a tumor had been removed; here it was always best to make sure of a restoration of the uterus to a normal position. In operating, the incision should be made as low as possible and the uterus attached low, to avoid the danger there would otherwise be of the intestine becoming caught between it and the abdominal wall. When the broad ligaments were stretched out into a fan-shaped vascular curtain he lifted them out and reached back so as to get a part that was not vascular, sometimes catching his suture through the ovarian ligament itself, which raised the ovaries on either side at the same time that it drew the uterus forward.

Dr. Paul F. Mundé agreed with Dr. Kelly that it was safe enough to be used without hesitation whenever it seemed indicated. But he also agreed with him that, in case the adhesions which bound the uterus posteriorly were very thick, it was one of the most difficult of operations, and in other cases might on that account be impossible to do. He thought we must in the future learn to recognize the latter class of cases in advance.

Dr. H. J. Boldt discussed the method of dealing with these cases by massage and exercises as practiced by Brandt in Sweden [for an account of which see the Journal of April 14, 1888]. He remarked that great care must be used in making a diagnosis previous to beginning this form of treatment, else great harm might be done, as in case of pyosalpinx being present. In very fat women the treatment could not be carried out for obvious mechanical reasons. Massage of neighboring parts following treatment relieved the irritation which resulted from the stretching of the adhesions; and in case inflammation threatened, cold was to be applied. In many cases it was possible to get good results only by working during the menstrual period. He thought hysterorrhaphy should be used after the Brandt method had failed, and in those cases where the adhesions were veil-like. He had got good results from temporary transfixion, passing his suture through the whole abdominal wall and through the peritonæum of the fundus. Some uteri were very vascular; if hæmorrhage proved severe he packed in iodoform gauze, but small amounts of blood he left to be absorbed. He thought it important to remember that several thousand women had been cured by Brandt's method, and that without a single accident. It happened quite often that after others had failed to get relief by his method, Brandt himself had succeeded in bringing about a complete recovery.

Dr. H. C. Coe remarked that he had often been disappointed in the results of ovariotomy by finding the pain and hæmorrhage still persisting. It had proved to him that it was necessary to break up any adhesions that were present about the uterus, especially posterior adhesions which held the uterus in retroflexion. Even if hysterorrhaphy did not keep the uterus up permanently in an anterior position, it at least kept it raised until the site of the recent adhesion was healed over, so that if it fell backward again it remained freely movable. In his operations he always had an assistant raise the uterus on two fingers while he disengaged and sutured it.

Dr. W. Gill Wylie had met with a number of cases where he had produced complete relief by curing an endometritis and subinvolution in the ordinary ways, even where there was a retroflexion with adhesions. On the other hand, he had sometimes opened the abdomen, expecting to do ovariotomy, and had found everything normal except for adhesions between the uterus and surrounding parts. He thought it was considerably easier to shorten the round ligaments inside the abdomen than to do Alexander's operation or hysterorrhaphy, while it accomplished exactly the same end. Then there would be no pocket for intestines to fall into. It was only necessary to scrape raw a section of the round ligament, and then fold and tie it together at that part. When he tied off the broad ligament in doing ovariotomy he simply included a portion of the round ligament and so raised the uterus to its normal position.

Dr. A. P. Dudley asked, from a purely mechanical standpoint, how it could be expected that two sutures through the peritonæum of the sort that Dr. Lee and Dr. Kelly had described should retain the uterus in place in spite of the movements imparted to it by the pressure of the pelvic diaphragm and of the thoracic diaphragm during labor, defecation, or other exertions, or by the uprise of a full bladder. He thought the organ must very commonly become free in a short time, although the suture might hold it up till the adhesions had had time to heal, the circulation to become re-established, and the uterus to regain its normal weight.

Dr. Lee replied that it was the main and assured result of the operation to make the uterus freely movable and to relieve the patient of all her distressing symptoms, whether the uterus remained fastened to the anterior abdominal wall or not, and this after all other measures had been tried without the least benefit.

Dr. A. H. Buckmaster, of Brooklyn, spoke of the value of tamponing the vagina for gradually overcoming adhesions.

Dr. Buckmaster and Dr. J. S. Hawley then continued the discussion on electricity in the treatment of extra-uterine pregnancy.

NEW YORK PATHOLOGICAL SOCIETY.

Meeting of October 24, 1888.

The President, Dr. William P. Northrup, in the Chair.

Puerperal Septicæmia.—Dr. T. Mitchell Prudden presented the uterus of a woman who had died shortly after being delivered of a dead fœtus. The presentation had been transverse, version had been performed, and the cervix had been considerably bruised. For a time the temperature had risen to 102° F., and only seven ounces of urine had been passed. The next day the temperature had fallen to normal; no signs of inflammation had appeared in the genital tract; but the patient had shown marked signs of septic poisoning, failed rapidly, and died of heart-failure and exhaustion. The autopsy showed scattered phthisical deposits and a badly lacerated and gangrenous cervix, but a perfectly normal peritonæum. However, the veins about the cervix and ovary were thrombosed. The clots were old and full of bacteria. The woman had died of infectious and poisonous matters carried into the circulation, without the development of any inflammation whatever. The speaker distinguished such cases from those which might be called puerperal pyæmia, where there was infection from without, with inflammation and fever.

Fæcal Concretions.—Dr. Hermann M. Biggs presented a vermiform appendix ulcerated and perforated. The contained concretion had escaped into the abdomen. He believed, judging from his own experience, that in by far the greater number of cases of fatal inflammation it resulted from the escape of fæcal matter into the abdomen.

He showed a piece of a large intestine on the inside of which were seen a large number of small pouches of mucous membrane projecting into the muscular wall. He thought many ulcerations of the intestine might begin by lodgments of fæcal matter in such pouches. He had seen a case where a large impacted mass of fæcal matter was found in the vermiform appendix, but where the opening of the latter was so narrow as barely to pass a pin-head. Many things led him to believe that impactions were formed little by little in the vermiform appendix by accretion, and that they did not enter as such from the bowel. He had never met with a case of disease of the vermi-

form appendix where he had found a foreign body which consisted of anything but fæcal matter. In a very few cases the mass had had as a nucleus a seed, raisin stem, or small mass of inspissated mucus. These fæcal masses often had the shape and general appearance of a date-seed. He thought the idea so wide-spread among the laity (and to a certain extent among physicians) that disease of the vermiform appendix was usually due to the entrance of a grape-seed or other such foreign body had its foundation in a lack of careful examinations.

In the discussion which followed, instances were given where pins had entered the vermiform appendix, and a case was related, which the late Dr. Alonzo Clark had reported, where the mass was found to consist of many layers of strawberry-seeds; but Dr. Prudden, in giving his experience, said that a large number of such concretions had been brought to him for examination, and that, furthermore, he had been earnestly on the lookout for the supposed seeds, but had never yet found these masses containing anything but fæces.

Pulmonary Gangrene.—Dr. L. Emmett Holt presented the lungs of a child in whom croupous pneumonia had gone on to end in scattered areas of gangrene in the lung surrounded by thrombi, accompanied by a profuse fibrinous exudation into the pleural cavity. There had been a very high fever from the beginning of the child's sickness, succeeded by collapse and heart failure which made no response to stimulation.

Dr. Prudden declined to make a search for a special bacterium in the gangrenous foci of the specimen, since a guarantee could not be given that the specimen had been removed under full antiseptic precautions and that it was not more than two hours old. He stated, however, that in four instances where he had examined the lungs of children who had died of croupous pneumonia he had found a lung looking like that of acute lobar pneumonia with pleurisy, and many bacteria present which he had identified as the pneumococcus of Fraenkel.

NEW YORK NEUROLOGICAL SOCIETY.

Meeting of November 6, 1888.

The President, Dr. George W. Jacoby, in the Chair.

Parenchymatous Neuritis.—Dr. W. H. Thomson read a paper on this subject, including the history of a number of cases.

Case I was that of a man of fifty-six years who had formerly been engaged in the lumber business, and had been obliged to stand in water containing floating ice for hours at a time. This patient's symptoms had first pointed to central spinal trouble, but later had been those of a multiple neuritis. They had, however, been gradual in their onset and there had been no evidences of pressure. There had been no shooting or lancinating pains. The actual cautery had been applied over the spine and the hot glass rod over the sensitive nerve-trunks. Nitro glycerin had given the greatest relief from pain in this case.

Case II was that of a man of thirty-five years, convalescing from diphtheria. There was no pain, but the laryngeal and pharyngeal paralysis was so profound that the general health suffered.

Case III was that of a boy convalescing from typhoid fever. There were pains in the legs and feet, with dropping of the feet.

Case IV was that of a woman confined to her bed for three months in the course of phthisis. There were pains in this case in the feet extending to the knees, and in the hands, with dropping of the ankles and wrists, which progressed steadily till death, when extensive nerve degeneration was found without any evidences of inflammatory action. The case was presented as a typical example of a wide-spread non-inflammatory degeneration of the nerves. It was a parenchymatous neuritis analogous to that which could be produced by a ligature. The origin and history differed from that of an inflammatory neuritis, however much it might resemble this condition in its ultimate results. In the case of typhoid fever and phthisis the degeneration might have been due to a mechanical cause—pressure from the loss of the surrounding fat. The fact that the vagus was implicated in the latter disease did not disprove the theory, as no statement had been advanced in regard to the condition of the bronchial glands. The theory of a non-inflammatory parenchymatous nerve degeneration was important, as the treatment of such cases would differ from that of cases of inflammatory origin. In the latter, antiphlogistic and soothing treatment was indicated, while in the former stimulating applications were required. It was questionable whether the term neuritis could be correctly applied to this type of the disease.

Dr. L. C. Gray had not heard the commencement of the paper and did not understand why Dr. Thomson objected to the term neuritis. He thought that the symptoms could be scarcely classed under any other name. There had been, as he understood, downright pain in the course of the nerves, and eventually paralysis and atrophy. These were the clinical symptoms of neuritis and measured the severity of the neuritic lesion. The treatment of neuritis was, he believed, except that of traumatic neuritis, still *sub judice*. Since attention had been called to the disease everybody had probably met with cases in which no local measures seemed to do any good. Quinine, the salicylates, and iron had been most beneficial in his own cases. Change of air was to be recommended. Even in the paralytic stage it was his custom to remove the patient to another part of the city, or even from a lower floor to a higher floor in the house. Change of location was especially indicated in the cases arising in our somewhat malarial suburbs.

Dr. M. A. Starr applied powdered menthol diluted with starch under a flannel bandage for the relief of the pains of multiple neuritis.

The President did not find the diagnosis of neuritis so easy as Dr. Thomson had represented it, especially in typhoid fever. Myositis was a more probable lesion in typhoid fever. Zenker had even stated that neuritis was never found in this disease. As to the distinction made between the inflammatory and degenerative processes, both might be found in the same case. Which process was primary and which secondary was still a question.

Dr. Thomson said that he had intended to call attention to only a single point, and necessarily had neglected many others touched upon in the discussion. He had intended to call attention simply to the impropriety of the term neuritis as applied to the process in the cases which he had described. There was no reason to suppose that the process in the case of phthisis had been inflammatory. The inflammatory process had certain definite characteristics. These were vascular disturbance and infiltration with serum and leucocytes or living matter. In the neuritis of alcoholism, both in private and in hospital practice, he had observed circulatory and nutritive changes; there had been the same tendency as in the inflammatory processes in other parts of the body. There were evidently inflammation of the sheath of Schwann and constriction of the nerve. These conditions contrasted with those in the cases which he had described. In the treatment of true neuritis he had used an application of equal parts of oil of peppermint and olive oil, a preparation similar in action to that which Dr. Starr had recommended.

Dr. Gray inquired whether Dr. Thomson recognized no inflammatory process within the sheath of Schwann.

Dr. Thomson replied that he knew of no changes within the sheath of Schwann which could be called inflammatory.

Book Notices.

Hand-book of Historical and Geographical Phthisiology. With Special Reference to the Distribution of Consumption in the United States. Compiled and arranged by GEORGE A. EVANS, M. D., Member of the Medical Society of the County of Kings, New York, etc. New York: D. Appleton & Co., 1888. Pp. 8–9 to 295. [Price, $2.]

THIS work presents a sketch of the development of our knowledge of pulmonary consumption from the time of Hippocrates to the present day, then details some ascertained facts regarding the geographical distribution of this disease throughout the world, and finally presents some statistics regarding the geographical distribution of consumption in the United States, arranged so as to make them available for reference.

There is little original matter in the work; it is made up almost entirely from translations from Hirsch's great work, "A Hand-book of Historical and Geographical Pathology," from compilations from the "Tenth U. S. Census Reports," and shorter abstracts from other writings and papers on tuberculosis.

The book contains much valuable matter conveniently arranged for reference. This matter is unquestionably derived from the best sources, and the work will consequently be found to be very useful to those interested in this important subject.

The author does not express his personal views regarding the ætiology of the disease, but contents himself with the quotation of the views of other writers. It should be remembered in this connection that in bacteriology opinions rapidly lose their value with the lapse of time. The developments have been so rapid in this field that an opinion two or three years old can have in many instances but little force now, however valuable it may have been when expressed.

The author's views regarding treatment with aseptic air seem to be based upon an erroneous conception of the pathology of tuberculosis and will hardly be accepted by many competent pathologists. This, however, does not detract from the value of the book.

Too little attention has been given to the historical and geographical study of medicine, and we would warmly welcome this contribution to this aspect of medical literature.

Elements of Practical Medicine. By ALFRED H. CARTER, M. D. Lond., Member of the Royal College of Physicians, London, etc. Fifth Edition. London: H. K. Lewis, 1888. Pp. xvi–472.

THIS book, having been before the public during the past eight years, needs no introduction for its last edition. Owing to its conspicuous brevity and simplicity, it will doubtless continue to be in demand by young students as a preliminary to more exhaustive works; and also by those whose studies can not be protracted. Many chapters have been rewritten and some additions made. It is still a strictly elementary work, but will on that very account fill a distinct need, by what its author has tried to make its "broad truthful sketches" of the principal diseases, their causes, pathology, symptoms, and treatment.

The Urine and the Common Poisons—Memoranda, Chemical and Microscopical, for Laboratory Use. By J. W. HOLLAND, M. D., etc. Illustrated. Second Edition, revised and much enlarged. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. vi–9 to 65. [Price, 75 cents.]

THIS little manual in its present edition is a model of condensed and finely arranged data for daily use in the laboratory. Excellent illustrations are given of the ordinary urinary deposits as seen under the microscope. Its price puts it within reach of everybody.

A Compend of Human Physiology. Especially adapted for the Use of Medical Students. By ALBERT P. BRUBAKER, A. M., M. D., Demonstrator of Physiology in the Jefferson Medical College, etc. Fourth Edition, revised and enlarged. With Illustrations and a Table of Physiological Constants. [Quiz Compends, No. 4.] Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. viii–9 to 174. [Price, $1.]

THE concise and clear language of this compend answers its purpose perfectly. Special value is to be ascribed to the description of the nervous system. The principal features of the electrical properties of the nerves, a scheme of the conducting paths in the spinal cord, a diagram showing the course, through the spinal cord, of the motor and sensory nerve-fibers, and especially the topography and physiology of the cerebral basal ganglia, are very satisfactorily explained.

These points constituting the puzzling physiological problems for students, owing to the lack, as a rule, of proper description and diagrammatic representation in text-books, are rendered readily comprehensible.

The Diseases of the Chest, including the Principal Affections of the Pleuræ, Lungs, Pericardium, Heart, and Aorta. By VINCENT D. HARRIS, M. D. Lond., F. R. C. P., etc. With 55 Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. xi–420. [Price, $2.50.]

THIS book is one of the Students' Guide Series; but it is not improbable that, as its author hopes, many who have used it as students will keep it in easy reach on their book-shelves long after the period of preliminary study is past. It is written to meet the great requirements for practical usefulness in these days when medical literature has attained such bulk: namely, brevity, good arrangement, and abundant illustrations. The style in which the book is written is the same as that adopted by perhaps a majority of the leading medical lecturers of the present time, in which the predominating tendency is to bring the emphatic points into all possible prominence, both with the voice and by blackboard tabulations or charts. The same results are obtained in the case of Mr. Harris's work by a judicious use of Italics and of heavy type where emphasis is desired; and by tabulations very conveniently arranged in contrast for the purpose of diagnosis. Many of the illustrations are delicately tinted, and their effectiveness is thus much enhanced. By excluding all mere suppositions, disputed questions, and rare phenomena from his volume, Mr. Harris has been able to incorporate the substance of several works written in a different manner in this single book, while at the same time, thanks to the resources of modern printing and engraving and to thorough arrangement, the context can be followed without fatigue. The book is likely to be welcomed by students as an invaluable aid to their imperfect notes of lectures, and as a relief from the elaborate disquisitions of the exhaustive standard works of the day. The first chapter considers very fully the normal chest; the second takes up the symptoms of disturbance; the third deals with the physical examination of the chest and is a model of skillful arrangement. The pulse and its indications are given a separate chapter. In the remarks on treatment given in connection with each disease, and also in the chapter on symptoms, the best ideas advanced during the last few years are carefully stated.

Many practitioners will on this account find the book valuable as a handy and reliable book for reference.

On the Relief of Excessive and Dangerous Tympanites by Puncture of the Abdomen. A Memoir. By John W. Ogle, M. A., M. D. Oxon., F. S. A., etc. London: J. & A. Churchill, 1888. Pp. 111.

In this little work, after a short introduction to the subject of puncture of the abdomen for the relief of excessive tympanites, very extended citations are made from medical writings from the earliest times. These occupy more than fifty pages, and following them are detailed "the results of some inquiries made of friends, colleagues, and others as to their individual and personal knowledge and estimate of the use of puncture in tympanites." The opinions of a large number of medical men are given and many cases are cited. The general testimony is decidedly in favor of the resort to puncture of the abdomen when the tympanites is so great as to interfere seriously with respiration, heart's action, etc. Some unfavorable results (oozing through the puncture and the escape of gas into the peritoneal cavity) are reported. The writer, in conclusion, emphasizes "the absolute necessity of using a very fine instrument, previously disinfected, and of not delaying the operation too long." The work contains some valuable suggestions, but would be more readable and quite as valuable if the 111 pages had been condensed into 30 or 40. It is extended to a far too great length, and too little emphasis is placed upon the danger of this operation. The style of the writer is decidedly prolix.

Physicians' Interpreter in Four Languages. Specially arranged for Diagnosis by M. von V. Philadelphia: F. A. Davis, 1888. [Price, $1.]

This little book contains in four parallel columns most of the ordinary words in English, French, German, and Italian that a physician would need in dispensary or hospital service. Many other books of the same sort with more extensive vocabularies have been published, but, from their size, and from their being usually devoted to equivalents in English and one other language only, they have not had the advantage which is pre-eminent in this—convenience. It is handsomely printed, and bound in flexible red leather in the form of a diary. It would scarcely make itself felt in one's hip-pocket, and would insure its bearer against any ordinary conversational difficulty in dealing with the foreign-speaking people who are constantly coming into our city hospitals.

BOOKS AND PAMPHLETS RECEIVED.

A Clinical Atlas of Venereal and Skin Diseases, including Diagnosis, Prognosis, and Treatment. By Robert W. Taylor, A. M., M. D., Surgeon to Charity Hospital, New York, and to the Department of Venereal and Skin Diseases of the New York Hospital, etc. Illustrated with One Hundred and Ninety-two Figures, many of them Life-size, on Fifty-eight Colored Plates. Also many Large and Carefully Executed Engravings through the Text. Part III, Venereal Diseases. Part IV, Diseases of the Skin. Philadelphia: Lea Brothers & Co., 1888.

The Pathology and Treatment of Displacements of the Uterus. By Dr. B. S. Schultze, Professor of Gynæcology, Director of the Lying-in Institution and of the Gynæcological Clinic of Jena. Translated from the German by Jameson J. Macan, M. A., M. R. C. S., etc., and edited by Arthur V. Macan, M. B., M. Ch., etc. With One Hundred and Twenty Illustrations. New York: D. Appleton & Co., 1888. Pp. xix–378.

Pictorial History of Ancient Pharmacy; with Sketches of Early Medical Practice. By Hermann Peters. Translated from the German, and revised, with Numerous Additions, by Dr. William Netter. Chicago: G. P. Engelhard & Co., 1889. Pp. xiv–5 to 184.

The Modern Treatment of Diseases of the Kidney. By Professor Dujardin-Beaumetz, Member of the Academy of Medicine, etc. Translated from the Fifth French Edition by E. P. Hurd, M. D., Newburyport, Mass. Detroit: George S. Davis, 1888. Pp. vi–169. [The "Physicians' Leisure Library."]

The Medical Bulletin Visiting List, or Physician's Call Record. Arranged upon an Original and Convenient Monthly and Weekly Plan for the Daily Recording of Professional Visits. Philadelphia: F. A. Davis, 1889.

The Codman Will Case. By Walter Channing, M. D., Brookline, Mass. (Read at the Annual Meeting of the Association of "Medical Superintendents of American Institutions for the Insane," held at Old Point Comfort, Va., May 15–18, 1888.)

Proceedings of the Connecticut Medical Society, 1888. Ninety-seventh Annual Convention, held at New Haven, May 23d and 24th. New Series. Vol. IV, No. 1. N. E. Wordin, M. D., Secretary, Bridgeport, Conn.

Revendication de la priorité de la découverte des vaccins du choléra asiatique faite sous les auspices de la Municipalité de Barcelone. Par le Dr. D. J. Ferrán. [À l'Académie des sciences de Paris.]

Twenty-ninth Annual Report of the Medical Superintendent of the State Asylum for Insane Criminals, Auburn, N. Y. For the Year ending September 30, 1888.

Reports on the Progress of Medicine.

ANATOMY.

By MATTHIAS L. FOSTER, M. D.

The Medio-tarsal Joint.—Bishop ("Med. Chronicle," October, 1888) disputes the correctness of the view held by most surgical and anatomical writers regarding this joint. This view he states to be that this joint is composed of the calcaneo-cuboid joint, with the anterior portion of the astragalo-calcaneo scaphoid, and is an arthrodial joint, passing right across the foot, the movements in the astragalo-scaphoid portion being "somewhat freer" than in the calcaneo-cuboid, but with no other difference. The only writer on surgery who takes the same view as the author regarding this joint is, as far as he has been able to find, Mr. Hancock, in his lectures on the anatomy and surgery of the human foot. This view is that the medio-tarsal joint is not composed of two joints, but is one alone; is a modification of an enarthrodial or ball-and-socket joint, passes only partly across the foot, and is not transverse, the axis of its greatest diameter being antero-posterior. The calcaneo-cuboid is "merely a secondary joint, distinct in every way from the primary medio-tarsal, except in the fact that it is *nearly* in the plane of part of it." The head of the astragalus forms the ball, while the os calcis, scaphoid, cuboid, and cuneiform, with their ligaments, form the socket. This can be seen best in the foot of an infant before the original shape of the joints has been modified by pressure, but can be easily recognized in the foot of an adult. Restricted movements appear to be checked by the position and action of ligaments without rather than by any irregularity in the articular surfaces. The joint thus formed forms a segment of a circle; the calcaneo-cuboid does not. "Dorsally the astragalo-scaphoid forms a curve, convex anteriorly; the calcaneo-cuboid is marked by a straight line. On taking a section between dorsum and sole, the astragalo-scaphoid still forms a curve, convex forward, while the calcaneo-cuboid has an undulating line, curved, as a whole, in the reverse direction." The synovial membranes point to the association of the astragalo-scaphoid with the anterior astragalo-calcanean articular surfaces, and not with the calcaneo-cuboid. The bones which form the socket are firmly bound together by ligaments, while the astragalus is mainly held by the interosseous ligament beneath, which is so fixed as best to permit of the head in the socket, forming, in fact, the posterior segment of its capsule. The attachment of the ligaments and muscles about the joint, as well as the action of those muscles, is also called upon to show the correctness of the author's view. To the evidence he thus obtains from normal anatomy he adds that obtained by a consideration of the deformities which occur at this joint, the relations of the bones to each other in infants with these de-

formities, and in older persons after the distorted feet have been walked upon. If his view is accepted, talipes varus may be defined as a rotation upward and inward of the socket upon the head; talipes valgus, a rotation downward and outward; while flat-foot is a sub-dislocation of the joint itself.

The Phrenic Nerve.—Mr. Wagstaffe ("St. Thomas's Hosp. Reports," xvi) calls attention to the frequent branch from the phrenic nerve for the supply of the anterior scalenus muscle. He thinks this shows that the scaleni and the diaphragm are intimately associated in their action as respiratory muscles.

The Rectum and Anus.—Dr. Symington ("Jour. of Anat. and Physiol.," October, 1888) differs from the generally accepted view regarding the second and third parts of the rectum. He professes to show by frozen sections that the second part of the rectum does not change its direction at the tip of the coccyx, but continues to pass downward and forward an inch or more, lying upon a mass of muscular and fibrous tissue, which he terms the ano-coccygeal body. This body is of a quadrilateral form, measuring not far from an inch in length, depth, and thickness. It is bounded behind by the coccyx, in front by the anal canal, above by the rectum, and below by the skin. Laterally it is bounded by the fat of the ischio-rectal fossæ. It is formed mainly by the levatores ani and the internal and external sphincters. The anterior surface begins to bend downward and backward at the apex of the prostate gland, and at this point a pouch is formed which sometimes becomes very well developed as the result of overdistension of the rectum.

Regarding the anus, he does not accept as this the aperture situated opposite the junction of the skin and mucous membrane, but holds that it should mean the passage between the rectum and the exterior, which is surrounded by sphincters and has its walls in close contact except in defecation. This passage is about an inch in length, and includes what is frequently described as the third part of the rectum and anus. Its long axis is directed downward and backward at about a right angle with that of the second part of the rectum. Its lateral walls lie in close contact with one another, forming an antero-posterior slit. The lower part of the empty rectum has its anterior and posterior walls in contact.

The action of the levatores ani he thus describes: "When the fæces have been forced by vermicular contraction into the lower part of the rectum, they can assist the sphincters in preventing the passage of fæces through the anal canal. During defecation they will be relaxed along with the sphincters, the anal canal is opened, and the ano-coccygeal body pushed downward and backward. Toward the end of the act of defecation the levatores come into action in closing the anal canal and drawing the ano-coccygeal body upward and forward."

The Topography of the Intestine.—Schiefferdecker ("Arch. für Anat. u. Physiol.," "Revue des sciences méd.," July, 1888) reports a case of unusual situation of the duodenum, with a mesentery common to the lower part of the duodenum, the jejunum, the ileum, the cæcum, and the ascending and transverse colons. The author discusses the causes which perhaps led to this condition, which resembles the cases reported by Gruber, His, and Toldt.

Adult Temporal Bones with Non-union of the Squamous and Petro-mastoid Portions.—Dr. Symington exhibited to the Anatomical Society of Great Britain and Ireland two temporal bones which belonged to a disarticulated skull which he had purchased from a dealer. The bones were evidently those of an adult, and none of them presented any peculiarity except the two temporals. The condition of these was practically identical. Each was divided into two parts, one being formed of the squamous portion, the other of the remainder of the bone. These were movable upon one another, but could not be completely separated on account of the interlocking of the tegmen tympani with the squamous portion. The line of suture ran thus: "From the incisura parietalis (or notch between the upper convex border of the squamosa and the upper edge of the mastoid) it passed downward and forward to the anterior part of the mastoid process, then turned upward in the posterior wall of the external auditory meatus, immediately behind the tympanic bone, and went over the inner extremity of the roof of the meatus to the Glaserian fissure. At the outer part of this fissure it lay between the tympanic plate and the post-glenoid process, but more internally it was separated from the tympanic plate by a process of the pars petrosa. From the inner end of the Glaserian fissure the suture could be traced backward, on the inner surface, to the incisura parietalis."

The name "squamoso-mastoid" usually applied to this suture is misleading, as the suture passes across the mastoid, dividing it into two portions. Removal of the squamous portion exposed the tympanic cavity and the mastoid antrum, as this portion formed the outer wall of these spaces. The Eustachian tube lay a little internal to the receding angle between the petrous and squamous portions, and had its walls formed entirely of the petrous and tympanic parts.

The Growth-rate of the Bones of the Lower Extremities.—Mr. Walter Pye ("Jour. of Anat. and Physiol.," Oct., 1888) thus summarizes the results of his observations: In the second year the thighs grow at first at a rate of a little more than a seventh of an inch, and the legs a little less than a seventh of an inch a month; this gradually lessens until at the end of the year the rates are respectively a tenth and a little more than a twelfth of an inch. The monthly growth-rate goes on in diminishing rates until the eighth year, when it is an eighteenth and a twentieth of an inch.

He does not believe that during the period of development of femoral and tibial curvatures the growth-rate of the bones is, as a rule, diminished, except in cases of acute rickets with marasmus, although the child may not seem to grow taller, or may even seem to become shorter. This seems probable, because, if these patients are watched a year or two, we often find they are not permanently dwarfed, and that they will eventually show few signs of the deformity. This could hardly be if the growth were arrested or retarded in the second or third years of life—the usual time for rickets to appear, and the period of most rapid growth of the limbs. Actual measurement of limbs with curvatures, the real length of the limbs being taken, shows also that the actual growth of the leg and thigh is not less, on the average, than the growth of a straight limb at the same age.

Persistent Hyaloid Artery.—Tangeman ("Arch. of Ophthalmology," Sept., 1888) reports a case of persistence of the hyaloid artery. The fundus of the eye, with the entrance of the central artery, was distinctly visible. One large vessel passed forward through the vitreous to the region of the posterior surface of the lens, where it divided regularly into a network, and finally passed to the ciliary region, just posterior to the iris. The lens was clear, the pupil movable, but vision reduced to $\frac{20}{100}$. Sight had never been good in that eye. The vessels were not mere threads or fibers, but presented a distinctly red appearance. Very few similar cases have been recorded.

The Origin and Relations of the Hypoglossal Nerve in the Medulla Oblongata.—Koch ("Arch. f. mik. Anat."; "Revue des sciences méd.," July, 1888) arrives at the following results of his investigations according to the manner of Weigert:

There is no connection between the hypoglossal nerve and the olivary body. The true center of origin of the nerve is the center of Stilling. This is the more important, at least in man, because, as a general rule, there is an accessory center which plays an essential part, especially in the lower animals. The radical fibers do not cross each other between the center and the periphery. But there are transverse commissural fibers (fibræ commissurales nuclei) joining the center on one side to that on the other, and longitudinal commissural fibers (fibræ propriæ nuclei) which join different portions of the same center. The fibers which join the origin with the central gray masses cross in the rhaphe, place themselves on the dorsal side of the pyramid, and then take part in the formation of the corona radiata. The author has not been able to determine with certainty the relations of the center of the hypoglossal nerve with that of the pneumogastric and with the lateral columns.

The Formation of the Cerebral Convolutions.—Flesch ("Correspondenz-Blatt f. schweizer Aerzte"; "Revue des sci. méd.," July, 1888) advances the theory that the development of the systems of fibers in the white substance of the brain plays the essential rôle in the disposition of the principal fissures and convolutions, and that the appearance of secondary fissures results from the needs of nutrition, while the direction of the systems of fissures depends upon the relation of the brain to the cranium. An argument in behalf of this theory is the presence in the white substance of the spinal cord, in children and in

the lower animals, of longitudinal furrows, in addition to the two principal fissures, which disappear with the progress of development of the pyramids, the columns of Goll, and the lateral columns.

Congenital Bony Occlusion of the Anterior Nares.—Dr. Potter ("Buffalo Med and Surg. Journ.," September, 1888) reports a case of this rare abnormity. It occurred in a child two years and three months old, who had been noticed to have nasal stenosis on the left side since it was three weeks old. Inspection of the left nostril revealed a cup-shaped depression about three eighths of an inch within the orifice, with no opening into the interior of the nose. The obstruction was removed by means of a trocar which passed through five eighths of an inch of bony tissue, and then by a galvano-cautery knife. The right nostril was normal in every respect. Two similar cases in which both nostrils were occluded have been reported by Jarvis, and a unilateral post-mortem case by Delstanche. So far as the writer knows, these are the only cases on record.

Miscellany.

Mortality in Cities in the United States.—The following table represents the mortality in the cities named, as reported to Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, and published in the abstract of sanitary reports received by him during the week ending January 4th:

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—									
				Cholera.	Yellow fever.	Small-pox.	Varioloid.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y.	Dec. 29.	1,548,628	772	..	..	..	..	..	..	4	51	40	21	19
Philadelphia, Pa.	Dec. 28.	1,016,758	367	..	..	..	..	..	..	6	14	18	..	2
Chicago, Ill.	Dec. 22.	800,000	227	..	..	..	..	..	..	3	4	29	1	1
Chicago, Ill.	Dec. 29.	800,000	289	..	..	..	..	..	..	14	4	26	4	3
Baltimore, Md.	Dec 29.	431,879	163	..	..	..	..	..	..	4	..	3	..	..
San Francisco, Cal.	Dec. 22.	330,000	96	..	..	1	..	..	..	..	1	2	..	2
Cincinnati, Ohio.	Dec. 29.	255,139	84	..	..	..	..	..	..	4	..	2	..	..
New Orleans, La.	Dec. 22.	248,000	132	..	..	..	..	..	..	1	1	2	..	1
Pittsburgh, Pa.	Dec. 29.	230,000	68	..	..	..	..	..	..	6	..	1	..	..
Cleveland, Ohio.	Dec. 1.	227,861	63	..	..	..	..	..	..	2	1	4	..	..
Milwaukee, Wis.	Dec. 29.	195,000	58	..	..	..	..	..	..	1	4	3	..	..
Kansas City, Mo.	Dec. 29.	180,000	36	..	..	..	..	..	..	..	2	..	..	..
Minneapolis, Minn.	Dec. 22.	180,000	30	..	..	..	..	..	..	..	..	..	..	..
Newark, N. J.	Dec. 18.	178,000	74	..	..	..	..	..	..	4	..	7	..	1
Newark, N. J.	Dec. 25.	178,000	65	..	..	..	..	..	..	1	..	6	..	..
St. Paul, Minn.	Dec. 29.	175,000	35	..	..	..	..	..	..	3	..	2	1	..
Rochester, N. Y.	Dec. 28.	120,000	37	..	..	..	..	..	..	1	..	5	..	..
Detroit, Mich.	Dec. 29.	116,340	61	..	..	..	..	..	..	..	1	7	..	..
Richmond, Va.	Dec. 24.	100,000	35	..	..	..	..	..	..	..	..	..	..	1
Denver, Col.	Dec. 28.	96,000	41	..	..	..	..	..	..	1	..	3	..	..
Toledo, Ohio	Dec. 28.	80,000	17	..	..	..	..	..	..	1	..	2	..	..
Camden, N. J.	Dec. 27.	70,000	32	..	..	..	..	..	..	5	..	1	..	..
Nashville, Tenn.	Dec. 29.	65,153	16	..	..	..	..	..	..	2	..	..	..	..
Charleston, S. C.	Dec. 22.	60,145	39	..	..	..	..	..	..	..	..	2	..	..
Charleston, S. C.	Dec. 29.	60,145	33	..	..	..	..	..	..	1	..	..	..	..
Lynn, Mass.	Dec. 29.	50,000	15	..	..	..	..	..	..	..	..	1	..	..
Manchester, N. H.	Dec. 22.	41,000	16	..	..	..	..	..	..	1	..	5	..	..
Portland, Me	Dec. 29.	40,000	10	..	..	..	..	..	..	..	..	..	..	..
Galveston, Texas.	Dec. 21.	40,000	9	..	..	..	..	..	..	..	..	..	..	..
E. Saginaw, Mich.	Dec. 29.	33,000	8	..	..	..	..	..	..	..	..	..	..	..
Burlington, Iowa.	Dec. 28.	30,166	6	..	..	..	..	..	..	..	..	..	..	..
Altoona, Pa.	Dec. 22.	30,000	4	..	..	..	..	..	..	..	..	2	..	..
Auburn, N. Y.	Dec. 29.	26,000	7	..	..	..	..	..	..	..	1	..	..	..
Haverhill, Mass.	Dec. 29.	25,000	11	..	..	..	..	..	..	..	..	..	..	..
Newport, R. I.	Dec. 27.	22,000	8	..	..	..	..	..	..	..	..	..	..	..
Newton, Mass.	Dec. 29.	21,105	8	..	..	..	..	..	..	..	..	..	..	..
Keokuk, Ia.	Dec. 29.	16,000	5	..	..	..	..	..	..	..	..	..	..	..

The Health of Michigan.—According to the State Board of Health's Report for the four weeks ending December 29, 1888, diphtheria was reported from fifteen places, scarlet fever from fifteen places, typhoid fever from thirty places, measles from ten places, and small-pox from six places.

The Health of Kansas City, Mo.—According to the Health Department's "Weekly Return" for the week ending January 5th, there were 30 deaths, including 1 from diphtheria, 1 from catarrhal fever, 1 from meningitis, 2 from pneumonia, and 1 from septicæmia.

The New York Academy of Medicine.—At the next meeting of the Section in Surgery, to be held on Monday, the 14th inst., Dr. L. B. Bangs will read a paper on "Spasmodic Stricture of the Urethra from Fissure of the Anus," and Dr. J. B. Bissell one on "Congenital Deformity of both Knees." The nomination and election of officers will also take place.

At the next meeting of the Section in Theory and Practice of Medicine, to be held on Tuesday, the 15th inst., Dr. W. H. Thomson will read a paper on "Auto-infection." An election of officers will take place at the same meeting.

New Haven, Conn., Medical Association.—At the annual meeting, held January 2d, officers were elected as follows: President, Dr. J. P. C. Foster; first vice-president, Dr. C. Purdy Lindsley; second vice-president, Dr. T. N. Russell; secretary and treasurer, Dr. Frank W. Wright; prudential committee, Dr. J. P. C. Foster, Dr. H. Fleischner, and Dr. F. W. Wright; finance committee, Dr. S. W. Williston and Dr. L. J. Sanford. The report of the secretary showed that the association had fifty-eight members—two fewer than one year ago—and that during the year 1888 twenty regular meetings had been held, with an average attendance of fourteen and one fourth members, three papers had been read, fifteen questions discussed, four pathological specimens presented, and fifty-two cases related. The association has a building-fund of about two thousand dollars.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

ON THE RELATION OF THE NASAL AND NEUROTIC FACTORS IN THE ÆTIOLOGY OF ASTHMA.*

By F. H. BOSWORTH, M. D.

The first question that arises in the discussion of this topic is, What is the true pathological lesion which gives rise to a paroxysm of asthma? From the earliest days of medical literature up to comparatively recent times we find all authorities accepting the theory that a paroxysm of asthma is due to a spasmodic contraction of the small circular muscular fibers which have been demonstrated by anatomists to exist in the bronchial tubes even down to their smallest ramifications. It seems rather curious that this theory should not long ago have been questioned. All observers very properly recognize asthma as a neurotic disease, and muscular spasm is undoubtedly a manifestation of the neurotic temperament, and apparently on this trivial ground the theory has been accepted. If the paroxysm is due to muscular spasm, why should the attack occur, in most instances, only at night? Why should it be affected by changes in temperature? Why should relief be obtained by high altitudes? Why should an attack be aggravated by a damp, bad atmosphere? There is everything in the repose of a quiet sleep which should protect one from an attack of asthma, and yet a paroxysm almost invariably comes on during the night. Changes in temperature are not usually recognized as having any marked effect on the nervous system, and yet a change in climate not infrequently precipitates a seizure of asthma. The sea-shore rather than mountainous districts is favorable to the toning up, as it is called, of the nervous system, and therefore asthmatics should suffer least at the sea-shore on this theory; yet the converse is true. Again, a paroxysm of asthma is ushered in suddenly, and during its persistence is characterized, it is true, by symptoms which are easily explained upon the theory of spasmodic muscular contraction of the circular fibers of the bronchial tubes, but the culmination of the attack is invariably marked by a more or less profuse sero-mucous exudation with cough and expectoration. This in no way can be harmonized with the spasmodic theory. I think, then, this view must be abandoned, as failing to explain the clinical history of asthma or the clinical history of a paroxysm. The first to call in question this spasmodic theory was Webber,† who demonstrated conclusively, to my mind, that an asthmatic paroxysm was due not to muscular spasm but to a paralysis of the vaso-motor nerves regulating the caliber of the blood-vessels of the bronchial mucous membrane. Under the influence of this vaso-motor paralysis coming on suddenly the blood-vessels in the bronchial membrane assume a sudden turgescence, under which the membrane becomes markedly swollen and congested, thereby encroaching notably upon the caliber of the bronchial tubes, constituting really the first or dry stage of inflammation, although differing from inflammation in that there is no tendency whatever to the escape of leucocytes or the development of the second inflammatory stage. The membrane is swollen, dry, and non-secretive. The result of this swollen condition is to interfere with not only the entrance of air to the air-cells, but also to its escape, giving rise thus to dyspnœa, both in inspiration and expiration. This condition, persisting for a certain length of time, somewhat precipitately gives way in connection with a more or less profuse exosmosis of serum, and the attack subsides. In this theory of Webber's we have one which very completely harmonizes not only with the clinical history of asthma, but with the clinical history of the paroxysm. Furthermore, it recognizes the view that the disease is essentially a neurosis. Medical science has not yet reached the stage where it can tell us in what neurosis consists, or what essential pathological lesion constitutes the nervous habit. That it is dependent on some structural change, I think, can not be questioned, as all so-called functional disorders are, the term "functional" being simply one which we use to cloak our ignorance of true pathological conditions. If, however, there is any morbid condition which constitutes the individual a neurasthenic, it is vaso-motor paresis involving some region of the body. Thus, in what we formerly called spinal irritation, it has been demonstrated that the backache and other symptoms characteristic of the disease are due to weakness of the vaso-motor control of the blood-vessels of certain portions of the spinal cord. In the same way, in the disease we call asthma, the essential pathological lesion consists in a weakness of vaso-motor control of the blood-vessels of the mucous membrane of the bronchial tubes. If, then, Webber's theory of spasmodic asthma be accepted, as I think it must be, we have gone far toward understanding why there should be a close ætiological relation between this affection and a diseased condition of the nasal mucous membrane.

In a former paper read before this association * in 1885 I discussed quite fully the true physiological function of the nasal mucous membrane, and the intimate connection between that and the bronchial membrane. I need, therefore, but briefly allude here to the views then advanced. The great and important function of the nasal mucous membrane is exosmosis of serum, by which the inspired current of air shall be so far saturated with moisture as that in passing through the bronchial tubes the mucous membrane lining them shall in no way be disturbed by the absorption of moisture by the respiratory current. Furthermore, this exosmotic function is regulated with an extreme degree of nicety through vaso-motor control in such a way that the serous exudation shall adapt itself to the various changes of temperature and humidity of the respired air. There is thus established a very close and exceedingly intimate connection between the membrane of the one region and that of the other. I think that much in the same way as the respiratory movements of the thoracic walls are regulated

* Read before the American Climatological Association at its fifth annual meeting, September, 1888.

† "Tageblatt der 45te Naturversammlung zu Leipzig," p. 159, 1872.

* "Hay-fever and Asthma and Allied Affections," "New York Medical Journal," April 24, May 1, 1886.

by the so-called *besoin de respirer*, and the demand for oxygen on the part of the blood controls the rate and rhythm of these movements closely and accurately, in just the same way the serous exosmosis from the nasal mucous membrane is regulated to adapt itself to the condition and demands of the bronchial membrane. The blood-supply of the two regions is thus brought into very close and intimate relation, and is virtually under the control of the same system of nerves, so far does this sympathy between the two regions go. Very close observation can easily demonstrate that a plethora of the blood-vessels of the nasal mucous membrane tends to develop a like plethora in the bronchial mucous membrane, and, furthermore, that, if we produce an anæmic condition of the turbinated tissues, an anæmic condition of the bronchial mucous membrane tends to follow. Given now still a third condition—that of vaso-motor paresis of the blood-vessels of the nasal membrane—the tendency is most marked to the development of a like weakness in the bronchial membrane. This is strikingly illustrated in cases of hay-asthma, which differs in no essential degree from ordinary spasmodic asthma except in the exciting cause of the paroxysm. The clinical history of every case of hay-asthma shows that the hay-fever attack precedes it invariably from one to ten days, the vaso-motor paresis of the blood-vessels of the nasal mucous membrane constituting hay-fever, being followed by the same pathological lesion in the bronchial mucous membrane, constituting an attack of asthma. This connection being established, it only remains to establish a connection between perennial asthma, or that form of asthma which is not connected with hay-fever, and the ordinary obstructive lesions in the nasal chambers. In a recent paper* I made an analysis of eighty of the cases of asthma taken from my own note-books which had been under treatment and in which the records were complete. This analysis demonstrated several points which are exceedingly pertinent to the subject under discussion. With reference to the existence of intranasal disease, such was found to be present in every case in sufficient degree to warrant the conclusion that it exercised a powerful causative influence in the production of the asthmatic attacks. This conclusion of course can easily be questioned, but I think the proof that my view was correct is shown in the fact that of these eighty cases forty-six were cured, twenty-six were improved, three unimproved, and five unknown, and this entirely as the result of treatment of the nasal disorder. The inference, I think furthermore, can safely be drawn that, if the attack of asthma is cured by curing the nasal disorder, the asthma was caused by the nasal disorder. Now, I do not mean to say that nasal disorder is the sole and only cause of every case of asthma. I think no one will dispute the powerful influence exerted by a neurotic habit, which all recognize as present in every case. Let us see what the conditions are which give rise to an asthmatic paroxysm. I think we shall find them covered by the three following heads:

1. The neurotic habit, as best shown in Salter's exhaustive work.

2. A diseased condition of the nasal mucous membrane, as shown by Daly,* this consisting simply of some obstructive lesion giving rise to a vaso-motor weakness of the bronchial mucous membrane through the intimate sympathy between the two regions already alluded to.

3. Some peculiar atmospheric condition which has never yet been determined, but which precipitates the paroxysm.

The first of these causes is recognized by all. On the second cause I have already written in the paper alluded to at sufficient length. I think the existence of the third cause must be accepted on clinical ground, for, as we know, the paroxysm is dependent on seasonal and diurnal conditions, probably atmospheric. Sir Andrew Clark,† in 1886, advanced the doctrine that hay-fever and asthma were virtually one and the same disease, a view which I had already advocated in my paper read before this association in May, 1885, the one disease being vaso-motor bronchitis, while hay-fever was a vaso-motor rhinitis; in the one case the hay-fever attack being produced, first, by a neurotic condition; second, a diseased condition of the nasal membrane; and third, the presence of pollen in the atmosphere. The atmospheric condition alluded to above as the third cause of the asthmatic paroxysm is closely analogous to the pollen-laden atmosphere which produces hay-fever; but whereas in one case the pollen theory has been absolutely demonstrated by Blackley's incomparable experiments,‡ the peculiar atmospheric conditions which give rise to asthma have not been determined. Of course it is not safe to make the statement that every individual of neurotic habit who suffers from obstructive lesion in the nose will necessarily have asthma, and yet I think the conviction would force itself strongly upon any one who was brought largely in connection with cases of this sort that, with these two conditions present, we have elements strikingly favorable to the development of spasmodic asthma, and no slight probability of such development occurring. There is one statement, I think, that should be made in this connection, and that is that I think many cases are overlooked in a mistaken diagnosis of bronchial congestion, slight cold, incipient bronchitis, etc. Asthma is a far more frequent disease, I think, than is generally recognized, and I am very confident that many cases in the earlier stages are overlooked and the diagnosis not made until a well-marked paroxysm sets in with its attendant suffering and distress. Going back to the original topic of discussion suggested in the programme as to what relation the neurotic bears to the nasal element in causing asthma, the conclusion I have drawn I hope is sufficiently clear. Both elements constitute powerful predisposing causes of the disease, and furthermore, from my point of view, a case of asthma in which they are both not present is exceedingly rare. But when we come to consider the comparative relation of the two, I think the importance of the nasal element must be conceded when we consider the question of successful treatment. And this, I think it must be conceded, is accomplished by the removal of any one of the three causative factors—the neurotic habit, the atmospheric condition, and the nasal disorder. Now, the treatment of

* "Asthma, with an Analysis of Eighty Cases," etc., "American Journal of the Medical Sciences," September, 1888.

* "Arch. of Laryngol.," iii, p. 157.

† "International Journal of the Medical Sciences," January, 1886.

‡ "Hay Fever," London, 1873.

asthma by general medication—or, in other words, the cure of this disease by therapeutic remedies directed to the control of the neurotic habit—does not present a brilliant chapter in medical literature. In other words, we possess no specific remedy for the disease. The nearest approach to this, I think, all will recognize in iodide of potassium, and yet, if we closely examine our note-books as to the permanently beneficial effects of this drug, our success has not been brilliant Much less can be said of the use of belladonna, zinc, arsenic, and other so-called nervines. As regards the removal of the atmospheric condition, this consists simply in a change of residence; this, I take it, we all recognize as a temporary measure—the attacks recurring as soon as the patient returns to his former unfavorable atmospheric surroundings.

Turning, however, to that system of treatment which is based on the cure of the nasal disorder, I think I need but refer again to the statistics of my own eighty cases already quoted, which, if correctly compiled—and I certainly made every endeavor that they should be recorded not only with accuracy but absolute candor—the question is sufficiently answered. Basing, then, the question of the comparative importance of these two factors in asthma on perhaps the most important element in the consideration of the disease—viz., its successful treatment—I think it may be fairly claimed that of the three elements which enter into the causation of asthma—namely, a neurotic habit, the nasal disease, and atmospheric conditions—the nasal disorder far outweighs in importance not only the nervous but all other elements of causation.

Remarks by

E. L. SHURLY, M. D.,
DETROIT.

In order to divest our subject of all ambiguity, let us establish our first standpoint upon the simple classification of *primary* or *essential asthma* and *secondary* or *symptomatic asthma.* For under one or other of these heads all cases, acute or chronic, may be classified which present that peculiar dyspnœa to which the name *properly* belongs. As we are aware, the ætiology of this peculiar dyspnœa has all along been enshrouded in mystery, especially of those cases which have appeared to show little if any structural change, and those which have been marked by a peculiar periodicity, known as hay-asthma; for the elucidation of its nature, therefore, various theories have been advanced, prominent among which are the *hæmic*, *inflammatory*, *Leyden's crystal*, *spasmodic*, *vaso-motor*, *peptic*, *nasal*, and other perhaps less significant ones.

It will be unnecessary, however, for the purposes of this discussion, to notice them historically and in detail; but I must call your attention particularly to the "spasmodic," "vaso-motor," and "nasal," the latter of which has been so ably presented to the profession of late by Dr. Daly, Dr. Roe, Dr. Bosworth, Dr. Ingals, Dr. Mackenzie, Dr. Sajous, and others.

Not fully convinced that the more recent and now prevalent ideas regarding the nature of the disease were rationally consistent with clinical observation, I instituted in the physiological laboratory of the Detroit College of Medicine a series of experiments upon dogs, and elicited the following information, according to the observation of myself and those who were present: Carefully dissecting out and isolating a portion of the pneumogastric nerve in the neck, a finely pointed electrode attached to a faradaic battery was applied, with the result of producing marked contractions of the trachea, bronchial tubes, and diaphragm; the contractions were both circular and longitudinal, effecting an obvious shortening of the air-passages; in fact, always resulting in a squeezing, so to speak, of the pulmonary organs from below upward. With the fingers could be *felt*, during the time of shortening, little rugæ, especially along the trachea. Upon laying open the trachea down to the bronchi, we could *see* the mucous membrane assuming small folds not unlike the *valvulæ conniventes.*

For a while after the application of the stimulus, respiration seemed to become almost entirely suspended, but soon Nature, operating against this continued danger, would succeed in relaxing the diaphragm, a little at first, and then the bronchial muscles, until a slight inspiratory effort took place. And so on, despite the great contractile opposition maintained, a feeble but sufficient respiration was carried on, thus illustrating as plainly as could be the phenomena of an asthmatic paroxysm. With a feebler current of stimulation, the action was more plainly visible.

These experiments were continued for about half an hour upon each animal, with the same physical effect in each case, and without producing any *sensible engorgement* of the mucous membrane of the *bronchial* or *nasal passages*, or any other result indicating vaso-motor paresis.

These experiments illustrated as plainly as could be the respiratory phenomena of ordinary asthma, and I may state, however, that the same effects did not follow the stimulation of the carotid plexus, although our experiments in this particular were not satisfactorily made.

The next series of experiments consisted of exposing one of the *spheno-palatine ganglia*, which in a dog is difficult to do; in fact, I should not have succeeded but for the able assistance of our demonstrator of anatomy, Dr. J. B. Wright, who is also a graduate of a veterinary college. This ganglion (which, it will be remembered, presides over the innervation of the posterior portion of the nasal passages) was stimulated as in the other experiments, very carefully avoiding contact with muscular tissue, with the effect of producing contraction of the nasal, palatine, and upper constrictor muscles—in short, producing the phenomenon of sneezing, but no contraction of the bronchioles at all. Under a very powerful stimulus the extrinsic muscles of the larynx would occasionally twitch. Mechanical irritation, such as pinching of the ganglion, produced only slight contractions of the palatine and nasal muscles.

Following these experiments, we quickly opened the nasal cavities and found only *very slight*, if any, engorgement, no swelling of the turbinated bodies, and no excessive secretion. I am aware that a few experiments of this sort have been made in Europe and results published contrary to those obtained by me.

With other dogs I applied to the nasal mucous mem-

brane, besides electricity, powdered sanguinaria, or an abundance of hay-seed containing rag weed probably, two of them being kept in an atmosphere containing more or less hay-seed for ten days, but without the induction of asthma, although in one dog there was an abundant nasal secretion. I also injected one animal, beneath the mucous membrane of the inferior turbinated bone, with an eighth of a grain of pilocarpine nitrate, but without the effect of producing anything save a slight local irritation and some constitutional debility.

It is therefore impossible for me, in the light of physiological experiments, which I think were conducted carefully, to discard the so-called "spasmodic" theory for the more recent one of *vaso-motor spasm* and consequent *blood engorgement*.

If the theory of vaso-motor paresis (advanced by Webber and advocated by Dr. Bosworth, in a recent able article upon asthma in the "American Journal of the Medical Sciences") accounts for the paroxysm of asthma, then, under the influence of an excitant producing such a condition, we ought to find at least considerable engorgement of the vessels within half an hour; whereas, in the experiments stated above, no such result followed.

Dr. Bosworth also objects to the term "reflex" in this connection, believing the term constitutes a mantle for our ignorance. While it is undoubtedly true that the term "reflex" is often misappropriated, its use is perfectly justifiable in its application to the disease under consideration, because we seldom know exactly what the *modus operandi* of the cause or causes leading to the paroxysm is.

However, assuming—because generally admitted even by Dr. Bosworth as a fact—the existence of a neurotic predisposition or habit (hereditary or acquired) underlying all cases of asthma, it will be unnecessary to discuss further whether it be a reflex or direct irritation that precipitates the paroxysm, only that asthma, properly speaking, is essentially a *spasmodic* disturbance of the bronchial nervo-musculature, independent in part of vaso-motor disturbance, and this, it seems to me, can be fully demonstrated.

Coming to the question of *intranasal disease* as the foundation of asthma and also hay-fever, I must take issue with the radical position held by Dr. Bosworth and others. In the first place, I must object to the wholesale condemnation of the noses of asthmatics which seems to prevail, for I believe with Mackenzie, of London, that there is no invariable standard of normality for nasal chambers any more than for arms, legs, eyes, or ears. What may seem a normal condition in one individual may be abnormal in another. When the nasal passages are open enough to admit of easy respiration through them, vascular enough to warm the inspired air, and bathed with secretion or moisture in proper quantity and quality for such a physiological condition as to give the owner no thought or consciousness of possessing a nose, such passages are practically healthy, whether there be slight deflection of the septum or not, or whether a turbinated body presents the orthodox curves, position, and size or not.

I have been examining nasal passages more or less for the past eighteen years, and I can not say now that I have seen many typically symmetrical examples of Nature's art in this direction; yet I should be amazed beyond recovery to become possessed of the conviction that in all this time I had seen but few healthy nasal passages, and really *none* possessed by asthmatics. Within the past two or three years I have taken pains to examine the nasal passages of many asthmatics, both in hospital and private practice, without observing even a majority with what I regard as diseased conditions of the nasal passages, while the "sensitive area" promulgated by my friend Dr. J. N. Mackenzie has been also wanting in most of those coming under my observation. On this point I am convinced that its occasional occurrence is due to the fact that the nasal mucous membrane of some persons is more sensitive than others either throughout or in part—analogous to similar conditions of mucous membranes of other parts, such as the rectum, vagina, and urethra; that it is generally met with in the noses of asthmatics or other persons is contrary to my experience.

That *intranasal disease* is a factor in the production, or rather prolongation, of some cases of asthma must be admitted, but that it is often the foundation is contrary to my observation.

I am sure that daily experience overwhelmingly shows a large number of cases of intranasal disease, such as deflections, neoplasms, and hypertrophies, in persons of neurotic habit, with a very small proportion of cases of associated asthma, and the same is nearly true regarding "hay-asthma"; although we must not forget that "hay-fever" and "essential asthma" are not one and the same disease, for the one is a peculiar constitutional disturbance characterized by a specific rhinitis allied to influenza, while the other is a neurotic disease of the respiratory apparatus, non-inflammatory ordinarily—at least at first—and not accompanied by coryza or rhinitis necessarily. The two diseases are undoubtedly allied, and sometimes coexist; there may be hay-fever with or without asthma, and asthma independent of rhinitis or hay-fever.

Now, if asthma depended upon intranasal disease almost wholly, we should find: 1. Nearly all cases of asthma presenting intranasal structural disease, and accompanied by rhinitis at first or during its duration. 2. We should observe asthma in a large majority of the cases of intranasal structural disease or neoplasms. And 3. We should be able to produce asthma by experimental or accidental irritation of the nasal mucous membrane at any season in individuals possessing the "peculiar neurotic habit."

Lastly, regarding the local treatment of nasal cavities with the *galvano-cautery*, other *caustics*, and *surgical manipulation* for the relief of asthma, I would say that although the valuable statistical article of Dr. Bosworth shows such really good results, I would, however, respectfully suggest that the real therapeutic value of such measures probably lies more in the therapeutic principle of *counter-irritation* than in the destruction of the causal nidus, for the following reasons: 1. Blistering and other counter-irritation over the neck and chest (though an old remedy) is one which often has given as good results as the galvano-cautery, especially in my hands; this and other seasons I

have treated some cases of hay-fever in this way, and also by the application of tincture of iodine (as suggested by Dr. Faulkner, of Alleghany City), with even better results than I have had with the galvano-cautery or saw. 2. The idea of destroying all of the peripheral nerve-ends without wide and absurd destruction of intranasal tissue seems impossible, owing to the anatomical structure of the parts; for how else can be reached the remote and hidden mucous surfaces of the nasal passages, which contain by far more of the sensory filaments than the parts which can be brought in view? I must confess that the results obtained by cauterization of the mucous surface have not been permanent in my hands except in two or three instances, which may be possibly due to lack of skill or perseverance. At the same time, when there are neoplasms or hypertrophies which really obstruct the nasal passages, the galvano-cautery or some such means ought to be employed.

Remarks by

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I MAY say, with no concealment of pride, that it has given me great pleasure to view the mass of valuable and pertinent work all over the civilized world that has followed my rather unpretentious record of observations, read before the Congress of the American Laryngological Association in New York in 1881, upon the subject of hay-asthma in its relation to nasal and neurotic factors. That paper seems to have marked a most important epoch in the study of this subject, for shortly thereafter followed Hack's valuable work, and J. N. Mackenzie, Roe, Bosworth, Sajous, Allen, and a host of others brought forward their experience—all of them more or less verifying the observations I had published, and many of them enlarging and strengthening the views I there promulgated. Some of them, however, possibly went further than I was then prepared to go. But I desire it understood that I am now prepared to go further than I was when I made my original observations. And I am also, as I was then, prepared to concede to others that they are looking into the same truth from a different standpoint, and that I believe they are right, like myself, so far as I go into the complicated and intricate question of asthma and the nasal factors thereof.

Now as to Dr. Shurly's experiments. I have always valued experimental research as being entertaining and instructive. It is, however, subject to being misinterpreted by us, and if so, then it is misleading to a serious degree. I know it has the air of precision about it to look at results that have been arrived at after a careful summing up of observations made upon vivisections of the lower animals; but, as a matter of fact, the suddenly produced objective results on the lower animals are pathologically a vastly different thing from the subjective results of years of complicated diseased action in some of our cases of asthma in the human being. In the latter the nerve factor may be that which is most manifest. But is it *the* factor or the only one through which the medical man must view the pathological process of asthma? I think it ought not to be considered the only one.

Now, gentlemen, we have much yet to learn upon this subject, and I do not believe any of us have ever told the whole truth about asthma, or hay-asthma either. I apprehend the truth is so big that none of us small mortals can take it all in, even in one of our most comprehensive views. We are, to a certain degree, like the three blind men in the wise fable of Tolstoi. The blind men came to see the elephant after their manner. They felt of the elephant, received their impressions of what it was like, and went away, each with a very definite notion of the appearance of an elephant. But their ideas differed widely. "An elephant," said one of the blind men, "is a kind of whip." He had felt of the tail. "No," said another blind man, "an elephant is a kind of horn." He had felt of the tusks. "No, no," cried another, "an elephant is a great round creature like a ball, and covered with rough skin." He had felt of the side. Each man had touched one little part of the big elephant, and thought that part was the whole. Each man was right so far as he went, and from his point of view; he began to be wrong the moment he insisted he had gone as far as anybody could go, and knew the whole of it. He began to be not only wrong but intolerant the moment he declared that his fellow, because he differed from him, must in the nature of things be either deceiving or deceived. These men forgot, or did not know, that an elephant was big. That is what was the matter with them. Is it not also the matter with us?

Now, gentlemen, do we not often forget that our truths are big and not easily reached? Do we not oftener spend valuable time trying to prove the fallacy of what another has honestly and correctly observed upon the subject of a big truth rather than strike out into a new line of observation and add more that is authentic regarding the same truth? I think we too often do this.

I am reminded of the occasion of the first day's meeting in the throat section of the great International Medical Congress at Copenhagen, in 1884, when much valuable time was taken up in the discussion of the relative superiority of inhalations, sprays, and insufflation of powder in diseases of the respiratory passages. The discussion was almost entirely in German, and by Germans, and the burden of it all was the Teutonic enthusiasm with which each champion of either spray, powder, or gas sought to impress the others with its superiority and the utter uselessness of the other measure, until some of us were nauseated into the belief that we were attending a convocation of Teutonic medical men with one idea, and not a great international congress in which a dozen intelligent and civilized nations were ably represented. These latter remarks refer to the first day's proceedings only, and I am pleased to say the work assumed an international complexion the next day, where every nation's representatives alike had an opportunity to discuss any part of such truths as he was familiar with.

Men get hold of one little corner of a great truth and say, This is the truth. And they listen to another who has his hand on the same truth, but on another side, and answers, "That is error." We are apt, therefore, to allege more for our observations than they are really worth, and indeed consistent and moderate is the man who alleges only

enough. In this connection I desire to say that what allegations were made by me, and what opinions and observations expressed upon that form of asthma known as hay-asthma eight years ago, in a paper entitled "Hay-asthma and Naso-pharyngeal Catarrh," I believe now that I then took one of the blind men's views of a great truth, and told my story of the question as I saw it. But I have since examined it again and again, and observed more and more, and, with the accumulated experience of eight years and careful observation, I must say that the questions I then formulated are still more strongly tenable in the light of accumulated practical experience—viz., that there is a certain proportion of cases of hay-asthma and also of asthma, and I am convinced the proportion is a growing one, that can be cured by putting the naso-pharynx in a healthful condition.

This, gentlemen, is the corner of the great truth which my hand touches. But I can not and will not say that my fellow, who appears to differ with me, has not also his hand on another part of the same truth.

Remarks by

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While agreeing with Dr. Bosworth that many cases of asthma have their origin in irritation of the upper air-passages, I believe there are also many cases having a different origin. There is no single locality which is always the seat of the reflex action. I have a patient, for example, who can bring on an attack at any time by imprudence in diet. A lobster-salad will cause a paroxysm with unvarying certainty. Here the gastric branch of the vagus is at fault. Such cases are by no means rare, and the term dyspeptic asthma is an entirely legitimate one. I am sorry that, in his physiological experiments, Dr. Shurly did not try the effect of irritation applied to the gastric nerve.

I can not agree with Dr. Bosworth that vaso-motor paresis is the main element in asthma. The very rapidity with which the dyspnœa follows irritation of the nasal membrane in his experiments speaks against the theory of tumefaction of the pulmonary mucous membrane resulting from vaso-motor paresis as the cause of the obstruction. Such tumefaction would require considerable time for its production, whereas the wheezing follows instantly upon touching the irritable nasal surface, thus indicating spasm of the muscular fibers encircling the air-tubes.

Still, I do believe that there is a form of asthma in which vaso-motor disturbance plays a prominent part, not alone by causing tumefaction of the pulmonary membrane, but also by retarding the flow of blood through the capillaries. Dyspnœa results as surely from retardation of blood in the capillaries as from lack of air in the alveoli. Many years ago I observed that, while most patients with asthma were immediately relieved by the inhalation of oxygen, some were not at all benefited. This, I think, may be explained by supposing that in the latter cases the trouble is chiefly in the blood-vessels and not in the air-tubes; that the patient is suffering not from a lack of oxygen, but from a lack of blood to carry the oxygen to the tissues. The positive clinical evidence in favor of the existence of the vaso-motor function in the lungs, such as the occurrence of sudden congestion, etc., appears to me conclusive, notwithstanding the negative results of anatomical and physiological researches.

With regard to nasal irritation, I believe that abnormal contact of surfaces within the nose, especially if the contact is accompanied by pressure, will often produce results far beyond what would naturally be expected. For example, I have again and again seen obstinate catarrh immediately relieved by removing the pressure of an hypertrophied turbinated body upon the septum, and I do not for a moment doubt that many cases of asthma can be cured in like manner. I admit this the more readily because I was formerly of a different opinion. But I still think we are going much too far when we seek to establish it as a rule that asthma is to be cured by operative procedures within the nasal cavities. The problem is too complex to admit of such a simple solution.

OUR PRESENT KNOWLEDGE CONCERNING THE ÆTIOLOGY OF TYPHOID FEVER.*

By AUGUSTUS CAILLÉ, M. D.,

VISITING PHYSICIAN TO THE GERMAN HOSPITAL AND TO THE CHILDREN'S DEPARTMENT OF THE GERMAN DISPENSARY.

Gentlemen: We have assembled here this evening for the purpose of discussing the ætiology and treatment of a disease which, owing to its general prevalence and grave importance, should be thoroughly understood by the practitioner in medicine. Before I endeavor to present a clear picture of our recent views and knowledge concerning typhoid fever I would intimate that medical nomenclature has not kept pace with our better understanding as to the causation of disease, and in consequence we occasionally miss in the written and oral communications of medical men that sharp distinction existing between a specific typhoid fever and a typhoid symptom.

We all know that the expression "typhoid" (*τύφον*) indicates drowsiness and cloudiness of the sensorium, and in earlier days was applied to almost all febrile disorders having such typhoid symptoms, so that at the beginning of the present century we find the terms typhoid fever, typhus fever, relapsing and remittent fever, used almost synonymously on account of their common symptom. About the year 1830 Jenner in England and Griesinger in Germany pronounced typhus and typhoid fever as two distinct disorders, the former alone being directly contagious.

This opinion, expressed so many years ago, holds good at the present time, but we know in addition that the typhoid stage or symptom which we frequently observe in acute febrile disorders—as in pneumonia, diphtheria, scarlatina, puerperal fever, or peritonitis—is probably due to a persistent high temperature which accompanies such diseases, and has no connection with typhus or typhoid fever.

If we bear this in mind there will be no necessity for coining such misleading terms as typho-malarial fever, etc.

* Read before the Medico-chirurgical Society of German Physicians, June 4, 1888.

Definition of Typhoid Fever and its Specific Poison.—For the purpose of brevity we may omit the usual historical retrospect and take up the study of typhoid fever from the time of its recognition as a general infectious disease, defining it as a specific endemic disorder not directly contagious, the poison of which is present in the excrement of the person afflicted. Anatomically, we find swelling and necrosis of certain glandular structures within the intestines. Clinically, we notice prolonged fever, continuous in the acme and remittent in the beginning and the end, with a tendency toward heart failure.

This is not an exact definition, but it will suffice for the purpose of our discussion. The question now presents itself: Are the above-mentioned symptoms occasioned by a purely chemical poison, or is the exciting cause of the infection of parasitic origin?

Is it a chemical poison? No poison, organic or inorganic, fixed or volatile, can produce the above-mentioned (complex) symptoms, or occasions or is accompanied by a more or less typical fever curve of three to five weeks' duration. No mineral poison, none of the numerous poisonous vegetable alkaloids, neither cyanides nor any other poisonous compound obtained by synthesis, can produce symptoms similar to those of typhoid fever. All the well-known poisons most rapidly destroy life when taken in sufficient quantity, and occasion little or no disturbance if taken in diminutive doses. A propagation of a purely chemical poison within the body, accompanied by characteristic symptoms extending over a long period of time, is an impossibility. As long as the normal functions of the tissues are not materially interrupted, elimination follows; otherwise death speedily results.

Even the isolated ptomaines do not, to my knowledge, provoke prolonged and typical disease; they react upon the animal economy precisely in the manner of organic poisons in general. The same is true of the toxic gases; neither marsh-gas nor sewer-gas produces typhoid fever.

We might conceive of a volatile cause of typhoid fever by assuming the body to be exposed to its influence during the whole period of sickness. But such an assumption is rejected at once if we reflect that a patient after infection fails to escape the disease by withdrawing from the place of infection. Even were you to hasten him from New York to the North Pole, the disease would surely run its course. I know of a woman who was taken sick with typhoid fever in a small town near Wiesbaden, Germany, a few days prior to her departure for New York. She was sick on board the steamer, and remained sick for three weeks after the completion of her journey; and I suppose almost every physician is familiar with cases of that nature.

Accordingly, we may say that the poison of typhoid fever is not a chemical poison, for, *a priori*, its reproductive ability both within the system and external to the body, its intimate connection with putrefaction, the typical course of the disease—all these are indicative of its parasitic origin. The *modus operandi* may be expressed as follows: A specific parasite has the power of inducing putrefaction in a tissue wherein it is lodged and thereby produces a ptomaine. This organic poison is absorbed, produces symptoms of disease, and is finally eliminated; the system is therefore under the influence of a poison as long as its production within the body lasts. After several weeks the activity of the specific parasite reaches its limit and the production of the ptomaine ceases; thus we have an illustration of an acute infectious disease. That the vitality of a parasitic organism reaches a natural limitation is a palpable conception, and it has been suggested that many of the microorganisms may limit their own activity by the high body temperature which they induce. This may be quite true in many instances, but there are exceptions, for we know that the *Bacillus tuberculosis* thrives admirably notwithstanding the high and continuous fever which many phthisical subjects have.

What other proofs have we that the poison of typhoid fever is a *contagium vivum?*

The discovery of the specific bacillus is credited to Eberth and Koch. In 1880 Eberth described a species of bacilli present in recent cases of typhoid fever in non-ulcerated, enlarged intestinal follicles—Peyer's patches—spleen, liver, kidneys, lungs, intestinal lymphatics, and the central nervous system. The cultivation gave the best results in potato medium, and, according to Gaffky ("Mittheilungen aus dem Gesundheitsamt," Band ii), the potato cultivation of this bacillus is so characteristic that it may readily be distinguished from others by the naked eye, and is looked upon as a means of diagnosis. E. Fränkel and Simmonds sought to prove the specific pathological nature of the "typhoid" bacillus by animal inoculation. The later investigations of Beumer, Peiper, and Serotinin ("Zeitschrift f. Hygiene," Bd. i–iii) show that the evidence of inoculation is not absolutely conclusive, but still so satisfactory that these authors recommend prophylactic vaccination. The bacillus described by Eberth has occasionally been found in contaminated drinking-water and in milk; however, it is thought that such milk had been watered.

V. C. Vaughan, M. D., and F. G. Novy, M. S. ("Med. News," January 28, 1888), profess to have been the first to discover the bacillus of Eberth in this country, in an article entitled "Experimental Studies on the Causation of Typhoid Fever." A sick immigrant introduced the disease into Iron Mountain, Michigan. From August to December statistics show three hundred and fifty cases with 10 per cent. mortality. The presence of the bacillus in the drinking-water was demonstrated by the potato cultivation, and it was also found in the tissues of some of the patients.

We may therefore state that the evidence as to the parasitic origin of typhoid fever is conclusive.

Next in importance to the recognition of a poison, its source is of practical value, for if we know from what direction danger threatens we have a rational defense in prophylaxis.

If we at any time admit the existence of a specific parasite we must also admit its continual propagation, and it is not at all probable that the typhoid-fever poison originates spontaneously in putrescible matter, but that it finds therein a suitable vehicle for its growth and multiplication. In other words, drinking-water contaminated by drainage from

a cess pool will not cause typhoid fever unless the specific germ is contained therein.

Experience has taught us that the disease under consideration is not directly contagious, and we know, on the other hand, that the specific poison is contained in the dejections of the sick; therefore we may state, without fear of contradiction, that the *carriers of the contagion are chiefly air, water, food, clothing*, and, as I personally believe, the *clinical thermometer* in hospital wards.

It is hardly necessary to cite instances of infection by means of contaminated air (sewer-gas), the latter being simply a vehicle for the typhoid-fever germ.

Murchison has reported how a number of children were taken sick from breathing the air of a school-room contaminated by means of an open cess-pool. Nearly all the children were attacked, and those sitting nearest the closet were taken sick first. A positive proof of infection by means of sewer-gas has lately been reported. Some time ago several convicts were stricken with typhoid fever in one of the wards of the Michigan State Prison at Jackson. The Board of Health was called upon to investigate the matter under the supervision of Professor Vaughan, director of the Michigan Laboratory of Hygiene. The milk and the water supply were found pure. A defective sewer was found which had not been in use, but which communicated with a newly constructed sewer under the hospital ward. The air of the old soil-pipe was analyzed and the typhoid-fever germ found, and distinguished by the potato cultivation ("Sanitary News," February 8, 1888).

When air or sewer-gas is the medium of infection, absorption of the poison need not necessarily take place through the lungs. In all likelihood the germs are caught in the secretions from the naso-pharyngeal space and are swallowed.

Infection by means of drinking-water is a well-established fact and need not be dwelt upon. Occasional immunity is noticeable, but sooner or later finds its explanation. Dr. Underwood, customs medical officer at Kinkiang, China, noticed marked immunity from the disease among the natives in his district, notwithstanding the frequency of typhoid fever among the Europeans located there. He explains this by the fact that the Chinese drink no water while tea is at hand.

According to Billings and Prudden, impure ice may be the means of infection ("The Medical Record," April 2, 1887). Dr. Prudden states in his article that there are a considerable number of cases of typhoid fever in which the most painstaking examination of the sanitary surroundings of the victims and their personal contacts fails entirely to account for the occurrence of the disease. Some of these isolated cases of typhoid fever, whose origin is otherwise unaccountable, may well be due to the ingestion of bacilli from sewage-contaminated ice.

Contagion by Clothing.—The Berlin correspondent of the "Medical Press," March 28, 1888, reports a persistent epidemic that played havoc in a garrison artillery barracks from 1873 to 1885. A case of typhoid fever was imported in 1873, and from that date to the close of the epidemic 146 cases occurred. Every possible source of disease was looked into and everything kept in the best possible condition, but the disease baffled all inquiry. The closing of the barracks finally came up for consideration, but previously suspicion fell upon the bed-linen and clothing, because the vast majority of cases were furnished by the men of one battery alone. On close investigation, it was found that the linings of the trousers were, almost without exception, soiled by dry fæcal matter. The clothing was submitted to renewed careful treatment by means of chlorine and dry heat, from which time (November 18, 1885) no more cases of disease occurred.

Infection by means of the clinical thermometer in hospital wards, and through nurses who attend a typhoid-fever patient at one moment and presently prepare ice-water without previous disinfection of their hands, is a sure thing, in my opinion, and the possibility of its occurrence should be borne in mind and avoided by all means.

Local and Individual Disposition.—We have all read, or attempted to read and digest, the somewhat lengthy treatises on ground-water, the height of which is calculated according to the depth of well-water. As a matter of fact, ground-water stands in a certain relation to health, and Pettenkofer has found that typhoid fever is prevalent with low ground-water. The investigations of B. Latham, C. E. ("Popular Science Monthly," December, 1887), extend over a period of eleven years, and show for England the prevalence of typhoid fever *after* low ground-water.

On general principles, I should be inclined to hold that contaminated well-water would contain proportionately more germs if the well were nearly dry than if it were quite full.

Finally, it should be borne in mind that high temperature favors the development of typhoid fever.

Individual Disposition.—Concerning individual disposition little is known. Persons between fifteen and thirty years of age are most liable to be taken sick; the disease attacks more men than women, more robust than weakly individuals. It is the exception that one person is attacked more than once. I can, however, recall several such cases. Occasionally entire families are stricken with typhoid fever. In 1878, of a family of eight persons living at 113 Eldridge Street, all were attacked within four months, and all fortunately recovered.

The following cases are also of interest:

In 1878 I was called to attend a cigar manufacturer, living with his second wife and six sons in East Fourth Street, New York. About a year previous his first wife had died of typhoid fever in the same house. One of the sons was sick with typhoid fever and got well after severe illness. Six months later a second son became sick and died. Subsequently the family removed to a flat in St. Mark's Place, and in October, 1887, the whole family except the stepmother contracted typhoid fever, and all recovered; thus one of the sons had the disease twice. A sister of the head of this family, residing at Sing Sing, reports that within a few years she and two children have been sick with typhoid fever. Under such circumstances one may well speak of individual disposition, whatever that may be.

The diagnostic value of the "typhoid" bacillus deserves a passing notice.

Microscopic examination is insufficient for the purpose of diagnosis, the potato cultivation being necessary under all circumstances. Typhoid-fever stools should not be used for obtaining cultivations, as they contain many varieties of bacilli. The examination of peripheral blood usually yields a negative result. Lucatello has removed blood from the spleen with a Pravaz syringe and obtained cultivations in ten instances out of thirteen. The blood of "roseola" patches gives a positive result in 50 per cent. of cases. A diagnostic bacteriological examination consumes several days, and is therefore of little value as a preliminary procedure, because the clinical diagnosis is usually made in about the same time.

Such an examination may be of importance, however, in distinguishing between typhus fever, typhoid fever, acute miliary tuberculosis, and other forms of disease accompanied by a constantly high temperature. The precise relation of typhoid fever to those forms of disease which are similar but of a very mild type has not as yet been cleared up.

In conclusion, I would add a few words on the prophylaxis of typhoid fever.

Dr. Vilchur, of St. Petersburg ("Lancet," January 14, 1888), has found by experiment that boiling water kills the "typhoid" bacillus, and recommends that the stools of patients be treated with boiling water. Such a method is impossible in private practice for obvious reasons; nevertheless, the physician should insist that the stools be treated by some cheap disinfectant, also the soiled wash.

No sleeping apartment should have a wash-basin which communicates with drain-pipes and sewers. The occasional use of germicide solutions in waste-pipes is no safeguard against infection; it is far more advisable to place a large piece of crude potash into the sinks every week or two; the fatty and sticky coating on the interior of waste-pipes is thus dissolved and loosened up and is carried away by a flush of water. Such a procedure would work good results, especially in tenement-houses.

According to our present experience, infection through drinking-water can be avoided by boiling the water before use.

In the tenement-house districts of New York city typhoid fever would have fewer victims if the physician who attends a case would make it his business to ascertain that printed directions distributed by the Board of Health to prevent the spreading of contagious disease were actually read, understood, and obeyed.

Many people are willing to carry out sanitary instructions if they are shown how; others neglect to do so because they do not quite understand written instruction, and no one has a better opportunity to make such matters clear than a conscientious attending physician.

Clinical thermometers after use should be cleansed with a pledget of cotton and bichloride-of-mercury solution.

To what extent the physician may be able to counteract the intensity of the poison, limit the duration of the disease, and keep the body functions as near as possible to the normal standard during a period of disturbance, is a matter of therapeutics.

SOME TENOTOMIES FOR THE CORRECTION OF HETEROPHORIA,

WITH RESULTS.

By DAVID WEBSTER, M. D.

(*Concluded from page 37.*)

Case XX.—A. J. C., aged twenty, single, artist, came under observation May 17, 1887. His eyes broke down in January and he consulted Dr. Miller, of Providence, who had him under treatment for two months, gave him glasses, and advised tenotomy of an internus.

My examination showed:

R. V. = $\frac{20}{15}$; Hm. $\frac{1}{48}$. L. V. = $\frac{20}{15}$; Hm. $\frac{1}{48}$.

No hyperphoria, esophoria 20°, in acc. 20°, abduction 5°, adduction 30°, sursd. R. 2°, L. 2°

Ophth.: No lesion. After trying both eyes together I ordered + 1·50 D., prism 2½°, base out.

May 23d.—No relief from the glasses. Tenotomy of right internus.

June 6th.—Esophoria 8°, in acc. 12°, abduction 7°.

8th.—Under atropine.

R. V. = $\frac{20}{40}$; $\frac{20}{20}$ with + $\frac{1}{22}$. L. V. = $\frac{20}{70}$; $\frac{20}{15}$ with + $\frac{1}{36}$, s. + $\frac{1}{60}$ c. ax. 90°.

July 18th.—Esophoria 4°.

27th.—Esophoria, with refraction corrected 4°; without, 5°.

March, 1888.—Esophoria 4°, abduction 7°, adduction 36°. The patient says he has been greatly relieved by the operation and the prisms, but that he can not do his work without his glasses.

August 10th.—He worked at his art from January 1st to June 1st, but not more than three hours a day. His eyes broke down again in June.

11th.—Esophoria 6° to 18°, in acc. 14°, abduction 5°. Tenotomy of left internus, leaving orthophoria, and abduction 10°.

12th.—Orthophoria, abduction 10°, sursd. R. 2°, L. 2°, with correction of the hypermetropia. Without correction, esophoria 6°, abduction 8°.

October 6th.—Esophoria 3, in acc. 6°, abduction 6°. With correction of refraction, exophoria ½°, esophoria 9° in acc., abduction 8°. Can work three hours a day. Has not the same tendency to lose the focus by crossing of the eyes as before the operation.

Case XXI.—William H., aged forty-four, married, merchant, came May 23, 1887. Mr. H. was troubled with headache all his life, and supposed it was due to indigestion until three years ago, when it was suggested that it might be due to eye-strain. He then went to Dr. Stevens, who gave him glasses and exercised his ocular muscles with prisms. The glasses relieved his headaches, but recently he has had a relapse. If he reads at all without his glasses, or even three minutes with them, his "head is wrong," and he becomes intensely sick all over, but does not vomit. His general health is good, his bowels regular, he sleeps well. He never had any disease except malaria.

R. V. = $\frac{20}{20}$; Hm. $\frac{1}{60}$. L. V. = $\frac{20}{20}$ −; $\frac{20}{20}$ + with + $\frac{1}{60}$ c. ax. 90°.

Esophoria 3° to 6°, in accommodation 15°. No hyperphoria, abduction 2, adduction 23°, sursd. R. 0°, L. 0°. His glasses are prisms, base out.

May 24th.—Tenotomy of left internus, leaving orthophoria.

September 20th.—Mr. H. thinks he was helped very much by the operation, but is not entirely relieved.

21st.—Esophoria 6°, abduction 2°, adduction 22°. *Tenotomy of right internus.*

October 10th.—No headache since the last operation. Wears no glasses and uses his eyes with comfort. Orthophoria.

Case XXII.—John H., aged forty-two, brother of the last patient, consulted Dr. Agnew and myself on April 9, 1888. He had always been subject to headache more or less, and had thought it "due to his liver," until attention was called to his eyes. He had worn glasses for two years, prescribed by Dr. Stevens, and the doctor had cut both his interni. His headaches had in this way been partially relieved.

R. V. = $\frac{20}{30}$; $\frac{20}{15}$ with — 0·25 D. s. — 0·25 D. c. ax. 180°. L. V. = $\frac{20}{30}$; $\frac{20}{15}$ with — 1 D. cyl. ax. 180°.

April 14th.—Under atropine:

R. V. = $\frac{20}{15}$; Em. L. V. = $\frac{20}{100}$; $\frac{20}{15}$ with + 0·50 D. c. ax. 90° — 1·50 D. c. ax. 180°.

No hyperphoria, esophoria 6°, abduction 8°, adduction 18°.

September 6th.—Mr. H. says his headaches now occur about once a month, generally on waking in the morning, and lasting over four hours. After reading a long time he has a "feeling of tightness" in the head.

With his refraction corrected he has esophoria 7°, in acc. 4°, abduction 8°, no hyperphoria. Without glasses, esophoria 5°, in acc. 3°, abduction 8°.

Tenotomy of left internus, leaving orthophoria and abduction 12°.

7th.—Esophoria 10°, abduction 8°, no hyperphoria.

October 4th.—Esophoria 3°, abduction 8°. Has been wearing concave cylindrics with prisms, base to nose, and is not relieved. Changed glasses to — cyl. with prisms, bases out.

Case XXIII.—R. H. O., aged forty-seven, consulted me on May 8, 1888. His eyes pain a great deal at times if he uses them much. Preceding the pain his eyes blur, and following the pain in the eyes is a headache. He uses + 2 D., both, for reading.

R. V. = $\frac{20}{20}$; $\frac{20}{15}$ with + 1·25 D. s. + 0·50 D. c. ax. 180°. L. V. = $\frac{20}{15}$; the same with + 0·75 D. s. + 0·50 D. c. ax. 180°.

No hyperphoria, esophoria 3°, in acc. 0°, abduction 4°, adduction 45°, sursd. R. 1$\frac{2}{4}$°, L. 2°.

Ophthalmoscopically, no lesion.

May 10th—Under homatropine:

R. V. = $\frac{20}{70}$; $\frac{20}{15}$ with + 1·25 D. s. + 0·50 D. c. ax. 180°. L. V. = $\frac{20}{70}$; $\frac{20}{15}$ with + 1·25 D. s. + 0·25 D. c. ax. 180°.

No hyperphoria, esophoria 3°, abduction 4°.

14th.—R. V. = $\frac{20}{20}$ with + 1·25 D. s. + 0·25 D. c. ax. 180°. L. V. = $\frac{20}{20}$ with + 1 D.

No hyperphoria, esophoria 3°, abduction 5°.

15th.—V. = $\frac{20}{15}$ with + 1 D. each.

For the distance, ordered + 1 D. prism 1°, base out, each. For reading, + 2·75 D. both.

31st.—Has less headache, but still has a good deal of pain in the eyeballs. Ordered + 1 D. prisms, 1$\frac{1}{2}$° each, base out, and medium smoke-glasses for bright light.

August 21st.—Has more or less headache and pain in eyeballs on using his eyes. Esophoria 4°, with hypermetropia corrected. Without correction, esophoria 8°, abduction 5°, adduction 22°, sursd. R. 1°, L. 1°.

22d.—Muscular condition unchanged. *Tenotomy of the left internus*, leaving orthophoria with abduction 10°.

23d.—Esophoria 1°, abduction 8°. In coming over from Brooklyn this morning he did not have the usual strained feeling in looking about at various objects.

September 5th.—Eyes have "felt first-rate." Hyperphoria 0°, esophoria 5°, without correction of hypermetropia. With correction, esophoria 1°, abduction 5°.

Case XXIV.—Miss Alice B., aged twenty-seven, consulted us on June 13, 1887. After using her eyes she has headache. She can not look steadily at anything. Her father died insane. His mother, sister, and cousin also were insane. She has a cousin in an insane asylum. She broke down after a hard winter's work, and has since had headache almost without intermission. She has a feeling in the back of the head and neck as if her head were being drawn back. She also has a "jumping headache" all over the top of her head. The jar of walking hurts her. Sometimes she feels "sort of lost," as if she did not know anything.

For many years she has observed that her left pupil is a little smaller than the right.

R. V. = $\frac{20}{30}$ —; Hm. $\frac{1}{18}$. L. V. = $\frac{20}{30}$ —; Hm. $\frac{1}{18}$.

Spectacles + $\frac{1}{40}$ were prescribed, and she was put upon increasing reading tasks.

August 20th.—She now reads four hours a day with her glasses.

Exophoria 12°, abduction 15°. She has single, binocular vision in reading.

Tenotomy of left externus, leaving orthophoria.

June 21st.—The headache she had yesterday before the operation was forgotten after it, and has not come on since.

August 27th.—She has done her usual work as governess since last here. She has experienced none of the "drawing feeling" in the back of the head and neck, but has had a tired feeling. Orthophoria, abduction 10°, adduction 12°.

Case XXV.—Bridget C., aged forty-three, came to the clinic at the Manhattan Eye and Ear Hospital on October 2, 1885. She complains that she can not see well, that her eyes ache after use, that she has a swimming sensation, and has pain through her temples.

R. V. = $\frac{20}{30}$; Hm. $\frac{1}{18}$. L. V. = $\frac{20}{20}$; Hm. $\frac{1}{16}$.

Reads J. 1 at 9″ with + $\frac{1}{10}$.

Exophoria 12°, in acc. 29°.

Ophthalmoscopic examination shows no lesion.

Glasses, R. + $\frac{1}{18}$, L. + $\frac{1}{20}$ were ordered for the distance, and + $\frac{1}{10}$, both eyes, for near work.

June 4, 1886.—Exophoria, 12°; in acc., 28°. The patient says the glasses gave complete relief from the pain in her eyes and head, and also from the dizziness, for five or six months, and then these symptoms returned and were as severe as before. She has been advised to have a tenotomy of an external rectus, but refused.

July 2.—Exophoria 7°, in acc. 14°.

Tenotomy of right externus.

23d.—Orthophoria. Exophoria in acc. 3°.

The patient states that the tenotomy did not give immediate relief, but after three or four weeks relief was complete, though she was compelled to continue the use of her glasses to insure comfort.

April 6, 1888.—The patient says she does not see with her glasses so well as at first, and that for the last three or four months she has had occasional attacks of pain in the eyes and in the head, but the pain is not constant nor so severe as it used to be. Orthophoria.

R. V. = $\frac{20}{100}$; $\frac{20}{15}$ with + $\frac{1}{15}$. L. V. = $\frac{20}{100}$; $\frac{20}{20}$ with + $\frac{1}{15}$.

Reads Jaeger No. 1 at 8″ with + $\frac{1}{9}$. Prescribed + $\frac{1}{15}$ for the distance, and + $\frac{1}{9}$ for the near.

Case XXVI.—W. J. T., aged thirty, consulted me on August 9, 1887. His eyes have had a strained feeling, and the lids would get red. The surface of the eyeball is bloodshot, especially over the internal rectus.

In 1879 and 1880 he suffered greatly from headaches, which were relieved by glasses. He is now wearing Rt. prism 2°, base in. Lft. — $\frac{1}{18}$ s. prism 4°, base in.

R. V. = $\frac{20}{20}$ —; $\frac{20}{20}$ + w. + 0·50 D. c. ax. 90°. L. V. = $\frac{15}{200}$; $\frac{20}{15}$ w. — 2 D. — 1·50 D. c. ax. 180°.

Exophoria 10°, in acc. 15°, abduction 15°, adduction 5°.

August 10th.—Tenotomy of the left externus.

11th.—Exophoria 15°.

12th.—Exophoria 6°, abduction 15°.

13th.—Exophoria 8°, abduction 15°, adduction 22°.

14th.—Exophoria 15°, abduction 15°, adduction 25°.

Ordered Rt. + 0·25 D. c. ax. 90°, prism 4°, base in. Lft. — 2 D. — 0·50 D. cyl. ax. 180°, prism 2°, base in.

August 30, 1888.—The patient has just returned from a European tour. He has had no headache since the tenotomy. He has worn the glasses constantly.

No hyperphoria, exophoria 20°, abduction 24°, adduction 20°.

He has no redness of his eyes, and no trouble relating to his eyes or head since the tenotomy.

Case XXVII.—Mrs. H. W. B., aged forty-four, consulted Dr. Agnew, January 9, 1888. She complained that on using her eyes a pain would come in them, and then the sight would get dim. There is constant sense of weight in her eyes. If she sews or reads, things get double, a phantom or shadow following the real object. She has much headache, and feels better when lying down.

R. V. = $\frac{20}{20}$; E. L. V. = $\frac{20}{20}$; E.

Abduction 2°, adduction 12°.

January 10th.—Esophoria 1°, abduction 1°, adduction 16°, hyperphoria 0°.

Sursumduction, R. 1°, L. $\frac{1}{2}$°.

Ophth. shows physiological excavation, no lesion.

March 6th.—Esophoria $\frac{1}{2}$°, exophoria in acc. 6°, abduction 2°, adduction 16°, no hyperphoria.

7th.—Esophoria 2°, abduction 2°.

Tenotomy of left internus, by Dr. Agnew, leaving exophoria 1° and abduction 5°.

March 9th.—Esophoria 2°, abduction 2°.

10th.—Esophoria 3°, exophoria in acc. 6°, abduction 1°, adduction 18°.

14th.—Esophoria 3°, abduction 2°.

23d.—Esophoria 1°, abduction 2°.

April 4th.—Esophoria 1°, abduction 2°, adduction 14°.

May 4th.—Esophoria 2° to 3°, exophoria in acc. 2° to 3°, abduction 2°, adduction 14°.

Sursumduction, R. 1°, L. 1°.

7th.—Esophoria $\frac{1}{4}$°, abduction 2°.

18th.—Esophoria 4°, exophoria in acc. 2°, abduction 2°, adduction 22°.

24th.—Esophoria 1° to 2°, abduction 2°, adduction 21°.

Tenotomy of right internus, leaving abduction 8° and exophoria $\frac{1}{2}$°.

May 25th.—Esophoria $\frac{1}{2}$°, abduction 5°, adduction 18°.

26th.—Bleeding occurred from the wound at 4 P. M. The blood also came from the nose and mouth. The bleeding continued two hours and a half, and was much more than at the operation.

28th.—Esophoria $\frac{1}{2}$° to 2°, abduction 5°, adduction 19°.

31st.—Esophoria $\frac{3}{4}$°, abduction 3°, adduction 18°.

A letter from Mrs. B., dated August 4, 1888, says: "For about two weeks after I saw you my eyes were comfortable. Then the feeling of drawing of the muscles and the aching began again, and I have seldom been free from pain since, in greater or less degree." Abduction 2°, adduction 18°.

Case XXVIII.—Miss Jane C., aged twenty-three, came on August 10, 1887. Her trouble began five years ago while at school. She complains of "heaviness in the head" and of "a very peculiar feeling where the neck joins the head, like a tightening as if a screw were put in." Toward the end of the day it gets worse. The top of her head feels "as if the muscles were drawn up together and tied in a knot." Often she has a burning sensation there. Her hands and arms are weak, and when she is tired they tremble. Menstruation scanty, no pain. Digestion poor. Has to take violent exercise in order to digest anything.

R. V. = $\frac{20}{15}$; E. L. V. = $\frac{20}{15}$; E.

Hyperphoria L. $\frac{1}{2}$°, exophoria 1°, abduction 9°, adduction 18°, sursumduction R. 3°, L. 3°.

August 13th.—Exophoria 2°, abduction 8°, adduction 15°.

15th.—Hyperphoria R. 1°, exophoria 3°, abduction 8°, adduction 22°.

Glasses were prescribed, R. prism 1°, base down; L. prism 2°, base in, to wear all the time.

24th.—A great deal of the pain has left the back of her head, but there is still "quite a pulling."

September 7th.—Exophoria 8°, abduction 10°. *Tenotomy of left externus.*

27th.—Exophoria 2°.

This patient was only partially relieved by the tenotomy and by glasses.

Case XXIX.—W. G. B., aged forty-six, came with the following letter from Dr. E. C. Seguin, September 30, 1887:

"Mr. B. has, besides anæmia and dyspepsia, certain head symptoms which, I think, are asthenopic. Convergence hurts his eyes and head; moving objects cause dizziness and nausea. He had a short period of diplopia in May last. I find no positive evidences of organic cerebral disease."

Mr. B. says he never had any trouble with his eyes till very recently.

R. V. = $\frac{20}{20}$; $\frac{20}{15}$ with + 0·50 D. c. ax. 90°. L. V. = $\frac{20}{15}$; sharper with + 0·25 D. c. ax. 90°.

Accommodation = $\frac{1}{12}$, abduction 4°, adduction 16°, esophoria 1°, hyperphoria, R. 1°.

Ophth.: No lesion. Optic discs look hyperæmic.

October 1st.— Under atropine:

R. V. = $\frac{20}{70}$; $\frac{20}{15}$ with + 0·75 D. s. + 0·50 D. c. ax. 90°. L. V. = $\frac{20}{70}$; $\frac{20}{15}$ with + 1·50 D. s.

Hyperphoria 0°; sursumduction R. 0°, L. 0°, esophoria 2°, abduction 3°, adduction 18°.

3d.—Tenotomy of right internus, leaving exophoria $\frac{1}{2}$° and abduction 10°.

4th.—Orthophoria, abduction 6°, adduction 10°.

11th.—The patient thinks his head has felt better since the second day after the operation. There has been less of the dizzy feeling. It makes him dizzy now to look to one side. He still has the pain in the back of his head. Esophoria 1°, abduction 5°, adduction 20°. Glass for the distance + 0·25 D. c. ax. 90°. Prism $\frac{1}{2}$°, base out, both eyes, were ordered, and for the near, + 0·25 D. c. ax. 90° + 0·50 D. s.

14th.—The glasses for distant vision misplace objects and have made him very uncomfortable. Abduction 3°, adduction 22°, esophoria 3°.

Tenotomy of the left internus, leaving exophoria $\frac{1}{2}$° with abduction 6°.

October 15th.—Abduction 5°, esophoria $\frac{1}{2}$°. His head symptoms have been better since the last cutting.

19th.—Orthophoria, abduction 5°.

28th.—Esophoria 1° to 2°, abduction 3°. Attempts to exercise the muscles with prisms produced nausea, pain in occiput, confusion, and drowsiness, which would last for several hours. The prism exercise was omitted one day, and he had a very comfortable day, though doing quite a deal of business down town.

The following is from a letter dated January 3, 1888, written by his wife:

"Mr. B. has put off writing, hoping to report more favorably than his condition has as yet justified. His eyes have given him

great discomfort, and are now more painful than they have ever been. To look at anything nearer than twenty inches, with or without his glasses, or the slightest pressure on his nose or scalp, causes an aching pain in the eyeballs that lasts for hours, sometimes for two days, accompanied by severe pain at the base of his brain and down to his shoulders, pulling the eyeballs toward the back of his head, a sensation as though a lot of hooks were in the eyes drawing them back. This makes him very nervous. His eyes are more painful when lying down even on the softest pillow."

[*October 8, 1888.*—For some time after the operation there was much sensitiveness of eyes deep in orbits, and Mr. B. felt as if the operation had done him harm. During the late spring this idea was dispelled, and in the months of July, August, and part of September he was quite free from occipital pain and paræsthesia. These have returned somewhat since straining the eyes by looking at a bright moving object last month. Has been able to write for two or three hours, but not to read in last four months. General health much improved. Movements of eyeballs in any direction are painful. It would seem as if we had to deal in this case with weakness or paresis of all the ocular muscles, to be benefited more by general treatment than by any mechanical means.—E. C. S.]

9th.—Orthophoria, abduction 3°, adduction 21°.

Case XXX.—Mrs. J. A. M., aged twenty-seven, came to me on April 28, 1888, presenting the following letter from Dr. Seguin: "This note is presented by Mrs. M., who has been under the care of an eminent gynæcologist and under mine for three years. Her ovarian trouble is cured, and there is no great uterine displacement. Neurasthenia, with a great variety of symptoms, is the complaint for which I am treating her, mostly by tonics and food. Asthenopia has been prominent from the first. I have long urged that her eyes be examined. The case is peculiarly one of those in which a doubt may exist as to which is primary—the asthenopia or neurasthenia."

Mrs. M. says that for three or more years she has been seeing double; that when her mind is concentrated on the object looked at it remains single, but as soon as she ceases to concentrate, it becomes double.

R. V. = $\frac{20}{30}$; E. L. V. = $\frac{20}{40}$; E. Hyperphoria 0; esophoria 10° to 14°; orthophoria in acc.; abduction 0°, adduction 20°; a red glass over one eye brings out diplopia.

Ophthalm.: Physiological excavation, venous pulsation, no lesion.

April 30th.—Under homatropine:

R. V. = $\frac{20}{30}$; $\frac{20}{20}$ with + 0·50 D. c. ax. 45°. L. V. = $\frac{20}{20}$; $\frac{20}{30}$ with + 0·50 D. c. ax. 135°.

Esophoria 12°, abduction 3°, adduction 30°, sursumduction R. 1°, L. 1°.

May 1st.—Esophoria 12°, abduction 1°, adduction 31°.

Tenotomy of right internus, leaving esophoria 4° and abduction 5°.

2d.—Patient had excruciating pain in the eye operated upon, which lasted from 1 P. M. to 5 P. M.

Esophoria 4°, abduction 4°, adduction 27°.

3d.—Esophoria 5°, abduction 5°, adduction 34°.

4th.—Abduction 5°, adduction 36°, esophoria 6°.

7th.—*Tenotomy of left internus*, leaving esophoria 1° to 2°, with abduction 13°.

8th.—Abduction 9°.

9th.—Patient says she has got rid of a certain "bound-up feeling in the back of her head," which she used to have for days and for weeks in succession. Her headache has not been so bad since the operation. Esophoria 3°, abduction 6°, adduction 35°.

15th.—Esophoria 2° to 9°, abduction 6°, adduction 30°. The patient says she has no trouble with her menstruation since the operation.

Case XXXI.—Mrs. D. L., aged forty, consulted me January 6, 1887. She has for years been a great sufferer from periodic headaches, from which she has experienced only partial and temporary relief by medication and change of climate. Her physical condition is bad. She is anæmic and thin. Her physician, Dr. E. J. Bermingham, thinks her headaches may be due to eye-strain. The pain commences in the back of the left eye and goes down the back of her neck, more especially after reading or sewing.

Ophthalm.: No lesion.

R. V. = $\frac{20}{30}$; E. L. V. = $\frac{20}{20}$; E.

Orthophoria, abduction 7°, adduction 9°.

Acc. = $\frac{1}{8}$. Slight conjunctivitis.

January 12th.—Under atropine:

R. V. = $\frac{20}{30}$; $\frac{20}{20}$ with + $\frac{1}{30}$ s. L. V. = $\frac{20}{20}$; $\frac{20}{20}$ with + $\frac{1}{30}$ s. + $\frac{1}{60}$ c. ax. 180°.

Glasses + $\frac{1}{30}$ were ordered to be worn all the time.

26th.—The attacks of pain are not so severe and do not last so long. Put upon reading tasks by Dyer's method.

Exophoria 4°, abduction 7°, adduction 14°. No hyperphoria.

March 1st.—Abduction 8°, adduction 14°. Is reading half an hour twice a day. Exophoria 4°.

Tenotomy of external rectus of left eye, followed by excessive bleeding into subconjunctival connective tissue.

April 13th.—Has had two of those terrible attacks since the operation. She reads an hour twice a day. Abduction 14°, adduction 8°.

May 11th.—Exophoria 2°, none in accommodation, no hyperphoria. Abduction 9°, adduction 8°, no sursd. Has had a great deal of pain since she was here.

23d.—Exophoria 6°, in acc. 9°, abduction 9°, adduction 8°.

August 17th.—Exophoria 5°. Headaches continue.

September 2d.—*Tenotomy of external rectus of right eye.* The operation was followed by so much hæmorrhage as to necessitate the application of a pressure bandage for three days.

September 23d.—There still remains much extravasated blood. The headaches are somewhat relieved, but far from cured. Exophoria 1°.

I now sent her to Dr. Seguin, who attributed much of her neurotic condition to the habitual use of opiates and other narcotics, and who interdicted their use, but without avail, as she thought she could not endure her pain without them.

October 13th.—Exophoria 5°.

24th.—Dr. Seguin writes: "You remember Mrs. L., whom you sent to me recently. After a very few questions I discovered one reason (probably the chief reason) why your work on her eyes has been thrown away. For three years she has taken morphine for each attack, and at intervals frequently, for insomnia, chloral and bromides. Like some other cases I have seen treated in this way, she has observed an increasing degree of pain. These remedies weaken the nervous system greatly, and I believe, from a series of observations, exert a peculiarly weakening effect upon the interni. No treatment will do her good until she dispenses with these drugs."

November 16th.—Headaches are as bad as ever, but different and more general.

Exophoria 1° to 2°, in acc. 4°, abduction 9°, adduction 7°.

Mrs. L. soon after went to California. In a letter, dated February 23, 1888, she says that the attacks of neuralgia continued for some time, but that she recently had a longer interval of relief than at any time in two years; that she had done a good deal of reading, writing, and sewing, as well as other work, and

that she attributed the relief more to the operations upon her eyes than to the change of climate.

Case XXXII.—Mrs. S. B. C., aged thirty-six, came to me on May 12, 1888, with the following letter from Dr. Seguin: "Will you kindly examine Mrs. C.'s eyes? She has a rather odd form of migraine, and describes other symptoms produced by attempts to write and sew."

R. V. = $\frac{20}{30}$; $\frac{20}{15}$ with + 0·75 D. L. V. = $\frac{20}{30}$; $\frac{20}{15}$ with + 0·50 D.

No hyperphoria. Exophoria 2°, in acc. 0°, abduction 14°, adduction 30°, sursd. R. 1°, L. 1°. Ophthal.: No lesion.

May 15th.—Under atropine:

R. V. = $\frac{20}{70}$; $\frac{20}{30}$ w. + 1·50 D. L. V. = $\frac{20}{70}$; $\frac{20}{30}$ w. + 1·25 D.

Abduction 18°, with correction of H. 12°. Adduction 18°; the same with correction. Orthophoria.

May 17th.—Exophoria 17°, abduction 20°, adduction 25°. No hyperphoria.

22d.—Exophoria 2°, abduction 18°. *Tenotomy of left externus*, leaving exophoria 2°, with abduction 12°.

24th.—Exophoria 3°, abduction 16°, adduction 14°.

26th.—Orthophoria, abduction 14°, adduction 20°.

29th.—Exophoria 2° to 4°, abduction 18°. *Tenotomy of right externus*, leaving orthophoria, with abduction 3°. I put in a stitch to prevent overcorrection.

31st.—Exophoria less than 1°, abduction 8°.

June 2d.—Esophoria 3°, in acc. 1°, abduction 9°, adduction 20°.

R. Hm. 1 D. L. Hm. 0·75 D.

With the above-described glasses, esophoria 6°.

6th.—Esophoria 2° to 3°, abduction 10°, adduction 30°.

22d.—Esophoria 1°, in acc. 2°, abduction 10°, adduction 34°. No hyperphoria.

The patient has been wearing glasses correcting her manifest hypermetropia. She says her headaches seem to be very much the same as before the operations, if anything more frequent, and in severity about the same.

A letter received from Mrs. C., dated September 2d, says: "Since the 1st of August, when I left New York, I have been much better. Before that time my headaches were as persistent and severe as usual, but the change of air seems to have done me good. I can use my eyes for an hour or more for reading, etc., without fatigue, except after an attack of headache. In that case I can only read a few lines of printed letters without their becoming blurred and unsteady. This lasts from one to ten days, according to the amount of pain in the head."

Case XXXIII.—C. W. G., aged twenty-one, was referred to me by Dr. Seguin on October 8, 1886. He had been wearing convex cylindrics for nearly a year. While studying technology in Boston he broke down in March with pain in the back of his head and neck, which became constant. He had not noticed that it was made worse by the use of his eyes. He has slight frontal and temporal pain on use of his eyes. He is troubled with dizziness.

R. V. = $\frac{20}{40}$ +; $\frac{20}{15}$ with + $\frac{1}{48}$ c. ax. 180°. L. V. = $\frac{20}{50}$; $\frac{20}{15}$ with + $\frac{1}{60}$ c. ax. 90°.

Esophoria 4°, in acc. 4° to 8°. No hyperphoria, abduction 2°, adduction 17°.

Ophthalmoscope: Physiological excavation of hyperæmic optic discs.

October 11th.—Under atropine:

R. V. = $\frac{20}{30}$; $\frac{20}{20}$ with + $\frac{1}{48}$ c. ax. 180°. L. V. = $\frac{20}{20}$; $\frac{20}{15}$ with + $\frac{1}{60}$ c. ax. 180°.

Esophoria 13°.

18th.—Tenotomy of right internus.

20th.—Esophoria 5°.

23d.—Esophoria 2°. The patient says he has less pain in the back of his head and feels better generally.

November 9th.—Esophoria 3°. Ordered glasses:

R. + $\frac{1}{60}$ c. ax. 180°, prism 1½°, base out. L. + $\frac{1}{60}$ c. ax. 180°, prism 1½°, base out.

26th.—Abduction 4°, adduction 17°.

29th.—Patient much relieved in back of head.

Case XXXIV.—Sarah G., aged twenty-five, came to the clinic at the Manhattan Eye and Ear Hospital on April 25, 1887. She complained of dimness of vision and blurring of sight when reading or sewing, but disclaimed headache or pain in or about the eyes.

R. V. = $\frac{20}{20}$; Hm. $\frac{1}{12}$. L. V. = $\frac{20}{20}$; Hm. $\frac{1}{12}$. No hyperphoria, exophoria 11°, in acc. 0°, abduction 10°, adduction 16°.

Ophthalmoscope: No lesion.

April 27th.—Exophoria 10°, in acc. 12°.

Tenotomy of left externus, leaving homonymous diplopia 14°.

April 29th.—Esophoria 4°.

May 2d.—Esophoria 3°.

4th.—Exophoria 4°, abduction 8°, adduction 16°.

6th.—Exophoria 3°, in acc. 0°, abduction 8°, adduction 16°.

9th.—Exophoria 4°.

13th.—Exophoria 4°, abduction 8°, adduction 18°.

October 10th.—Exophoria 8°, in acc. 16°, abduction 18°, adduction 9°.

Tenotomy of right externus, leaving esophoria 8°.

October 12th.—Homonymous diplopia 18° to 20°. The right externus was now advanced to nearly its former place of insertion.

13th.—Esophoria 2°.

14th.—Orthophoria.

17th.—Esophoria 5° to 6°.

The patient has glasses correcting her manifest hypermetropia. She says she has more headache than before the operations upon her eyes.

28th.—Exophoria 1°, in acc. 3°, abduction 10°, adduction 20°.

November 23d.—Orthophoria, abduction 8°, adduction 27°, sursumduction R. 3°, L. 3°.

January 13, 1888.—Esophoria 5°, in acc. 0°, abduction 4°, adduction 23°.

May 9th.—Esophoria 4°, in acc. 0°, abduction 3°, adduction 18°. No hyperphoria.

The patient complains of diplopia when looking to the right or left. She has noticed this since the last tenotomy. She has no pain in the eyes or head, but her eyes tire after reading or sewing.

August 1st.—The patient says her double vision on looking to the right or left troubles her a great deal, both on the street and in the house. She has pain in the eyes, some days all day and some days none at all. Esophoria 4°, abduction 1°, adduction 20°. Advancement of an externus was advised.

Case XXXV.—Mr. J. O., aged thirty, was referred to me by Dr. Seguin on October 19, 1887, with the following note: "Mr. J. O., who presents this note, has been under my care, off and on, for two or three years for malarious symptoms, anæmia, constipation, etc., but also for headaches, which no medical treatment improves. Scores of experiments go to show clinically that the headaches are from his eyes, and I would therefore ask your help for the problem."

R. V. = $\frac{20}{40}$; $\frac{20}{20}$ with + 0·50 D. c. ax. 90° — 0·50 D. c. ax. 180°. L. V. = $\frac{20}{50}$; $\frac{20}{20}$ with + 0·50 D. c. ax. 90° — 0·75 D. c. ax. 180°.

No hyperphoria, esophoria 3°, in acc. 3°.

Sursumduct. R. 1°, L. 1°, abduction 3°, adduction 20°.

ophthalmoscope shows numerous very small yellowish spots scattered about over a large area at the posterior pole of the eyeball.

October 20th.—Under homatropine:

R. V. = $\frac{20}{30}$; $\frac{20}{15}$ with + 1 D. s. + 1 D. c. ax. 90°. L. V. = $\frac{20}{30}$; $\frac{20}{15}$ with + 1 D. s. + 1·25 D. c. ax. 90°.

Esophoria 6°, abduction 3°.

25th.—Has been exercising his externi with prisms. He has found that mornings he could overcome 5°, while evenings he could overcome only 3°. Esophoria 2°.

November 14th.—Has had less headaches since he was here than for a long time before. Esophoria 1°.

December 14th.—Esophoria 2° to 3°, exophoria in accom. 1°, abduction 3°, adduction 18°, sursumduction R. 1°, L. 1°.

15th.—Adduction 24°.

16th.—Adduction 25°.

19th.—*Tenotomy of right internus*, getting orthophoria, with abduction 8°.

20th.—Has + $\frac{1}{36}$ c. ax. 90°, both for constant use.

21st.—Esophoria 1°, abduction 6°.

25th.—Mr. O. wrote: "My eyes are getting along nicely, and for the last two days there were no signs of headache. If this pleasant state continues it will be all that I could possibly desire."

30th.—Orthophoria, exophoria in acc. 4°, abduction 6°, adduction 20°.

I have recently heard that Mr. O. does not think he was made better or worse by the tenotomy.

Case XXXVI.—Miss A. G. P., aged twenty-nine, came on December 29, 1886, with the following note from Dr. Seguin: "Miss P. suffers from neurasthenia, with a strong predominence of asthenopia. Her general condition has so much improved that she can go to your office and stand testing pretty well. I have found no very evident optical defect, and suspect the interni of being at fault."

Miss P. states that she has suffered from nervous prostration since July last. At times her eyes feel tired and then rested again without use. At other times they feel tired after reading, and there is a general feeling of lassitude. She had a similar attack three years ago.

R. V. = $\frac{20}{20}$ +; E. L. V. = $\frac{20}{20}$ +; E.

Orthophoria, abduction 10°, adduction 12°. Ophthal.: No lesion.

December 31st.—Under atropine: V. = $\frac{20}{20}$; E., both. Orthophoria, abduction 8°, adduction 14°.

January 10, 1887.—Orthophoria, esophoria in acc. 5°, abduction 10°, adduction 16°.

12th.—A. = $\frac{1}{2}$ each. Read five minutes, but eyes got very tired before the five minutes were up. Abduction 10°, adduction 15°.

Tenotomy of left externus, Dr. Seguin and Dr. Way present.

22d.—Orthophoria, abduction 7°, adduction 20°.

29th.—Orthophoria, abduction 10°, adduction 20°. Ordered glasses + $\frac{1}{72}$ for both eyes, and read five minutes twice a day, and increase the task two minutes daily.

February 3d.—Read ten minutes this morning; eyes got a little tired. Orthophoria, abduction 8°, adduction 17°.

March 25th.—Has continued reading half an hour twice daily, and is much improved. Abduction 7°, adduction 16°, orthophoria.

April 25th.—Miss P. writes: "Since my return home four weeks ago I have improved greatly. My eyes are much stronger than when I last saw you. I now read forty-five minutes both morning and afternoon. I find I read forty-five minutes now much easier than I read thirty minutes four weeks ago."

October, 1888.—A relapse followed in the summer, and afterward the patient was placed somewhere for a rest-cure; result unknown. I had satisfied myself that much of this patient's invalidism was connected with unfavorable moral home conditions (discontent, irritation, etc.).—E. C. S.

Case XXXVII.—DeWitt D., aged twenty-nine, clerk, married, consulted us June 10, 1887, for asthenopia. He complained of his head. Sometimes he can not see what he is writing. The letters run together.

R. V. = $\frac{20}{30}$; $\frac{20}{20}$ with − $\frac{1}{72}$. L. V. = $\frac{20}{30}$; $\frac{20}{20}$ with − $\frac{1}{72}$.

June 13th.—Under atropine:

R. V. = $\frac{20}{20}$; $\frac{20}{15}$ with + $\frac{1}{24}$. L. V. = $\frac{20}{20}$; $\frac{20}{15}$ with + $\frac{1}{36}$ s. + $\frac{1}{60}$ c. ax. 60°.

22d.—Ordered glasses + $\frac{1}{36}$ s., both eyes, for all the time.

January 16, 1888.—Patient wore the glasses all the time for five or six weeks. He then left them off for the distance, because his eyes were more comfortable without them. He could not see well in the distance with them, and they made his eyeballs feel sore. He used them for near work up to within four weeks, and then found he could see better and more comfortably without them. But now he has got so that he can not get along with or without them. His eyes begin to pain as soon as he begins to use them, and after a few minutes he has to close them and keep them closed. He has headache three or four days out of a week, over the eyes and back of the ears.

R. V. = $\frac{20}{20}$; $\frac{20}{15}$ with + 0·25 D. cyl. ax. 40°. L. V. = $\frac{20}{15}$; $\frac{20}{15}$ with + 0·25 D. cyl. ax. 60°.

Esophoria 3°, in acc. 1°. Hyperphoria R. $\frac{1}{2}$°, abduction 5°, adduction 18°, sursd. R. 2°, L. 1°.

Ordered glasses + 0·50 D. both, and to exercise ocular muscles with prisms.

20th.—Abduction 5°, adduction 18°.

31st.—Esophoria 9°, in acc. 3°, abduction 3°, adduction 18°.

February 8th.—Esophoria 6°, abduction 3°.

17th.—Esophoria 7°, in acc. 2°, abduction 3°, adduction 25°.

Tenotomy of right internus, leaving orthophoria with abduction 8°.

18th.—Esophoria 7°, abduction 4°, adduction 18°.

20th.—Esophoria 4°, exophoria in acc. 1°, abduction 4°, adduction 15°.

May 14th.—Esophoria 3°, abduction 5°, adduction 16°.

Ordered glasses R. + 0·25 D. + 0·25 D. cyl. ax. 180°. L. + 0·25 D. cyl. ax. 60°, prism 3°, base out.

22d.—Patient has furuncle of brow.

April 17, 1888.—Mr. D. says he is entirely rid of his headaches, but lately he has been using his eyes without the glasses, and print begins to blur, and he begins again to have pain over his eyes. Esophoria 3°. No hyperphoria. Abduction 5°, adduction 18°.

R. V. = $\frac{20}{15}$; Hm. 0·50 D. L. V. = $\frac{20}{15}$; Hm. 0·25 D.

Ordered the glasses last above for all the time.

Case XXXVIII.—Dr. W. M. L., aged thirty-three, was fitted with glasses by me, many years ago, for compound myopic astigmatism. On September 5, 1888, he stated that his eyes had been examined at the Manhattan Eye and Ear Hospital several months since, and that he had been found to have hyperphoria R. 10° and exophoria 18°. Examination on this date shows hyperphoria R. 18° and exophoria 18°. The second image is brought out by placing a red glass over either eye. Left eye swings out and down, and the dragging sensation is a source of considerable annoyance to the doctor. The eye also gets very tired on reading a short time.

Tenotomy of left externus, leaving exophoria 7°.

September 6th.—Exophoria 7°, hyperphoria R. 13°. With hyperphoria corrected, the exophoria is 6°.

7th.—Hyperphoria 12°, exophoria 7° to 9°. With hyperphoria corrected, there is exophoria 4°.

8th.—With the hyperphoria corrected, the exophoria is 6°.

28th.—Hyperphoria R. 14°, exophoria 14°.

Tenotomy of left inferior rectus, leaving hyperphoria R. 3° with exophoria 14°. The bleeding began as soon as the center of the tendon was snipped with the scissors and greatly embarrassed the rest of the operation. At the completion of the tenotomy the lower portion of the ocular conjunctiva bulged as from a high degree of chemosis.

29th.—Hyperphoria L. $\frac{1}{2}$°. The patient complains of constant and extremely annoying diplopia.

30th.—Hyperphoria L. 8°, exophoria 20°. With exophoria corrected, hyperphoria L. 4°.

October 1st.—Hyperphoria L. 6°, exophoria 18°. With exophoria corrected, hyperphoria L. 3° to 4°.

2d.—Hyperphoria L. 6°, exophoria 20°. The diplopia continues to be very troublesome, making the patient dizzy if he attempts to move about with both eyes open.

After consultation with Dr. George T. Stevens, I advanced the *left inferior rectus* with a single stitch, leaving hyperphoria R. 10°. The bleeding during this operation was even greater than it had been at the tenotomy.

3d.—Hyperphoria R. 3°. Great distension of lower half of ocular conjunctiva by subconjunctival hæmorrhage.

4th.—With his refraction corrected, and red glass over left eye, images fused by prism 8°, base in over right. With red glass over right eye, images fused by prisms 15°, base in, and 4°, base up over left.

5th.—Swelling and redness much less. The patient has not suffered from diplopia, nor has he had any pain, since the advancement.

6th.—Removed the stitch. No diplopia. Subconjunctival hæmorrhage is being rapidly absorbed.

8th.—Swelling gone and eye clearing up. At 20′ lights are fused by prism 19°, base in, and 2°, base up, over left eye, with red glass over right. No diplopia without red glass over one eye, or unless brought out by prisms.

Case XXXIX.—Miss Augusta W., aged thirty-four, teacher, consulted me May 2, 1888. She complained of seeing objects double at times. She was not the subject of headache, but she had long been afflicted with dyspepsia and nervous exhaustion which she said Dr. E. G. Loring had told her was due to the constant effort she made to keep her eyes looking in the same direction. Reading gives her a sensation of exhaustion in the stomach. Dr. Loring did a *tenotomy of her right internus* in November, 1887, and told her she must have the left cut afterward.

R. V. = $\frac{8}{200}$; $\frac{20}{15}$ with — 5 D. L. V. = $\frac{20}{30}$; $\frac{20}{15}$ with — 1 D. c. ax. 45°.

She is wearing this correction over the left eye with a plane glass over the right.

Hyperphoria L. 1°, esophoria 2°, in acc. 0°, sursd. R. 0°, L. 0°, abduction 0°, adduction 2°.

Ophthal.: No lesion except staphyloma posticum.

Professor W. Oliver Moore, M. D., kindly sent me, from Dr. Loring's records, the following note:

"Miss A. L. W., October 29, 1887. R. — $\frac{1}{6}$ V. = 1. L. — $\frac{1}{24}$ cy. 35° V. = 1.

"Insuf. exter. 10° between two eyes. Candle comes together in 3′. 20′ insuf. 10°, abduction 17°; 1′ insuf. 6°, adduction 10°. Cut left internus November 1st.

"*December 23d.*—R. plane, L. — $\frac{1}{36}$; ax. 35° ord.

"*April 23, 1888.*—Insuf. still 10°. Images come together in 3 ft."

May 8th.—Esophoria 3° with or without her glasses. With red glass over either eye there is homonymous diplopia. Red and yellow lights brought together by prisms 5°, base out, and 1° base down over left eye.

Tenotomy of left internus, leaving exophoria 3° and hyperphoria less than $\frac{1}{2}$°.

August 30th.—Miss W. writes: "I can say that my sight has been much benefited by the operation. The double vision does not trouble me, and my general health has improved. I still feel, however, the exhaustion after reading of which I complained in the spring. I can use my eyes for sewing or painting without having any unpleasant feelings."

October 9th.—Hyperphoria L. 1°, esophoria $\frac{1}{2}$°. The symptoms of indigestion have disappeared. After using her brain she still has a feeling of exhaustion in her chest. She can use her eyes a long time without trouble.

Case XL.—Miss Lulu T., aged eighteen, consulted me June 6, 1888. Right eye always very near-sighted. Pain in both eyes, more in right. In February, 1887, had so much pain that she was compelled to give up studying. Her general health has been good. She has had headaches "quite a good deal" and thinks it due to her eyes. She is wearing over the right eye a plane glass, and over the left + 1·50 D. c. ax. 90° — 1·50 D. c. ax. 180°.

R. V. = $\frac{4}{200}$; $\frac{20}{40}$ with — 7 D. — 1.25 D. c. ax. 135°. L. V. = $\frac{20}{70}$; $\frac{20}{15}$ with + 1·50 D. c. ax. 90° — 1·50 D. c. ax. 180°.

No hyperphoria, exophoria 16° to 20°, abduction 18°.

With red glass over one eye, prism 16°, base in, fuses images. She has had occasional diplopia for over a year.

Ophthal.: Rt. staphyloma posticum with chorioidal changes. Myopic 10 D. Left, no lesion.

Tenotomy of right externus, leaving exophoria 12°. The patient *fainted* during the operation, though she declared that she was not hurt.

June 7th.—Crossed diplopia 16°.

Tenotomy of left externus, leaving homonymous diplopia 12°.

8th.—Homonymous diplopia 10°.

9th.—Homonymous diplopia 15°.

Motion outward of left eye restricted. I now *advanced the left externus* by a single stitch and got homonymous diplopia 3°.

10th.—Homonymous diplopia 2°.

12th.—Homonymous diplopia 6° with or without red glass over one eye. At one foot crossed diplopia of 7°.

13th.—Homonymous images at 20′ fused by prism 4°, and crossed images at 1′ fused by prism 4°.

15th.—Homonymous images 3°. Has had no headache for three or four days.

16th.—Homonymous diplopia 1°, with red glass over one eye.

August 3d.—In a letter dated August 1st, Miss T. says: "The swelling on my left eye did not disappear entirely until one week ago. The eye is still a little red, but it does not trouble me any, and I have had but little headache since I left the city. I still see things double, and this is decidedly annoying. I fear the eyes are not straight, for the right one seems to turn out. I have had to give up all fine work and can read only very little at a time, as my eyes ache so badly if I use them."

Treatment of Epilepsy.—"Considering the nervous disorders, partly of convulsive kind, which compose the cachexia strumipriva resulting from ablation of the thyreoid gland," says the "Lancet," "Siguicelli suggests that a derangement of the functions of the thyreoid body might play a part in the production of epilepsy. This idea led him to try the effect of galvanization of the thyreoid body in epileptics. Seven cases were tested: three showed no change in the progress of the disease; the other four presented first an augmentation and then a rapid and progressive diminution in the number of fits, which ceased entirely in one case for a month, and for two months in another instance; the mental state of the epileptics also improved."

DIABETES MELLITUS FOLLOWING OBSTRUCTIVE JAUNDICE.

By A. B. SWEET, M.D.,
HANLEY FALLS, MINN.

As the pathology of diabetes mellitus is quite obscure and the disease is not amenable to any specific treatment, a history of this case may be of interest to the profession:

Mr. L., a traveling salesman of Minneapolis, aged fifty-nine, of German parentage, American born, of rather obese habit and previous good health, was attacked with obstructive jaundice in October, 1887, thought to be due to concretions in the tubes, attended with acute pain and enlargement of the liver and gall-bladder. An intolerable itching appeared with the jaundice, also the most obstinate constipation, which was finally overcome with large doses of salines and repeated doses of calomel, in one-grain doses, with jalap. The duration was from twelve to fourteen days, with tendency to recovery, when a relapse with less severity occurred, lasting from eight to ten days. Convalescence was protracted and a general decline was evident, and in four or five weeks Mr. L. noted a marked increase in the discharge of urine. For several weeks he passed from my observation, and when he consulted me again (in about eight weeks) I made an examination of his urine with the following results: He was passing from one half to three quarters of a gallon of urine daily, with a specific gravity of 1·040, and with from two to three per cent. of sugar.

His condition remained at this point for two months, except a progressive decline in flesh from 180 to 120 pounds in three months and a half.

His case at this date was very discouraging. A peculiar defect of vision occurred, as if all human faces were masked from the eyes downward, at a distance of fifteen to twenty feet. Thinking this imaginary, I examined his vision, which appeared normal with the exception of clouded lens and the retinal vessels occluded, doubtless with bile, as the sclerotic showed the remains of bile pigment.

I mention this disorder of vision as I wish to refer to it again, the other conditions not differing from the ordinary obese forms of diabetes mellitus.

The treatment has been mostly dietetic. Gluten bread only; fresh meats, lean and fat, of all kinds; milk, eggs, oysters, and vegetables, as cabbage, radishes, onions, and tomatoes, with a little dilute Hennessy brandy in the last six months. Saccharin in small quantities in coffee.

Medicinal.—Codeine in increasing large doses, according to Dr. Pavy's system, and antilithic remedies.

Mr. L. has taken all the exercise he could stand, and has pursued his vocation as salesman since his illness, except for two months, and in five months from the beginning of the diabetic treatment the sugar has gradually disappeared from his urine, the urine voided being nearly normal in color, quantity, and gravity, with a gain in bodily weight of twenty-two pounds.

His condition is improving gradually, apparently from the diet. No medicines have been given for the last six months. He still continues the diet. Fourteen months from date of illness Mr. L. appears in normal health, and still travels on the railroad.

From the above-given history I ask the privilege of a few quotations from our best authors on the pathology of diabetes mellitus, not to show I have anything new in the pathology of this obscure disease more than relates to the above-cited case.

In Dr. Bartholow's excellent work on "Practice," page 940, he gives the pathological anatomy in general, and when referring to the liver, states that the changes are not constant, for the organ sometimes appears quite normal; and that Dickinson states there were six healthy livers in twenty-seven cases examined. Carter, of London, is very guarded in his pathology as to the disturbance of the glycogenic functions of the liver produced by direct nervous influence upon the hepatic cells, or from vaso-motor disturbances producing dilatation of the hepatic arterial system, etc.

It might seem in this case allowable to assign the cause to disordered function of the bile itself from calculi formation and obstruction. The unknown action of the bile must be important when three or four pounds are secreted every twenty-four hours. If it assists in removing superfluous hydrocarbons from the body (under which the properties of sugar may be classed) and aids digestion, what is the effect on dependent organs when it becomes confined and passes to the circulation unchanged? If calculi form in the bile, some of its solids are given up to form them, and must therefore affect its properties, which might affect nutrition so as to cause diabetes mellitus, and the liver appear normal. The same principle to some extent applies in the effect of calculi in other organs. Bile decomposes in the capillaries when stasis occurs, and acts as a poison. Vision is affected from its lodgment in the vision center and in the capillary circulation of the retina.

Its abnormal presence in the fourth ventricle of the brain might cause sugar in the urine, the same as a wound does at this point in the animal.

The experimental effect on the dog with the biliary fistula, arresting the passage of bile to the digestion, simulates the character of diabetes mellitus, except the increase of urine and presence of sugar.

In conclusion, I ask pardon for any unscientific statements in connection with this case, but would be pleased to learn of any similar cases to this, and what pathological relations exist between the two consecutive lesions.

December 4, 1888.

Electric Prostration.—"Several cases of this new malady are reported from Creusot, France. It affects workers under electric light. The light exceeds 100,000 candle power, and it appears that it is this excess of light, and not the heat, which produces the nervous symptoms. A painful sensation in the throat, face, and temples is first noticed, then the skin becomes coppery red, and irritation is felt about the eyes; much lacrymation ensues, and these symptoms then disappear, while the skin peels off in five days. The effects are comparable to those produced by walking over fresh snow in the sunlight, and may be regarded as a sort of 'sun-burning.'"—*Lancet.*

Physiology of Uranium Salts.—According to the "Lancet," "experiments recently made by Dr. R. H. Chittenden attest the harmfulness of uranium salts to healthy tissues. Uranium is an irritant poison tending to destroy the life of the intestinal and renal tissues; enteritis or acute catarrhal inflammation was easily induced by the administration of small doses of the salts of uranium. In toxic doses it causes absolute anuria; in smaller doses, merely acute parenchymatous nephritis; in minute doses it has a diuretic effect. Oxalate-of-lime crystals in the urine, and glycosuria, were constantly noted in cases of poisoning by uranium."

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DELINEATIONS OF INSANITY BY THE INSANE.

At a meeting of the Section in Neurology of the New York Academy of Medicine, held December 14, 1888, two series of specimens of unique interest were presented, and comments thereon read by Dr. Frederick Peterson and Dr. William Noyes. The former read extracts from the autobiography of a religious paranoiac. The writer of this book, although he had died in an insane asylum and had had occasional attacks of violent mania, had been a person of unusual intellectual attainments. His style of composition was graphic and refined. The narrative was straightforward and continuous. The religious delusions became more marked in the later parts of the book, the composition of which had engaged several of the closing years of his life. This book, written in a distinct, graceful handwriting, was passed about for inspection.

The history of his life, and especially of his internal states of feeling, is both curious and startling. Very noticeable in his account is a certain delicacy and psychological accuracy with which he has depicted and analyzed his own mental maladies. He portrays clearly the growth of a morbid sensitiveness which made him shun contact and speech with his fellows. Their remarks on himself he was always listening for and brooding over. In time it became so that he translated any voices that he heard at a distance into facetious or contemptuous remarks about his own peculiarities. This scorn, expressed or imagined, besides causing him profound depression, also at times stung him to madness, and led to many plans for revenge, usually of a bloody sort, but these he was utterly unable to carry out. The beginnings and growth of other hypochondriacal delusions are described in a realistic and skillful manner. What is more remarkable, he even had at times "a conception of the sane and able man that he *might* have been towering up beside him, while he felt *himself* sinking deeper and deeper into egoism and impotency." He also readily comprehended insanity in other inmates of the asylum. Their delusions seemed quite amusing to him. In one instance, however, where fits of violent and abusive anger were the usual manifestation, he never conceived of the man as irresponsible in the matter, and hated him so wildly that nothing short of a murder would have done justice to his feelings.

Dr. Noyes presented numerous specimens of the work of an insane artist, comprising crayon sketches, water-color paintings, clay modelings, and decorated articles of clothing or personal belongings. In all of them a peculiarly morbid and fantastic character was manifest. This was particularly marked in the distortions which he invariably made in his representations of human faces. Some quite intricate and highly elaborated diagrams in water-colors were designed to illustrate the author's theological conceptions of the universe and God.

The articles of clothing or personal decoration embodied a fantastic idea as to a proper economy in utilizing any fragments of however widely differing origin—wish-bones, buttons, feathers, etc., such as he had found scattered about the grounds of the asylum. This artist had in earlier life been a man of brilliant social gifts, and had also had something of a career as an illustrator of books. He had always been known in New York, however, from the carelessness of his work in detail, as "the unfinished artist." His aversion to continuous application became increased with each year of his life.

Any thoughtful reader of these brief sketches will see how unmistakably the processes of the insane mind are exaggerations of what are scarcely more than peculiarities in men and women about us in ordinary life. It becomes more and more evident that insanity represents weakness of mental and moral structure; and that, whether with a view to restoring the balance of faculty or not, the only rational plan of dealing with insane people must be one which has in it no disrespect to the feelings of the patient. Both policy and the duty of a stronger nature to a weaker seem to require that the morbid susceptibility to being wounded by the contumely of his fellows, which is often so highly developed in the possessor of a "mind diseased," should be met with all gentleness and, if possible, even friendliness.

The same principle would also seem to be necessary in dealing with some classes of unfortunate or depraved people who are not confined in asylums.

POST-MORTEM HÆMORRHAGE IN CASES OF DROWNING.

An article by M. Arnaudet (de Cormeilles), published in a recent number of "La Normandie médicale," is especially interesting from its bearing upon medical jurisprudence.

The author cites the case of a woman, aged fifty, who, on Friday night, July 27th, at eleven o'clock, was found drowned in a pool where she had been in the habit of washing clothes. She was seen for the last time at about eight o'clock; the submersion, therefore, might have continued for three hours.

On the evening of the accident the woman was intoxicated, and all the circumstances pointed to accidental death. Still, the authorities' attention was attracted to a somewhat remarkable fact. The concha of each ear was filled with bright-red, fluid blood which had also run down the neck on both sides—about a soup-spoonful in all. One would have pronounced it an arterial hæmorrhage coming from the auditory canal and the deep part of the ear, but, on wiping away the bloody surfaces with a piece of dry linen, it was apparent that the blood had proceeded from a number of little wounds, erosions of the skin, red, irregularly round, and varying in size from that of a grain of millet to that of a hemp-seed. They covered almost symmetrically the edge and partly the exterior and interior surfaces of the two auricles. Among the excoriations were seen pink ecchymoses of like dimensions. The

middle of the forehead was the seat of similar lesions, only larger, some of them having a diameter equal to that of a silver twenty-centime piece. There was no blood. These wounds were evidently inflicted during life, or very soon after death.

The pool used for washing, a metre and a half broad and fifty centimetres deep, was fed by a little brook. It was partially filled with a fine, grayish slime; there were no brambles or snags anywhere about the place, but in the slime, and particularly in the current of the stream, were to be seen myriads of the crustaceans popularly known as fresh-water shrimp, one and two centimetres long. An assistant consented, at the author's request, to plunge his hand into the pool, and in a few moments it was literally covered with crustaceans. They tried to taste the morsel, and in doing so caused a very unpleasant pricking, itching sensation. Next, a piece of raw meat was hung in the water; more tender than the callous hand, it was speedily reduced to shreds. The author then proved his surmise to be correct that these little river pirates had inflicted the wounds. He examined the woman's clothing and found it swarming with crustaceans. Ecchymoses and erosions, like those already described, were observed on the right hip and on the left leg and thigh. At this last point the crustaceans were caught still feasting twenty hours after death.

Were the lesions inflicted during life or after death? The red surfaces pointed to a time when capillary circulation had not yet ceased and to the fact, in the author's opinion, that the woman had been attacked while still alive by the crustaceans. Blood issued from the ears. None was found on the forehead, hips, etc. In cases of drowning, the color of the skin is ordinarily pale and bloodless; certain regions, however, may be red and gorged with blood. Briand and Chauvé mention the auricle in this regard. During submersion, the water washed away the blood as fast as it issued from the ears; consequently, that found on examination in the concha of the ear must have collected there after the body had been removed from the water.

This case of post-mortem hæmorrhage explains the popular belief that the drowned sometimes bleed when taken from the water, but it is absurd to add that the phenomenon occurs only on the approach of a relative.

MINOR PARAGRAPHS.

THE ANTHROPOLOGICAL VALUE OF THE HYOID BONE.

In a recent number of the "American Anthropologist" Dr. J. L. Wortman says that the hyoid bone has never been studied from the anthropologist's point of view. Anatomists generally assign the co-ossification of the hyoid with the median piece to the middle period of life and the union of the lesser cornua to a much later period, although Meckel, supported by Henle and Hyrtl, holds that the five pieces rarely unite. Professor Virchow, in discussing a paper on that subject presented to the Berlin Congress of Americanists, stated that the elements of the hyoid never united except under pathological conditions. Professor Flower, on the contrary, had always found the greater cornua co-ossified with the body in persons at or beyond the middle period of life. Dr. Wortman ascribes this conflict of opinion to differences in the hyoid bones of the respective peoples in which it has been examined. He has been engaged for several months past in collecting data, and, while not yet able to draw final conclusions, is convinced that there are important differential characters to be found in the hyoid bones of some races at least.

APARTMENT HOUSES FROM A SANITARY POINT OF VIEW.

The "Lancet" of December 29, 1888, calls attention to the risk involved in living in flats. While an ordinary householder has access to every part of the building in which he resides, and can easily discover and rectify any defective hygienic arrangements, the denizen of the flat is at the mercy of his fellow-lodgers. He may clean, ventilate, and disinfect his apartments, but if the inhabitant of the floor below does not go and do likewise, he must suffer the evil consequences of his neighbor's neglect. This fact is of especial importance in regard to the main drainage of the premises. If the landlord or janitor who has charge of the basement does not see that the main drain is both water-tight and so disconnected from the sewer as to admit of a free current of fresh air through its entire length, the whole house is apt to be filled with foul air from below upward. The danger arising from that source, already great, is increased from the multiple occupation which always occurs in the case of flats.

PYRODINE.

In a recent number of the "British Medical Journal" we are warned against the free use of the new drug which has been introduced under the name of "pyrodine." It has undoubted temperature-reducing properties of a high order, but unfavorable toxic action interferes with its practical application. Pyrodine contains as its active agent acetylphenylhydrazin ($C_6H_5N_2H$, C_2H_3O), a crystalline powder, slightly soluble in water. According to Dr. Dreschfeld, of Manchester, pyrodine acts in the same manner as, but more powerfully than, antipyrine, acetanilide, and phenacetine. It has also been used with good effect in migraine and other forms of neuralgia, as well as in the lancinating pain of locomotor ataxia (Lépine). Great caution is required in its administration, because it is apt to produce jaundice, followed by anæmia and even grave symptoms due to hæmoglobinæmia. In exceptional cases, and where other antipyretics have failed, we may resort to pyrodine, but with the utmost reserve. Small doses only should be given, and at sufficiently long intervals to enable one to stop on observing the first indications of any toxic effects.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending January 15, 1889:

DISEASES.	Week ending Jan. 8.		Week ending Jan. 15.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	22	7	14	4
Scarlet fever	341	52	295	50
Cerebro-spinal meningitis	4	3	4	1
Measles	552	23	352	20
Diphtheria	166	65	184	53

The Health of New York City.—During the four weeks ending Tuesday, January 15th, the following numbers of cases and deaths from infectious diseases were reported to the Sanitary Bureau of the Health Department: Typhoid fever, 68 cases and 20 deaths; scarlet fever, 972 cases and 196 deaths;

cerebro-spinal meningitis, 18 cases and 11 deaths; measles, 1,576 cases and 80 deaths; diphtheria, 633 cases and 205 deaths.

The Health of Kansas City, Mo.—According to the Health Department's "Weekly Return" for the week ending January 12th there were 34 deaths, including 1 from entero-colitis, 1 from malarial fever, 1 from typho-malarial fever, 1 from marasmus, 1 from cerebro-spinal meningitis, 5 from pneumonia, and 1 from pleuro-pneumonia.

The Hunt Memorial Hospital.—Dr. J. H. Hunt, of Port Jervis, N. Y., has erected a hospital in that town, in memory of his father, the late Dr. Isaac S. Hunt. The building, which is a three-story brick structure, contains a ward in which are ten beds, eight rooms for private patients, three offices, an operating-room, a hall, a dining-room, and a kitchen. The hospital is intended for the reception of injured employees of the Erie Railroad and for the personal patients of Dr. Hunt. The sanitary arrangements and equipments of the building are all that could be desired for the comfort of patients. Miss Mary E. Sherman, a graduate of the Bellevue Hospital Training School for Nurses, will assume the duties of matron.

St. Bartholomew's Hospital and Dispensary.—This institution was incorporated in December, 1888, for the free treatment of diseases of the genito-urinary organs—venereal and non-venereal—and diseases of the skin. Dr. George A. Peters is president of the Board of Governors. The consulting staff consists of Dr. G. H. Fox, Dr. C. McBurney, and Dr. G. A. Peters. The visiting surgeons for diseases of the genito-urinary organs are Dr. C. T. Adams, Dr. E. B. Bronson, Dr. F. T. Brown, Dr. W. B. Clark, Dr. J. A. Fordyce, and Dr. F. J. Leviseur, and for diseases of the skin, Dr. G. T. Jackson, Dr. P. A. Morrow, and Dr. C. C. Ransom. It is announced that an excellent site has been found at No. 84 Carmine Street, and that the institution is to be opened for the reception of patients about the middle of the present month.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from January 6 to January 12, 1889:*

SHUFELDT, ROBERT W., Captain and Assistant Surgeon, will, by direction of the President, report in person to Brigadier-General Wesley Merritt, president of the Army Retiring Board at Fort Leavenworth, Kansas, for examination by the board. Par. 1, S. O. 4, A. G. O., Washington, January 5, 1889.

JOHNSON, R. W., Captain and Assistant Surgeon, is, by direction of the Secretary of War, relieved from duty at United States Military Academy, West Point, N. Y., and will report to the commanding officer at San Carlos, Arizona, for duty at that post. Par. 10, S. O. 7, A. G. O., Washington, January 9, 1889.

JOHNSON, RICHARD W., Captain and Assistant Surgeon, is granted leave of absence for fourteen days. Par. 1, S. O. 8, A. G. O., Washington, January 10, 1889.

PILCHER, JAMES E., Captain and Assistant Surgeon, will, by direction of the Secretary of War, repair from Fort Wood, New York Harbor, to Philadelphia, Pa., at such time as his services can be spared, for the purpose of giving instruction to the Hospital Corps of the First Brigade, National Guard of Pennsylvania. Par. 6, S. O. 8, A. G. O., Washington, January 10, 1889.

Society Meetings for the Coming Week:

MONDAY, *January 21st:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Medico-chirurgical Society of German Physicians; Hartford, Conn., City Medical Association.

TUESDAY, *January 22d:* New York Academy of Medicine (Section in Laryngology and Rhinology); New York Academy of Medicine (Section in Pædiatrics); New York Dermatological Society (private); Buffalo Obstetrical Society (private); Medical Society of the County of Putnam (semi-annual), N. Y.

WEDNESDAY, *January 23d:* New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medical Society of the County of Albany, N. Y.

THURSDAY, *January 24th:* New York Academy of Medicine (Section in Obstetrics and Diseases of Women and Children); New York Orthopædic Society; Brooklyn Pathological Society; Roxbury, Mass., Society for Medical Improvement (private).

FRIDAY, *January 25th:* Yorkville Medical Association (private); New York Society of German Physicians; New York Clinical Society (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

SATURDAY, *January 26th:* New York Medical and Surgical Society (private—annual).

Proceedings of Societies.

NEW YORK STATE MEDICAL ASSOCIATION.

(Continued from vol. xlviii, page 468.)

The Address in Surgery.—Dr. W. H. CARMALT, of New Haven, Conn., in this paper dealt with operations for carcinoma of the tongue. He considered the condition so miserable—from the dribbling saliva, the difficulty of swallowing, the fœtid breath, the attacks of partial suffocation, and the consciousness of there being no lasting relief obtainable—that removal of the tongue was always justifiable.

The operation for extirpation was now the only one accepted by all authorities. The immediate exciting cause of cancer of the tongue was the same which led to it in other parts of the body—namely, a slight but prolonged irritation, not sufficient to excite an inflammation, for that would throw out products which would be reparatory, but enough to overstimulate circulation and local nutritive processes. It belonged regularly to the later years of life and was more common in men on account of their taking less care of the mouth than women did. Rubbing the tongue on a jagged tooth, gnawing some tag that projected from its surface, and the irritation of a hot pipe-stem on the lip or tongue, were mentioned as typical causes.

The reader reviewed the different modes of opérating for the removal of a cancerous tongue, which by their number alone indicated the difficulties which surgeons had been trying to overcome. He would speak of the three main difficulties or dangers that attended the operation which made the mortality so high and the whole procedure relatively so unsatisfactory. They were, briefly, hæmorrhage, the liability of causing septic pneumonia, and the tendency of the disease to recur either in the stump itself or in neighboring lymphatic glands.

Hæmorrhage was always a most troublesome feature in the operation done through the mouth. Ligation of vessels was difficult; some blood getting into the larynx caused suffocation, coughing, and perhaps, later on, septic pneumonia.

Ligation of the lingual arteries in the digastric triangle, although often a tedious operation, gave a clean, dry operation. Torsion of cut arteries was not much used in this country, al-

though it had some advantages. Unless the surgeon had an assistant possessed of great skill and experience who understood just how far to etherize the patient, the manipulation of sponges, etc., he would advise that the trachea be opened and air and ether given by a tracheotomy-tube; that a tube be placed in the pharynx for feeding, and the pharynx then securely plugged with sticky iodoform gauze as made by Billroth. Absorbent dressings could then be used and kept in place till healthy granulations appeared.

He was opposed to the removal of the diseased masses by either slow ligation, the ecraseur, or the galvano cautery. The diseased glands were not reached by these methods. The galvano cautery might do in a beginning fibroid cancer; the slough, however, was long in coming away, and was liable to give out septic matters.

Recurrence could only be avoided by complete removal of infiltrated tissue and glands, especially hard to be sure of in the rapid medullary growths. The presence of these traveling bastard epithelial cells could not be demonstrated in glands and lymph channels by touch alone, but appeared when the latter were laid open. After describing Whitehead's operation *via* the mouth, and many other operations in which the cheek or jaw was laid open or a submental incision made—all of them being untrustworthy because some remote superficial or deep glands were not reached—he took up the operation advised by Kocher, of Zurich, which he considered the only radical one. This consisted in ligation of the lingual arteries, plugging the fauces as already described, and extirpating the glands in the neck, then the deep glands placed along the internal maxillary, external carotid, and facial arteries. The facial had to be divided and tied to reach the deeper glands; then, the cheek being laid open, the tongue was cut away at its attachment to the hyoid bone. He did not think it safe to leave half of the tongue in any case; neither was half the tongue of much use to a patient. For cases which were too far advanced for operation he thought tracheotomy and feeding by a tube kept in place would mitigate the sufferings and inconveniences attached to this deplorable condition. The mouth could then be filled with iodoform gauze and other deodorizing preparations.

Dr. A. L. Carroll, of New Brighton, read a paper discussing the distribution of cases of cancer, which he showed were most numerous in proportion where population was most widely scattered, looking toward the view that cities had better hygienic conditions than the country. Earlier operations were possible in cities, and might explain the lesser mortality. The relative mortality of cancer was about 2·33 per cent.

What are Neoplasmata, and what are the Characteristics which differentiate them from Blastemata, and these from Inflammatory Processes?—Dr. H. M. Biggs, of New York, discussed these questions in a paper which he read. He defined neoplasmata as circumscribed masses of newly formed tissue, devoid of function, and tending to persist or increase in size independently of the condition of nutrition of the organism from which they arose. He distinguished blastemata, or infectious granulomata, as infectious inflammatory new formations, showing no tendency to persist or increase beyond a certain size, and not usually passing beyond the stage of granulation tissue. Their formation was a conservative process, and tended to limit the multiplication of the organisms present. Their differentiation was evident from the foregoing definition. They differed from inflammatory processes by their occurrence in nodules, by the constant presence of micro-organisms, by their failure to pass on to the fibroblast stage of development, and by their early tendency to degeneration; also by their local infectivity and tendency to reproduction in distant parts. As to the question relating to the advantages of naming and arranging the neoplasmata according to their histogenesis, he thought that simplicity, exactness, and uniformity were all best obtained by a nomenclature on the anatomical basis. As to the question, "What is the value of the anatomical basis to the clinician when the question of malignity arises?" the speaker thought it arose from the unique fact that in the case of neoplasmata the anatomical name of a tumor conveyed an approximate idea of the degree of malignity, because this bore a constant inverse ratio to the degree of development, as judged by the physiological type of the tissue reproduced in it.

As to the question, "What are the objections to the grouping of neoplasmata in accordance with their benignity or malignity?" he believed it was enough that there was no sharp distinction possible between them on that basis. There was a gradual ascent from the most malignant neoplasmata to those which were quite benign. In the case of connective tissue, every stage of development was represented, from the embryonic connective tissue reproduced in the round-cell sarcoma—one of the most malignant of the neoplasms—to the fully developed fibrous tissue of the hard fibroma, which was quite benign.

Another cause of confusion was that entirely benign tumors might cause death, because by their position they interfered with some vital function. Yet such growths were apt to be called malignant simply because death had resulted. A third objection was that in such a classification we grouped together neoplasmata that were essentially quite different in origin, structure, and clinical significance.

There had been a tendency to apply the term malignant to whatever was proved to be cancer; whereas some forms of cancer were far from being fatal. On the other hand, some of the most malignant of the neoplasmata were not cancerous.

Dr. C. B. Nancrede, of Philadelphia, defined histological malignity as consisting in an invasion of tissue elements by neighboring elements of another sort, the invading elements being without function and incapable of developing into a stable tissue. The necrotic process was due to strangulation or blocking, or rupture of the blood-vessels which supplied the parts. The causes were entirely mechanical. As to whether cancer was ever cured, he preferred to decide the question on *a priori* grounds, judging from the nature of the growth in any case as respected its liability to be carried inward. Thus squamous epithelioma was readily cured by a timely excision, because, from the large size of the cells, their immobility from lack of fluids, and their uninterrupted blood-supply, they were mechanically ill adapted to be carried into the glands. He believed that for such cancers as had not as yet involved neighboring glands a cure was possible. When it could be shown that after excision a given form of cancer recurred, but rarely after three years' time had elapsed, and only very rarely after five years, he thought it fair to assume from analogy, whenever we removed such a cancer, that if there was no recurrence when four or five years had gone by, that cancer was in all probability cured. In all such cases, where there had been a recurrence after a great many years, he considered that the disease had arisen afresh owing to a tendency inherent in the individual, together with the continuance of some exciting cause.

Dr. Nathan Jacobson, of Syracuse, discussed the question as to what constituted the malignity of tumors histologically and clinically. The most marked characteristic of a malignant growth was its power of invading with infectious foreign material the surrounding tissue elements and glands, a power which suggested to the mind the action of pathological micro-organisms. Constant bacilli had been found by some investigators, but it had not yet been possible to infect animals with the virus and get a reproduction of the lesion. Histologically, those tumors were malignant which presented tissue with a rich but

immature cell structure, atypically arranged and found nowhere else in the body.

Everything looked to their local origin. The kind of epithelium that was present in the site from which the tumor grew, whether squamous, spheroidal, or cylindrical, was the same as that which we found multiplying in the tumor. It was in the same way that the connective-tissue of sarcoma varied with the location.

In the clinical study of a tumor it was to be remembered that sarcoma occurred when connective-tissue growth was most active—that is, in childhood. In aged persons, on the other hand, the vitality of the connective tissue was reduced, its power of resistance to the invasion of epithelial tumors was lessened, and carcinoma was oftener encountered.

Growing as they did from tissues of fixed and determined elements, each form of primary malignant disease was found only in certain tissues or structures, and so even in definite locations. Thus, primary malignant disease of bone was sure to be sarcomatous.

Malignant tumors could not be said to be due in the ordinary sense to constitutional taint. We encountered them at points where two kinds of epithelium met, at constricted points in canals, and in places particularly prone to irritation. Were they of constitutional origin, we should expect them to crop out simultaneously from different parts of the body. Heredity was relatively not an important factor in diagnosis. The proportion of cases in which there was a parental history was comparatively insignificant.

Their diaphanous property sometimes aided in diagnosis, though some other varieties of tumors which were mentioned might also have it. Recurrence of the growth in the stump or in surrounding glands after removal was the last clinical feature of a malignant tumor and distinguished them from other recurring growths. The speaker then discussed laryngeal tumors, both benign and malignant, especially with reference to the character of the process which had lately ended the life of the German emperor. He concluded that, owing to the danger of converting a benign into a malignant growth by the irritation caused by the removal of a portion of it for microscopical examination, diagnosis should be made with the laryngeal mirror only. The sputa told nothing conclusive.

As to the mechanism of the necrotic process, he agreed with the previous speakers in making it a strangulation of the vascular supply in various ways, and observed that colloid, mucoid, cheesy, and fatty degenerations, or cicatricial contraction, were also possible terminations of the process. The speaker then discussed the curability of malignant tumors, and believed it ought sometimes to be accomplished by excision under certain conditions depending on the rate of growth, the stage of growth, the seat of the tumor, its accessibility, its exent and complications, and the dangers incidental to operation. He distinguished second appearances of the disease from recurrences, believing that both occurred.

Dr. Carmalt discussed the question which various speakers had raised as to there being a constitutional taint which either caused or made liable to cancer. He believed there must be such a tendency and that it might be inherited. If there were not, why did not all who underwent the same prolonged irritation of some particular part have the malignant tumor development at that point also? We knew the great majority of these did not develop cancer. Those who did were individuals who at these points of irritation had not for some reason grown their tissues to full maturity. Their stability of structure was slight and their resistance to invasion readily overcome. A significant fact bearing on this matter of constitutional tendency was that erysipelas sometimes caused the absorption and disappearance of a sarcoma. He had seen one such case. He thought we had repeated developments of tumors in people so constituted as well as recurrences of partly removed growths.

What is the Rationale of the Recurrence of Excised Neoplasmata in Distant Parts or in the Viscera? What is the Explanation of the Tendency to involve Neighboring Glands?—Dr. J. D. Bryant, of New York, read a paper discussing these questions (see vol. xlviii, page 677).

Dr. E. M. Moore, of Rochester, continued the discussion. He was not satisfied with the theory that carcinoma spread chiefly by the lymphatics. The infectious elements seemed to him to have a penetrative and diffusive power more like amœboid transmigration. The spread of a cancer reminded him of the pollen shed broadcast by some trees in the spring time, and covering all the surrounding land. He had hoped as the discussion went on that some one would report that some German had discovered a microbe to which cancer was due, but in this he had been disappointed. Taking up the question of recurrence and the chances of cure by operation, the speaker related the history of a case where a young man had an osteo-sarcoma develop in the bones of his hand. The forearm was amputated midway between wrist and elbow. The disease had shortly reappeared in the stump. The whole forearm was then removed at the elbow; but the malignant process soon after showed itself above the elbow. Without much hope of saving life, he had, at the request of the patient, amputated the arm at the shoulder joint, telling him no further aid could be given. In a short time the scapula and clavicle showed that the process had spread to them and was taking as virulent a form as ever. Solely because the patient insisted upon another operation, the whole scapula was removed (and that for the first time in this country) and part of the clavicle. To his astonishment, the disease never appeared again and the young man continued well.

The speaker had repeatedly seen extirpations of the breast where the patients lived for years afterward without recurrence and died of other diseases. One fact he regarded as of great moment in making a prognosis as to the likelihood of recurrence, and in deciding on the advisability of operation. It was that cancer and diabetes alone of all diseases were less dangerous in elderly people. The older the patient, the less likely was a patient to die of a cancer or was it to recur if removed. Instances were given where six, eight, thirteen, and seventeen years of life had succeeded removal of the breast, during which time no recurrence had taken place. On the other hand, he recalled the case of a man in whom an epithelioma of the lip had returned sixteen years after having been extirpated, and in the exact point on the lower lip from which it had first been removed. On being removed a second time by a wide excision, it had returned in the face in an exaggerated and virulent form, eating away everything and causing a horrible death.

The President, speaking in regard to the heredity of cancer, quoted the opinion of Sir James Paget to the effect that it was a possibility of some importance. He instanced a family where four successive generations had suffered from the disease, which in one generation affected two brothers, in another three brothers. As regarded metastasis, he had seen a case where, seven years after removal of an epithelioma of the lip, cancer of the stomach had appeared and proved fatal.

Dr. Nancrede related an instance in which, after nineteen removals of carcinomatous growths, thirteen years of life succeeded without further appearance of the disease. As illustrating a possible reason for an apparently immediate return in the scars left from previous removals of cancer, he related instances where an early and close examination of the later growth showed that it was starting from new centers of infection not identical with the scar, but only a very small fraction of an inch distant

from it. With regard to heredity, if cancer were inherited, why should it not appear in the offspring in infancy or childhood instead of in the sixtieth year, as so often happened?

Dr. Gouley closed the discussion. His remarks in full were published in vol. xlviii, page 680, of this Journal.

NEW YORK PATHOLOGICAL SOCIETY.

Meeting of November 14, 1888.

The President, Dr. W. P. Northrup, in the Chair.

Ruptures of the Aorta.—Dr. H. M. Biggs presented a specimen showing a ragged rupture of the aorta three fourths of an inch long and just above the semilunar valves. The pericardium had been filled with blood. The aorta was not changed in appearance except a general thinning.

A second specimen was of a dissecting aneurysm of the arch of the aorta of large size which had not ruptured, although apparently the patient had died of it. He had died while at stool. Perhaps it had made a pressure on the trachea which had suddenly cut him off. There was much hypertrophy of the left ventricle, which was rare in cases of aneurysm.

A third specimen was of a pin-hole perforation through the aorta into the pericardium, which had been followed by death after three quarters of an hour. Such a prolonged death was very rare. The aorta showed acute endarteritis. He would remark on this lesion of aortic rupture that it must be very common and would be known to be so if more autopsies were held in both the very poor and the well-to-do classes, especially where death occurred with serious disease preceding. He had met with thirty-nine cases within a year and a half.

Dr. W. Mendelson remarked on the second of Dr. Biggs's cases, where a man had died of an aneurysm without its having ruptured, that death might have been due to an arrested heart action through a sudden paralysis of the pneumogastric nerve. This paralysis, he thought, might have been brought about by a reflex irritation due to pressure of the aneurysm on the laryngeal nerves.

Dr. T. M. Prudden compared it to the instant death which often followed the lodgment of a foreign body in the trachea. Often children (to whom this accident usually occurred) dropped dead without the least struggling.

Dr. Biggs spoke of similar cases, especially where the body, a button or a screw, rested on the vocal cords.

Volvulus of the Large Intestine.—Dr. Frank Ferguson presented the colon taken from a case in which the strangulated condition was not recognized during life. The patient had suffered from vomiting and cramps with a tense and painful abdomen. No symptoms had been observed which, in the general condition the patient was then in, justified surgical interference. However, the autopsy had revealed that the lower colon had crept up behind some of the mesenteric folds and become twisted on itself. A very long mesocolon had allowed the colon an extraordinary range.

Cirrhosis of the Liver from Portal Thrombus.—Dr. Ferguson also presented a liver showing scattered areas of cirrhosis which corresponded to thrombosed branches of the portal vein. The other viscera were normal, and it was concluded that the portal thrombi were directly causative of cirrhosis in this instance.

Self-incasement of the Small Intestine.—Dr. J. S. Thacher showed an anomalous condition of the small intestine taken from a patient who died after several years of gastric disturbances and impaired health, but without definite symptoms. The whole small intestine was found after death crowded into a white membranous bag, with a small opening through which it could be removed and returned freely. It had probably begun by a knuckle of the intestine pressing against the mesentery and making a pouch, into which the rest of the gut followed, the membrane meanwhile enlarging and thickening.

The Origin of Abscess of the Liver.—Dr. Thacher also showed the lungs, liver, and colon of a patient who had died of hepatic abscess. The right lung had become infected and was nearly wasted away, and the glands of the colon were ulcerated. There were reasons for believing that the process in the glands was older than that in the liver or lung, thus pointing to morbid conditions in the intestine, due probably to fermenting food, as the primary cause of hepatic abscess.

Dr. Biggs questioned if autopsies after death from abscess of the liver ever failed to show diseased glands in the colon.

Dr. Thacher replied that he had made one such autopsy.

Meeting of November 28, 1888.

The President, Dr. W. P. Northrup, in the Chair.

Tuberculosis of the Genito-urinary Tract.—Dr. R. Van Sanfordt presented specimens which apparently showed a primary tuberculosis of the prostate and epididymis.

The President raised the question of the initial location of the process in such cases.

Dr. Mendelson believed the process began in the lungs, where it remained almost latent, while, on the other hand, an active development went on after the lodgment of bacilli in the genito-urinary organs *via* the kidney. The reason of this metastasis was always mysterious. But he believed primary infection of the genital organs rare. Either the lungs or the intestinal canal were more likely to receive the virus.

The President took the opposite view—that primary infection of the prostate, epididymis, or testis was fairly common. It was seen in children suffering from congenital tuberculosis that the kidney was one of the last viscera to become involved, only becoming so, in fact, when the peritonæum and lower surface of the diaphragm became studded with tubercles. This made infection of the genital organs through the kidney from a slight pulmonary deposit very unlikely.

Dr. B. F. Curtis instanced cases in which castration had prevented the spread of the process in the testis to the kidney. It seemed to him that the infection traveled first to the prostate and thence to the kidney, and not up the urethra, but going through the blood-vessels.

Dr. Van Sanfordt remarked that septic processes reached the kidney from operations even on the cervix, causing surgical kidney. Tubercle bacilli might travel by the same route, whatever it was, from any of the genito-urinary organs.

Cardiac Abscess.—Dr. H. P. Loomis presented the heart of a patient who had died of pneumonia in which were found two small abscesses. When a child she had had scarlet fever, and in later years malarial disease. In her final sickness she had chill, sweat, and fever, the temperature being 105° to 106° F. all the time. The autopsy showed, besides pneumonia, a spleen much enlarged, diffuse nephritis, ureters, tubes, and ovaries diseased, a syphilitic chancre of the cervix, and pyosalpinx. The nodules in the heart had a necrotic center, surrounded by brown cells. No tubercular deposits or gummata were found. The diseased ovary seemed the only cause of cardiac abscess, if it were that. Infarction seemed unlikely, because of the absence of surrounding connective tissue.

Dr. Mendelson supposed the abscesses might be due to infection by the bacillus of the pneumonia (the pneumococcus of Fränkel).

Dr. Van Sanfordt remarked that, while the pneumococcus sometimes caused endocarditis, the lesion in this case showed signs of age. He thought it more likely to be a gumma.

The PRESIDENT suggested acute endocarditis which had gone on to abscesses.

Multiple Suppurative Arthritis.—Dr. T. H. MYERS showed the carpal and other joints of a child which had died at the age of two months, in whom every joint in the body was found filled with pus. Syphilis had been suspected, but none had been found in either parent. The mother had acute rheumatism previous to the birth of the child, but this disease was very rare in young infants. Syphilis affected usually but a few of the joints, and gonorrhœa the same. It seemed to have been a pyæmia coming spontaneously during fœtal life, without any metastatic abscesses. The umbilical cord had always been healthy.

Death from Aneurysm without Rupture.—Dr. A. H. ELY showed a large aneurysm of the arch of the aorta removed from a patient who had died suddenly upon falling out of bed, and discussed the causes of sudden heart-stoppage. He concluded that it could only be caused in a heart free of disease by paralysis of its innervation from reflex irritation or shock.

Dr. JOHN MESSENGER instanced a case where an enormous aneurysm of the aorta had produced death, by very slow degrees, after years of suffering. It was found to be adherent to the sternum and to the vertebræ, the lung was compressed, and the recurrent laryngeal nerves were flattened out to the breadth of the hand.

Interlobular Emphysema in Infancy.—The PRESIDENT presented a specimen taken from a child of five months that had died of broncho-pneumonia, showing this rare secondary affection.

Necrosis of the Lung in Pleuro-pneumonia.—The PRESIDENT also showed a lung portions of which were necrosed, the patient having had cerebro-spinal meningitis, complicated with pleuro-pneumonia. The bronchi also were dilated and contained pus and fibrin, all the changes being apparently part of the general inflammation.

Meeting of December 11, 1888.

The President, Dr. W. P. NORTHRUP, in the Chair.

Tricuspid Stenosis.—Dr. J. S. THACHER showed a heart in which this rare lesion was developed together with disease of all the other valves, apparently produced by scarlet fever in childhood, the patient being twenty-nine at the time of death. Œdema and ascites had developed toward the later weeks of life. There were palpitation and congestion of the face and the heart impulse was irregular, heaving, and diffused. A presystolic mitral and a systolic aortic murmur had been heard constantly during her sickness.

Dr. MENDELSON thought the case bore out the old view that epilepsy was caused by a spasmodic contraction of the cerebral blood-vessels. The volume of the brain would thus be greatly diminished.

Addison's Disease.—Dr. EUGENE HODENPYLE presented specimens showing the lesions of Addison's disease. The patient had died at twenty-three. When fifteen years old she had had a tubercular gathering in her fingers and a severe attack of fever with delirium and loss of flesh. Five years before her death she had begun to lose flesh and strength, the skin grew darker in color, and she became liable to periods of stupor and sleepiness; also to attacks of "biliousness" with headache, nausea, and vomiting, pain and tenderness of the abdomen, and constipation and diarrhœa alternating. When admitted to the hospital it was found that during these attacks the skin became colored a deeper brown, and nearly black about the vulva and breasts. The pigmentation also extended to the mucous membranes. She died comatose, during an attack of unusual severity. The autopsy showed complete cheesy degeneration of the supra-renal capsules, which were of three times their normal size, and caseous and calcific changes in the cervical lymphatic glands. The liver was fatty, the spleen was enlarged, the thyreoid gland and kidneys were infiltrated with cells. No tubercle bacilli were found, although they might once have been present. Dr. Osler, of Philadelphia, had found them several times in Addison's disease. The semilunar ganglia were not involved.

Gout in the Hog.—Dr. A. H. ELY presented the kidneys of a hog in which the proper tissue was entirely replaced by retention cysts, both organs being of great size.

Dr. MENDELSON remarked that gout in the hog was not uncommon, and resembled the disease as it occurred in man. Crystals of a substance termed by Virchow *uanine* were found in the joints and liver, and were sometimes mistaken for trichinæ.

Carcinoma of the Pylorus.—Dr. H. P. LOOMIS presented a greatly distended stomach measuring twenty-nine inches along its greater curvature, and holding three quarts of fluid. At its pyloric orifice was a small nodule of dense tissue which almost completely closed its lumen. The intestines were wasted. He believed the condition often occurred in private practice, where no autopsies were usually obtainable. The patient in this case had suffered from dyspepsia for a number of years before he developed a condition which persisted until his death from starvation. Every few days he had an attack of persistent vomiting after eating, and raised a quantity of partly digested food mixed with green slime. After this his appetite would return. He lost flesh rapidly, and the abdomen became sunken in while the stomach was evidently enlarged. Washing out the stomach had given no lasting relief. The free hydrochloric-acid test had failed to show carcinoma. No cachexia or tumor appeared. The case could probably have been cured by resection of the pylorus.

Carcinomatous Degeneration of the Ovaries.—Dr. M. A. D. JONES presented a series of specimens showing fibroid degeneration of the uterus and appendages, including several in which a long-existing disease of the tubes had ended in oophoritis followed by abscess and degeneration of the ovary of a clearly carcinomatous character. The patients, previous to the removal of the diseased organs, had suffered from great pain on standing, and been greatly emaciated and very miserable. Of fifty-six instances where she had removed diseased ovaries, in nine the growth proved to be a species of epithelioma succeeding to an old oophoritis.

A Double-faced Monstrosity.— Dr. H. J. BOLDT presented a head which had no body attached, and on either side of which a partial development of features had taken place. It had immediately followed the birth of a normal child. No such case had ever been recorded before.

Epilepsy from a Frontal Lesion.—Dr. W. A. HUME presented a portion of frontal bone showing loss of bone-substance in unusual amount, and a section of the brain through the subjacent anterior lobes, together with a written account of the case. The patient had received the injury in 1881, when twenty-three years old, from a boiler explosion. An oval area in the forehead, measuring two inches and two thirds in width by an inch in height, had been broken into fine fragments and forcibly driven in against the brain, lacerating the membranes and a portion of the right anterior lobe. The fragments had been removed and the wound had healed over. The opening in the cranium left was situated in the median line just above the orbits and involved the left orbital plate.

Afterward, from pressure of the brain, ulcerations appeared in the line of union, which shortly gave way entirely. The brain protruded through the wound, completely filling the opening in the bone, and had to be returned by compresses and bandages. This time the wound healed by granulation. Curiously enough,

up to this point, from the moment of injury, there had been no cerebral symptoms beyond a little delirium and slight increase of temperature, and none occurred until eight months after the injury. Then an attack of epilepsy occurred, and thereafter recurred at intervals of eighteen months. The spasms were general, never unilateral. At the very beginning of an attack some one group of muscles might be the first to become rigid, but the convulsion so soon became general that this had never been observed.

Between his attacks the skin covering the brain had been seen to recede and advance with each pulsation, but during his seizures all pulsation had ceased, and the skin was firmly drawn back through the bone-opening. As consciousness returned the pulsations became more and more pronounced, and the skin bulged a little beyond the surrounding integument. Ordinarily, when either standing or lying, it was slightly sunken. Three months before his death (in November, 1888) convulsions had become more frequent and much more violent, occurring about once a week, with two or three attacks at a time; in the last week they had been nightly, and in the last twenty-four hours there had been sixty of them. During all these years he had seldom had headache, and his mind was unimpaired till just before the end.

At the autopsy firm adhesions were found between the skin, membranes, and brain. The dura had not reformed over a portion of the right lobe, and the pia over the frontal portion of the right anterior lobe was entirely obliterated. The frontal portion of each anterior lobe was softened and disorganized, but more on the right. Some had thought this degeneration due to loss of the integrity of the pia. The membranes in places had seemed to Dr. E C. Spitzka (who made a microscopical examination) to be drawn into and fused with the cerebral substance; in other places between the two was a trabecular tissue covering an irregular cavity. The gyri surrounding the cicatrix were puckered in toward it in a radiating manner. Sections showed that the white matter underlying the affected gray substance was also affected nearly as far back as the caudate nucleus. The centers or "cores" of all three frontal gyri were converted into a spongy tissue, such as occurred in rarefying encephalitis, its meshes following the course of the nerve-fibers. The projecting ends of two arcuate fasciculi showed distinct fibrillation. Unless secondary degenerations were found, the reader thought the epileptic attacks must have been due to reflex irritation conveyed in some way to the motor tracts. He was not aware of any motor tract situated in the parts of the brain which had been found diseased. There might have been fibers connecting with the motor area in the underlying white substance which were either diseased or conveyed the irritation from other affected parts.

Meeting of December 26, 1888.

The President, Dr. W. P. Northrup, in the Chair.

Congenital Micromelia.—Dr. A. H. Ely presented, as a specimen of arrested evolution, the body of an infant apparently born at full term and well grown. Its parents were Polish Jews; it had been brought to Bellevue Hospital. No history had been obtained. The deformity consisted in extreme shortness of the upper and lower extremities. The arms being brought together across the chest, the fingers barely touched. The legs were bowed outward in an exaggerated manner, the feet being turned inward so that when erected the infant stood on the outer sides of its feet. The bones were of normal thickness and the limbs thick and well developed. The thumbs and great toes resembled those of certain apes in being turned to nearly a right angle with the other digits and set some distance back. This disposition in the ape was one which facilitated climbing and grasping limbs of trees. It seemed a typical case of reversion to a lower type.

The Bronchial Glands in General Tuberculosis.—Dr. L. Emmett Holt presented three specimens showing enlarged bronchial glands, in two of which ulceration and perforation had taken place. Two of the cases gave physical signs by which the condition of the glands had been diagnosticated during life. In the first case a spot of the size of a silver dollar had been found close to the spine on the right side where there was marked dullness and also exaggerated tubular breathing. The temperature had remained high, with symptoms of general tuberculosis, for only a week previous to death. At the autopsy all the viscera were filled with tubercular deposits, some in caseous degeneration. A large mass of diseased bronchial glands was found about the right bronchus, and a perforation of the bronchus half an inch from the bifurcation communicating with one of them. In the second case general symptoms presented for only twelve days previous to death, the temperature ranging between 101·3° and 102°, and only once reaching 103°. Five days before death cerebral symptoms had developed, and signs of consolidation in the right lung, in addition to the usual symptoms of tubercular meningitis with right facial paralysis, and partial paralysis of an arm and a leg. In the right intrascapular region the same signs were present as in the first case. There were occasional convulsive movements, but the child died comatose. The autopsy showed tubercular meningitis, with lesions most marked along the left Sylvian fissure, thrombosis of the left middle cerebral artery, and an area of red softening in the cerebral substance. Cheesy nodules were scattered throughout the lungs and other viscera. The bronchial glands formed a large cheesy mass surrounding the right bronchus. Near the bifurcation of the trachea was a small perforation due to ulceration of a tubercular deposit in the bronchial wall.

In the third case, which also presented enlarged bronchial glands and general tuberculosis, there had been few symptoms except gradual wasting without much fever. The condition of the glands had not been diagnosticated. For nearly two months before death there had been almost continuous opisthotonos, which was at times very marked. At the autopsy general tuberculosis was found but without any involvement of the brain or cord, so that no explanation was afforded as to the cause of the opisthotonos. Perhaps the cheesy degeneration had been present in the glands of the neck in a way to cause reflex spasm through irritation of the spinal accessory nerve.

Laryngeal Diphtheria without Loss of Voice.—Dr. Holt also reported a fatal case of diphtheria, and exhibited the lungs, larynx, and trachea. There had been no loss of voice, no laryngeal dyspnœa, and nothing to lead one to suspect croup, in spite of a false membrane which extended over the epiglottis, larynx, and upper trachea. The membrane covering the cords and lower part of the larynx was thin and not very adherent. In the trachea it was loose. A singular feature in this case was that while no membrane was found in the lower trachea nor large bronchi, at the third or fourth subdivision it reappeared in abundance, but was present in the small bronchi only upon the right side. The child died of broncho-pneumonia on the sixth day.

The President remarked in regard to the third of Dr. Holt's cases, that he had seen opisthotonos developed in cases of marasmus where it had been supposed due to tubercular meningitis of the brain and cord, but where the autopsy had revealed no lesion in any tissue except gastro-intestinal catarrh. In regard to the fourth case, he would mention that he had recently removed a larynx from a child dead of diphtheria in which its whole interior, including the vocal cords, was thickly coated

with a white diphtheritic deposit, while yet during life the child had presented no symptom of its presence, either by dyspnœa, cough, or altered voice.

Reports on the Progress of Medicine.

GENERAL MEDICINE.

By H. N. VINEBERG, M. D.

The Cause of Malarial Disease.—Tommasi-Crudeli ("Deut. med. Woch."; "Medical Chronicle," February, 1888) thought eight years ago that he had discovered the cause of malaria in a bacillus-shaped schizomyces. This germ, he believed, was widely spread on the surface of the ground, and, under the surface, had the power of remaining for a long time inert, and of at length waking to life and being reproduced when exposed to summer heat, a moderate amount of moisture, and direct contact with the atmosphere. For the past eight years, however, there has been great confusion of ideas on the subject. One observer found the schizomycetes in the atmosphere, another found them in the soil of malarial regions, while other observers found them in the blood of fever patients. It was chiefly with reference to the last observation that differences of opinion arose. The hyaline mass found in the blood of fever patients, and which Laverau and Richards named *plasmodium malariæ*, Tommasi-Crudeli considered was simply a degeneration of the red corpuscles—an effect, not a cause, of the malarial infection. The hyaline mass finally splits up into rosettes or discs—the segmentation of Golgi—which are converted into a granular detritus and finally scattered through the plasma. In various diseases, frequently in fevers, such as scarlet fever and typhus, the same process occurs. It occurs also in progressive anæmia. What occasions it in malarial disease?

Dr. Bernardo Schiavuzzi, of Pola, has shown experimentally that the so-called plasmodium of malaria in the red blood-corpuscles of rabbits follows an infection which can be produced in these animals by inoculating them with the pure cultivation of a bacillus found in the malarial atmosphere of Istria. Schiavuzzi affirms that these organisms were always discoverable in the air of malarial regions, and never met with in non-malarial districts, and maintains that the bacillus is identical with that discovered by our author and Klebs in 1879. Strangely enough, Marchiafavu and Celli, hunting for bacilli in the air of the Pontine marshes, in the summer of 1885, found none. Our author attributes this unsatisfactory result to their using an imperfect and immovable apparatus. Schiavuzzi used Koch's appliances and other movable aspirations. The important practical point is to examine the atmosphere in the proper places and at times when the malarial poison is the strongest.

Subcutaneous Injection of Salt Solution in Cardiac Weakness.—Rosenbusch ("Ctrlbl. f. klin. Med.," 1888, No. 6) recommends that the salt solution be injected deep into the subcutaneous tissues of the selected part with a Pravaz syringe. Resorption takes place in from three to five minutes. Where a large quantity of the solution is indicated, Cantani's apparatus is used. Apart from moderate pain when a concentrated solution is employed, and a temporary redness of the skin when the injection is made superficially, no untoward effects occur. The effect in general is as follows: In from three to five minutes after injecting from 20 to 30 grammes (℥ v to ℥ vijss.) of a six-per-cent. solution, the pulse becomes markedly slower and the vessels become more tense. This effect increases for thirty minutes, then usually continues for several hours. The favorable results are illustrated by the histories of several cases, among which are one case of intense anæmia following repeated hæmatemesis, one case of acute gastro-enteritis attended with collapse, one case of typhoid fever with heart dilatation, two cases of pneumonia, etc.

On the ground of his personal experience, the author lays down the following indications: (1) In sudden collapse, from 20 to 30 grammes (℥ iv to ℥ vijss.) of a six-per-cent solution. (2) In heart weakness in the course of any acute illness, the foregoing quantity to be administered at one time and afterward 5 grammes (℥ j ¼) daily. (3) In acute gastro-enteritis and debility following vomiting and diarrhœa. (4) In hæmorrhages from the lungs, stomach, and bowels. (5) In cardiac debility in the course of various chronic diseases and cachectic conditions.

Alimentation with Peptone and Egg Enemata.—C. A. Ewald (*ibid.*) has made several experiments on animals and healthy human beings regarding the resorptive power of the rectum. He extended his experiments also to three cases of disease. The amount of nitrogen in the nourishment was accurately ascertained, as was also the amount in the fæces and in the urine. As a practical result of these experiments, it was found that the rectal mucous membrane had the power of absorbing prepared and non-prepared egg albumin better than it could variously prepared peptones. Ewald's results contradict those obtained by Voit, Bauer, and Eichhorst, in which the egg albumin became absorbed only when chloride of sodium was added to it.

Regarding egg enemata, it is advisable that the quantity should not exceed a fourth of a litre (10 oz.), and that several should be given during the day. The nutrient enemata should always be preceded by a cleansing enema of warm water, and it is always better to wait for an hour after this before beginning with the rectal alimentation. In cases of great irritation of the bowel it is well to add a few drops of laudanum to each enema. It is not advisable to introduce into the rectum a pouch filled with air or water in order to retain the injected material, as that would only increase the irritation of the rectum.

The Treatment of Typhoid Fever.—Ziemssen (*ibid.*) attributes the lowered mortality of typhoid fever within the past few years to improved therapeutics. A few only of the more important features of his very extensive and scientific paper can be here given. The patient's room should be capacious, quiet, and well ventilated. Water-pillows should be used, and, when possible, a second bed. The author is in favor of easily digested albuminates during the fever. Beef-juice extracted from fresh beef is the most suitable, and of this the patient should have 150 to 200 grammes (5 to 6½ oz.) in twenty-four hours. Regarding other forms of nutriment, the author follows the prevailing methods. Gelatin is often given in form of calves'-foot jelly with wine. The author gives but few medicines, and these only when specially indicated. Calomel, he thinks, has a decidedly beneficial effect when given at the right time—that is, within the first five days of the illness. He gives grs. vijss. three times within two hours. Strong emphasis is laid upon his method, which is so well known, of reducing the temperature by graduated cold baths. He speaks warmly of antipyrine as an antipyretic, of which he administers 5 grammes (grs. lxxv), in three divided, hourly doses, beginning the administration after 6 P. M. Thalline and acetanilide receive praise from him, but he condemns quinine, because it is attended with untoward effects—such as noises in the ears and an indescribable sensation all over the body. Kairin and salicylate of sodium as antipyretics he considers antiquated. In slight cerebral symptoms an ice-bag should be applied to the head, but not continuously; in severe cerebral symptoms, graduated baths, with cold affusions, are indispensable. Insomnia and restlessness are best combated by an injection of morphine. A tendency to cardiac weakness is best met by excitants, the best of which are camphor and wine, champagne and brandy. Severe diarrhœa is best treated with starch and opium enemata. Intestinal hæmorrhages call for ice-bags on the abdomen, and subsequently for ice-water enemata, which act reflexly. The intestinal hæmorrhages which occur between the fourth and sixth weeks offer a much worse prognosis than those that occur during the second and third weeks. Bed-sores can be avoided by care, cleanliness, cold-water treatment, and a water-pillow.

During convalescence great care must be exercised regarding the diet. For five days, at least, after the non-febrile period has set in the diet should continue to be of a liquid nature. After this it may be given in a semi-solid form for a few days, and then solid food may be cautiously given. The patient should keep in his bed for fourteen days, even after a mild attack, and for three or four weeks after a severe one.

Acute Infectious Phlegmon of the Pharynx.—Senator ("Ctrlbl. f. klin. Med.," 1888, No. 9) has seen four cases of this affection, and he remarks that it is as yet very little known. The clinical features were acute fever, the temperature undergoing moderate elevation only, early pain in the pharynx and pain on swallowing, laryngeal symptoms in the form of hoarseness, and dyspnœa. In a short time cerebral disturb-

ances were added, and death occurred shortly after without any marked changes of the internal organs. The most constant pathological process found after death was a diffuse suppurative inflammation affecting the deeper tissues of the pharyngeal mucous membrane, extending to the larynx and the glands, attacking secondarily other organs. The disease attacked previously healthy individuals without any apparent cause. The author did not find any difficulty in forming a diagnosis. Diphtheritic laryngitis could easily be excluded. The prognosis is grave in the extreme.

In the discussion that followed Senator's paper, Guttmann remarked that the disease had been described by French authors under the cognomen of erysipelatous inflammation of the pharynx and larynx. Even the absence of the erysipelas cocci from the products of inflammation would not disprove the erysipelatous nature of the inflammation.

Virchow would place the described process under the category of pseudo-erysipelas or diffuse phlegmon. Practically it does not differ from true erysipelas, and it matters not whether or not cocci are found. Most of the phlegmonous affections of the digestive apparatus are extremely infectious. The number of cases is excessively small in which a starting-point can not be traced.

A Peculiar Microscopical Appearance of the Brachial Plexus in Neuritis consequent upon Typhoid Fever.—E. Stadelmann (*ibid.*) reports the following case: A driver, aged twenty-seven, during convalescence from a mild attack of typhoid fever, began to suffer with lightning-like pains in the arms and legs, with stiffness and a sensation of cold in the extremities, and with profuse perspiration. The pains in the extremities increased on motion, and after a time affected the abdomen and lower half of the thorax. The extremities were weak and incapable of exertion, the faradaic irritability of the muscles was intact, the galvanic was lowered, the sensibility was diminished, and the tendon reflexes were absent. The cerebral nerves were intact. The patient died twelve days later without any new symptoms manifesting themselves. At the autopsy were found swelling and medullary infiltration of Peyer's patches, typhoid ulcers in the small intestines, patches of lobular pneumonia in the right lung, and a recent endocarditis of the mitral valves. In addition, the brachial plexus and crural nerve were found in a pretty far advanced state of parenchymatous degeneration. The spinal cord, microscopically and macroscopically, was normal, the muscles showed marked waxy degeneration. Worthy of attention was the microscopical appearance of the brachial plexus. In the proliferated perineurium and endoneurium, and even in the loose cellular tissue near the brachial artery, were seen numerous layers of tissue, with large spindle-shaped nuclei which had long processes. A distinct lumen was absent. Longitudinal sections showed that it was simply connective tissue. The significance of these pathological processes was not apparent.

Cancer of the Stomach; Pylorectomy.—Dr. McCall Anderson and Mr. George Buchanan ("Brit. Med. Jour.") relate a case of cancer of the stomach in which pylorectomy was done.

The patient, a woman, aged forty-eight, had suffered with symptoms of gastric derangement for four months. She was very pallid, weak, and emaciated. A tumor, of the size of a hen's egg, could be detected in the epigastric region. The stomach had undergone considerable dilatation, but under suitable treatment this disappeared to a great extent. The patient was operated upon by George Buchanan after Billroth's method. She rallied slightly under the effects of free stimulation, but died the next morning from exhaustion. The authors, from their experience in this case and a careful study of the subject, draw the following conclusions: 1. That if pylorectomy is to be undertaken with any prospect of success, the patient must be urged to submit to it long before he is reduced to a state of approaching inanition by starvation. 2. The success or fatality of the operation itself will be greatly affected by the length of time the abdominal cavity is kept open. 3. The freedom of the tumor from complications, such as adhesions and secondary infiltrations, is necessary, but sometimes can only be ascertained during the operation. In answer to the question, Is pylorectomy justifiable or not? they quote two eminent authorities. Butlin: "The excessive mortality due to the operation, the rapidity of recurrence in what have appeared to be most favorable cases for operation, the return of the symptoms of obstruction in some, if not many, of the cases, and the fact that there does not appear to be one case which can be alleged as a genuine cure, lead me to doubt whether the operation of resection of the pylorus for cancer is ever a justifiable operation."

Professor Billroth's assistant, in reply to Mr. Buchanan, writes: "Professor Billroth does not only consider the operation of resection of the pylorus as a justifiable one, but he continues operating with good results in many cases, as you will see in the pamphlet following this letter. Of course he does not operate in cases of carcinoma, if there are already infiltrations and adhesions to the liver and pancreas. In these cases he prefers Wölfler's operation, or gastro-enterostomy."

Anorexia Nervosa.—Dr. Stephen Mackenzie ("Lancet," March 31, 1888) relates a case of this affection, to which Sir William Gull has recently so ably drawn attention. As the case is typical of a class of cases which are often very puzzling to the physician, it may be of interest to give its full history. The patient, a governess, aged nineteen, was at the time Dr. Mackenzie saw her greatly emaciated and rather anæmic. She did not complain particularly of anything except weakness. Careful examination failed to reveal any signs of disease in the chest, abdomen, and fundi. On account of pain, she had been taking insufficient food until she had really starved herself into the condition noted. She was admitted into the London Hospital, January 3, 1883. Her family history was not important. She was born in the West Indies, and came to England when a year old. She had inflammation of the bowels when nine, inflammation of the lungs when ten, and gastric fever when fifteen years old. She had had several minor ailments, and was always subject to colds. She stated that, about six years before, she had had a cough and spat blood. About two years before admission she began to be troubled with indigestion. She had pain after eating, with feelings of nausea and heart-burn, faintings, and flushing of the face. Her appetite left her in the previous March, and she had gradually eaten less and less. She noticed that she began to be more fatigued than usual when walking, and she also suffered much from headache. For the last three or four months she had remained at home and in-doors. A year before admission she had a severe fright, caused by burglars. The patient was of light complexion and hair, her expression was sad, her intelligence was good. She was much wasted, weighing only eighty-six pounds. Her abdomen was retracted, and the bowels constipated, never acting more than once in seven or ten days. There were no signs of disease in the heart, liver, or kidneys, and the fundi were normal. She menstruated first at fifteen; the catamenia had always been irregular and scanty, and had been absent since August. She had always suffered from leucorrhœa. Her temperature was subnormal during the whole course of her illness in the hospital, with the exception of the time following admission, when she had an attack of follicular amygdalitis. She was ordered milk and beef-tea, eggs, pudding, and brandy mixture, at regular intervals, with instructions that, if the food was not taken each time, it was to be administered by the stomach-pump or enema. She steadily gained flesh, color, and strength. She menstruated for the first time for seven months on February 23d. She was allowed up for the first time on February 25th, and went out into the garden on March 30th. The medicinal treatment was unimportant; stomachics and aperients were given, and for a time cod-liver oil, which, however, disagreed. As she gained strength she was encouraged to assist in waiting on the other patients in the ward, and she found this occupation so congenial that when she left the hospital she gave up her former profession and regularly adopted that of nursing. She left the hospital in May practically well; when seen a few weeks since by Dr. Mackenzie she was robust and happy.

In an editorial in a prior number of the "Lancet" attention is drawn to Sir William Gull's article on anorexia nervosa. It recalls the chief points in the graphic picture of the disease by the distinguished author, and the simplicity of the treatment. The patients are generally young girls from fourteen years old or more. The disease may, however, occur in males. The great feature of the cases is complete anorexia, leading to extreme emaciation, with slow pulse, subnormal temperature, and very few respirations. Strange to say, there is associated with these depressed functions a remarkable restlessness, a disposition to be moving or walking about, though the patient is an object of remark in the street. There is an entire absence of signs and symptoms of tubercular or other organic disease. The cure consists of

three things—rest, warmth, and the regular and frequent introduction of food, in utter disregard of the anorexia of the patient. An efficient nurse is essential. Medicine seems to be of little or no use; massage is not mentioned. Most of the cases seem to occur in the colder months of the year, and possibly this may be more than a coincidence.

Hysterical Traumatic Arthralgia.—M. Charcot ("Le progrès médical," January 28, 1888) again draws attention to a form of joint affection which may have a traumatism for its origin, but yet rest on a purely neurotic basis. A case of this kind formed the subject of a clinical lecture recently delivered by him. The patient, a young girl, had fallen on her left knee seven months before. Since that time the knee had been swollen and the patient had kept to her bed. A cursory examination would leave the impression that the patient was the subject of a grave joint affection. The joint was considerably swollen, and its outlines were gone. Movement and manipulations caused considerable pain. The skin over the joint was red and shiny, the local temperature was somewhat higher than that of the opposite side. The limb was in a position of semiflexion and the muscles were markedly atrophied. Analyzing the case, it was found, however, that there had been no fever, and there was no emaciation such as would attend a serious disease of the joint. The redness of the skin was due to all kinds of topical agents that had been employed by various physicians whom the patient had consulted. On further examination, it was found that the patient had left hemianæsthesia and ovarian pain on the left side. There was anæsthesia of the pharynx, and there was considerable diminution of the field of vision of the left eye. There was hyperæsthesia over the third, fourth, fifth, and sixth dorsal vertebræ. Under chloroform it was found that the joint was quite movable and that there was no crepitation to be felt.

The treatment of these cases must be chiefly moral. Hypnotism and suggestion may be tried. The various means employed in hysteria are here called into requisition.

Peripheral Traumatism as a Cause of Tabes Dorsalis.—M. Spillman and M. P. Parisol ("Rev. de méd.," 1888, No. 3) have collected fourteen cases, including one case of their own, of tabes, in which a slight peripheral traumatism was the only exciting cause to which the development of the disease could be attributed. Of these cases only two had had syphilis and two more were addicted to the use of alcohol In all the cases in which the matter had been investigated there was a history of hereditary neuroses. The authors are of the opinion that an injury, however slight, to a peripheral part may be sufficient to be the starting-point of a tabes dorsalis in an individual of a neurotic tendency. They think that the question has a medico-legal interest in cases where a person suffers from a life-long disease excited by a slight injury.

Hypertrophic Cirrhosis of the Liver without Icterus.—E. Demange (*ibid.*) reports, at considerable length, a case of this kind. The patient, a man, was eighty-four years of age, had always had the best of health, had never had syphilis, and was not addicted to the use of alcohol. He began to suffer from digestive troubles characterized chiefly by diarrhœa and anorexia. The disease ran a rapid course, terminating fatally in three weeks without the slightest sign of jaundice. At the autopsy the liver was found very much increased in size, weighing 2,750 grammes (86 ozs.). There were no nodosities and the enlargement was uniform. Examined histologically, cirrhosis of a venous origin was detected. The connective tissue between the lobules and around the central vein had undergone active proliferation, but there was no appreciable fatty or waxy degeneration. The liver cells had retained their form and size, and there was no proliferation about the biliary ducts.

On the Effects of Acids (Hydrochloric, Lactic, Acetic, and Carbonic) on the Functions of the Stomach, and their Therapeutic Application.—W. Jaworski ("Ctrlbl. f. klin. Med.," 1888, No. 10) draws the following conclusions, after extensive experiments with acids on the gastric function:

1. The acids throw down a considerable precipitate of mucus.

2. They (especially hydrochloric acid) increase the cellular elements of the gastric contents.

3. Their introduction is followed by intense butyric reaction, most marked after hydrochloric acid.

4. Larger quantities of the acids produce a considerable effusion of bile into the stomach.

5. They stimulate, very actively, the secretion of pepsin, but have no more influence upon the secretion of hydrochloric acid than so much distilled water would have.

6. Their long-continued administration is followed by marked diminution of the secretion of hydrochloric acid.

7. Even in large quantities hydrochloric acid produces no gastric disturbances. On the contrary, a continued administration of the acid is attended with a feeling of well-being.

8. The difference in the effect between acids and the alkaline salts on the gastric functions consists in the fact that the alkaline salts dissolve the mucus and decrease the secretion of pepsin, while the acids precipitate the mucus and increase the secretion of pepsin. The disappearance of the alkaline salts from the stomach is followed by a decided increase of the hydrochloric-acid secretion. This does not occur, or only to a slight degree, in the case of acids. Both the acids and salts, in large quantities in continued use, have the same effect in lowering the activity, and finally in destroying the function of the glands secreting hydrochloric acid.

Experiments with the introduction of carbonic acid into the stomach, either in gaseous form or dissolved in water, show that this acid has the property of stimulating the peptic and acid functions of the stomach, and in that way increases its digestive power.

Lathyrismus; its History and Ætiology.—B. Schuchardt ("Ctrlbl. f. klin. Med.," 1888, No. 10) describes under this term a toxic affection following the continued use of various kinds of peas (*Lathyrus sativus, L. cicora, L. clymenum*), which was first recognized in the seventeenth century. The author has searched literature on the subject, and finds that all writers agree in stating that the most prominent feature of the affection is a marked disturbance of the nutrition of the muscles of the inferior extremities, together with a pronounced interference with their movements. Similar phenomena are to be witnessed in horses that have been fed for a long time with peas. The animals stumble during light work, on account of rapid paralysis of the inferior extremities, and in many cases they die from asphyxia due to a simultaneous paralysis of the recurrent laryngeal nerve. In man such a paralysis of the recurrent laryngeal does not take place, and death is a very rare termination. Cantani has given the best clinical picture of the disease. The adductor muscles are affected more than the abductors. The muscles of the trunk, neck, face, and upper extremities remain intact. The sensibility of the skin of the legs is normal, so also are the reflexes. The muscles contract slowly with a decreasing galvanic current on closing. With the increasing current, contractions do not take place either on closing or opening the circuit. Microscopical examination of an excised fragment of a muscle shows that the striæ are diminished, and that several small fat cells are to be seen.

Proust makes the guess that the lesion is a transverse myelitis, or a hæmorrhage of the cord, and that this lesion is followed by a secondary degeneration of the lateral columns. But against this view are the facts that many of the patients entirely recover and others are very much improved. Strümpell expresses a similar opinion. Experiments have been made to extract the toxic agent. One observer thinks that he succeeded in obtaining a body resembling an alkaloid which he named lathyrine.

Miscellany.

Medical Society of the State of New York.—In addition to the papers already announced, the following have been promised for the meeting which begins in Albany on Tuesday, February 5th: "The Treatment of the So-called Perityphlitic Abscesses," by Dr. Robert F. Weir; "Basedow's Disease," by Dr. H. R. Hopkins; "Cranial Measurements in Twenty Cases of Infantile Cerebral Hemiplegia," by Dr. Edward D. Fisher and Dr. Frederick Peterson; "Cases illustrating the Curative Effect of Convex Glasses in the Strabismus of Young Children on Some of the Minor Types of Pneumonia," by Dr. T. E. Satterthwaite; "The Practical Application of Acoustics to the Physical Signs of the Human Chest in Diagnosis," by Dr. J. R. Leaming; "The Importance of the Early Recognition of Cancer of the Cervix Uteri," by Dr. Henry C. Coe;

"Office Photography with the Flash Light," by Dr. Henry G. Piffard; "Inferior Dental Neurectomy," by Dr. J. H. Glass; "Vaginal Hysterectomy," by Dr. James B. Hunter; "Septic Poisoning in Early Life," by Dr. Henry D. Chapin, "Amblyopia in Diabetes," by Dr. W. O. Moore. Gentlemen who propose to discuss any of these papers will confer a favor upon the business committee by sending their names to Dr. Roosa, 20 East Thirtieth Street, New York, without delay. A provisional programme will be sent to the press and to members of the society the last week in January.

Mortality in Cities in the United States.—The following table represents the mortality in the cities named, as reported to Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, and published in the abstract of sanitary reports received by him during the week ending January 11th:

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—										
				Cholera.	Yellow fever.	Small-pox.	Varicella.	Varioloid.	Typhoid fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y....	Jan. 5.	1,540,500	785	..	..	..	..	..	..	9	17	43	25	14
Philadelphia, Pa...	Dec. 29.	1,016,758	349	..	..	..	..	..	..	10	8	7	..	2
Brooklyn, N. Y....	Dec 29.	805,885	341	..	..	..	..	..	..	4	12	23	6	7
Baltimore, Md....	Jan. 5.	500,343	164	..	..	..	..	..	..	5	..	6	..	3
St. Louis, Mo	Dec. 29.	440,000	156	..	..	..	..	..	..	3	..	16	..	....
San Francisco, Cal.	Dec. 28.	330,000	102	..	..	..	..	..	..	1	..	2	..	....
Cincinnati, Ohio...	Jan. 5.	255,139	124	..	..	..	..	..	..	..	3	7	..	....
New Orleans, La...	Dec. 29.	248,000	117	..	..	..	..	..	..	3	..	5	1	....
Milwaukee, Wis ...	Jan. 5.	200,000	66	..	..	..	..	..	..	1	3	5	..	....
Kansas City, Mo...	Jan. 5.	180,000	30	..	..	..	..	..	..	..	..	1	..	....
Minneapolis, Minn.	Dec. 29.	180,000	43	..	..	..	..	..	..	2	2	6	..	....
Newark, N. J.....	Jan. 1.	179,000	76	..	..	..	..	..	..	6	..	1	..	....
Newark, N. J.....	Jan. 8.	179,000	94	..	..	..	..	..	..	9	2	2	..	.
Detroit, Mich.....	Jan. 5.	.....	59	..	..	..	..	..	..	..	..	2	..	....
Richmond, Va.....	Dec. 31.	100,000	38	..	..	..	..	..	..	1	..	1	..	....
Richmond, Va.....	Jan. 7.	100,000	32	..	..	..	..	..	..	..	..	..	..	1
Denver, Col.....	Jan. 4.	96,000	33	..	..	..	..	..	..	..	..	1	..	....
Toledo, Ohio	Jan. 4.	80,000	23	..	..	..	..	..	..	..	1	3	..	....
Camden, N. J.....	Jan. 3.	70,000	9	..	..	..	..	..	..	1	1	..	..	....
Nashville, Tenn....	Jan. 5.	65,153	24	..	..	..	..	..	..	1	1	..	..	....
Fall River, Mass...	Jan. 5.	65,000	32	..	..	..	..	..	..	..	1	2	..	....
Charleston, S. C....	Jan. 5.	60,145	25	..	..	..	..	..	..	..	..	..	..	....
Lynn, Mass.....	Jan. 5.	50,000	23	..	..	..	..	..	..	..	..	..	1	....
Manchester, N. H..	Dec. 30.	41,000	19	..	..	..	..	..	..	..	..	2	..	....
Galveston, Texas..	Dec. 28.	40,000	13	..	..	..	..	..	..	..	..	..	..	....
Portland, Me	Jan. 4.	40,000	15	..	..	..	..	..	..	..	..	..	..	....
Council Bluffs, Ia..	Jan. 5.	40,000	2	..	..	..	..	..	..	..	..	..	..	....
E. Saginaw, Mich..	Jan. 5.	33,000	8	..	..	..	..	..	..	..	..	..	..	....
Altoona, Pa.....	Dec. 29.	30,000	10	..	..	..	..	..	..	..	..	1	..	....
Auburn, N. Y.....	Jan. 5.	26,000	7	..	..	..	..	..	..	..	..	..	..	....
Haverhill, Mass....	Jan. 5.	25,000	10	..	..	..	..	..	..	..	..	..	1	....
Newport, R. I.....	Jan. 3.	22,000	6	..	..	..	..	..	..	..	..	..	..	....
Newton, Mass.....	Jan. 5.	21,105	6	..	..	..	..	..	..	..	..	1	..	....
Keokuk, Ia.....	Jan. 5.	16,000	2	..	..	..	..	..	..	..	..	..	..	....

New York Academy of Medicine.—The next meeting of the Section in Ophthalmology and Otology will be held on Monday evening, the 21st inst.

At the next meeting of the Section in Laryngology and Rhinology, to be held on Tuesday evening, the 22d inst., Dr. W. F. Chappell will read a "Report of the Examination of the Throats and Noses of 2,000 Children, to ascertain the Frequency of certain Abnormal Conditions."

At the next meeting of the Section in Pædiatrics, to be held on Tuesday evening, the 22d inst., Professor R. H. Chittenden, of the Sheffield Scientific School, Yale University, will present: (*a*) "Observations on the Digestive Ferments in Normal Digestion"; (*b*). "On the Conditions Modifying their Action"; (*c*) "Trypsin and Pepsin as Solvents of Pseudo-membranes."

At the next meeting of the Section in Obstetrics and Gynæcology, to be held on Thursday evening, the 24th inst., Dr. J. R. Nilsen will read a paper on "Some Unusual Complications in Opening Pelvic Abscesses through the Vagina or by Laparotomy"; and Dr. H. J. Boldt will read a paper entitled "Treatment of Suppurative Disease of the Uterine Appendages."

The New York Ophthalmological Society.—At the annual meeting, held on Monday, the 14th inst., the following officers were elected: President, Dr. William Oliver Moore; vice-president, Dr. Samuel B. St. John; secretary, Dr. William S. Dennett.

The Philadelphia County Medical Society.—Lack of space has compelled us to omit a report of the proceedings of this society for several weeks past. At a meeting held on November 7th there was a comprehensive discussion on the treatment of peritonitis, in which the advantages and disadvantages of opium were particularly considered. A valuable discussion on recent work in abdominal surgery occupied the meeting of November 14th. At the meeting of September 26th, Dr. S. W. Gross read a paper advocating complete extirpation of the breast and removal of the axillary glands in all cases of mammary carcinoma. On November 28th, Dr. William Hunt called attention in a comprehensive paper to the marked liability to gangrene which attends diabetes.

Cirrhosis of the Liver.—According to the "Lancet," "Lancereaux treated alcoholic cirrhosis of the liver with iodide of potassium. The iodide is least useful in the hypertrophic form, and when persistent jaundice or perihepatitis obtains. Improvement may be observed in a fortnight, the urine being increased and the ascites diminished; at the same time the venous enlargement of the parietes and the swelling of the spleen tend to subside, and the patient gains weight and strength as the digestion improves. The dose should be an ordinary one, and the treatment kept up for some weeks or even months. Alcohol must be avoided, and a milk diet enjoined; cutaneous frictions are beneficial."

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

ACOUSTICS APPLIED TO THE HUMAN CHEST IN PHYSICAL DIAGNOSIS.*

BY J. R. LEAMING, M. D.

THE interior conditions of that marvelous instrument, the eye, are made known to us with mathematical precision by the application of the laws of light—optics. Any writer or teacher who should reject or neglect to apply these laws in considering the problems of vision would be unscientific, and most likely wrong. In fact, since the application of the laws of light to the study of the eye, ophthalmology has become, in the hands of its devoted and learned professors, the one branch of medicine entitled to the distinction of being scientific, and consequently certain.

Optics and acoustics are twin-sister sciences, cognate in origin, in similarity of laws, and of results or effects.

The laws of one, which are familiar, have ever been used in elucidation of the obscure in the other.

Yet, while optics has been successfully applied in the diagnosis of diseases of the eye, acoustics has hardly been thought of as a sure scientific solution of the important and difficult problems of diagnosis of diseases of the chest.

The reason for this is, no doubt, the fact that acoustics has until lately been an unapplied science. Its phenomena in nature have been subjects of wonder and superstition, rather than for education. The ancients placed them all under the dominion of Pan, the mysterious god of noise and of silence, the unexplainable, the source of sudden fears, and panics.

Bacon, the great author of modern philosophy, took the greatest interest in studying echoes, which he never comprehended as mathematical results of natural phenomena in such a way as to make them practical, as he would have done had he been acquainted more fully with the laws of sound. Laennec, who discovered the means of diagnosis by auscultation with the stethoscope, and Louis, who did so much to establish its use and to make it practical, were not learned in acoustics. Therefore it has been said that acoustics is not necessary to any one in order that he may become a good auscultator. The brilliancy of the discovery of Laennec, and its great possibilities, blinded the eyes of the profession then and since, so that auscultation has just missed perfection by not being based upon eternal law.

Laennec stumbled upon acoustic facts when he placed one end of a roll of paper against a patient's back and applied his ear to the other. Had he been acquainted with the laws of sound, what a grand opening would this have been for the establishment of fact, instead of ingenious theory in explaining the laws of physical diagnosis! I would not take one leaf from the laurel crown which he so richly won; but rather would add to it that which belongs to discovery—its scientific explanation. Skoda made one step toward this consummation when he discovered the principle of consonation. That was one more discovery which again pointed out the fact that all ascultation to be most valuable must be based upon the laws of sound, but went no further; the time was not yet.

But in this practical age of the application of the laws of sound to the telegraph, the telephone, the phonograph, and the microphone, it becomes an easy thing to apply acoustic law to diagnosis of diseases of the chest, which will raise this branch of medicine also from the realm of hypothesis and place it upon a level with ophthalmology.

Mr. Edison, the discoverer of the phonograph, while listening to music and holding his hat in his hand, noticed that the crown vibrated sensibly to the sound, and this suggested the instrument. For, if vibrations in the air-waves could cause this diaphragm to vibrate, why should not vibrations in a diaphragm also send sound-waves into the air; these waves were recorded in some penetrable substance by a point, and going over the same ground again with the point, would reproduce the sound, and thus the discovery was made.

The discovery of the phonograph began and ended with two elements of acoustics—vibrations and sound-waves. All sound originates in vibrations which pass through the universal medium, the air, in waves the same as does light. The rapidity of the vibrations gives pitch, another element, and is limited in recognition by the ordinary human ear, practically, between thirty-two and forty thousand in a second. Less than thirty-two vibrations in a second give the idea of distinct sounds, and more than about forty thousand in a second result in silence, or are not taken notice of by the sense of hearing.

Tyndall says that if the vibrations number less than sixteen a second we are conscious only of the separate shocks. If they exceed thirty-eight thousand a second, the consciousness of sound ceases altogether. The range of the best ear covers about eleven octaves, but an auditory range limited to six or seven octaves is not uncommon. Music embraces seven octaves, forty to four thousand vibrations in a second.

Thunder is, in nature, the lowest note which can be heard as continuous sound, and the squeak of an insect the highest in pitch; but it is possible that there are still higher notes of the insect which we do not hear, from their too great rapidity of vibration failing to send out sound-waves that could make an impression upon the tympanum.

These three are fundamental principles in acoustics and are essential in understanding the physical conditions of the chest, as we shall see whenever we make application of these laws in diagnosis.

The chest-chamber is encompassed by walls lined internally with a dense, elastic, smooth membrane—the costal pleura. The walls themselves are formed of the ribs, bone, and cartilage, which are connected by thin muscles which interlace, allowing a very considerable movement; but, whether contracted or distended, they are curved in such a way as ever to present a smooth reflecting surface covered by the pleura. This chamber has but little movement in the superior part, where there is but little cartilage, but expands

* Read before the New York Academy of Medicine, December 6, 1888.

largely at the base, where cartilages are attached to the ribs, lengthening them in front and attaching them to the sternum, which is itself composed of several pieces attached to each other by cartilage, in order to permit movement, and all are closed in at the base by a diaphragm of muscle with great power of expansion and contraction, so that while ever continuing a perfect acoustic chamber in mathematical form, it may be enlarged or contracted, and consequently its power augmented or diminished with the speed of thought. The upper and unyielding part of this chamber is in the form of a cone; above it, in the trachea, which passes down through it, is placed the larynx or sound-box, where voice vibrations are primarily formed and conducted in tubes in every direction to the chest-wall, where they are reflected again and consonated into a mass of harmonious sound, and, coming back, are emitted through the larynx and mouth into the open air, setting all of it into vibrations of music for the exquisite enjoyment of all within hearing. The acoustic chamber of the chest in health is a perfect instrument for the formation and reflection of sound-waves, and it has been said that the violin, the most perfect instrument of music, was formed upon its model. As a sound-chamber it is indeed perfect, but it is liable to be altered in shape and its acoustic perfection destroyed by changes of form from intrapleural adhesions, pressure of tumors, or diseases of the spine, etc. Also the chamber is filled with the lungs and heart and their appendages. All of these interfere with the formation of sound and its passage in waves and reflection from the surfaces of the interior walls. But the lungs are an acoustic instrument, formed of tubes and sacs, for the passage of air and the aeration of the blood of the body which is brought here and is spread out and exposed in the pulmonary capillaries by the heart and blood-vessels; so that the contents of the chest are of the utmost importance to the breathing, living, pulsating being. The membranes, in which the capillaries are spread out in sacs and minute tubes filled with alveoli, are thin, diaphanous, and distensible to a wonderful degree, and yet contract upon the contained air with active force in alternate movements in which the air itself is a factor. Constantly renewed by inhalations about sixteen times a minute, or once every three or four seconds, the fresh, cool, pure air is mixed with the warm, impure air, and interchanges at once commence. The fresh air expands with heat and gives up its oxygen to the greedy blood, and receives in exchange the worn-out material, carbonic and nitrogenic, as filth to be thrown out of the living organism in expiration, while the cooled, freshened, purified blood goes on to the heart to be sent through the systemic circulation, to continue the growth and nutrition of the body.

During this vital act of one respiration in the time of three or four seconds, the heart—a double pump—sends half an ounce of blood about twelve times in each direction—the right to the lungs, venous blood; the left, arterial blood, to the system. These acts of the lungs and the heart are rhythmic, and are accomplished with sound—the heart-beat and respiratory murmurs, contemporaneously. The auscultator must take in both, and give each its due importance, recognizing at the same time that they occur in an acoustic chamber, and are reflected from its walls, consonated, harmonized, and governed by definite law, and then we will appreciate auscultation as scientific. The arrangement of the tubes and sacs in the lungs constitutes an acoustic instrument, but of a different kind. Each little sac is a resonator, distended by air constantly rarefied by heat, upon which it actively contracts, causing vibrations which help to make up the vibrations of the true respiratory murmur. Each sac is connected with a bronchus, and so indeed it is with the outside air at each inspiration and expiration, and consequently sound-waves in the open air pass in and are consonated in each sac, as are also the friction-vibrations of the tidal air rushing in and out through the open bronchi. There are three sources of vibrations going to make up the true respiratory murmur, and each one can be distinguished by the organ of hearing being placed in audible connection with the chest-wall. Nor does the fact that the chamber, or its contained system of tubes and consonating sacs, have lost much of their acoustic perfection make it any less necessary to apply these laws to make a correct diagnosis of the location, extent, and condition of the injured part. It rather increases the necessity, for by the application of these laws we measure the deficiency in the only scientific way.

The lungs may originate sound-vibrations in the air-sacs when in perfect condition only—that is, only when the walls of the sacs contract upon the contained air with muscular sound-vibrations, called muscular susurrus, which is consonated in the compressed air of all the sacs into a body of sound.

They may also receive vibrations from without, or from friction of the moving air within the tidal space of the connective system—that is, the space from the entrance at the mouth and nose into the bronchi, as far as there are developed cartilaginous rings to keep them patent, until about the fourth division. Here the tidal air meets the residual air and immediately becomes a part of it, or in so short a time as to be practically immediate, by the law of the diffusion of gases, but which is evidently assisted by the contraction of the distensible bronchi, without cartilage, within the true respiratory system. The tidal-air space, where the bronchial tubes have cartilaginous rings to keep them open, is the location of friction-sound—the air moving in and out—and this friction-sound, as well as sound-waves in the open air, are consonated in the air-sacs.

The distance between the tidal-air space and the air-sacs is filled with compressed air, but confined in distensible tubes in connection with the air-sacs, and together they form the true respiratory system. These tubes do not originate sound; the residual air does not cause friction. The vibrations from without and the friction in the tidal-air space are not consonated in them, but pass through them silently and are consonated in the sacs, as is the sound in a speaking-tube. It is spoken at one end of the tube and heard at the other, but not along the course of the tube, for the sound-vibrations are only at the ends. This is an acoustic law of importance in diagnosticating disease of the lungs, for where unusual sounds or noises come from the true respiratory system other than acoustic consonations, or the muscular susurrus of the sacs, it is an evidence of disease, and is

caused by conduction by pathological products. Conduction then becomes an acoustic fact of warning; pathological changes have taken place.

The conditions of health have their signs of acoustic facts, and those of disease as well, and both are unfailing when understood.

The heart is also within the chest acoustic chamber, and originates sound; it also obstructs sound, and at the same time conducts sound, which seems paradoxical, but is also true. Its particular and useful office is to pump the blood, to send it down the great arteries and through many divisions until it comes within the influence of attraction by affinity —that is, the aerated blood is sent from the left heart with force commensurate with its purpose, and is assisted by the great arteries following in contraction the blood sent on by the heart's impulse until it is near enough to come under the influence of the tissues eagerly waiting for the coming nutrition.

Without this attraction between the blood and the tissues the circulation could not go on. The physical force of the engine—the heart and arteries—sends it but a certain distance; affinitive attraction does the rest. A power sufficient to send the blood through the capillaries would destroy itself. So the forces are divided—the heart, the arteries, and the attraction of affinity—in the capillaries. All act in unison, and their harmony is evidence of health; their want of harmony, of disease. The right heart beats exactly in the same time as the left. In fact, they have the same beat. In sounds and rhythm, like the left heart, it has three sources of force—the heart, the arteries conveying venous blood, and the capillaries in the true respiratory system. There is this slight difference; the right heart is a little weaker, the arteries are not so strong, nor are the capillaries as vigorous. This is, no doubt, owing to the fact that the circulation itself is shorter and less force is necessary to complete the circuit, and because of the active affinitive attraction between the air and the blood, and because both are free to move toward each other. Both hearts are indeed but one engine. One power moves both in the same moment of time; there is no such thing as heterosynchronous action. Harvey noticed, in his study of the incubation of the hen's egg, that the first appearance of movement in the germinal spot after about two days was a red point which appeared and disappeared rhythmically. This is the first evidence of organic life, or life of the body, and this rhythmic movement commences before there is any heart, or even a rudimentary pulsating tube, which answers in the lowest forms of animals for a heart. The rhythmic movement is *sui generis*. It is the one characteristic, manifest action of organic life in man as well as in animals of a lower order. Rhythmic movement is primary, and it builds its home; first, the simple pulsating tube, which becomes an auricle, and then a ventricle is added, and then in time another auricle and another ventricle, and it becomes a double heart, and the arteries are pushed out until finally there is a perfect body —two circulations, a digestive apparatus, a brain and nervous system—a man in all his parts. But still the rhythmic pulsations of the heart go on counting time until the last one, when life ceases and decay begins—a cycle of man's life.

The heart's sounds may be brought into the chest-wall at two different points, from or by either heart, by conduction, and thus give the idea of duplication; but the application of acoustic law corrects the illusion.

In the human chest the heart lies, or is hung, in the middle, obliquely, the apex pointing to the interspace between the fifth and sixth ribs, while the base extends to the right upward and backward, and it is partly in the right and partly in the left chest. It is attached to the mediastinum and to the root of the lungs, and is capable of considerable movement up and down and laterally, outside of the rhythmical beat. It is inclosed in a sac, arising from the blood-vessels, lined upon the inside and covered upon the outside with serous membrane—the pericardium. This sac lies naturally in intimate connection with the heart, conducting sounds perfectly, without adhesion or pathological attachments.

The lungs, separated in the middle by the mediastinum, fill the chest with the exception of the heart, which has a space hollowed out in them for it, only leaving a triangular space in front uncovered—the apex-beat area, which comes against the chest-wall, and into which is delivered its sound directly, nothing intervening but the close-fitting pericardial sacs.

This perhaps tedious description of what you learned so carefully in your student days is only given to remind you how entirely it all agrees with the laws of sound. The lungs press against the inner chest-wall during a full inspiration in every space except that of the apex-beat area, which is occupied exclusively by the heart in health. The lungs convey sound through their convective tubes and deliver it into the chest-wall through the air-sacs with diminished intensity during expiration and with increased intensity in inspiration. The lungs are a perfect conductor of sound in the direction of their columns of air in tubes, but are non-conductive in any other direction. The lungs shut off all sound coming from the heart, except by natural direct conduction through the mediastinum, in all parts covered by them; so that whenever the heart-sounds are heard otherwise through the lung-substance it is acoustic evidence of pathological change. Either the lung is condensed by pressure, or there is consolidation or adhesions. The heart delivers its sounds only by direct conduction through the mediastinum to diagnostic points in and near the sternum; but naturally in the apex-beat area, with diminished intensity during the diastole and increased during the systole, because it is then pressed against the chest-wall. Of course, the heart shuts off all respiratory murmurs within the apex-beat area. It conducts sound when pressed against the chest-wall, or when there is consolidation of the lung, or adhesions attaching the pericardial sac to the lungs and the lungs to the chest-wall. We are now able to consider its peculiar mechanism for originating sound.

As said before, the heart is a double pumping-engine, its stimulus of contraction and repose being fundamental in the organic life of the body. The rhythmical heart-beat, commencing before the heart had structure or form, still

marks the time of the individual life—seventy to eighty per minute ordinarily, sometimes slower and sometimes faster—as if nature had originally intended it should be sixty per minute, and something had disarranged its beat. But any notable change has come to be a sign of danger.

The heart is a hollow muscle divided into two chambers and united by a common wall—the septum ventriculorum—and during the closure of the auriculo-ventricular valves each side is again divided into auricle and ventricle. When the heart is at rest there are two chambers; during contraction there are four. The blood enters the heart on either side through the auricles during the heart's rest after contraction, passively distending it, and floating the auriculo-ventricular valves up to their proper place, dividing each heart into two chambers, with doors not quite closed, when the motion of contraction, commencing in the auricles, instantly passes into the ventricles, closing tightly the auriculo-ventricular valves and forcing the contents of the ventricle into the open aorta and pulmonary artery, when the contraction ceases, and then follows muscular relaxation. The resiliency of the aorta and pulmonary artery, reacting, brings back the blood with force and closes the semilunar valves, and holds them until they are again forced open by the blood which is again forced into the artery, and throws the valves back against their walls for its easy passage.

The heart works and rests, contracts and relaxes. Auricle and ventricle in action are one. And were it not for the closure of the semilunar valves forcibly by the return shock of blood in the arteries, there would be no mystery in the sounds and intervals of silence in the cardiac cycle. It would simply be contraction and relaxation—one sound and one interval of silence. But the return blood, closing the semilunar valves, makes another sound and divides the interval of silence into two parts, one short and the other long, and thus we get the rhythm of the cardiac cycle. The first sound is long, formed entirely by the heart's contraction, occupying about one third of the cycle, and is emphasized by the apex-beat; the interval from the apex-beat until the "tack" sound of the closure of the semilunar valves is the first interval of silence, short. And this gives us the rhythmic first sound, long; first interval of silence, short. Second sound short, a mere "tack," and then follows the long interval of silence, filling up the cycle.

The study of the heart's rhythm is entirely acoustic, and its right apprehension is of far more importance than all the other signs together, for there can be no alteration of the rhythm without pathologic cause. Murmurs may be heard, and in various areas, and mean little or nothing if the rhythm remains correct, but the slightest variation in rhythm means possibly danger.

We are now prepared to look into the heart and study its sound-producing capability. The outside cause of the second sound, the forcible closing of the valves which are placed at the opening into the aorta and pulmonary valve by the blood sent back by the resilient artery, makes the second sound and divides the period of relaxation into two parts—a short sound and a short and long interval of silence. There is no dispute in regard to these; they are understood. The closure of the valves causes the sound, and divides the interval of silence.

But about the first sound there are different opinions. More than twenty years ago, before the County Medical Society of New York, I gave a synopsis of the views held by the profession of that time, and presented my own views, which I then believed agreed with acoustic law and physics. I feel more sure now than then that I gave the true philosophical explanation. It is this: The mitral valve (and the tricuspid) are curtains closing the auriculo-ventricular openings. They are floated up to their plane by the inwelling blood during the relaxation of the heart, and are held from being crushed through by tendinous cords attached to the valves and to the fleshy walls of the ventricle through the intervention of fleshy columns or the small muscular elevations arising from the interior walls. These tendinous cords hold the curtains of the valve and prevent them from being forced through the opening. They are tendinous and strong, taking up but little space and offering a minimum obstruction to the rushing blood. The valve itself is a tendinous expansion, and, at the same time with the contraction of the heart, the columnæ carneæ and the musculi papillares also contract in such a nice way that the curtains of the valves are kept in exact coaptation and resist the forcing blood and turn its stream into the course of the natural exit. When every drop of blood has thus been forced out, the heart relaxes and the semilunar valves are closed. Just run over this again: The curtains of the valves are floated up to the closure of the auriculo-ventricular system, but without force, for as yet there is no contraction—then, like a flash of lightning, the contraction commences in the auricle, instantly passes down into the ventricle, and the valves are forcibly closed. Of course there will be sound. The stretched and vibrating membrane of the valve gives a drum-like sound of low note; the chordæ tendineæ are also thrown into vibrations in harmony with the valve, but of higher pitch.

As the contraction of the heart goes on, the valve-note grows less and less and the higher note of the chordæ increases until the apex strikes the chest-wall and relaxation commences. This is the mechanism of the first sound. It begins in a low note, and gradually increases in pitch until apex-beat. As the whole cycle is about only one second, the time of the first sound is not more than one third of a second—a very short time in which to make observations of a complicated contraction of a hollow muscle, which suddenly begins to contract upon its contained blood and to expel it from its suddenly formed, bound, girded compartment, rapidly contracting in size until it has ejected all within and the apex is brought against the chest-wall with force. Then as suddenly relaxing, every muscular fiber, the chordæ, and valves lying loosely and without force in the midst of the greater chamber, which fills passively with blood, floating the valves into place for the artificial division of the chamber, when the contraction binds, girds, and holds the compartment, while it systematically contracts in size, expelling its contents. All of this is done with accompanying sound—first of the valve, then of the valve and vibrating cords, and lastly of the cords alone, and is ended by the stroke

against the chest-wall, all in one third of a second, to be commenced again after two thirds of a second of silence and relaxation, divided into two unequal parts by closure of the exit valves and the second sound.

The heart does but one thing: it contracts. The relaxation is passive. Whatever else takes place is outside, extrinsic physically, or perhaps only in the imagination of the observer. The muscular susurrus, however, of the heart-muscle is a physical fact; also the blood friction rushing through and among the chordæ and against the tense vibrating valve, which has suddenly divided the right or left heart into two compartments—auricle and ventricle.

The auscultator will become learned in the rhythm of the heart's cycle, the quality of its sounds, and the length of its intervals of silence. Like the engineer with his engine, or the clock-maker with his time-piece, he becomes intimate with its sounds or murmurs, and they constantly communicate with him in a most intelligent manner. If the engineer is asleep and the rhythm of his engine is disturbed, he instantly awakens. The clock-maker of old used a stick of wood between his ear and the clock to listen long before Laennec was born, and he could detect any change in the regular movement of the works or the tick at once.

The first sound, then, is formed by the vibrations of the tense mitral valve, by the tense chordæ, the sound of muscular contraction, and the friction of the blood. If it loses the valve sound—the low, drum-like note—we know that the vibrating power of the valve is affected. If it has also lost the higher note of the vibrating chordæ, we know that they are affected pathologically. If the valve and chordæ sounds are both gone, then all that is left of the first sound is of blood friction and muscular contraction. If the first sound is increased in energy, and the first interval of silence in length, and the second sound is emphasized with the second interval of silence shortened, we know that there is obstruction at the aortic orifice, or regurgitation, and there will be arterial tension. But regurgitation is practically obstruction, and must soon cause hypertrophy; but hypertrophy is compensation. Where compensation is sufficient, arterial tension will have subsided.

In our description of acoustic facts we now come to the organ of hearing in the auscultator, in which we will content ourselves by describing it as inclosed within the temporal bone of the skull, and entrance to it from without is by a curved foramen in which is stretched across and closing it a membrane—the tympanum—which receives the waves of sound, registers them, and communicates them to an interior mechanism of curious and scientific construction, the description of which we will not now indulge ourselves in, with these exceptions, that the tympanum is supplied with small muscles and bones, which act as machinery to make it tense or relaxed as may be necessary for its purpose. And that from the throat of the individual there is also an entrance for air to the opposite side of the tympanum of great importance to its usefulness.

The methods of auscultation are by placing the ear against the chest-wall so that the drum may receive the vibrations; or a piece of wood or other sonorous substance may be placed one end against the external ear and the other against the part to be auscultated; or a tube should enter the external meatus or opening to direct the sound-waves against the drum. The binaural stethoscope of Cammann, conveying twin waves to either drum, is, in mechanism, the most perfect instrument for artificial auscultation invented. But, while stethoscopes have particular advantages and claims for use as a means of avoiding filth and vermin and for direction and limitation of object (and their use must be cultivated), yet for accuracy, delicacy, and freedom from acoustic imperfection or injury from outside causes, nothing equals the temporal bone of the head, placed against the sonorous object, so that the sound vibrations may pass directly into it and to the organ of hearing. One may have occlusion of the Eustachian tube and the hearing will be impaired, or there may be injury of the drum and the person may be deaf, but if he is accustomed to receive sound impressions from vibrating bodies directly into the temporal bone, he will not lose his power of auscultation because he is deaf by injury of the drum. The whole side of the head is sensitive to direct vibrations delivered directly from a sonorous body. But the most sensitive part is in front and just above the external ear. Here, and in this way, the nicest discrimination of sound can be made, and, under the laws of acoustics, correct diagnosis. It is not affected by age, by the accumulation of dried wax in the ear, or inflamed throat, closing the Eustachian tubes. It measures the time in the heart's cycle with unerring certainty and detects the slightest fault in rhythm, and, of course, detects the earliest evidence of pathological change. The respiratory murmurs—their analysis and cause, their locality and manner of conduction into the chest-wall—are all noted by this perfect acoustic instrument, a microphonometer.

ANGINA AND PNEUMONIA

BEFORE 1857 AND SINCE;

WITH THE PATHOLOGY OF DIPHTHERIA IN ITS VARIOUS PHASES.*

By WILLIAM HENRY THAYER, M. D.,
BROOKLYN, N. Y.

This paper is offered as a contribution to the history and nature of diphtheria; to show that, in the light of many observations of later years, it must be regarded as a constitutional disease, often with little manifestation in the fauces, and sometimes an entire absence there of the exudation-membrane from which its name is derived. As a preparation for a trustworthy presentation of the subject, a brief view will be taken of the varieties of angina and faucial inflammation observed before 1857—the date of the onset of the present epidemic of diphtheria in America—and also a view of the acute pneumonia of the same period.

Before 1857 diphtheria was known in the United States only in French literature. We might occasionally meet with a case of exudative pharyngitis, to which we would give the name of *diphtherite*, as we had learned from Bretonneau to designate it; but such a disease never gave evidence of being infectious. So in England, as late as 1855,

* Read before the Kings County Medical Association, January 2, 1889.

Barlow says, in his "Practice of Medicine," in his lecture on cynanche: "There is indeed another form of this disease, to which the term *diphtherite* has been applied by French authors"—showing that it was something with which he in England was personally unacquainted.

Inflammations of the fauces, unattended by plastic exudation, were common affections. They were characterized by fever and general *malaise*, with difficult or painful deglutition, varying in severity according as the tonsils were more or less involved. The inflammation was superficial or it was deep-seated, including the entire pharynx and soft palate, and often extending into the posterior nares and the Eustachian tubes.

It was catarrhal, rheumatic, or parenchymatous. It might present the form of "a bright-red efflorescence of the throat, with tumefaction and copious secretion of mucus; or, tense and dry, the mucous membrane might have a duller and deeper red; or it might be marked by relaxation and puffiness of the mucous membrane, in consequence of serous exudation under the epithelium or in the substance of the mucous tissue itself, or in the submucous areolar tissue."

These were forms of inflammation which had no serious results, the attack covering two or three days, without sequelæ. In these cases the tonsils were involved, but only in the form of a superficial inflammation, although sometimes with considerable enlargement, but not to the extent of closing the isthmus faucium, the swelling in some instances subsiding after free catharsis.

Follicular amygdalitis—in which the tonsils are the chief seat of the inflammation, with considerable enlargement, general redness, and a muco-purulent accumulation in the follicles, giving the whole an appearance of numerous white spots upon the red surface—was not an uncommon affection. It began with a sharp febrile attack, with painful deglutition, generally running through its course in a few days. It was not infectious. Instances of its occasional prevalence in public institutions, where it appeared to have an infectious character, will be presented later when the subject of diphtheria is considered.

Parenchymatous inflammation of the tonsils was a much more grave affection. It is characterized by great swelling of one or both tonsils and the velum palati, sometimes entirely closing the isthmus faucium, rendering respiration difficult, deglutition impossible, and the attempt to swallow excruciatingly painful. This disease, to which the name of quinsy adheres, is one of the most distressing of acute diseases. The act of deglutition is excited every few minutes by the mucus which accumulates in the throat, and every movement of the pharyngeal muscles occasions unspeakable agony. No liquid can pass the isthmus faucium, or, if any portion passes, it is apt to be returned by the nose. The inflammation results in deep suppuration, and the abscess breaks into the mouth after several days, with entire relief of the suffering and rapid recovery. Angina tonsillaris, as it is called, is apt to recur; and many persons suffer an annual or a more frequent return of these attacks.

Such are the anginas as they were seen before 1857. And they still occur, unchanged in character, and perhaps with no less frequency, the results of exposure to wet and cold and violent changes of weather, or the consequence of disorders of the chylopoietic system, from surfeits or other recognized causes of indigestion.

It may be a question, however, whether diphtheria may not in many instances have supervened upon them. The atmosphere is loaded with micro-organisms, a very small proportion of which are productive of general or special disease. The morbific bacteria require an appropriate nidus for their development. In this way we explain the history of tuberculosis, which destroys whole families, while others are entirely free from it; the *Bacillus tuberculosis* requires a suitable nidus, which it finds in some persons but never in others. If we attribute diphtheria to bacteria, we may reasonably conclude that sometimes inflammations of the throat, benign at the outset, become diphtheritic, the inflamed mucous membrane aiding in the development of the pathogenetic germs which on a healthy membrane might never have matured; just as an ulcerated cutaneous surface may become covered with a diphtheritic membrane in an infected atmosphere. Jacobi says: "Diphtheria, as a rule, will not attack a sound mucous membrane." Hence it is probable that since diphtheria has been so prevalent we have seen fewer cases of simple faucial inflammation than formerly.

Diphtheria, however, may have its chief seat in the lungs, or in any of the mucous membranes, and affect the throat so slightly that it would be overlooked unless special search were made for it. In other words, we may have diphtheritic pneumonia.

Before the appearance of diphtheria in the United States, pneumonia was known only in sporadic form, and was generally regarded as a local inflammation, resulting from exposure to cold—except where it complicated or followed measles, typhoid fever, chronic nephritis, or some other disease. No writer thirty years ago took any other view.

The universal experience was that single uncomplicated pneumonia in adults, under the expectant treatment in use after 1850, was never fatal. Of 1,255 hospital cases reported by Dietl, Varentrapp, Skoda, and Bennett, between 1850 and 1857, only 87 were fatal—less than 7 per cent.—against a mortality of 28 per cent. of 1,403 cases treated antiphlogistically in the previous ten years. And Dietl says that of his 750 cases every fatal one was complicated.

That cold and dampness are prominent exciting causes of pneumonia is shown by mortality tables in the United States and in Europe. It is much more frequent in winter and spring than in summer and autumn.

In Brooklyn the deaths by pneumonia in two years were: In 1886, first quarter, 489; second, 335; third, 176; fourth, 468. In 1887, first quarter, 492; second, 346; third, 168; fourth, 412.

Juergensen reports that in six large European cities 31·1 per cent. of the deaths by pneumonia take place in winter; in spring, 33·1 per cent.; in summer, 16·1 per cent.; in autumn, 17·7 per cent.—that is, 66·2 per cent. in winter and spring, and 33·8 per cent. in summer and autumn.

In London, for fourteen years, ending in 1854: first quarter, 31·3 per cent.; second, 21·4; third, 14·4; fourth, 32·9.

In the Vienna General Hospital the admissions of pneumonia for twenty years were: first quarter, 29·5 per cent.; second, 33·5; third, 15·4; fourth, 21·6.

In the United States Army, between 1839 and 1855, the cases of pneumonia were, from January to June 18th, 60 per cent.; from July to December 12th, 40 per cent.

Doubtless, in most cases where exposure to weather acts as the exciting cause, there is a predisposition in some idiosyncrasy or already existing functional disturbance, especially of the portal circulation.

Within the past fifteen years, one and another writer of high authority has adopted the opinion that acute lobar pneumonia is an essential fever, and not originally a local affection. The late Dr. Austin Flint read a paper to the New York State Medical Society in 1877 advocating this view, and reiterated it in opening a discussion upon pneumonia at the annual meeting of the New York State Medical Association in 1885.

At the same meeting Dr. Didama inclined to the same opinion, and said also: "There are good reasons for regarding pneumonia as infectious, and even occasionally contagious." He also quotes Sée as denying that pneumonia is a general disease, but admitting that it is infectious. And Dr. Biggs said: "I believe pneumonia to be an infectious disease due to a micro-organism." And Dr. Janeway quoted Klebs, Ebert, Koch, Friedlander, and others as describing a bacterium characteristic of pneumonia. Time will show whether their conclusions are trustworthy. But the opinion that pneumonia is a specific disease has originated within the last twenty years—inside the period of the present epidemic of diphtheria. There is no evidence in Dr. Flint's paper in 1855 that he regarded pneumonia as anything but a local disease.

Pneumonia has certainly increased in frequency and perhaps in proportional fatality within twenty years. In 1868, with a population in Brooklyn of 369,000, there were 247 deaths by pneumonia. In 1885, with a population of 666,000, there were 1,446 deaths by pneumonia. The mortality by pneumonia had become nearly six times greater, while the population had not quite doubled; thus pneumonia had become about three times as frequent or as fatal. There are no data to show whether the increase was in the prevalence of the disease or in its proportional mortality. There has been some falling off since 1885.

No explanation of this increase has been arrived at in New York or Brooklyn. But in some small cities and towns, where the tracks of disease are more easily followed, and where perhaps the specific character has been more marked, it has been established beyond question that a large number of cases of pneumonia are diphtheritic. Not a sequel of diphtheritic pharyngitis, but a diphtheritic pneumonia from the outset.

In Troy and some of the neighboring towns diphtheria has been for some years very prevalent, and Dr. William P. Seymour, of Troy, has for twenty years recognized the pneumonic form, which he has repeatedly verified, and his experience has been gradually confirmed by some other observers.

Dr. Seymour's large experience has satisfied him that diphtheria is to be regarded as a constitutional disease, manifesting itself upon any mucous membrane, and frequently exhibiting no exudation-membrane on the fauces, while attacking the lungs or other organs; that *the diagnosis does not depend upon the presence of a false membrane in the throat.*

This view of diphtheria, without a visible exudation-membrane, has never been generally accepted. For, although Greenhow, in 1861, evidently inclined to include in the same classification the non-membranous sore throats which he saw in diphtheria epidemics; and Dr. H. H. Childs, at the meeting of the Berkshire, Mass., Medical Society in January, 1861, expressed the opinion "that there was a succession of symptoms which revealed the diphtheritic poisoning as surely as the existence of the false membrane"; and Dr. R. C. Stiles, on the same occasion, said "that the presence or absence of false membrane on the pharynx or air-passages could not be made a test of the presence or absence of the diphtheritic poison in the blood"; * yet the dictum of Bretonneau, that no inflammation unattended by exudation is diphtheritic, is still generally accepted,† and Jacobi does not consider any cases as diphtheria unless the membrane is present. He says: "The characteristic sign of diphtheria is the membrane," and "Diphtheria is characterized by its membrane."‡

In striking illustration of the opinion which Dr. Seymour has maintained in spite of much opposition, the following very interesting and important cases are related by his son, Dr. William Wotkyns Seymour, from his own professional experience:

"Whether there is in all cases of infectious croup a membrane I very much doubt, and I base my opinion upon many cases, of which my own child's case is the most striking. The facts are as follows: My child, then within a few days of her first birthday, the last of December, 1883, became croupy. There was no fever, no membrane visible during the entire course of the croup, which lasted ten days, and gave me great anxiety, because of the very great prostration and blanching produced by the attack. A week later my wife was taken down with pains in the bones, marked sore throat, great physical depression, moderate fever, but never a particle of membrane. She remained away from the baby ten days, during which time the child was in the nurse's care. A few days after my wife's recovery the nurse came down in the same way, but never a shadow of a membrane. She also remained away from the baby ten days, and then again my wife had a second attack, but still no membrane. She was quarantined for ten days, and then returned to the care of the baby.

"During all this time, considerably over a month, the baby remained prostrated and blanched, and the lips, always bluish, became markedly so on the slightest exertion. With the hope of benefit from a change of air, my wife took the baby to her mother's on a large, airy, well-drained farm, a mile from a Vermont village, and what was the result? Within a week every member of my mother-in-law's family was down with diphtheria, and the exudation was very abundant. I asked the attending physician, Dr. William Platt, where the disease came from, and he responded that my family brought it, as he had seen no

* "Berkshire Med. Journal.," 1861, pp. 70, 71.

† "Greenhow on Diphtheria," p. 42.

‡ "Treatise on Diphtheria," by A. Jacobi, 1880, pp. 134, 147, 159.

case within a mile or more of the house in a year. To my further statement that in the previous illness no membranes had been observed, he said that, in his experience, membrane was not a necessary attendant upon cases which in themselves might be active carriers of the most deadly disease."

These interesting cases are sufficient for illustration. Similar experiences are furnished by Dr. William P. Seymour and Dr. S. A. Skinner, of Hoosic Falls, and doubtless could be matched by many others; but in large cities the traces of contagion are less easily followed than in small communities.

When the exudation-membrane is absent from the fauces there is the characteristic redness of the mucous membrane, with more or less swelling, and often an abundant secretion seen in strings of tenacious mucus stretching from the soft palate to the tongue.

The subject of diphtheria in the form of pneumonia and other inflammations, but especially pneumonia, I will present in the language of Dr. W. P. Seymour and Dr. W. W. Seymour, which they have kindly furnished for the occasion.

Dr. W. P. Seymour says:

"For the last fifteen or more years there has been a great change in the symptoms and course of diphtheria. There has been more blood poisoning, presenting a greater diversity in the character of different individual cases, or of many cases at different times, in accordance with the amount of the blood-changes or the physiological functions of the organ principally suffering. The localization has been upon the different vital organs more frequently than in the throat, causing in the lungs bronchitis, broncho-pneumonia, fibrous pneumonia, wandering pneumonia, pleurisy, and all other forms of pulmonary disease, doubtless differing in their histological character in no respects from the same form of disease from other causes, except in the character of the blood-changes, the presence of bacilli, and an infectious character so pronounced and so common that the old-fashioned idiopathic pneumonia is rarely met with; and young teachers, having but little or no experience of any other form, talk of pneumonia as a specific form of fever and infectious, and of membranous croup as always diphtheritic. Localized in the liver, it has produced vomiting and purging. In the skin, so-called cases of measles or scarlet fever."

Dr. Seymour presents as an example of diphtheritic pneumonia an experience shared with Dr. Bontecou—who had charge of some of the patients—of nine persons, most of whom were in one family and all exposed to the contagion, who one after another were attacked with diphtheria, two of whom had pneumonia and died. In one of the cases of pneumonia, which began with a sore throat and was diagnosticated as diphtheria by Dr. Seymour, specimens of the lung were sent for examination, on account of the unusual interest in the subject, to Dr. Welch and Dr. Delafield, who reported croupous pneumonia.

Dr. S. A. Skinner, of Hoosic Falls, in a paper on this subject prepared for the January meeting of the Union Medical Association of Bennington, Rensselaer, and Washington Counties—from which he has kindly permitted me to quote—reports the cases of a family of eight persons, seven of whom had diphtheria—man and wife, brother, three children, and two nurses. The father only escaped; the rest had sore throats; all the adults had pneumonia; the mother and her brother and one nurse died. He says:

"In 1878 I was called to see a woman who had been ill two days with a sore throat, and began to cough on the second day. Her three boys were recovering under domestic treatment from a mild diphtheria of the throat. On examining her, I found the fauces a dark red, with well-defined margin; the secretion in the mouth appeared very tenacious and stringy, stretching from the roof to the tongue. Skin slightly cyanosed. Her lungs presented signs of broncho-pneumonia of a wandering character. On auscultation, I diagnosticated pneumonia. Still I was not satisfied, as the characteristic symptoms were not in accordance with my previous experience in pneumonia. There was a fine crepitant râle at the base of the chest with resonant percussion. No expectoration to speak of. On the next day I expected to find the lung hepatized, but did not. She was expectorating to a small extent slightly tinged red sputa, but not viscid. Prognosis unfavorable. Death on the fourth day of her illness."

Dr. Skinner describes the other fatal cases, and says: "From that date up to the present time we have had occasionally cases of a similar type." He relates the cases of two women in the same family ill this year with diphtheritic pneumonia—both grave cases, but which recovered under the free use of whisky and carbonate of ammonia.

Dr. W. Wotkyns Seymour says:

"In my own practice I have seen in at least three instances diphtheritic patches on the vulvæ of children after they had been ill for several days with pneumonia accompanied by great prostration."

The only case of diphtheritic pneumonia that I have personally recognized is that of a girl, twelve years old, whom I saw first in February, 1886:

On the 26th she had been feverish for two days, after two weeks of a common cold, with cough. Reported hard vomiting and delirium the night before. She was in bed; pulse, 126; temperature, 103·5°. Tongue covered with a white coat except at tip and edges, which were red and smooth. No membranous exudation and no cutaneous eruption anywhere. No physical signs in chest. In fact, she had all the symptoms of scarlet fever without any rash.

February 27th.—She had a chill followed by increased heat, several loose dejections, almost incessant short cough, with occasional rusty sputa, and the next morning there was bronchial respiration with moderate dullness on percussion over upper right back, with some crepitus under the lower edge of the scapula. Next day hepatization more complete; sputa small in quantity, rusty and viscid. Resolution began on the fourth day from the attack of pneumonia, with normal temperature. On the fifth day temperature 104·2° in axilla, with diarrhœa and heavily coated tongue, but no renewal of hepatization. Next day complete intermission, temperature being below 98° in axilla all day. Aphthæ in cheeks. The next day high temperature in afternoon, but no physical signs of pneumonia. After this the temperature never rose above 101·1°, with a daily remission, and after the ninth day from the first signs of pneumonia, never went beyond the normal point. After resolution of the hepatized lung and during the subsequent fever there were swelling and soreness of the tongue, with a dirty white coat. The mouth was sore and the lips bled easily. And on the 10th of March, twelve days from the attack, amid general improvement, while the lobes of the tongue were clean but swollen, the center was depressed, with a dirty-white exudation-membrane covering it.

The patient was put on tincture of chloride of iron and phosphoric acid in frequent doses, in place of the quinine which she had been taking, and the next day the exudation was nearly gone. There was no albumin in the urine.

A case of double pneumonia, followed immediately by diphtheria, in which the exudation covered the entire mucous membrane of the mouth, and was followed by nephritis, is the only other instance in which I have recognized the conjunction of the two diseases, or either of them in immediate sequence. But the supervention of diphtheria upon various acute diseases is well known.

But I have obtained a brief history of a recent case in New York city, of which I will give an abstract:

Dr. Chalmers, Chief Ambulance Surgeon of Gouverneur Hospital, was attacked November 3d. On that day had an ulcer in the nose; the next day the left tonsil was covered with a diphtheritic exudation; the third day it had extended over the whole pharynx with the uvula and the right tonsil, and was seen by the laryngoscope to be upon the vocal cords. On the fourth day there was pericarditis. On the seventh day circumscribed lobular pneumonia in the left lower lobe, with rusty sputa for a day. Several days afterward there was pneumonia of the whole of the middle and lower lobes of the right lung, with rusty sputa for several days. The pneumonia ran its course in about the usual time, but the exudation did not entirely disappear from the throat for five weeks. In the course of the pneumonia, endocarditis was developed, and the urine had 50 per cent. of albumin, which, after four days under the use of strophanthus, was reduced to 5 per cent. He is still in bed, but has no albumin in his urine, and convalescence goes steadily on. During the active stage of his disease he was treated with brandy—never less than thirty ounces in twenty-four hours, and on one day he took two quarts.

Dr. William W. Seymour gives the following pathological statement of the principal varieties of diphtheria:

"With regard to the lungs in diphtheritic cases there are two classes of cases: First, those in which, without any accompanying bronchitis or pneumonia, there is a loss of respiratory murmur over varying areas of lung tissue, accompanied by slightly impaired percussion and vocal resonance, by more or less pronounced want of air. These areas may flit from one position to another of a lung or both lungs in a few hours. This phenomenon is evidently due to a pneumoparesis, a poisoning of the pneumogastric. Dr. B. W. Richardson has recently described cases of 'pneumoparesis,' but he regards them as inevitably fatal. The condition can not be due to an infiltration, or it would not disappear so rapidly; nor can it be due to a local œdema, for in many cases there are no râles, and œdema, interstitial or intralobular, could not disappear so rapidly. But a paresis will fully account for all the lung symptoms, whether mild or severe.

"In the milder cases, with considerable prostration and arthralgias, the patient feels a want of air, as if breathing through cotton. Physical examination shows a feeble pulse, little or no elevation of temperature, but an area or areas of lung tissue where the respiratory murmur is either feeble or entirely absent. There is very slight dullness and impaired vocal resonance. This persists from a few hours to several days. If the patient convalesces, the respiration becomes more and more full and no trace of disease is left behind. If, on the other hand, the case tends to a fatal termination, with little or no expectoration, there is increasing dyspnœa, râles coarse and fine are heard everywhere, respiration becomes more and more rapid and shallow, and the patient dies of asphyxia.

"It is almost impossible at times to say whether we are dealing with a case of pneumoparesis or what Buckler has described as leuco-inoitis, an acute inflammation of interstitial lung and bronchial tissue, which is chiefly of gouty or rheumatic origin.

"The second class of lung cases are the pneumonias. I do not mean the broncho-pneumonias, occurring from inspired irritants, but the croupous pneumonias, the lobar pneumonias. The present tendency of pathologists everywhere seems to be to regard croupous pneumonia as a general disease of which the lung trouble is only a symptom. This is the doctrine first advanced by Juergensen, and adopted by Pons, Grisolle, Flint, Loomis, Pepper, and others. I believe the present teaching that all pneumonias are manifestations of a general constitutional poison is a grave mistake. The pendulum has swung too far. The old writers, such as Gerhard, were too good observers not to see a general disease if it was common among their cases. But they did recognize epidemics of an asthenic type, and believed them to be different from the simple, definite-coursed, sthenic pneumonia.

"When pneumonia occurs as a result of diphtheritic poison, it is chiefly characterized by the disproportion existing between the amount of lung tissue involved and the disturbance of heart and nervous centers. The expectoration is usually slight, not commonly tinged with blood. The disease often migrates from one portion of the lung to another, and in general pursues no definite course in time or place. The cases not infrequently occur in groups. I have had five in one family; and not infrequently some of the attendants come down with pneumonia or pharyngeal diphtheria, and die of them.

"Diphtheria, erysipelas, malarial fever, typhoid, and acute rheumatism may, by their specific poisons, occasion croupous pneumonia, and it is to these poisons that we must look for the specificness of our disease.

"Diphtheria has been endemic here for thirty years, and it has only been since this time that a few good observers here have noted that our present pneumonias were not all of the same type as those occurring in the earlier days of their practice. My father has for twenty years maintained that the present form of pneumonia was infectious, and that it owed its greater or less infectiousness to our endemic diphtheritic poison.

"Pathologically, I believe the pneumonia to be due to microbiotic emboli, to lodgment of the cocci in the capillaries of the lungs. Friedlander has discovered a pneumococcus, and Max Schüller and others have shown the cocci of diphtheria in the painful joints, lungs, heart, and kidneys of fatal cases.

"The skin is frequently the seat of eruptions during diphtheritic attacks, which may more or less closely simulate the specific exanthematous eruptions. In the care of Dr. W. L. Cooper I saw a child who was an arsenal of diphtheritic anomalies. I saw it in consultation, when it appeared to be dying from diphtheritic croup. It had patches over the tonsils, nose, and pharynx; croup, pneumonia, and bronchitis; and at one and the same time had three typical rashes over the body. On the knees and thighs there were diffuse scarlatinal patches; on the belly, chest, and back an eruption discrete and crescentic, but a little more blue than measles; and on the face a triangular, red, swollen patch, with the apex at the right punctum lacrymale, and the base about three inches out on the cheek. This last form of eruption I have seen in eight cases of diphtheria; in some it has been single, in some double. It appears from the history to be an extension through the punctum of a diphtheritic inflammation to the cheek, and in its perfect form crudely represents a red butterfly.

"The nervous system, apart from its implication in the acute attack, affords a sequel of the disease which is not uncommon in a minor form, but rare in its most pronounced forms. This is the post-diphtheritic paralysis, which only recently has been recognized as a peripheral neuritis. It is familiar to us all in the form of paralysis of the accommodation and of the soft palate. Two years ago I had a case which in this connection is most interesting. The history is as follows: J. M., ten years old, had, two weeks before consulting me, a sore throat, which prevented him for several days from eating anything solid. This subsided, and he was brought to me for a marked disturbance of speech, which made it impossible for one to understand him. His voice was nasal in tone and vibratory. There were marked emaciation, ataxia, and total loss of patellar and cremasteric and umbilical reflexes. The muscles were so atrophic that at first I thought it might be a rare case of acute muscular atrophy; but there were no fibrillary twitchings, and the tenderness and flaccidity of muscle, with absent reflexes, led me to diagnosticate diphtheritic, peripheral neuritis. Five days later I attended him through an attack of pneumonia migrans. The recovery from both the neuritis and pneumonia was complete."

In examining the history of pneumonia in all its known varieties, we must not fail to notice one form which has not received general recognition, and that is rheumatic pneumonia, or limited and wandering hepatization of portions of the lung in the vicinity of acute rheumatic inflammation of the fibrous tissue of the bronchi. This affection entirely escaped notice, and failed to be distinguished from idiopathic pneumonia, until described in 1853 by Dr. Buckler, of Paris, in a monograph on "Fibro-bronchitis and Rheumatic Pneumonia," and again in 1882 in the "American Journal of the Medical Sciences," under the name of "Rheumatic Leuco-ino-itis." But even the latest works on the practice of medicine make no allusion to it, and it is probably almost unrecognized. Dr. Buckler aptly says: "When a new truth is dragged out of darkness and held up to the light, men, often to avoid the trouble of thinking, refuse to regard it as anything different from what they have been taught and are accustomed to."

The symptoms, briefly stated, are a dry cough, without physical signs, without pain in the chest; and, after a period varying from a few days to several weeks, the development of fine crepitus, followed by bronchial respiration in portions of the lung; with an intercurrent articular or muscular rheumatism, which, if occurring during the early stage, may supersede the cough, which returns when the rheumatism of the extremities disappears.

A failure to recognize this rheumatic pneumonia must seriously affect the prognosis, from the inevitable error in therapeutics.

Dr. Buckler makes the interesting statement that Dr. Black published a paper in the "Edinburgh Medical Journal" in 1854, wherein he says that, in examining the air-tubes microscopically, he had discovered crystalline particles of uric acid and urate of soda deeply imbedded in the thin, white, fibrous tissues.

Possibly most of us have seen something of the rheumatic pneumonia, or broncho-pneumonia, without recognizing it. It is only three weeks since I first read Dr. Buckler's article; and last week I was called to a boy with this disease, to which Dr. Buckler's researches had opened my eyes. He is Irish, nine years old. I saw him first December 28th.

He was in bed; pulse 105, temperature 98·8°; action of heart regular, but systolic souffle over cardiac region, and still louder over left back; respiration and percussion-sounds in front normal, and over right back; but percussion-dullness over the upper two thirds of left back, with moderately bronchial respiration and somewhat prolonged expiration over much of the same part, and moderate bronchophony about lower angle of left scapula. No râles. The history obtained from his mother was that after tramping with political processions at election-time (November 13th) he had had much general pain for several days, which was then superseded by a cough, of which he had recovered early in December, and continued pretty well till about the middle of the month, when, after another exposure on a very cold day, he began to cough again, and has continued ill till the present time. He has had some shortness of breath from the first attack in November, and sometimes pains in limbs; some expectoration latterly, but never red; epistaxis two days in the week before I saw him. Had been out more or less, and the day before I saw him had much dyspnœa after mounting the three flights of stairs leading to their rooms, and seemed so much worse that his mother gave him a sweat at night and kept him in bed next day, where I found him. She had given him castor-oil three times within a week. His tongue is pale and flabby. He has no articular pain now. He has never had rheumatism before, nor dyspnœa until the attack in November. His brother, aged twelve, has a loud systolic souffle and violent action of the heart, with dyspnœa on exertion, and epistaxis, dating from acute articular rheumatism in infancy.

Directions: To remain in bed, on vegetable diet chiefly, and take ten grains of salicylate of sodium four times a day.

December 30th.—No dejection for three days. Coughs little. Has taken six doses of the salicylate; vomited the last one last evening. Has slept much. No pain. Pulse 100, temperature 98·4°. Bronchial respiration and dullness have disappeared. No râles. Heart sounds unchanged.

Continue salicylate three times a day. Laxative pill.

January 1, 1889.—Cough much less. Pulse 108. Bowels moved yesterday and the day before without pill. Had pain in cardiac region for four hours last evening, and whistling respiration (by his mother's report). Now percussion-sounds normal over whole back. On very careful auscultation, the respiration over the left back, especially in the central portion, is louder than on the right side, perhaps a little rude, but without any sound of expiration, and no râles. The cardiac souffle is decidedly less loud both in front and behind. He vomited his medicine this morning, with some mucus.

13th.—The boy has been out several times. No cough for a week past. Sometimes dyspnœa; none to-day. Has had no rheumatic pains. Respiratory sounds and percussion resonance normal, heart's action excessive in force, with souffle as before. Is rather pale, with pale and flabby tongue. Has continued salicylate twice daily till two days ago. May now take tincture of chloride of iron and dilute phosphoric acid.

The history of anginas which I have undertaken to present would not be complete did I omit to relate some cases in which follicular amygdalitis has been infectious, under peculiar conditions, in public institutions. These are presented to me by Dr. Eliza M. Mosher, from her experience as physician to the Massachusetts Reformatory Prison for Women, and at Vassar College, where for three years she and Dr. Lucy M. Hall held jointly the professorship of physiology and the office of physician to the college.

She says:

"During my two years' service as physician to the Massachusetts Reformatory Prison for Women 154 patients were admitted to the hospital with follicular amygdalitis; 120 of these cases occurred between October 1, 1878, and May 1, 1879.

"The disease was exceptionally severe in many instances, due no doubt to the fact that the patients were women whose systems were much impaired by intemperance and debauchery. In spite of this, however, the course of the disease was almost exactly the same in all cases. No complications occurred, and all recovered, the length of the illness being from three to seven days, according to the severity of the attack, the recuperative power of the individual, and the involvement of both tonsils simultaneously or consecutively, the latter increasing the time spent in hospital by one or two days, other things being equal.

"Briefly, the symptoms were as follows: Chilliness alternately with flashes of heat, backache, and 'pain in all me bones,' a full feeling in the head, with or without headache; temperature 101° to 103°, pulse 96 to 120+. This condition was almost invariably first manifested toward evening or at bedtime, and there was often no complaint of sore throat at this stage. When examined the tonsils were found a little swollen and shining, with general redness of the pharynx. The speech was characteristic—so much so that in numbers of instances I made a diagnosis before asking a question; it was a little thick, and gave one the impression of stiffness of the vocal apparatus.

"The morning following, the patient was usually too ill to rise, throat very sore, and deglutition difficult; saliva ropy and tenacious, tongue coated, usually moist and white, in the more severe cases brown and dry. One or both tonsils were dotted with white spots, or the surface was lightly covered with a gray exudate, which might have been mistaken for a diphtheritic membrane. Again and again I isolated cases, expecting them to develop into diphtheria, only, however, to find them following the regular course and convalescing in a few days.

"The severe constitutional disturbance left most of them weak and anæmic after an attack, requiring iron or some other reconstructive tonic for a week or so.

"The plumbing of the building was in a bad condition during the winter in which this epidemic occurred. It was all remodeled during the next year, and fewer cases have occurred there since.

"During my service at Vassar College the family numbered about the same as that at the Reformatory—about 400. Sixty cases only of amygdalitis occurred in three years. Here I proved, to my own mind at least, that prompt isolation of cases materially lessened the number. Three or four young ladies occupy a parlor in common, their sleeping-rooms opening from it. If one had an attack of amygdalitis and remained in her room, the others were almost sure to have a similar attack in about four days, whereas when she was promptly isolated they usually escaped.

"Here, as at the Reformatory, the course of the disease and its duration were uniformly the same, although the cases were seldom so severe. There were no complications and no sequelæ, but tonics had to be administered for some time afterward, or the general health suffered. After a trial of nearly all the remedies recommended for this disease, I settled down into the old-time method of treatment, consisting of a saline aperient, followed by quinine and tincture of iron, with or without an astringent and disinfectant gargle."

Dr. Jacobi has been misquoted by Professor Fraenkel as saying that "diphtheria is spread by adults suffering from angina lacunaris." * He takes occasion to say, in a paper read before the New York Academy of Medicine, November 16, 1886: "What I did say, and do say, is this: that what in an individual case was called by the name of follicular amygdalitis and then gave rise to diphtheria, was diphtheria, and therefore produced diphtheria. Nor do I say that every case of follicular affection of the tonsils is diphtheria, and that diphtheria in general is spread by follicular amygdalitis in general; but I claim that the name of follicular or lacunar amygdalitis is but a subterfuge for the lack of a correct or complete diagnosis. There are cases of follicular amygdalitis of a catarrhal, purulent, fibrinous, and diphtheritic character, and its name ought to be dropped from our nomenclature, because of its giving rise to mistakes, unless it be complemented with a descriptive adjective." †

Follicular amygdalitis, the catarrhal inflammation which was briefly described in the early part of this paper, although under some circumstances infectious, as has just been shown, is not diphtheria. But the occasional uncertainty of diagnosis at the outset makes isolation of the patient sometimes desirable. In private houses there is seldom any reason for such isolation, seldom any doubt of the nature of the affection. The markedly sudden onset, with fever and pain, the early swelling of the tonsils, their color, and the unevenness of the surface from the swelling of numerous follicles even before the white muco-purulent secretions appear—so different from the smooth surface and slight swelling of the tonsils and soft palate seen at the commencement of diphtheria, with their peculiar raspberry redness, looking as if the color had been laid on with a brush—generally remove all difficulty in diagnosis. And the further course of amygdalitis, with the early recovery, confirms the diagnosis. And in the history of the epidemic at the Woman's Reformatory, the fact of one hundred and fifty-four cases occurring without subsequent paralysis or nephritis in any one, adds strength to the conclusion that the disease bore no relation to diphtheria. ‡

A PHOTOGRAPHIC STUDY OF THE LARYNGEAL IMAGE DURING THE FORMATION OF THE REGISTERS IN THE SINGING VOICE.#

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Two years ago I had the honor of presenting a paper to this Association, in which I made an effort to explain, to

* "The Medical Record," New York, November 27, 1886, p. 593.

† *Ibid.*

‡ I am well aware that Dr. William P. Seymour is the prime inspiration of this paper, and deeply regret that he should have left to me to offer what he is so eminently qualified by nature, education, and long experience to present in a much fuller and more satisfactory form. He owes the medical profession a comprehensive treatise on diphtheria, presented with a breadth which he more than any other man I know is qualified to give.

An abstract of a paper read before the American Laryngological Association at its tenth annual congress.

some extent, the reasons for the diversity of opinion existing among writers on voice production, regarding the appearance of the larynx during the formation of tones in the singing voice. The photographic demonstration made at that time served to show, at least, that nature has many ways of accomplishing the same result, and that different larynges do not always act exactly alike while producing the same tones, even in the same class of voice. To-day I propose to present more facts gleaned from the study of a very large number of photographs taken since then.

There are many movements which take place in the larynx which may be seen by the eye but which can not be shown in photographs, and again there are many changes which the eye can not see or the mind grasp which are caught and held upon the sensitive plate. The value of photography in the study of the physiology of the larynx lies in the fact that with its aid the exact conditions occurring at any given time are caught and held, and we are thus able to compare two or more conditions at the same time and at leisure.

The size of an object photographed upon a sensitive plate depends upon its distance from the lens. The shorter the distance between the object and lens the larger will the image appear in the negative, and the longer the distance the smaller the image. In laryngeal photography the size of the image of the larynx depends mainly upon the position of the lens—in other words, upon the focus used; but it does not depend entirely upon this, for the larynx occupies different positions in the neck while singing notes in different parts of the scale. The difference, however, is so slight that a change of focus is rarely needed in order to obtain perfectly sharp photographs in any part of the gamut.

If the larynx rose as the voice ascended the scale, and occupied the highest position in the neck while the highest note was being emitted and the lowest while the lowest note was being sung, then with the same focus the image would appear largest in the highest note and smallest in the lowest note. This, however, does not appear to be the case. As will be shown in this demonstration, physiological variations in the size of the cavity of the larynx occur at different points in the scale. If the epiglottis or any of the other structures of the larynx should appear larger in one photograph than in any of the others of the same subject, it would, of course, be apparent that the image as a whole was increased in size. In this investigation, when two or more photographs were taken of one larynx, the same focus was always employed. The relative sizes of the photographs will be seen upon the screen, for, though enlarged positives were made from them, the degree of enlargement was always exactly the same.

It would, no doubt, be more instructive and comprehensive if I should compare the results of this investigation with the most generally accepted theories of the action of the larynx as seen in the mirror, but this would be impossible in the short time at my disposal to-day.

The study of the singing voice has such a broad range that it will be impossible for me to deal with more than one of its divisions at this time. The limited time in which I must speak will suffice only for the consideration and demonstration of the appearance of the larynx in the formation of the *registers* of the voice.

First of all, let us understand what is meant by the term register. Garcia defines it as a "series of consecutive homogeneous sounds going from low to high produced by the action of a certain mechanism." Behnke says that "a register consists of a series of tones which are produced by the same mechanism," and Sir Morell Mackenzie's definition is "the series of tones of like quality producible by a particular adjustment of the vocal cords." These definitions imply that different mechanisms are necessary for the production of the voice in different portions of the scale, and that each series of tones produced by the same mechanism represents what is known as a register.

Writers are generally agreed as to what is meant by a register, but there is a great lack of uniformity in their belief as to their number as well as to the appearance of the larynx in their formation. Some believe that there are but two registers. Others are of the opinion that there are three, and others again insist that there are five. My own opinion is that the female voice has three registers and the male voice two. Having stated my belief, I will now proceed to demonstrate by means of photographs, to be shown upon the screen, the changes which occur in the larynx at the breaks from one register to another, and the points at which these breaks occur. I will consider first the action of the female larynx. [Several hundred photographs were taken during this investigation, twenty-five of which, showing the larynges of thirteen subjects, were thrown upon the screen during the reading of the paper. They showed the changes which occurred in the mechanism of the larynx at the points of transition from one register to another.]

While most of the photographs which will be exhibited to-day were being taken, the tongue of the subject was held out, for when it remained in the mouth the anterior insertions of the vocal bands could rarely be exposed. I am unable to detect any difference in the relative positions of the various structures of the larynx whether the tongue is protruded or remains in the mouth.

The two photographs now seen upon the screen were taken of the larynx of a contralto while singing F sharp, treble clef, top line. The first of the pair was taken while the tongue was in the mouth, and the second while it was protruded. The only differences to be seen are those caused by the shadows, the slight difference in the position of the epiglottis—it being a trifle more elevated in the second than the first—and that caused by the difference in the force of the air-blast. The blast was greater when the tongue was in the mouth, and therefore the space between the vocal bands is a little wider in the first of the pair. It is easier to sing a loud tone when the tongue is in than when it is held out, and when it is held out the epiglottis is raised higher than when the tongue is not protruded.

A number of the subjects used in this investigation were not aware of any sudden change in quality in any part of their singing voices, nor could I detect it while listening to their voices as they sang up the scale, or see sudden changes in the mechanism while looking sharply for them in the mirror; but, nevertheless, such changes were invariably

disclosed in the photographs taken of four or five notes below and above the points at which they are supposed to occur. Others, again, were not conscious of a change in sensation, though a change in the quality of the voice could be heard and a slight change in the appearance of the glottis seen in the mirror, but the character of the change could not always be positively ascertained until it was disclosed in the photographs. When the notes at which the changes occurred were determined by the photographs and the changes themselves were displayed, they could easily be distinguished by the eye with the aid of the laryngoscope, but the contrast between the mechanism of the vocal bands before and after the break was never as clearly shown in the laryngoscope as in the photographs.

In the series of photographs which I took a number of years ago I failed to find evidences of sudden changes in the mechanism of the vocal bands, and in the paper already referred to, which I read before this Association two years ago, I made use of these words: "That certain changes do occur in many larynges while singing up the scale can be easily demonstrated; . . . but these changes are, I believe, almost always gradual, not sudden." In another part of the paper, when referring to a portfolio of photographs, I said: "The portfolio contains a soprano, contralto, tenor, and bass series, all of which bear me out in the statement that sudden changes in the positions of the vocal bands, as the trained voice mounts the scale, are rarely apparent." An examination of the series of photographs of female larynges contained in the portfolio referred to, reveals the existence of sudden changes in every instance. I am therefore forced to the conclusion that, as I was ignorant of the nature of these changes, I did not recognize them when I saw them.

A slight change in the shape of the glottic chink may easily escape notice unless one is familiar with the exact conditions to be looked for and the neighborhood in which they may be found. Judging from the slight difference in the appearance of some of the larynges which have just been shown, it is scarcely to be wondered at that changes in the mechanism of the vocal bands are frequently overlooked in the mirror. One of the main motives for the preparation of this paper was to supply positive information concerning these changes by demonstrating their occurrence.

A very careful search for changes in the mechanism of the vocal bands in the larynges of fifty or more female singers has failed to reveal more than two—namely, at or near F sharp, treble clef, first space, and at or near F sharp, treble clef, fourth line. That these changes occur and are apparent to the eye is conclusively proved by the photographs.

It is believed by many writers that when the voice breaks from one register to another the epiglottis is suddenly raised. I am of the opinion that, instead of its being suddenly raised, it is suddenly depressed. My reason for this belief is that, in almost every instance, I have found it lower in the photographs showing the change than in those representing the note immediately preceding it. In a number of instances I found it impossible to expose the entire length of the vocal bands at the note on which the change occurred, though the anterior insertions could be easily seen during the production of the note before the break. In such cases the photographs showed that when the epiglottis was well raised the change had not occurred, but the mechanism of the lower register was continued upward. When, however, the change in the mechanism was displayed, the epiglottis was depressed enough to cut off a view of the anterior commissure.

During the production of the lower notes of any voice the vibrations of the vocal bands can usually be seen, but in the middle and upper notes they can not be detected. As to what portions of the vocal bands vibrate in the middle and upper notes neither the photographs nor inspection with the laryngoscope give any positive information. From what has already been demonstrated to-day, and from the demonstration of two years ago, we must conclude that there are no positively characteristic appearances of the glottis in the different registers or different portions of the scale. In the lowest notes of the male voice the chink may be elliptical or open widest behind. In the middle and upper notes the chink may be linear or open widest behind. In the falsetto register the chink may be open in its whole length, or stop-closure may occur in front, or behind, or both. In the lower register of the female voice there is something like uniformity, for the chink is almost invariably open widest behind. In the middle register it may be linear or elliptical, or the edges of the vocal bands may be curved inward. In the upper register, as we have seen to-day, the chink may be open in its entire length, or stop-closure may occur, but of that more will be said while dealing with another portion of the subject which it was my original intention to consider to-day—namely, the appearances of the larynx in the production of variations in the pitch of the voice. Time will not permit it to be properly presented this afternoon.

The conclusions which may be drawn from this study are:

1. That protrusion of the tongue does not alter the laryngoscopic appearances.

2. That in the female voice there are three registers. This renders two changes necessary in the mechanism of the vocal bands. These changes are always accompanied by changes in the quality of the voice. The lower break occurs at or near F sharp, treble clef, first space; and the upper break at or near F sharp, treble clef, top line. The change of mechanism consists of a shortening of the vocal bands, an appearance of an increase in their tension, and a change in the shape of the chink of the glottis. The change in the mechanism is usually accompanied by a backward movement of the epiglottis.

The change in the shape of the chink at the lower break consists usually of a wider opening of the ligamentous portion of the glottis, and partial or complete closure of the cartilaginous portion of the glottis. At the upper break the chink may simply be reduced in length and width, or a part of the ligamentous and all of the cartilaginous portion of the glottis may be closed.

3. That in male voices possessing the falsetto range there are two registers. The transition from the chest to

the falsetto usually occurs somewhere between C sharp, bass clef, first line above staff, and the F sharp above.

The change in the mechanism consists usually of a sudden shortening of the vocal bands—though occasionally they are increased in length—an appearance of increased tension, and an alteration in the shape of the glottic chink. The edges of the vocal bands may be brought into apposition in front or behind, or both in front and behind, or the chink of the glottis may be open in its entire length, in which case the shape is altered, but the area of the space between the vocal bands is about the same as is necessary for the production of the note before the break.

The falsetto tones are therefore produced by stop-closure and change in the length and tension of the vocal bands, or by change in the length and tension without stop-closure.

Correspondence.

LETTER FROM PARIS.

The Medicinal Effects of Unroasted Coffee.—Faradization in Ascites.—Therapeutical Novelties.—A New Use for Bergeon's Gas Apparatus.—Electricity and Hydrotherapeutics in the Paralysis of Pregnancy.—The Exhibition of Hysterical Patients.—Strophanthus as a Remedy in Cardiac Affections.

Paris, *December 25, 1888.*

The medicinal properties of coffee in the crude state have not received much attention from the medical profession, as its effects have been constantly studied in the roasted condition. Unroasted coffee has been employed in intermittent fevers, and Dr. Chapman, of Philadelphia, many years ago, spoke of its merits in calculous nephritis. Now a writer in the "Montpellier médical," Dr. Landarrabilco, brings up the subject again. He has used raw coffee since 1866, with great success, in the treatment of gout, gravel, nephritic colic, and megrim. He takes one half of Martinique coffee, one quarter of Mocha, and one quarter of Bourbon; these are mixed and made into packages of twenty-five grammes each. One of these is simply introduced into a glass of water, and is allowed to macerate for from ten to twelve hours. In the morning it is stirred and strained and drank cold, without sugar, a short time before breakfast. A number of cases are given in which nephritic and hepatic colics have been cured. In biliary calculi, complicated with diabetes, the hepatic colic and sugar in the urine ceased after five weeks of this simple treatment by raw coffee. It is explained that the green coffee is first of all a good diuretic, and also that such an infusion has a special action in dissolving biliary calculi. Green coffee certainly acts on the liver, either by stimulating its various functions or by modifying the bile secretion; but the author claims that the action of the solution of raw coffee-grains is to stimulate the hepatic cells themselves, and thus making the bile fluid, while it descends the ducts, soften the calculi, and cause a discharge of certain products that gives relief to the patient.

The treatment of ascites by faradization of the abdominal walls has come into use again here, with some considerable success, the induced current being used. One pole is placed in the lumbar region and the other is passed over the different parts of the abdomen; the results are often surprising. There is usually an augmentation of diuresis, diminution in the size of the belly, and cure of the ascites after five or ten applications. It comes back again, however, if the cause is renal in origin. In any case the treatment is simple and seems to be harmless, so that it can be tried in all forms of ascites. Cases are given of ascites from tubercular peritonitis, and also of that form arising from a tumor of the spleen, that were completely relieved. The current used must be strong enough to cause decided muscular contraction, and this action should be kept up for from five to fifteen minutes twice a day, or three times when possible. Erb explains that the electric current produces an excitation of the nerve plexus which excites the absorbent vessels to strong action, and the serous accumulation is thus carried off. Be this as it may, the treatment is simple and one that every one can try, so that its merits can soon be tested, and medical science have some definite methods that will raise it above an art.

Therapeutical instability is a reproach to modern medicine. Every few months or weeks we are treated to some new and sure cure which after a few months of trial dwindles away out of sight, or at least into non-usage, from a want of merit in the article, or a want of faith on the part of the physician. This feverish rush to false statements in regard to new therapeutical measures has come to this, in France at least, that but very few of our best men have any faith in drugs, so that to-day we do not know how to treat a typhoid fever, or almost any other known malady, according to an accepted method; all is uncertainty. One professor gives one system, and another says it is useless. It has been said that "pulmonary phthisis has no treatment because it has too many." Whose fault is it? Well, it would seem to be that of the uncertainty resting on the great revolution of the microbe doctrine. The chains that bind us to the old medication of the past are still around us, and the newer style of anti-microbe treatment has not yet entirely taken its place as a science, so that wise and sober doctors of experience are hesitating in the hope that the present transition stage of medicine will soon be over, and that we can proclaim medicine as an exact science. For the moment we can only say *experientia doceat*, and do the best we can.

The gas apparatus used by Bergeon and others for phthisis, while it is of no use for that purpose, has found a new application in the uncontrollable vomiting of pregnancy. M. Rose says that this form of uncontrollable vomiting can be cured by using this apparatus and injecting carbonic-acid gas *per rectum*. The idea is that the cause of such troubles has its point of departure in the uterus itself, so that it is a reflex action, and at first M. Rose projected the gas on to the os uteri, but he has since found that it is better to proceed *per rectum*. While upon this subject we must speak of a most interesting case of M. Desnos, who is one of the oldest physicians to Charity Hospital here. He had a patient, a woman, who during pregnancy fell into a state of rapid muscular atrophy. The patient conceived in February, 1887, when she had already been much weakened by a hæmorrhagic metritis, and from the first she had violent abdominal pains, followed by digestive troubles, with vomiting that could not be stopped. Besides this, she had an extensive alopecia. In June she was able to take a little food, but now there appeared a complete impotence of the lower members; the muscles were flabby, and the paraplegia was almost complete; a rapid atrophy took place; the muscles of the calf of the leg had almost entirely atrophied, while the whole inside leg muscles, as well as those of the posterior portion of the thigh, were almost gone. Several days afterward the superior members began to be affected with an abolition of sensibility, which was accompanied by tingling in the muscles. There were no rectal or bladder troubles, contractility was not entirely destroyed, and there was no elevation of temperature. It was considered best to induce premature labor, and this was done in July last. The confinement was a regular one, and rapid amelioration followed; electrization of the muscles and hydro-

therapy was the treatment used. This last was at first the wet sheet, and at present the woman is restored to health with her usual strength. The question is, Was this a case of puerperal paralysis, which has been spoken of as due to uræmia? But there was no albumin in the urine, or but very slight traces of it, when the patient was most ill. Was it hysteria? Not likely, as the patient did not present signs of that trouble. Could it be a reflex irritation from the uterus? This last idea does not seem possible, owing to the profound alteration of the muscles. It was probably a neuritis of a general parenchymatous order, or a myelitis of the anterior horns, but it is very difficult to say what the precise nature of the trouble was, except that it was connected with the pregnancy, and that electrical and hydropathical treatment was of great use to the patient.

M. Gilles de la Tourette calls attention to the danger of allowing theatrical representations which present entertainments showing off what are really medical patients suffering from hysteria in its many forms. It has been constantly noticed by the able *chef de clinique* of Professor Charcot's service in the Hôpital Salpêtrière that, after exhibitions of this kind, given by all sorts of so-called magicians, electro-magnetic operators, hypnotists, etc., there is a real epidemic of hysteria exhibited in patients brought to the hospital. The danger is a real one, for these poor, convulsive, nervous people are for months afterward incapable of attending to their occupation or of gaining their living. M. Charcot has shown that hypnotism is not a natural phenomenon, but a real experimental neurosis, which should never be brought about except by a physician who has a real curative end in view. Certainly, no one forces the susceptible people who frequent such shows to do so, but it is usual to place a railing on precipices to prevent people who are susceptible to vertigo from falling over, and so such exhibitions should be compelled by law to cease, except in the interest of science. It is much more easy to prevent than to cure in all cases. Many of the nervous manifestations are hidden in families, but some have gone to law about the matter, and have obtained damages from the professors (!) of magic, etc., whose exhibitions have provoked the symptoms in the patient. The *Société de médecine legale* passed the following resolution after M. de la Tourette's article: "We hope that public exhibitions of hypnotism will be forbidden by law, owing to the numerous accidents they produce in innocent persons, which compel them to seek medical treatment for months."

A good deal is being said at present in Paris in regard to strophanthus as a heart remedy, but it is well to be careful in giving this drug, as there are such a large number of its varieties that the best judges can not agree which is the best. So far, the *Strophanthus hispidus* and a *strophanthus* called *Kombé* are the two used here, but in tinctures they have no very remarkable action. It may be that strophanthine and extracts of strophanthus are better, but they are dangerous drugs that are difficult to obtain pure, and their action is not certain. Many samples shown of strophanthine are simply impure extracts, which have a very different physiological action. It is probable that a pure crystallized strophanthine will be produced, but its constant production and chemical study are as yet to be made, not to speak of clinical experience, which is also as yet wanting.

Action of Chloride of Ethylene on the Cornea.—"Chloride of ethylene is often used by physiologists abroad to anæsthetize dogs. M. Dubois has observed that the cornea of the animal thus anæsthetized undergoes a change some hours after recovering consciousness, a bluish opalescent appearance being developed. This opacity is not followed by necrosis, and at the end of some months the cornea clears from the periphery toward the center; the change is believed to be due not to inflammation, but to a true œdema."—*Lancet.*

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THE ANÆMIAS.

THIS class of disease, characterized by more or less profound blood-changes, is one of peculiar interest. A discussion of the ætiology must be considered suggestive only until verified by further observation. Loomis is sufficiently conservative to state that simple anæmia may be caused by anything that decreases the number of red blood-corpuscles or interferes with their production; that chlorosis is without assignable cause; that the essential nature of pernicious anæmia is unknown, and that the ætiology of leucocythæmia can not be determined. In the "Practitioner" for August, 1888, Dr. William Hunter adopts Coupland's classification of symptomatic and idiopathic anæmia, discarding the terms primary and secondary as misleading. In no condition can anæmia be really primary; in every case it must be secondary to changes in some organ or organs, whether these changes are manifest as in wasting disease, or obscure or difficult of recognition as in chlorosis. Hunter uses the term anæmia in its widest sense to include every condition, whether local or general, in which the blood is either qualitatively or quantitatively impaired. Idiopathic anæmia is, therefore, a condition resulting either from loss of blood or from diminished production or increased destruction of it, the latter disorders of hæmogenesis or hæmolysis being unaccompanied by any corresponding changes in other tissues of the body. To be styled idiopathic, any given case of anæmia must comply with the following conditions:

(1) The changes in the blood (as determined by actual examination) must not only apparently but actually constitute the most marked feature of the disease.

(2) The other chief symptoms of the disease must in great part be referable to the altered condition of the blood.

(3) With regard to post-mortem appearances, the changes in the blood, whether alone or in association with changes in the blood-forming (hæmogenic) or blood-destroying (hæmolytic) organs, constitute the characteristic morbid feature.

A comparison of the anæmia of phthisis with that of chlorosis or leucocythæmia illustrates the difference between the symptomatic and idiopathic forms of the disease. In phthisis the blood-changes, however profound, do not by any means constitute the most marked clinical feature. The other symptoms—cough, night-sweats, fever, expectoration—are not dependent on hæmogenic or hæmolytic disorder. The condition of the blood throws no light upon the nature of the disease or its seat. Hence the anæmia of phthisis is rightly classed as symptomatic. In chlorosis, however, the blood-changes, especially the great diminution in hæmoglobin in comparison with the slight lessening in the number of red blood-corpuscles, con-

stitute its chief clinical (and in this instance the chief pathological) feature. The pallor, giddiness, debility, breathlessness, palpation, etc., can be shown to depend on disordered blood-formation, which is also the cause of the blood-changes themselves. The gastro-intestinal disturbances generally associated with chlorosis have been shown (Bunge) to be due to the excess of decomposition products in the intestine accompanying the characteristic constipation. These break up the iron compounds of the food, and tend to prevent due absorption of iron in its only assimilable form, and so lead to impaired blood production. Chlorosis in girls is, in fact, an idiopathic anæmia, hæmogenic in its origin, and is due to a deficient supply of assimilable iron at a time when the recent onset of menstruation has removed a certain proportion of the already small supply of that element present in the body. So, too, in leucocythæmia the blood-changes—the abnormal increase in the white blood-corpuscles and a diminution in the red—constitute the chief clinical feature, and serve to account for the other symptoms, and, with the alteration in the blood-forming organs, present the chief morbid changes discoverable after death. These facts place leucocythæmia among the idiopathic anæmias.

Let us now apply these considerations to the case of pernicious anæmia. Here the blood-changes constitute the most marked characteristic of the disease. They suffice in themselves to account for most of the other features—the extraordinary pallor, weakness, dyspnœa, palpitation, the fatty degeneration of the vessels with attendant hæmorrhages—and all this without any emaciation.

In a great measure its obscurity rests upon the variety of symptoms. There is marked pallor, sometimes a peculiar lemon-colored or icteric tint, with occasional attacks of jaundice, frequent gastro-intestinal disturbances, such as dyspepsia, vomiting, constipation, or, what is nearly as common, diarrhœa. There may be more or less œdema or puffiness about the legs and ankles, associated with hæmorrhages from the nose, gums, bronchi, and female genitals, together with ecchymotic and petechial spots and vibices upon different portions of the body. Retinal hæmorrhage, demonstrable during life, has been considered almost positive proof of the existence of this disease. An ophthalmoscopic examination is always in order in any profound anæmia, and throws light upon the treatment. Cardiac, venous, and arterial murmurs exist, of greater intensity than in simple anæmia. The heart is always feeble, and in severe cases intermittent in its action. Palpitation, dyspnœa, and attacks of syncope result from the oligocythæmia and attendant exhaustion. The muscles are soft and relaxed, and muscular weakness may be so extreme as to force the patient to take to his bed; and yet there is often little or no emaciation. There is recurrent pyrexia that is usually followed by an aggravation of all the previous symptoms, and a persistent tendency to a fatal issue.

While malignant disease in certain situations may predispose to pernicious anæmia, this association is as yet considered an accidental coincidence rather than any true pathological relation. So, too, the presence of intestinal worms; the workers in the St. Gothard tunnel presented apparently all the characteristics of pernicious anæmia. These disappeared in most cases on the removal of the parasites. In Finland, where the *Bothriocephalus latus* abounds, the disease occurs in an intractable form among persons not infested. It is quite possible that the conditions making the human intestine a ready habitat for parasites in one case may also bring about quantitative and qualitative blood-changes in another. Along this line of thought there may yet be some explanation of the relationship between anæmia or chlorosis and exophthalmic goître—a relation that many observers maintain always exists. It is not improbable that each essential form of anæmia may have a varying ætiology, resting upon an anatomical basis in some instances and a purely chemical one in others.

The principal changes in the blood that seem peculiar to pernicious anæmia are the following:

(1) The *marked oligocythæmia*, sometimes to a very high degree and far in excess of that ever found in symptomatic anæmia. This oligocythæmia is, in certain cases at least, entirely independent of the occurrence of hæmorrhage.

(2) The relative *richness in hæmoglobin*, in comparison with the high degree of oligocythæmia that is frequently met with.

(3) The presence in the blood of small yellowish globules or *microcytes*, distinguishable by their form and color from the various other small colored elements present in all forms of anæmia.

The diminution in the number of corpuscles is something extraordinary, varying in different cases. In almost all, however, the number of corpuscles is reduced from the normal standard of 5,000,000 in a cubic millimetre (c. mm.) to 2,500,000, or less. In not a few it falls to 1,000,000, or even to 500,000, in a c. mm. This latter number has been thought the lowest compatible with life, or at least with recovery. Yet there is one case on record where it fell to 143,000 in a c. mm., and yet the patient recovered. In a few recorded cases of chlorosis the oligocythæmia was as great as 30 or 40 per cent.; but, generally speaking, the average number of corpuscles is over 3,000,000. In leucocythæmia, the number of corpuscles was found to be 1,150,000 in one case, in another 2,160,000, and in a third only 500,000. In the anæmia of malaria, Hayem found the number of corpuscles as low as 1,182,700; and in that of purpura hæmorrhagica even lower—namely, 1,000,000. Pallor bears very little relation to the degree of oligocythæmia. Judging by pallor alone, the anæmia of wasting disease is often so profound as apparently to entitle it to be termed pernicious. In phthisis, the diminution of corpuscles is neither regular nor constant. The average is something over four millions. The change is but little more marked in malignant disease. In six cases of carcinoma the average equaled 3,660,000. Lead poisoning, with its marked pallor, gave 3,200,000 in a c. mm. During inanition resulting from starvation, the changes in the blood are relatively less marked than the changes in other tissues. So far from being diminished, the number of corpuscles in a c. mm. of blood is actually increased. The result of this comparison

goes to show that the oligocythæmia of pernicious anæmia is far in excess of that accompanying malignant and wasting disease. Oligocythæmia in all other forms of anæmia rarely reaches a diminution of 50 per cent., usually much less, while in this disease it constantly reaches 80 per cent. or more. A factor that might account in a measure for this state of things in pernicious anæmia is often absent in malignant disease, and that is the occurrence of hæmorrhages more or less frequent and copious. This will do more than any other adventitious condition to bring about profound anæmia, pallor, and debility. Opportunities for observing the effects of loss of blood in man are frequently met with, as in the hæmatemesis of gastric ulcer, the epistaxis of Bright's disease, or the hæmorrhage of malignant or fibromatous disease. The anæmia in these cases is profound and closely resembles the form termed pernicious; but the other signs—the gastro-intestinal disturbances, the more or less marked jaundice—are not present. Repeated and copious bleedings fail to produce in animals anything that approaches the degree of oligocythæmia so frequently found in true pernicious anæmia. In dogs it is impossible to reduce the number of corpuscles by artificial hæmorrhage below 1,000,000 in a c. mm. without causing death. Mere loss of blood fails to explain this feature—oligocythæmia—that is present for long periods in marked degree when no hæmorrhage has occurred. Life is often compatible, as has been demonstrated, when there are only 700,000 or 800,000 corpuscles to the c. mm. Pernicious anæmia is characterized by a rapidity of progress and an intensity that can not be accounted for by any failure of nutrition however profound, or any defect in the blood-forming functions. The extraordinary degree of oligocythæmia points most strongly to the hæmolytic origin of the disease. The richness of the blood in hæmoglobin is so marked that one observer considers it pathognomonic of pernicious anæmia when associated with marked diminution of corpuscles. Its presence in any case would serve to distinguish between this disease and anæmia resulting from loss of blood, for in hæmorrhage the diminution of hæmoglobin is greater than the diminution in corpuscles.

The changes in the form of the blood-discs (poikiocytosis) are not of particular importance, depending as they do on the degree of hydræmia present. Microcytes are present in the majority of cases of pernicious anæmia at some period during its course, varying in number at different times. They are remarkable for their small size, their perfectly spherical form, and their deep-yellow color. They resemble small drops of oil. One view of their origin is that they are imperfectly developed red blood-corpuscles, while another is that they are the products of blood-destruction. As in some other diseases, in pernicious anæmia there is an absence of the formation of *rouleaux* in the blood when drawn, and the occasional presence of nucleated red corpuscles. There is no increase of white corpuscles, or granular elements, or blood-plates, so common in phthisis and other wasting diseases. The plasma presents two points of special interest—excessive hydræmia and low specific gravity.

In all symptomatic anæmias, such as are associated with ordinary organic disease, the blood-changes are but little, if at all, more marked than those found in other tissues, and are primarily referable to defective nutrition and to failure in hæmogenesis. In pernicious anæmia the changes in the blood are essentially hæmolytic. They are due to excessive destruction of the blood, while hæmogenesis is so little interfered with that it is generally in excess of the normal. Even with this knowledge, the practical question remains, How are we to determine whether a given doubtful case is one of pernicious anæmia or not? With the single exception of the disproportionate richness of the blood in hæmoglobin, there is scarcely one feature of the disease that is peculiar and characteristic. Each of its features may in some form be singly presented in other conditions. But this apparent similarity ceases when we find these single symptoms combined in a certain association. This combination or association is what the diagnosis is based upon, due consideration being given to each separate feature and to their relation to each other. To recapitulate, marked oligocythæmia, increased richness of hæmoglobin, the presence of microcytes, pronounced hydræmia and low specific gravity of the plasma, together with gastro-intestinal disturbances, attacks of jaundice, fever, no marked emaciation, extreme pallor and muscular weakness, make up a picture that is quite unique and certainly entitles pernicious anæmia to the rank and distinction of a clinical and pathological entity.

MINOR PARAGRAPHS.

THE MARINE-HOSPITAL SERVICE.

The many friends of Surgeon-General Hamilton, as well as sanitarians who have appreciated his administration of quarantine affairs, will regret to hear of his contemplated resignation from the service to assume the editorship of the "Journal of the American Medical Association." It is an open secret that the pay attached to the office of Surgeon-General of the Marine-Hospital Service ($4,000) is inadequate, judged either from the standpoint of the responsibilities of the office, or from a comparison with the pay and allowance of the Surgeon-General of the Army or Navy. On the 10th inst. a joint resolution was favorably reported by Senator Cullom, from the Committee of Commerce, making the pay and allowance of the Surgeon-General of the Marine-Hospital Service the same as that now allowed by law to the Surgeon-General of the Army. This would raise the salary to $5,500, with an allowance of $720 per annum as commutation for quarters. While even this sum is insufficient compensation for the responsibilities of either office, in the case of the Marine-Hospital Service it will be an improvement on the present condition, and will, we trust, be a sufficient inducement for Dr. Hamilton to remain in the position which he has filled with so much benefit to the country and credit to himself.

THE RIGHT OF A STATE TO REGULATE THE PRACTICE OF MEDICINE.

After stating the case of Dent *vs.* The State of West Virginia, which involves the validity of the statute of that State requiring "every practitioner of medicine in it to obtain a certificate from the State Board of Health that he is a graduate of a reputable medical college in the school of medicine to which he belongs; or that he has practiced medicine in the State con-

tinuously for the period of ten years prior to the 8th day of March, 1881; or that he has been found, upon examination by the board, to be qualified to practice medicine in all its departments," and making "the practice of or the attempt by any person to practice medicine, surgery, or obstetrics in the State without such certificate, unless called from another State to treat a particular case, a misdemeanor punishable by fine or imprisonment, or both, in the discretion of the court"—Mr. Justice Field, of the Supreme Court of the United States, affirmed the decision of the Supreme Court of West Virginia, holding that a State has the right to pass laws regulating the practice of medicine or the qualities of medical practitioners within its limits. The defendant based his claim for a review of judgment on the ground that the statute of West Virginia is unconstitutional, the unconstitutionality asserted consisting in its alleged conflict with the Fourteenth Amendment to the Constitution of the United States. Although every citizen of the United States has an undoubted right to follow any lawful calling he may choose, "the power of the State to provide for the general welfare of its people authorizes it to prescribe all such regulations as in its judgment will secure or tend to secure them against the consequences of ignorance and incapacity, as well as of deception and fraud." Few professions require more careful preparation than that of medicine, and no one has a right to practice it without having the necessary qualifications. The statute only requires that whoever assumes, by offering his services to the community, that he possesses the requisite qualifications, shall present evidence of them from a body designated by the State as competent to judge of his fitness to practice medicine.

THE PERIOD OF INFECTION IN SCARLET FEVER.

In a recent number of the "Lancet," Dr. Arthur Whitelegge, Health Officer of Nottingham, England, says that, assuming infection to be given off by the breath and sputa in the early stages of scarlet fever, and by the desquamation at a later period, it seems not improbable that a lull as regards infectivity may occur in ordinary cases about the end of the first week. He adduces some circumstantial evidence in support of this view from a tabulated record of the intervals of time elapsing between the days upon which the first and second attacks, respectively, occur in the same household on a total of two hundred and eighty-eight households. There is a remarkable drop on the ninth day, which is followed by a slight but distinct rise, beginning a few days afterward and reaching a maximum about the sixteenth day. The inference is that the average infectivity suddenly decreases about the sixth day and increases about the twelfth.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending January 22, 1889:

DISEASES.	Week ending Jan. 15.		Week ending Jan. 22.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	14	4	10	5
Scarlet fever	295	50	339	51
Cerebro-spinal meningitis	4	1	2	2
Measles	352	20	335	32
Diphtheria	184	53	159	39

The Medical Society of the State of New York.—It is announced that it is the intention of the majority of the delegates from New York and its vicinity to go to Albany on the 4th of February by the 3.30 P. M. train. Certificates will be sent to members and delegates, which they can exchange for excursion tickets at the ticket-office of the New York Central and Hudson River Railroad on the payment of $4.65, the regular rate being $6.20. A drawing-room car will be provided for the exclusive use of delegates. Gentlemen who wish certificates or reserved seats in the drawing-room car should at once notify Dr. Clarence C. Rice, secretary of the New York delegation, 115 East Eighteenth Street.

The Society of the Alumni of Bellevue Hospital.—The second annual meeting will be held at the New York Academy of Medicine, on Wednesday, April 3, 1889. Dr. William Osler, Professor of the Practice of Medicine in Johns Hopkins University, will deliver the annual address.

The Philadelphia Polyclinic.—Dr. S. Weir Mitchell has been elected professor of diseases of the mind and nervous system, a chair upon that subject having been established.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from January 13 to January 19, 1889:*

Alden, Charles H., Lieutenant-Colonel and Surgeon, and Mearns, Edgar A., Captain and Assistant Surgeon. Detailed for duty on army retiring board to meet at St. Paul, Minn., at the call of the president thereof. Par. 7, S. O. 10, A. G. O., Washington, January 12, 1889.

Munday, Benjamin, Captain and Assistant Surgeon, is relieved from duty at Fort Sisseton, Dakota, by direction of the Secretary of War, and will report in person to the commanding officer, Fort Sully, Dakota, for duty at that post. Par. 2, S. O. 11, A. G. O., Washington, January 14, 1889.

Harris, Henry S. T., First Lieutenant and Assistant Surgeon, will, upon the arrival of Acting Assistant Surgeon Boyer, proceed from Camp Peña Colorada to the post of San Antonio, Texas, and report to the commanding officer for temporary duty. Par. 4, S. O. 1, Headquarters Department of Texas, San Antonio, Texas, January 2, 1889.

By direction of the President, and in accordance with section 1,246, Revised Statutes, an army retiring board is appointed to meet in Washington, D. C., at 11 o'clock A. M., Thursday, the 17th day of January, 1889, for the examination of such officers as may be ordered before it.

Detail for the Board.

Baxter, Jedediah H., Colonel and Chief Medical Purveyor, and Greenleaf, Charles R., Major and Surgeon. Par. 2, S. O. 12, A. G. O., Washington, January 15, 1889.

Society Meetings for the Coming Week:

Monday, *January 28th:* Medical Society of the County of New York; Boston Society for Medical Improvement; Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement; Baltimore Medical Association.

Tuesday, *January 29th:* Medical Society of the County of Onondaga (semi-annual, Syracuse); Boston Society of Medical Sciences (private).

Wednesday, *January 30th:* Auburn, N. Y., City Medical Association; Berkshire, Mass., District Medical Society (Pittsfield); Middlesex, Mass., North District Medical Society (Lowell); Gloucester N. J., County Medical Society (quarterly).

Thursday, *January 31st:* Cumberland, Me., County Medical Society (Portland).

Friday, *February 1st:* Practitioners' Society of New York (private); Baltimore Clinical Society.

SATURDAY, *February 2d:* Clinical Society of the New York Post-graduate Medical School and Hospital; Manhattan Medical and Surgical Society (private); Miller's River, Mass., Medical Society.

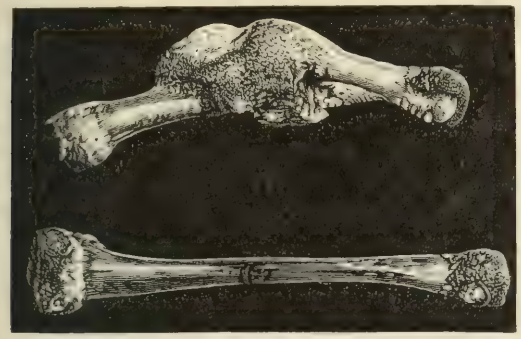
Letters to the Editor.

COMPARATIVE PATHOLOGY—A CASE.

12 WEST THIRTY-FIFTH STREET, NEW YORK, *December 31, 1888.*

To the Editor of the New York Medical Journal:

SIR: Observing in your last week's issue a paper on "Examples of Fractures and their Union in the Bones of Birds," by Dr. R. W. Shufeldt, it occurred to me that a case coming to my notice of fracture of the thigh-bone of a frog, with spontaneous recovery, might be of some interest to your readers, and perhaps, if published, be the means of inducing others to con-



tribute to this field of pathology among the lower forms of animal life. The photograph inclosed, taken twenty years ago, shows the large callus at the seat of fracture, and the amount of shortening may be determined by comparing the injured bone with its fellow.

The history of the case can not be given, but when we consider the enjoyment afforded to youth by casting stones at these harmless amphibians, it is easy to imagine how the fracture was caused. Indeed, on reading an article in yesterday's "Tribune" on "Frogs' Legs and where they come from," it would seem that the custom prevails in a froggery conducted by Messrs. Clark, near Detroit, Mich., of breaking frogs' legs in order to increase their size. Frogs thus "treated" when young are said to develop immense hind quarters; but I should fancy that the increase in size was rather due to the callus at the place of union than any increase of muscular structure. SAMUEL SEXTON.

AN INEXPENSIVE CELL FOR GALVANISM.

PHILADELPHIA, *January 5, 1889.*

To the Editor of the New York Medical Journal:

SIR: In order to prevent a waste of money and time in the case of practitioners of limited means, I write to say that the cell advocated by Dr. Buckmaster, in your issue of to-day, will not answer medical purposes at all. No Leclanché will act for more than a few minutes unless its carbon is fitted with the usual manganic depolarizer. The "creeping" incident to such cells will destroy the pasteboard cover in a day or two. The difficulty of handling the cathodes by one not skilled in construction will result in so many fractures as to raise the cost much above that of a good disc cell, which is by far the better one for medical and surgical use, cautery work only excepted. Wire can not be fastened to either electrode without clamps, and loose connections produce arcs which are very destructive. The form suggested will polarize rapidly when the resistance of the human body is intercalated in the external circuit, the internal resistance being very low. For my gynæcological work I use a battery evolving six to ten ampères under from one hundred to one hundred and fifty volts, the reduction being controlled by a Waite and Bartlett rheostat, and held at fifty to two hundred and fifty milliampères, as proved by a reliable meter for a definite number of seconds. In a fibroid, for instance, I use from three to twelve coulombs at each sitting, and this gives not only the fraction of an ampère, but the quantity in all—so much a second, and so much a séance. You can not do this with a modified Leclanché.

W. R. D. BLACKWOOD.

Proceedings of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

(*Concluded from vol. xlviii, page 472.*)

The Relation between Trophic Lesions and Diseases of the Nervous System.—Dr. E. C. SEGUIN, of New York, representing the Association of American Physicians, opened a discussion on this subject. Dr. H. C. WOOD, of Philadelphia, representing the American Physiological Society, followed. Among trophic lesions they included changes dependent upon neural as well as central lesions, and also permanent vaso-motor changes in so far as they could be shown to influence nutrition; they excluded changes within the nervous system itself.

Dr. SEGUIN, in opening his paper, remarked that the question presented brought the critic face to face with an enormous accumulation of more or less well-observed, widely diverse, and not necessarily correlated clinical data and experimental facts. He would exclude from consideration vaso-motor disorders and diffused or quantitative changes, partly because he considered them to be distinct subjects, and partly because their study would be beyond the scope of a short paper; it would obscure, complicate, and infinitely extend the search for the true relation between trophic lesions and nervous diseases. He insisted that a lesion meant a positive histological alteration in tissue, and excluded retarded or imperfect development, simple quantitative reduction of tissues, or alterations in local circulation and calorification, such as were seen in cerebral and spinal paralysis occurring before full growth, and occasionally after it. It was quite beyond the limits of his paper to enumerate or classify all the lesions of the non-nervous tissues which had been observed and ascribed to nervous influence or to lack of it. Such trophic lesions had been described as occurring in almost all the non-nervous organs and tissues, in the muscles, bones, articulations, arteries, and glands; and even in cartilages, where it could not be demonstrated that any nerve-fibers terminated. He would, however, suggest a classification which he believed would be found useful in practical work; it comprised two great divisions, as follows:

1. So-called "trophic lesions" in parts whose sensibility was reduced by reason of the nervous disorder, and which were exposed at the same time to injury or infection. The larger part of the data which had accumulated belonged in this class. Examples were seen in falling out of the nails or hair, alteration in the appearance of the skin, articular changes and disorders,

bed-sores, fractures of bone, deep eschars, necrosis of digits, and in most of the lesions in hollow viscera lined by epithelium, such as cystitis. In posterior spinal sclerosis, injuries of the spinal cord or of nerve-trunks, and in various forms of "myelitis," so called, such lesions were frequently seen.

2. Trophic lesions which came as a spontaneous change in deeper parts, where there could be no exposure to infection or to injury. In this class were muscular atrophies and dystrophies, a limited number of cutaneous lesions, and perhaps some alterations in glandular function. They were met with after nerve-section, in neuritis, and in diseases affecting the ventral cornua of the cord or their homologues in the cephalic prolongation of the spinal axis.

When we studied carefully the first class of lesions and the conditions under which they arose, and then compared them with the similar peripheral lesions met with at the close of some non-nervous diseases with tendencies to asthenia and inanition, it became doubtful whether we could rightly consider them as direct results of suppressed or perverted nervous action. The strongest partisans of the truly dystrophic nature of these lesions admitted that extraneous influences played a certain though wholly secondary part in their genesis. But other observers held an opposite view, and believed that the efficient causes of these lesions were trauma and infection acting upon parts which had lost their automatic defense through anæsthesia, and whose circulation and general nutrition also were lowered by disease and inertia, without being specifically altered. The reader proceeded to give accounts of experiments and observations in this line. Thus, when the fifth nerve had been severed, the cornea did not ulcerate if it was completely protected; wounds in parts supplied by an injured nerve, or bed-sores occurring in paraplegia, healed without difficulty if kept clean and at rest, and the use of aseptic catheters gently introduced was exceedingly efficient as a preventive measure against cystitis. In posterior spinal sclerosis, perforating ulcers, arthropathies, and fractures were very rare in cases where the patient had good attendance and avoided overexertion in the later stages of the disease. They scarcely ever occurred among patients in the well-to-do classes for that reason.

The second class of lesions, which the reader called true trophic degenerations, were then reviewed, particularly those occurring in muscles whose nerve was severed, or became diseased, or had its ventral ganglion cells in the spinal cord destroyed. He also considered some skin diseases, such as herpes. He emphasized the fact that there *were* here spontaneous qualitative (or histological and anatomical) changes—changes which occurred with fatal necessity, which gave fixed reactions, and which could not be prevented or cured.

As to the mechanism of these real trophic lesions, we could not go far without getting into speculative fields. Charcot had recently stated that he knew nothing of trophic nerves or their mode of action. Their very existence was denied by physiologists. Many speculations had been published which had no scientific basis in either anatomy or physiology.

He believed true trophic degeneration depended on a law of interdependent life in continuous tissues. The neuro-muscular apparatus, from the ganglion cells of the ventral cornua of the spinal cord to the striated muscular substance, was a unity. In lower forms of animal life, actual neuro-muscular structures existed. In man, the ultimate nervous fibrillæ came into a co-aptation and continuity with the muscular structures so close that no investigations had yet shown where the one structure ended or the other began. He therefore concluded that, in the first of the two great classes of cases which he had made, the lesions were probably mostly due to the action of extraneous causes, and were to a great extent preventable. He endeavored to show that only lesions directly due to nervous disease as a necessary and unpreventable result merited the name of trophic lesions, and that, furthermore, they occurred in organs and tissues which were anatomically continuous and whose life (or preservation of structure and function) was associated and interdependent. His final conclusion was that disease of the nervous system produced true trophic lesions when and because it interfered with this interdependent life of continuous tissues; but the proposition was offered as only a partial and preliminary answer to the question it attempted to deal with.

Dr. Wood read a paper in which he approached the question from a different side. He considered Dr. Seguin's paper a daring and logical advance into a difficult and necessarily more or less speculative region of inquiry. He agreed with Dr. Seguin as to the variety of uses to which the term trophic had been put, and thought it had been misused to such an extent that in many instances its own originator would not know it. As to the connection between nerves and muscles, no one could doubt that it was of the closest sort. But in his mind the contraction of a muscle meant a direct result of a change in its nutritive state as a muscle, however that change might be brought about. It was well recognized now that in the salivary glands the condition of the blood-vessels was not necessarily connected with the nerves which controlled secretion and nutrition in their functional cells. The fact that muscle without nerves of discoverable size was contractile, only meant that nervous structures were omnipresent. He had long believed that the relation of nerve to muscle was a twofold one, both metabolic and anabolic that is, or destructive and nutritive. It might be that different fibers in a nerve presided over these changes. It might be that all the fibers conducted either influence, the latter originating in the brain. But at one time, by nervously communicated influence, destructive change and the evolution of work and heat were set up in a muscle; at another time, by nervous influence, rest and nutritive restoration were promoted. Such processes in a gland, or muscle, or in the whole body, had been shown to be independent of blood-circulation, and really dependent on the influence of nervous centers in the medulla. He therefore concluded, in answer to the first question proposed to him by the council, that it was physiologically proved that the nervous system directly affected the general nutrition.

As to the second question proposed, in regard to lesions following injury or disease of a nerve-trunk, he only turned in his mind to cases where the spinal cord had been injured or diseased in which the pressure of the buttocks of a patient on the bed for only twenty-four hours had caused deep ulceration. This meant to him that the nutrition of the parts had been somehow greatly altered. Nothing of the sort happened in health. Furthermore, it had been proved that such changes occurred without any circulatory disturbance accompanying.

Vaso-motor palsy might be complete, and not cause trophic degeneration. He therefore concluded that a number of lesions were the immediate result of a preceding nervous disease, and were due to direct nervous action affecting the cells, for no vaso-motor condition that we knew of was capable of causing such changes in local nutrition. He thought it absurd to attribute such changes to a vaso-motor condition preceding.

Dr. William Ord, of London, believed that the various trophic lesions might be caused in any of three ways: 1. By disease of the spinal cord. 2. Through injury or disease of nerves. 3. By reflex action from disease elsewhere present in the body. As an example of the first class he related the history of a case of chronic hypertrophic cervical pachymeningitis. It had gone on to recovery of motion and sensation, but the tissue around the second and third digits of the patient's hands had wasted unaccountably, the joints of both thumb and fingers had become

swollen, tender, and quite loose, the skin and muscles meanwhile wasting. He had been trying for many years to understand the changes in joints and muscles which occurred in chronic gout. He had seen atrophy of the muscles go hand in hand with much deformity of the joints of a limb. Both seemed to him of nervous causation. In another instance which the speaker related, an old man had for years lost power in his arms, the tissues of which, including the skin, had almost wasted away. At the same time the joints of his fingers became loose from atrophy of the synovial membranes and disappearance of the fluid. They were considerably swollen, yet constantly became dislocated and had to be restored to place. Here, too, there was some primary affection of the nervous system which determined dystrophy in the joints. Early in his efforts to analyze the causes of pseudo-arthritis he had met a class of cases in which women of a nervous and anæmic type, as they approached their climacteric, suffered from swellings in the joints of the fingers and toes, accompanied with severe pain. Menorrhagia was nearly always associated with these attacks. The patients commonly called them gouty. After the menopause came a complete recovery from the joint affections. A common and significant lesion accompanying such conditions was herpes of the mouth.

He believed that prostatic irritation was also the reflex cause of joint affections, and that gonorrhœal rheumatism was due, perhaps, not to a microbe, but to an irritation of the nervous system which gave rise to joint affection in the same way that a disease of the nervous substance itself might. Even ordinary acute rheumatism might be a state arising from a condition in some gray cell in the medulla. Changes in joints were certainly very common in connection with changes in the heart. Joint changes often followed parturition, and were also common in poorly nourished women, or those who suckled their infants too long. In the latter case it appeared as if the excessive stimulation of the nervous system caused by the lips of the child directly produced, by a reflex influence, lesions in the joints of the mother.

Dr. M. Allen Starr, of New York, thought the distinction made by Dr. Seguin between trophic and nutritive disturbances had not been appreciated in the discussion. It seemed to him a very important one to keep in mind. There was a class of nutritive disturbances, which had not been mentioned yet, which had been described by Gowers and by Dr. Osler. They were changes which followed birth palsies, and cerebral palsies following hemiplegia in children, where there was a wasting of both bone and muscle in the affected limb and arrest of growth. This connected itself strongly with the idea advanced by Dr. Seguin of the close interdependence of the life of physiologically continuous tissues.

Dr. H. P. Bowditch, of Boston, recognized in muscular metabolism two distinct processes. One of them was a continuous process of waste and supply of the nitrogenous elements, which had no relation to the activity of the muscle and might be called trophic. The other was connected directly with its activity, and involved loss and renewal of its non-nitrogenous elements. This was, then, the nutrition of the muscle. He thought the distinction a simple means of separating the two ideas of trophic and nutritive disturbance.

Dr. Pye Smith, of London, said he agreed more with Dr. Wood, and thought there must be trophic nerves or trophic impulses sent through nerves. At the same time he did not underrate the parts which traumatism, infection, and loss of circulation might play in giving rise to a "lesion." He also believed that there were trophic and atrophic centers in the brain. Some investigators were even finding thermal nerve-fibers and nerve-centers. He thought those acute bed-sores which in a short time scooped out the whole buttocks of a man pointed to something more radical than loss of circulation or pressure, or loss of sensibility preventing change of position. Illustrating nerve injury as a cause, he would mention a case reported by Hilton where an incurable ulcer in the hand had been found to have been produced by a minute exostosis pressing on the ulnar nerve higher up in the arm. On removal of the bony point, the ulcer had at once healed. In "trophic" lesions of the skin, loss of nutrition explained some cases, as when gangrene resulted from obstruction of an artery by an embolus. But other cases could not be explained on such an hypothesis, and we had to look to direct nervous interference. All had seen the cutaneous changes which often followed diseases of the cord—the peculiar and characteristic bullous and vesicular wheals. Michael's investigations had, in his opinion, proved the existence of two sorts of nervous action bearing on preservation of structure. After an exsection of the cervical sympathetic ganglion a loss of circulatory action in the ear had followed, but even after a whole year no ulceration had appeared.

Dr. Ferrier, of London, thought there was no doubt whatever that the nervous system had a direct effect on the nutrition of the tissues apart from vaso-motor changes, but whether or not this was done through a separate set of nerve-fibers was not proved. The secretion produced in a gland by stimulation of certain fibers looked in the direction of a special trophic nerve-supply. The degeneration of a muscle without inflammation where its nerve was severed pointed to a separation from its trophic center. But he believed with Dr. Seguin that most trophic disturbances following injuries of nerves were not due to loss of trophic influence. Such were panophthalmitis from lesion of the fifth nerve and various cutaneous disorders. They occurred especially when the injury was partial, and therefore apt to excite irritation. Dr. Weir Mitchell was, he added, of the same opinion. He should, however, expect that section of all the sensory nerves of a part would lead to an atrophy about their terminations similar to that seen in muscles from section of motor nerves. He doubted that there was a trophic center apart from the motor sensory and secretory centers. In the case of a muscle, he thought its motor center gave it its more highly organized structure. With severance of connection between the two, the highly organized neuro-muscular structure fell away to a lower plane of life. We could not as yet say that there was a heat center apart from muscular motor centers. The theory of anabolic and catabolic centers or nerve-fibers was not to his mind clearly proved as yet in its detail. Increased heat production and tissue waste had not been shown to result from the destruction of any known inhibitory or anabolic center. The influence to which we gave these names might be a result of an interference of nerves alike in function merely.

Mr. Victor Horsley, of London, did not wish to speak for himself, but to communicate the results of some experiments made by Dr. Frederick Mott, of London, which he thought had a remarkable bearing on the discussion to which he had just listened. It was difficult but necessary to divide the problem into three parts, and decide how far section of nerves induced lesions owing to true trophic disturbance, or to vaso-motor changes, or to loss of function. That vaso-motor changes were often the cause had been rendered improbable. Between loss of function and trophic disturbance it was harder to decide. Dr. Mott's experiments were made in a way which excluded both circulation and functional use as factors in the problem. He had produced changes in the nutrition of bone, and had seen that they were brought about by an active destructive process and not as a passive change. Dr. Mott had tied on one side certain anterior roots in the cauda equina of monkeys, and shortly afterward had found the femoral bone changed in structure on

that side, and markedly atrophied. On microscopical examination, its interior medullary structure was found thickly studded with osteoclasts. There was thus present an exaggeration of the normal process of absorption.

The Effect of Concussion of the Spine on the Reflexes.—Dr. F. T. Miles, of Baltimore, read a paper with this title in which a number of instances were related where marked symptoms had been present without visible changes being afterward found in the cord. In one case there had been loss of reflexes, loss of reaction to the electric current, the formation of bedsores, and of a large bleb where one foot had pressed against the other. Without a visible change in the cord or its circulation, all nervous functions could be destroyed by jar. He thought too little attention was given to the possibility of such cases. None were recorded among all the cases collected for the "Medical and Surgical History of the War of the Rebellion."

Dr. Wood believed that three different results might attend a severe jarring of the cord: 1. Hysteria, as seen in a case where a woman had collected one hundred thousand dollars from a railroad company to indemnify her for injuries which she had sustained by concussion of the spine in a collision, but, having married shortly afterward, had become a well and active woman. 2. Myelitis resulting from a minute hæmorrhage, and taking different forms. 3. The direct results of shock, arising from invisible injuries to the integrity of the gray matter, and causing symptoms due to either irritation or arrested transmission.

Pathology of the Thymus Gland.—Dr. A. Jacobi, of New York, read a paper with this title, and presented for examination a large number of frozen sections through the entire neck, which showed the relations of diseased thymus glands to surrounding structures. He remarked that medical literature contained scarcely any allusions to diseased states of this gland; it dealt mainly with its embryology, histology, and anatomy. Enlargement of the gland in young infants was not uncommon. Its substance being suddenly engorged by a change in the circulation due to croup or pneumonia, hæmorrhages might take place into the gland and the child be choked to death by pressure on the trachea. Its enlargement sometimes was of itself sufficient to cause choking. Various inflammations occurred in it; also sarcoma, tuberculosis, and syphilis. Diphtheria produced a general parenchymatous change; syphilis a cell proliferation as in the liver. Diseases of the thymus were not on the whole uncommon.

The Micro-organism of Syphilis.—Dr. F. S. Eve, of London, showed specimens illustrating the progress of the search for a specific germ producing the lesions of syphilis. No one doubted that there was one; its appearance and nature, however, were not known. It was very likely to be in some way similar to that present in tuberculosis; its product was a more or less similar proliferation of cells and formation of granulation tissue.

In making cultivations, matter was obtained from fresh papules without any medication, as by mercury, having preceded. In the present state of our knowledge there were three reasons for being doubtful of the existence of what we were accustomed to think of as a germ: 1. Syphilis can not be produced by inoculation in animals. 2. The micro-organisms found are certainly not uniform in shape. 3. They are so very few in numbers, considering the amounts of abnormal tissue which are produced.

The Micro-organism of Yellow Fever.—Dr. G. M. Sternberg, of the United States Army, gave a demonstration of his methods used in his investigations recently made at Havana for establishing the ætiology of the disease. The bacilli described by Frère and Finley he had not found regularly present; they could not be the cause of the disease. No one germ could be found in the intestinal contents as in cholera. However, in eight tenths of his cases he had found one new bacillus by using a 20-per-cent. gelatin medium. It turned out to be the same thing as the bacillus of Emerick and Esrè (the colon bacillus). It had a remarkable growing power. It also bore a dark to black feathery outgrowth.

The speaker, however, did not look to bacilli as the prime ætiological factor in yellow fever; but rather to some unknown volatile poison diffused through the air of an infected district.

Dr. W. H. Welch, of Baltimore, exhibited microscopic specimens showing the changes which followed unilateral and bilateral extirpation of the thyreoid gland. When half only was removed, the other half underwent hypertrophy so as to take on increased functional duty. But this was not done by an increase of similar gland tissue. The new tissue presented a modification in which the cells were much enlarged and the relations of size in the other component elements were widely changed.

Dr. T. M. Prudden, of New York, showed sections of the thyreoid gland in myxœdema, in some of which there was almost complete loss of gland substance.

NEW YORK SURGICAL SOCIETY.

Meeting of October 24, 1888.

The President, Dr. Lewis A. Stimson, in the Chair.

Contusion of the Abdomen, with Excessive Hæmorrhage; Laparotomy; Recovery.—Dr. McBurney presented a patient with the following history: C. W., a newsboy, twelve years old, was brought to the Roosevelt Hospital at three o'clock in the afternoon. A few minutes before admission, the boy, while running across a railway track, stumbled and fell with great violence across a rail, the full force of the fall being borne by the abdomen just above the umbilicus. The ambulance surgeon found him in a state of great shock, muscles relaxed, face pallid and covered with perspiration, pupils dilated. He had no radial pulse, was quite indifferent to surroundings, but answered questions feebly. On admission, he complained of much pain in the back, and was exceedingly sensitive to the touch all over the abdomen. There was no external sign of contusion. It was evident that he had suffered a very severe injury, but the speaker could not decide whether the shock was due to concussion of the sympathetic plexuses or to visceral rupture. No operation could be attempted in his prostrated condition, and he was treated by external heat and by rectal injections of whisky and hot water, hypodermics of whisky being also given. Eight hours later the boy's condition had somewhat improved. A feeble pulse of 160 could be felt; he was still mentally indifferent, was somewhat restless, and complained greatly when the abdomen was touched. Respiration 26, and the temperature 99·8° in the rectum. The abdomen was flat on inspection and dull on percussion on both sides—on the right side to within two inches of the umbilicus, on the left side to within four inches of the same point. The speaker suspected visceral rupture with hæmorrhage or extravasation of intestinal contents, and, although the boy's condition was very bad, he determined to open the abdomen, fearful that, if he did not do so, hæmorrhage might terminate life, or septic peritonitis be established. The operation was done, at 11 P. M., with the assistance of the house staff—Dr. Park, Dr. Brockway, and Dr. Harrison. The most careful antiseptic precautions were taken. An incision about four inches long was first made in the median line of the abdomen. Before the peritonæum was opened it bulged through the wound, and through it dark-colored blood could be seen. The peritonæum was then opened, and numerous large clots and

much fluid blood were removed, the quantity of blood being estimated to be about a quart. The incision was then necessarily extended so as to reach from just below the ensiform cartilage to two inches above the pubes, thus permitting of a visual inspection of the whole cavity. The cavity was then flushed and rapidly cleansed with distilled water as hot as could be borne. Some considerable extravasations about the colon and in the omentum were noted. The intestines were drawn out, protected by hot towels, and examined. No rupture was here found. A thick band of omentum was seen to pass through the right internal abdominal ring. It was adherent within a hernial pouch and was left in place. The subperitoneal extravasations being all seen in the right hypogastric region, and none elsewhere, the speaker now examined this region in detail. A single bleeding vessel, a branch of the pancreatico-duodenalis, was found at the lower edge of the duodenum, about an inch to the right of the pyloric orifice, and around this point peritonæum was found to be stripped off the intestine, and also from the adjacent edge of the stomach. The subperitoneal tissue in the immediate vicinity of the pylorus, and for two or three inches along the duodenum, contained extravasated blood. The single bleeding vessel was secured with fine catgut. The whole cavity was then again thoroughly cleansed with hot water, and by sponging rendered quite dry. The abdominal cavity was open forty-five minutes. The wound was closed with silver-wire sutures, which passed through the whole thickness of the walls, about half an inch apart. No drainage. The patient was returned to bed in an hour from the commencement of the operation. During the operation the pulse had improved considerably, probably owing to the stimulus of hot water and ether, and the speaker was sufficiently encouraged by the improvement to defer a resort to transfusion until it should become clearly necessary.

The boy recovered from the effects of ether well. During the night six minims of Magendie's solution were given, and frequent small rectal injections of whisky and occasional hypodermics of the same. The next day, at 9 A. M., his temperature was 103·8°; pulse, 160 and of increasing force.

In the evening the pulse was 110, and the general look of the patient much better. Vomiting, which was troublesome during the early morning, did not occur after midday. The abdomen continued to be very tender. Whisky and milk were cautiously given in small quantities by the mouth. Temperature in the evening, 100·8°.

From this time on the patient rapidly improved, and on the 17th, three days and a half after the operation, he had a natural evacuation from the bowels. No incident worth note occurred during convalescence, except the formation of a small subcutaneous abscess about one of the sutures.

On the 26th, thirteen days after operation, the last sutures were removed, and on September 4th, twenty-one days after operation, the patient went out to walk.

He was now presented in perfect health. The cicatrix was narrow and very strong, and no tendency to ventral hernia was to be noted.

In reply to a question by Dr. Gerster, the reporter said that the hæmorrhage was still going on when the abdomen was opened. The bleeding point was secured by passing a curved needle under it. As this vessel was small, most of the blood must have come from other vessels. There was about a quart in all.

Dr. GERSTER said that, although the case had terminated favorably under Dr. McBurney's hands, it might be said that the patient might have recovered without laparotomy. In the case reported the symptoms were such as to indicate the operation, though septicæmia was not a necessary consequence of the internal hæmorrhage. The success obtained was due to the promptness of action. No fixed rule could be laid down. The operator must be guided to a considerable extent by the wishes of the patient and his or her friends. He had seen patients who were operated upon when in collapse do well, while others, who were in good condition at the time of the operation, succumbed from shock.

Dr. BRIDDON said that every case must be judged by itself. He had recently performed laparotomy in two cases of recent injury to the abdominal viscera, one of which terminated fatally from shock, the other from general peritonitis. There was no doubt as to the justifiability of laparotomy when internal hæmorrhage was present.

Dr. MCBURNEY said that it was impossible to make a positive diagnosis in the case reported. There was profound shock at first, but the patient's condition subsequently improved so that an operation seemed to be justifiable. Dullness developed on both sides of the abdomen after the boy came under his observation, showing that there was an accumulation of blood in the cavity.

The Immediate Correction of Deformities resulting from Disease of the Hip.—Dr. V. P. GIBNEY read a paper with this title. (It will be published hereafter.)

Dr. WYETH asked if it would not be wiser in all these cases to make a clean section of the femur below the trochanter without trying to make extension. He had performed this operation in many cases, and had always had good results, without any bad symptoms.

Dr. BRIDDON did not see how simple section of the bone alone could correct a bad deformity, as there were often so many muscular and tendinous adhesions. In one instance he had fractured the femur when making very slight manipulations. He thought that section of the bone without simultaneous tenotomy would do little, if any, good.

Dr. WYETH said that the result was entirely different when the bone was broken than it was when a clean section. It was always easy to tenotomize the adductors and the tensor vaginæ femoris if necessary.

Dr. POORE said that he had generally been able to straighten the limb by extension without performing tenotomy.

Dr. ABBE said that he had divided the femur below the trochanter in three cases, and had been obliged to do tenotomy in addition in order to prevent the divided ends of the bone from being drawn forward. No suppurating sinuses were present.

Dr. GIBNEY said, in reply to Dr. Wyeth, that in ordinary cases in which no sinuses existed, section of the bone was all that was necessary, but when the adductors and the tensor vaginæ femoris were contracted it was better to divide them; if tenotomy was not done, the ends of the bone might be tilted so that they would unite at a bad angle. He never employed violence, but made steady traction until he felt the tissues give way. He did not believe that suppuration in his cases had ever been due to the manipulation.

Biliary Calculi removed by Cholecystotomy; Recovery.—Dr. ABBE presented specimens of biliary calculi removed from the gall-bladder of a woman, aged thirty, who had been suffering for eight or ten years from occasional attacks of hepatic colic. She had been jaundiced only twice. A globular swelling could be felt at the site of the gall-bladder only during the period of sharp colic. A vertical incision was made over the tenth rib, and the transverse colon was found to be adherent over the entire surface of the gall-bladder. It was evident on examination that gall-stones had at some time ulcerated through into the colon. It was necessary to strip off the latter for the space of an inch and a half. The gall-bladder was then

stitched to the abdominal wound and at once opened. About fifty calculi of different sizes were removed. The contents of the sac was a whitish fluid, showing that the cystic duct was obliterated. The former attacks of hepatic colic were caused by repeated ulceration of the wall of the gall-bladder communicating with the intestine. The patient made an excellent recovery.

Pott's Fracture with Peculiar Complications. — The President reported two cases of Pott's fracture with unusual complications. The first patient, a man twenty-five years of age, was admitted to the New York Hospital, September 14th, with a Pott's fracture of the right ankle. The outward displacement of the foot was well marked. The fibula was broken about two inches above the tip of the malleolus. The internal malleolus was broken off along its base and was very movable; on reduction of the displacement of the foot, it projected to a marked degree under the skin, lying well to the inner side of the plane of the internal surface of the tibia, and being still freely movable. All efforts to restore it to its place were unsuccessful. An incision was made on the inner side of the leg and foot, crossing and exposing the fragment, which was then found to have been rotated 90° about its antero-posterior axis, so that its broken surface was directed toward the skin and its apex lay against the side of the astragalus. The rotation was corrected by passing a blunt retractor between the fragments and pressing the apex of the malleolus downward. A strip of periosteum an inch long and half an inch wide had been torn from the inner surface of the tibia and remained attached to the malleolus. The patient made a good recovery. In the case of the second patient (admitted to the New York Hospital about October 1st) the lower fragment was not quite so large as in the first, and was much less freely movable, but it also projected beneath the skin and could not be reduced. A similar incision was made and the cause of the persistent displacement was found to be a similar strip of periosteum, torn from the tibia and adherent to the malleolus, which had fallen in between the latter and the astragalus. This patient also made a good recovery. So far as the reporter knew, no other examples of these complications had been reported.

Meeting of November 14, 1888.

The President, Dr. Lewis A. Stimson, in the Chair.

Dr. Abbe presented a patient with severe cervico-brachial neuralgia, upon whom he proposed to operate (case to be reported subsequently).

Radical Cure of Hernia.—Dr. McBurney presented a male patient, aged sixty-one, upon whom he had operated four months before for cure of inguinal hernia. The patient was feeble and his tissues lax, while the hernia was of large size. The condition of the parts even after the lapse of such a short time seemed to justify the belief that the cure was permanent. The entire canal, except enough space for the spermatic cord, was filled by firm cicatricial tissue.

Syphilitic Perforation of the Hard Palate; Closure of the Opening by a Plastic Operation.—Dr. McBurney also presented a boy who had had a chancre two years before, followed by secondary and tertiary manifestations. Six months ago he had an aperture in the hard palate on one side of the median line, and two months later another appeared on the opposite side; the two coalesced, forming a median perforation half an inch wide and an inch and a half long, at the bottom of which the vomer could be seen. The patient had worn a rubber plate over it for some time. As the roof of the mouth was unusually vaulted, the reporter was able to close the opening by making a long incision to relieve tension along the roots of the teeth on each side, then freshening the soft parts around the edge of the aperture, freeing them from the subjacent bone with an elevator, and approximating them with sutures. The wound healed perfectly ten days after the operation, the patient being fed with a tube during the first four days. The voice was now perfect.

In reply to a question by the President, the reporter said that, in the case of the patient with hernia, cicatrization had been complete at the end of seven weeks. It was very important to keep patients in bed as long as possible. They were never allowed to wear a truss after the operation.

Dr. Wyeth asked Dr. McBurney if a recurrence had ever been noted in any of his cases. He replied that there had never been one where all the steps of the operation had been carried out. In the only two cases in which the hernia had returned the sacs were small and themselves completely reducible, so that the reporter had not ventured to search for and draw them down; now he would not hesitate to search for and reproduce the sac and tie it off, as there was always a tendency to recurrence when it was not entirely obliterated.

Dr. Abbe said that he had become a thorough convert to Dr. McBurney's method, and had operated in this manner between twenty-five and thirty times with invariably good results. He cited a case of Dr. McBurney's in which there was a slight recurrence, although the patient did not require a truss.

Dr. McBurney explained that this was one of the two cases to which he had referred in which all the steps of the operation were not taken. There was an incomplete hernia above the canal, and the sac had no neck, so that he did not interfere with the shallow protrusion of peritonæum; now he would extirpate such a sac, and sew the edges together. In the other case of recurrence there was a bubonocele, the sac slipping back into the peritoneal cavity after the canal was opened.

The President did not see why the fact that the sac was not removed in these two cases should interfere with a radical cure.

Dr. McBurney explained that when such a sac was not removed there was a space filled with areolar tissue at the upper end of the canal remaining after the operation. In order to prevent the intestine from protruding, the peritonæum must be rendered smooth by ligating the sac. Otherwise there was nothing to keep the sac from protruding except the dressing. In reply to a question by Dr. Wyeth, he said that Macewen did not extirpate the sac, but folded it in.

Dr. Wyeth thought that Macewen's method offered an advantage in that a convex surface was presented on the peritoneal side of the ring, rather than a concave one.

Dr. Abbe questioned if the boss described by Macewen was really formed as he said. The sac when inverted became twisted and really formed a sort of funnel. The speaker had only once had an opportunity to observe the appearances post mortem and had found a depression opposite to the ring rather than a boss. The sac was always quite thin, and did not form a protuberance when bunched together.

Dr. McBurney said that if a boss was really formed there must necessarily be a fossa on either side of it, which was an unnatural condition to have at this point within the peritoneal cavity and one which would rather favor the formation of hernia. It was difficult to see how the ring could be entirely filled with the inverted sac, as the latter was often exceedingly thin and small; moreover, in congenital hernia there was usually no sac to roll up. While Macewen's results were undoubtedly brilliant, they did not seem to depend on the boss.

Dr. Abbe described the post-mortem appearance of the peritoneal wound in the case of a patient who died of cardiac paralysis two weeks after an operation for the radical cure of

hernia by McBurney's method. The peritoneal cavity was absolutely normal; at the internal ring there was merely a stellate cicatrix, lying opposite the upper end of the granulating wound.

Giant-celled Sarcoma of the Astragalus; Excision of the Bone.—The PRESIDENT presented a patient, with the specimen removed by operation. The young man, aged twenty-five, entered the New York Hospital the previous summer giving a history of pain and sensitiveness in the foot of eighteen months' standing. The dorsum of the foot was the seat of general swelling. On making longitudinal incision along the antero-external aspect of the leg and foot, the ankle joint was opened and the tumor found in the head and neck of the astragalus. The entire bone was removed. The other bones presented a normal appearance. The patient made a rapid recovery and had been walking about for over a month. There was slight motion at the ankle joint. On microscopical examination of the growth, it proved to be a giant-celled sarcoma. The reporter had removed the astragalus in five cases during the summer, a fairly good functional result being obtained in each case.

Dr. MCBURNEY asked if a diagnosis had been made before the operation.

The PRESIDENT replied in the negative. There was, he said, simply a uniform swelling on the dorsum of the foot and at the sides of the ankle without thickening of the skin, as in tuberculosis, and the diagnosis before operation was chronic arthritis of doubtful origin.

Anthrax Maligna.—A paper on this subject was read by Dr. MURRAY. (It will be published hereafter.)

The PRESIDENT asked if the zone surrounding the slough was anæsthetic, as this was a peculiar feature of the affection. The reader replied that it was, to some extent.

Dr. ROCKWELL asked why the reader did not give corrosive sublimate more frequently.

Dr. MURRAY replied that he thought that it was sufficient to administer it four times daily.

Dr. ROCKWELL said that he had given gr. $\frac{1}{24}$ to gr. $\frac{1}{30}$ every two or three hours to adults in cases of diphtheria without any bad effects.

Dr. BRIDDON said that he had given gr. $\frac{1}{40}$ to children without having trouble.

Dr. ROCKWELL said that he had administered a grain a day in hourly doses for four days to a child with diphtheria, the patient recovering.

In reply to Dr. Gibney, the reader said that he applied powdered bichloride of mercury to the wound; within twenty-four hours it turned black, probably being changed to calomel.

Eburnated Osteoma of the Frontal Sinus; Operation; Cure.—Dr. KAMMERER presented a specimen of osteoma which he had removed from a girl of seventeen, who, six years before, fell on a stone pavement, striking full upon her face. Six months ago she noticed that the region of the nasal bones began to broaden, and that she also experienced difficulty in breathing through the right nasal fossa, which is now entirely closed. The latter was laid open by an incision along the back of the nose, and the tumor was separated from its attachment to the frontal bone with a chisel. It could only be removed *in toto* after excising the edge of the superior maxilla bordering on the anterior nares. The mass measured 3 × 3 × 1½ inches, and filled the entire fossa, deflecting the septum to the left.

Separation of the Internal Epicondyle.—Dr. KAMMERER showed a specimen that he had removed in resecting the elbow of a man aged sixty-one. He found the epicondyle separated from the humerus, and attached to it by fibrous tissue. There were no other injuries of the bone. On section of both portions across the line of separation, the inner fragment was found to be lined with hyaline articular cartilage. It was doubtful whether the epicondyle had not been united to the humerus at all, or had been separated by a fracture, a new joint forming subsequently.

Ovarian Cyst with very long Pedicle, simulating Cyst of the Kidney or Liver.—Dr. MCBURNEY showed a large multilocular ovarian cyst which he had removed, on November 6th, from a patient, aged twenty-five, who had an abdominal tumor of two years' standing. The uterus was freely movable, and the ovaries could not be identified. The abdomen was much distended, and a large tumor could easily be felt, which seemed to be continuous with the liver, the pelvis and iliac fossæ apparently containing intestine only. Flatness on percussion existed from the fifth rib on the right side, and in the median line continuously downward to within two inches of the crest of the ilium. The lower edge of the liver was apparently felt below the edge of the ribs, and below this, and continuous with it, there was a cystic tumor.

A six-inch median incision was made, exposing a tense cyst, which was punctured with a trocar and emptied. A much larger mass, of firm consistence, remained; the latter displaced the liver upward. On passing the hand into the abdominal cavity, this mass was found to be composed of numerous small cysts, with firm walls. The whole tumor was now drawn out of the cavity, and proved to be a multilocular ovarian cyst, springing from the left side, with a pedicle at least six inches in length. There were no adhesions, and the pedicle was tied with silk and returned to the cavity. The right ovary contained a number of small cysts and was removed. No drainage-tube was used.

[NOTE.] *November 27th.*—The patient is now entirely well, and is walking about.

Rapid Formation of a Pulsating Tumor following Stab-wound of an Artery.—The PRESIDENT reported the case, with specimen, of a young man who was stabbed in the front of the forearm, about three inches above the wrist, with a long, sharp knife. The wound was sutured by the ambulance surgeon, and healed promptly; but the patient applied to the hospital on account of a pulsating tumor that had quickly formed at the site of the wound. An incision was made along the line of the radial artery, and a thin-walled sac was found, which was opened, and a quantity of blood-clot was turned out, when a long slit was found in the artery. The latter had been split longitudinally, the knife transfixing both sides of the vessel. It was unusual to have an impulse and murmur so soon after this accident. The artery was tied on both sides of the wound and the intermediate piece removed. The patient made a good recovery. The specimen shows the two stumps of the artery, connected by two smooth bands half an inch long, into the interval between which each end of the artery freely opens.

NEW YORK CLINICAL SOCIETY.

Meeting of September 28, 1888.

Dr. GEORGE M. TUTTLE in the Chair.

Adenoid Hypertrophy in the Pharynx; a New Instrument for its Removal.—Dr. D. B. DELAVAN presented an unusually large adenoid hypertrophy of the tissues at the vault of the pharynx in a child five years of age, which had the usual symptoms of mouth-breathing (although able in some degree to breathe through the nose), of restlessness at night, etc. But the most serious symptom in the case was diminution of the hearing power, due to the large growth covering the orifice of both Eustachian tubes. The watch could be heard at only about two inches on one side and four on the other. The child was also unable to articulate certain sounds. After the operation the

hearing distance tested by the same watch increased on one side to five inches and on the other to fourteen, and doubtless, after healing of the surface from which the growth was removed, the hearing would still further improve.

The operation was performed with a new instrument, which he exhibited, being a further modification of the much-modified instrument of Loewenberg. It was simpler and rather more effective than the first modification of Morell Mackenzie and the last one of Major, of Montreal. The several pieces of which it was composed could be taken apart and very readily cleansed and disinfected. The handle could be unscrewed just as in the ordinary amygdalotome, so that if it was necessary to have a series of knives (and it did seem desirable to have at least two sizes) they could all be adjusted to one handle. There were only certain cases, perhaps exceptional ones, in which the instrument was specially applicable. They were those in which the growth was of considerable size, and lay principally in the vault of the pharynx. He had a less perfect instrument than the one presented with which he had operated successfully six times. Any remnant of the growth could be scraped away with the fingernail, suitable curette, or forceps.

Dr. B. F. Curtis inquired if hæmorrhage had been considerable after the use of such instruments.

Dr. Delavan replied that there was always some hæmorrhage, and when the Loewenberg forceps was used it was considerable. While it had been supposed that crushing and tearing the tissues would cause less hæmorrhage than to cut them, yet in practice it had been found that operations with cutting instruments had been less bloody. He had not known such hæmorrhage to take place as not to be readily controlled.

Dr. H. M. Biggs inquired what was the structure of the growth.

Dr. Delavan replied that it was like that of the pharyngeal tonsil. The amount of fibrous material varied greatly. One could not be assured beforehand that the growth would not prove tough and difficult to remove. It was more friable in young patients.

Dr. L. E. Holt inquired regarding the frequency of the affection. He had recently read Dr. Hooper's article in which he reported over one hundred cases, which he thought must be a large number in the practice of one physician. He asked also what evidence there was that the disease was congenital.

Dr. Delavan said that Dr. Hooper had operated in over two hundred cases, but one could not judge of the relative frequency of the affection by Dr. Hooper's practice, for to him were sent an unusual number of this particular class of cases. In the public schools adenoid growths in the vault of the pharynx were present in about three per cent. of the pupils. It would be difficult to give undisputed proof of the fact that the disease was congenital. The child had always been a mouth-breather, and as it grew, other symptoms pointing to the growth in the pharynx made their appearance. It did not follow that the growth in children was always present at birth. It might develop afterward. If attention were directed to it, he thought the condition could be recognized at a very early age.

Dr. R. J. Hall, speaking of hæmorrhage, mentioned the case of a woman who was brought to Bellevue Hospital with the history that about twenty-four hours previously she had had an adenoid tumor removed from the pharynx in a city institution, and, hæmorrhage not ceasing, she was brought to the hospital. Her condition was not critical, and the bleeding was readily stopped by a tampon.

The Chairman inquired whether such growths were common in the adult, and whether they attained a size to require removal.

Dr. Delavan said that when they appeared in adults it was believed that usually they were present in childhood. It was not likely that they would develop *de novo* after the twentieth year. Usually when a child had such growths they began to atrophy when the child attained to puberty, but the physician should not wait, allowing the symptoms to which they gave rise to continue a number of years, but should at once remove them.

Meeting of October 26, 1888.

The President, Dr. J. West Roosevelt, in the Chair.

Tuberculosis of the Genito-urinary Tract.—Dr. F. H. Markoe read a paper with this title. (It will be published hereafter.)

Dr. B. F. Curtis remarked that out of two thousand cases of tuberculosis which had come under his notice at St. Luke's Hospital only half a dozen had been cases of tubercular inflammation of the testis, and he had concluded that the affection was a rare one comparatively. It was an interesting question to him whether genital tuberculosis was a thing to which those were especially liable who had had no venereal history previous to the connection from which a gonorrhœa, followed by a genital tuberculosis, resulted. He had seen several cases where, in young lads and married men, a genital tuberculosis had followed a gonorrhœa.

Dr. Markoe responded that Kocher had made gonorrhœa a not infrequent cause of the development, at least, of a tuberculosis of the testicle.

The President thought that it was proper to take into consideration the very large number of those who had gonorrhœa without the development of local tuberculosis in estimating the importance of the former as a cause of genital tuberculosis.

Dr. Curtis then remarked that the second case related in Dr. Markoe's paper seemed to indicate the value of a removal of a diseased testicle as a surgical procedure tending to prolong life. He asked why the testicle had not been removed in that instance?

Dr. Markoe replied that the inflammation had been of so violent a sort, and the whole progress of the disease so rapid and spreading, that no opportunity, owing to the state of the patient, had presented for surgical interference. However, it was very rare to have such a rapid course, and there was ordinarily abundant opportunity for extirpation of a localized focus of tubercular matter in the genital tract. It had at least the result of removing diseased tissue which would cause a very rapid tubercular process in other parts of the body. The disease might go on, but it would be at a much less destructive rate.

In reply to a question from Dr. A. A. Smith as to the possibility of an early diagnosis of genital tuberculosis, he thought we must make it usually by exclusion. But in case the inflammation was so situated that there was an outlet for its products into the urinary tract, then, by the method of injecting the urinary sediment into healthy animals and watching for the development of phthisis in them, we had a most excellent means of determining the nature of the inflammation that might be present, as to whether it was phthisical or not.

Dr. G. E. Brewer, speaking of the diagnosis, considered it a simple matter. Genital tuberculosis could only be confounded with acute gonorrhœa, epididymitis of gonorrhœal origin, and syphilis of a subacute sort. He would like to hear from Dr. Markoe by what rules he was guided in deciding on operation.

Dr. Markoe replied that he considered operation called for when the tubercular process was not an active one and the health was otherwise good. Under such conditions he had found extirpation of diseased testicles, especially bilateral extirpation, an efficacious measure in checking the course of the disease,

even after some tuberculous deposits had appeared in the lungs. It at least made the later months of the patient's life far more endurable, since a subsequent inflammation of the prostate was thus prevented, with its very distressing secondary results, stoppage of the free escape of urine, etc. Two cases had been reported where, after the removal of both testicles, the patient had lived for many years in good health, and died of a non-tuberculous affection. At the autopsy no tuberculous deposits had been found in any part of the body. A consideration of such cases had led him to believe that genital tuberculosis came from a local infection, the virus entering by the urethra and taking up a residence in the large venous plexus about the testicle. He did not understand by what path the micro-organisms reached the testicle, nor how they could ascend far up the urethra against the flow of the fluids. He did not contradict the statements made by authorities that tuberculosis of the kidney began only as a constitutional manifestation of the disease.

The PRESIDENT here observed that in numerous autopsies he had found tubercular deposits in other parts of the genital tract than the testicle, but that in none of these cases had a diagnosis of the condition been made during life.

Dr. MARKOE thought that in these cases the urinary sediment had not been tested by injection into animals. In one instance that he knew of a diagnosis could be not obtained from any other symptoms, even just before the fatal termination of the disease.

Dr. W. D. MCKIM cited an instance where, by the removal of diseased bone in a tuberculous joint, a tuberculous deposit in the apex of the lung had disappeared of itself. There had been unquestionable signs of the presence of the tubercular process in the lung; they began to lessen at once after the removal of the diseased bone, and in a short time had entirely passed away. Other cases had been reported by competent surgeons where operation on a diseased joint had arrested a tuberculous process in the lungs, and had prolonged life for many years.

Dr. KELLY, of Philadelphia, and Dr. W. H. KATZENBACH, thought that in the absence of râles, in the case cited by Dr. McKim, there was no conclusive evidence of a tuberculous condition.

The PRESIDENT observed that in most of such cases the tubercular deposits were diffused, and led to no pneumonia or other condition to give rise to râles.

Book Notices.

BOOKS AND PAMPHLETS RECEIVED.

Studies in Pathological Anatomy. By Francis Delafield, M. D., Professor of Pathology and Practical Medicine, College of Physicians and Surgeons. Volume II. Part 3—Acute Bright's Disease. With Forty-two Plates. New York: William Wood & Co., 1888.

What to do in Cases of Accidents and Emergencies: describing the Symptoms in each Case and how to treat them on the Moment. With a List of the Principal Poisons, which, if taken, require Prompt Treatment; their Remedies and Antidotes. Designed for Family and General Use. By Joseph B. Lawrence, Medical and Surgical Nurse. New York: J. H. Vail & Co., 1888. Pp. 9–11 to 139.

Sull' idrogeno solforato in rispetto alla sua influenza sull' organismo animale sano ed ammalato. Studio sperimentale. Pel G. Petteruti, Dottore in Chimica e Farmacia; Dottore in Medicina e Chirurgia, etc. Insieme ad alcuni esperementi batteriologici pel Dott. G. Marcone. Napoli: Nicola Jovene & Co., 1888. Pp. 3 to 180.

Explanatory Notes on Dr. Keyes's Investigation of Electrolysis. By C. R. Dickson, Kingston, Canada. [Reprinted from the "New England Medical Monthly."]

The Technique of Ovariotomy as practiced at the University Hospital by Dr. Goodell. By Lewis H. Adler, Jr., M. D., Resident Physician at the University Hospital, Philadelphia. [Reprinted from the "Medical News."]

Further Studies on Grammicolepis Brachiusculus Poey. By R. W. Shufeldt, M. D., C. M. Z. S. [Reprinted from the "Journal of Morphology."]

On the Affinities of Aphriza Virgata. By R. W. Shufeldt, M. D., C. M. Z. S. [Reprinted from the "Journal of Morphology."]

Sixth Biennial Report of the Trustees, Superintendent, and Treasurer of the Illinois Eastern Hospital for the Insane, at Kankakee, September 1, 1888.

The Influence which the Discovery of Cocaine has exerted upon Ophthalmic Surgery. By Samuel Theobald, M. D. [Reprinted from the "Transactions of the Medical and Chirurgical Faculty" of the State of Maryland.]

Report of the Chief of the Bureau of Medicine and Surgery to the Secretary of the Navy, 1888.

Report of the Surgeon-General of the Army to the Secretary of War, for the Fiscal Year ending June 30, 1888.

Our Hospitals for the Insane. By Hiram Corson. [Reprinted from the "Philadelphia Medical Times."]

An Almost Unrecognized Cause of Disease in Young Children. By Hiram Corson, M. D., Conshohocken, Pa. [Reprinted from the "Medical and Surgical Reporter."]

Placental Development. By Henry O. Marcy, A. M., M. D., LL. D., etc. [Reprinted from the "Transactions of the Ninth International Medical Congress."]

The Histology and Surgical Treatment of Uterine Myoma. By Henry O. Marcy, A. M., M. D., LL. D., etc. [Reprinted from the "Transactions of the Ninth International Medical Congress."]

The Eye of the Adult Imbecile. By Charles O. Oliver, M. D., Philadelphia, Pa. [Reprinted from the "Transactions of the American Ophthalmological Society."]

The Climate of the Southern Appalachians. By Henry O. Marcy, A. M., M. D., LL. D., etc. [Reprinted from the "Transactions of the Ninth International Medical Congress."]

Miscellany.

Diphtheria in Boston.—A correspondent writes: Boston is again suffering from diphtheria. It is not alarming enough to be considered an epidemic, yet it has spread to such an extent that physicians are solicitous in making strenuous efforts to keep the disease within its normal bounds. The lack of immediate success in this direction is due in part to the neglect of our former city governments to provide special hospitals and other quarantines for this disease similar to those which are at the command of the health authorities in the case of small-pox. A member of the Board of Health recently said: "In this city diphtheria is more to be dreaded than small-pox. The only way properly to fight a contagious, death-dealing disease is to concentrate all of the cases at one point. This can be done very satisfactorily in the case of small-pox, but it is at present impossible in the case of diphtheria, for the only accommodations for the treatment of diphtheria are those provided at the City Hospital, which are far too limited. Then, again, public sentiment helps the authorities to exterminate small-pox. Everybody dreads it, if only for its loathsomeness, and the relatives of a small-pox patient are only too willing to have him removed from the house. On the other hand, relatives of a person who is afflicted with diphtheria, especially in a mild form, object in nearly every instance to have him taken from the house, and it is exceedingly difficult to isolate a case of this disease, particularly in tenement-houses. The city physician visits every case, and in each instance a warning card is placed in a conspicuous place on the exterior of the house. Very often these cards are maliciously torn down, and, oftener still, the occupants of the house destroy the cards; for, very curiously, there seems to be a feeling that

diphtheria and scarlet-fever cards are labels of disgrace. That, of course, is absurd; but one man lately made no attempt to conceal the fact that his objections to having a diphtheria card placed on his house were based on that ground. Had some other person followed this rule of the board, then perhaps the child of the man referred to would not have had diphtheria."

The appended table shows the number of cases of diphtheria in the different wards of the city in 1888 and 1887, and it should be stated that the percentage of deaths from this disease to the number of cases reported was 33·12 in 1888 and 30·03 in 1887:

Ward.	1888.	1887.	Ward.	1888.	1887.
1. East Boston.....	63	43	15. South Boston....	52	56
2. " "	17	40	16. South End.....	71	30
3. Charlestown.....	15	34	17. " "	33	37
4. "	32	21	18. " "	41	21
5. "	27	24	19. Roxbury	104	85
6. North End.....	126	49	20. R'xb'y & Dor....	95	61
7. " "	85	56	21. Roxbury.....	41	38
8. West End.....	35	47	22. "	52	35
9. " "	13	22	23. W. Roxbury.....	49	95
10. "Down town"...	16	6	24. Dorchester	126	78
11. Back Bay.	33	31	25. Brighton.....	148	25
12. Cove.....	27	10	Totals.....	1,390	1,044
13. South Boston....	42	44			
14. " "	47	56			

Mortality in Cities in the United States.—The following table represents the mortality in the cities named, as reported to Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, and published in the abstract of sanitary reports received by him during the week ending January 18th:

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—									
				Cholera.	Yellow fever.	Small-pox.	Variolоїd.	Variolla.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y....	Jan. 12.	1,550,372	739	..	..	..	..	..	..	4	49	54	24	9
Philadelphia, Pa...	Jan. 5.	1,040,245	366	..	..	..	..	..	..	10	14	4	..	2
Brooklyn, N. Y....	Jan. 5.	814,505	345	..	..	..	..	..	..	3	9	25	5	9
Brooklyn, N. Y....	Jan. 12.	814,505	344	..	..	..	..	..	..	1	9	29	5	4
Baltimore, Md.....	Jan. 12.	500,343	149	..	..	..	..	..	..	2	1	3	..	2
St. Louis, Mo	Jan. 5.	440,000	150	..	..	..	..	..	..	..	3	10	..	....
San Francisco, Cal.	Jan. 4.	330,000	108	..	..	1	..	..	..	4	..	2	..	1
Cincinnati, Ohio...	Jan. 12.	255,139	99	..	..	..	..	..	..	2	..	7	..	....
New Orleans, La...	Jan. 5.	248,000	105	..	..	..	..	..	..	1	..	3	..	....
Cleveland, Ohio....	Dec. 15.	227,861	68	..	..	..	..	..	..	2	..	5	..	....
Pittsburgh, Pa.....	Jan. 5.	220,000	90	..	..	..	..	..	..	6	2	1	1	1
Pittsburgh, Pa.....	Jan. 12.	220,000	104	..	..	..	..	..	..	3	..	4	..	1
Milwaukee, Wis ...	Jan. 12.	200,000	70	..	..	..	..	..	..	1	4	4	..	....
Louisville, Ky.....	Jan. 12.	200,000	57	..	..	..	..	..	..	3	..	2	..	....
Minneapolis, Minn.	Jan. 5.	180,000	37	..	..	..	..	..	..	1	1	1	..	....
Minneapolis, Minn.	Jan. 12.	180,000	45	..	..	..	..	..	..	2	3	4	..	....
Kansas City, Mo...	Jan. 12.	180,000	34	..	..	..	..	..	..	..	..	..	..	....
Newark, N. J.....	Jan. 15.	179,000	75	..	..	..	..	..	..	3	..	3	..	....
St. Paul, Minn.....	Jan. 7.	175,000	31	..	..	..	..	..	..	1	1	2	..	....
St. Paul, Minn.....	Jan. 12.	175,000	63	..	..	..	..	..	..	2	..	..	..	....
Rochester, N. Y....	Jan. 5.	120,000	26	..	..	..	..	..	..	..	1	..	..	1
Rochester, N. Y....	Jan. 12.	120,000	39	..	..	..	..	..	..	1	..	4	..	1
Richmond, Va.....	Jan. 12.	100,000	37	..	..	..	..	..	..	..	..	..	..	....
Denver, Col.....	Jan. 11.	96,000	46	..	..	1	..	..	..	1	1	2	..	....
Toledo, Ohio	Jan. 11.	80,000	22	..	..	..	..	..	..	..	..	1	..	....
Camden, N. J.....	Jan. 3.	70,000	21	..	..	..	..	..	..	2	2	..	..	....
Nashville, Tenn....	Jan. 12.	65,153	20	..	..	..	..	..	..	1	..	..	..	....
Fall River, Mass...	Jan. 12.	65,000	30	..	..	..	..	..	..	..	2	1	..	....
Charleston, S. C....	Jan. 12.	60,145	27	..	..	..	..	..	..	1	..	..	..	1
Lynn, Mass.....	Jan. 12.	50,000	.....	..	..	..	..	..	..	..	..	..	..	....
Manchester, N. H..	Jan. 5.	42,000	9	..	..	..	..	..	..	..	..	..	..	....
Galveston, Texas..	Jan. 4.	40,000	6	..	..	..	..	..	..	..	..	..	..	....
Portland, Me	Jan. 12.	40,000	.....	..	..	..	..	..	..	..	..	..	..	....
Davenport, Iowa...	Jan. 5.	33,715	8	..	..	..	..	..	..	..	..	4	..	....
Davenport, Iowa...	Jan. 12.	33,715	.....	..	..	..	..	..	..	..	..	4	..	....
E. Saginaw, Mich..	Jan. 12.	33,000	7	..	..	..	..	..	..	..	..	..	..	....
Burlington, Iowa..	Jan. 4.	30,166	.....	..	..	..	..	..	..	..	1	..	..	....
Altoona, Pa.....	Jan. 5.	30,000	5	..	..	..	..	..	..	..	..	..	..	....
Altoona, Pa.....	Jan. 12.	30,000	2	..	..	..	..	..	..	..	..	..	..	....
Auburn, N. Y.....	Jan. 12.	26,000	7	..	..	..	..	..	..	..	..	1	..	....
Haverhill, Mass....	Jan. 12.	25,000	5	..	..	..	..	..	..	1	..	..	..	....
Newport, R. I.....	Jan. 10.	22,000	7	..	..	..	..	..	..	..	..	2	..	....
Keokuk, Ia.....	Jan. 12.	16,000	3	..	..	..	..	..	..	..	..	..	..	....
Pensacola, Fla.....	Jan. 5.	15,000	5	..	..	..	..	..	..	..	..	..	..	....
Pensacola, Fla.....	Jan. 12.	15,000	7	..	..	..	..	..	..	..	..	..	..	....

The Health of Connecticut.—According to the State Board of Health's "Monthly Bulletin" for December, the whole number of deaths reported was 950, including 2 from measles, 4 from scarlet fever, 10 from cerebro-spinal fever, 68 from croup and diphtheria, 6 from whooping-cough, 4 from erysipelas, 24 from typhoid fever, 8 from malarial fever, 6 from typho-malarial fever, and 5 from puerperal fever. There were also 125 deaths from consumption, 82 from pneumonia, and 30 from bronchitis.

The Health of Kansas City, Mo.—According to the Health Department's "Weekly Return" for the week ending January 19th, there were 38 deaths, including 1 from diphtheria, 2 from malarial fever, 1 from typhoid fever, 1 from typho-malarial fever, 3 from meningitis, 4 from pneumonia, and 1 from tetanus.

ANSWERS TO CORRESPONDENTS.

No. 249.—1. To the secretary of the City Board of Health. 2. No. 3. At once if you wish. 4. They are determined by the July civil-service examination.

No. 250.—1. Diplomas must be certified to by the Secretary of the Interior, whose signature is in turn certified to by the Resident Minister of the country at Washington. The applicant must then pass an examination before a board appointed by the Faculty of Medicine of the country. 2. They are said to be from $20,000 to $60,000.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

THE ANATOMY OF THE NASAL CHAMBERS.*

BY HARRISON ALLEN, M. D.,
PHILADELPHIA.

THE anatomy of the nasal chambers bears a close relation to their clinical states, and must always repay the physician who makes them the subject of study.

The descriptions which form this essay will be confined, in the main, to the structures which can be seen in the living subject.

I shall consider the shape of the anterior portion of the middle turbinated bone and associated parts, the shape of the posterior part of the same, the difference in diameter of the chambers, and the boundaries of the naso-pharynx directly back of the chambers.

The Shape of the Anterior Part of the Middle Turbinal.—The middle turbinal, when examined by anterior rhinoscopy, presents a stout anterior border which extends vertically, and an inferior border seen foreshortened, extending horizontally for a variable distance.

The vertical border varies both in position and shape. It may, as a rule, lie in the plane of the posterior border of the ascending process of the maxilla, or be advanced well into the external nose so as to be placed between the process last named and the septum. The border is, in the majority of instances, thin and compressed, and retains a diameter not over 2 or 3 mm., but it may be much wider, and attain in rare instances estimated diameters of 6 to 10 mm.† Examination of the ethmoid bone in the skeleton shows the increase of width to be due to the inflation of the bone by two or more interspaces occurring between the vertical walls. The anterior portion of the middle turbinated bone may be said to be separated from the posterior portion at a vertical plane which passes through the anterior ethmoidal foramen and the line of the suture between the malar and sphenoid bones. The part of the nasal chamber which lies between this plane and the ascending process of the maxilla is wider than elsewhere. It is bounded laterally by the uncinate process of the ethmoid bone and the lacrymal bone, inferiorly by the suture between the horizontal plates of the maxilla and the palatal bones, anteriorly by the plane of the posterior borders of the ascending process of the maxilla, and posteriorly by the plane of the anterior ethmoidal foramen. Hanging directly within this space is the anterior portion of the middle turbinated bone.

The following structures lying within the anterior part of the nasal chamber may become inflated—viz., the anterior portion of the middle turbinal, the anterior ethmoid cells,‡ and the points of junction of the middle and superior turbinal with the ethmoid bone proper. No inflated part occurs in the posterior portion. The anterior portion is never scrolled.

The inferior free border of the anterior portion of the middle turbinated bone may be abruptly bent and be free from surrounding parts or be pressed against them. The anterior portion is distinguished clinically from the posterior by the disposition shown for the bone to be covered with spicules or the whole region to be hyperostosed. The membrane is often abnormally thickened at this place alone. The bone, when denuded of its membrane, is found to be separated from the rest of the turbinal by a groove.

The septum being in no instance perfectly straight, but presenting wavy surfaces (even when not grossly deviating from a vertical plane), it is possible for the inflated anterior portion of the middle turbinated bone to be concealed at the sides while freely exposed in front.

Numbers of instances have been seen in which the anterior border was not inflected, but of wafer-like thickness, yet the bone was found to be greatly inflated a short distance back.

The importance of this knowledge in making clinical examinations is so evident as to call for no comment.

The anterior ethmoid cells often form a distinct structure. A rounded mass which resembles the larger end of a distended pea-pod may be seen occasionally projecting into the nasal chamber at the widened anterior part. It u ually lies back of the uncinate process, which may be widened and placed nearly transverse to the chamber, and thus be held between it and the nasal septum (as in skull, No. 1,432, Peruvian, in the Academy of Natural Sciences of Philadelphia), or projects more directly forward than in the instances given, when it occupies the space between the uncinate process and the lacrymal bone, and can be seen only after this bone has been removed (see skull, Peruvian, McCracken series, in the Academy of Natural Sciences of Philadelphia). The entire anterior portion of the ethmoid mass may be distended, but without a distinctly projecting mass being formed (No. 1,032, Peruvian, in the Academy of Natural Sciences of Philadelphia, will serve as an illustration).

I have seen cases where intense pain of an inflammatory type was located directly over this anterior inflated part of the ethmoid bone, which was relieved by drilling into the parts from in front.

The inflated parts at the places of junction of the turbinals with the main portion of the ethmoid are never of large proportions, but may exert injurious pressure against the septum, especially in the instance of the superior turbinal.

A question may here be answered as to the connection between the forms of the middle turbinated bone and disease of the bone and its membranes. I have found, both in children and adults suffering from atrophic catarrh, a simple and compressed anterior portion.

The lower free border anteriorly may be also inflated.

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* Read before the American Laryngological Association at its tenth annual meeting.

† Greater diameters have been observed by Zuckerkandl ("Anat. der Nasenhöhle.")

‡ The term cyst used by Bayer ("Centralbl. f. Laryng.," ii, 237) and Glassmacher ("Berl. k. Wochensch.," 1884, No. 30) is probably the same as the inflated part as above denoted. Since they are not morbid, but may simply become the seat of disease, it was thought best to avoid a term of pathology.

An S-shaped anterior portion has been observed in adults only. The inflated form is, however, absent in all ages. In chronic nasal catarrh I have met with all the above varieties.

The Shape of the Posterior Part of the Middle Turbinal.—The hinder part of the middle turbinal as seen by posterior rhinoscopy either entirely occupies the upper part of the choana or inclines obliquely downward and inward. In the latter instance, a space is formed through which a small portion of the interior of the chamber can be seen. The superior turbinal is less commonly seen in the choana than is shown in the figures of the clinical text-books. I have commonly found the right middle turbinal less inclined than the left, and it may be horizontal at the upper part, a condition very rarely seen on the left side. The left turbinal is often nearly vertical and held in a narrowed choana. A deflected septum will be apt to compress the middle turbinal on the side toward which the septum inclines. But apart from this condition, the left middle turbinal may incline posteriorly to the vertical line.

In posterior rhinoscopy the parts are seen as they lie in various relations to the plane of the posterior naris, as this opening is defined in the skull. Observers commonly speak of the image as though it were framed in this plane. In truth, what is seen is a foreshortened view of the posterior portion of the nasal chamber seen through the naris. If care be not taken, a septal deviation which is within the chamber may be confounded with a thickening of the septum at the plane of the nares. In studying the skull, of course, this difficulty disappears. If a careful inspection satisfies the observer of the living subject that an irregular or triangular swelling exists on the septal side of the smaller of the two images of the nares, and that this swelling is associated with a middle turbinated bone which inclines to the vertical, a diagnosis of posterior deviation of the septum can be made, although the septum may be normal as seen from in front.

The Diameters of the Chambers.—That the two chambers may vary in size without deviation of the nasal septum was shown by me in a skull exhibited before the Association in 1883.* Since that time I have seen a number of crania which yield a similar appearance, and it would not be necessary to recall the observation if a statement had not been made by Dr. Morell Mackenzie† to the effect that he had examined 3,102 skulls in the collections of London and not found a single example of such asymmetry.‡ I was led by this statement to go over the ground as it was presented in the museums at Philadelphia.

In the Academy of Natural Sciences are collected 1,750 skulls of many nationalities; eighteen examples of left choanal asymmetry were met with. Of this number, only two showed septal deviation, and three only presented angularity of the left contour-line of the septum. In all the above the left choana was distinctly smaller than the right, and the general disposition was the same throughout the left nasal chamber.

The following crania make up the total as given above: Eight Peruvian (Nos. 892, 1,273, 1,489, 1,518, 1,376, San Malco, 1,026, 1,691), one aged six months; two Hindoo (Nos. 1,554, 4), one aged eight years; two Narragansett North American Indians (Nos. 952, 951); and one each of the ensuing tribes: Otaheitan (No. 1,681), Carib (No. 692), Araucanian (No. 652), Fiji (No. ——), Columbia River Indians (No. 575), and one skull was unnamed (No. 1,489).

In nine examples it was observed that the right nasal chamber was the smaller. They were distributed as follows: Four Peruvians (Nos. 403, 1,366, 1,432, 67); and one of a Columbia River Indian (No. 574), and of the ensuing numbers (Nos. 1,489, 32, negro, 964, 959).

In the skull last named (No. 959) the nasal septum was deviated to the right.

The following include some measurements in centimetres and millimetres of the asymmetrical nares in Peruvian crania:

No. of specimen.		Height.	Middle width.	Top width.	Width of turbinals.
892	R...	2·0	1·1		
	L...	2·0	1·0		
1,442	R...	2·3	1·3		
	L...	2·3	1·1		
1,489	R...	2·5	1·2		
	L...	2·4	1·0		
1,366	R...	2·5	1·5	0·7	
	L...	2·4	1·5	0·8	
1,518	R...	2·1	1·5	0·7	
	L...	2·4	1·4	0·4	
1,691	R...	2·3	1·3		
	L...	2·3	1·5		
67	R...	2·3	.....	.....	1·1
	L...	2·4	.....	.....	0·9
1,273	R...	2·8	1·5		
	L...	2·7	1·2		
1,033	R...	2·6	1·4		
	L...	2·4	1·6		
1,026 (Young)	R...	1·8	1·0		
	L...	1·6	0·9		

In the collection of 156 crania in the College of Physicians of Philadelphia—most of the specimens being from European localities—the asymmetry was noted in twenty-four.

Of this number, eleven exhibited the left choana as the smaller. The specimens were distributed as follows: Gypsy (No. 31), Magyar (No. 13), Kossack (No. 101), Roumanian (No. 96), Dalmatian (No. 132), "Gaming Steverin" (No. 138), Krain (No. 86), Anglo American (No. 5), Japanese (No. 50), Pole (No. 26), and one without locality.

The septum was straight in two examples only of the series—viz., in Nos. 86 and 138. It was nearly straight in No. 96.

The remaining thirteen skulls yielded a larger right choana, as follows: Wende (No. 85), Carniola (No. 87), Kumanéa (No. 71), Schlesien (No. 68), Austrian (No. 63), Calabria (No. 48), Ceragora (No. 29), Gypsy (No. 18), Italian (No. 107), Servian (No. 90), Gorale (No. 83), Genua (No. 113), Anglo-American (No. 28); five showed straight or nearly straight septa.

It is seen that the number of instances among recent European skulls (three only of the skulls in the College of

* "Trans. Am. Laryngolog. Assoc.," 1883, p. 84.

† "Diseases of the Throat and Nose," 1884, ii, 467.

‡ In the figure of the choanæ in Quain's "Anatomy" (vol. i, Fig. 52, 9th edition) the left is the smaller.

Physicians were from ancient graves, and these were symmetrical) of contrasts in measurements of the choanæ is much greater than in the skulls of other races, and that within the group thus limited deflection of the septum is of more common occurrence.

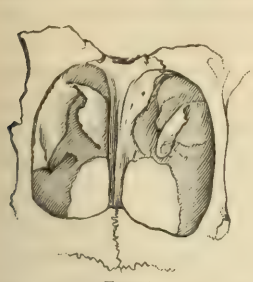


Fig. 1.

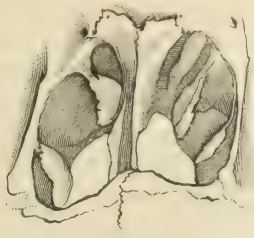


Fig. 2.

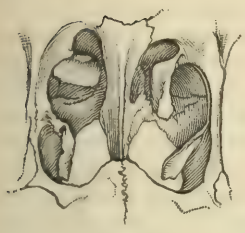


Fig. 3.

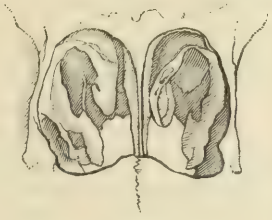


Fig. 4.



Fig. 5.

The above examples of asymmetry of the nasal chambers at the choanæ (the septum being straight or nearly so) are from the collection of the Academy of Natural Sciences of Philadelphia. The artist, in order to better illuminate the parts, inverted the specimens, thus sacrificing some of the details at the region of the inferior turbinals.

It would appear that the best guide to nasal asymmetry as seen in crania is a comparison between the choanæ. The septum may be straight, be inclined to the smaller choana, or to the opposite side. The asymmetry appears to be determined by causes which exist independently of the deviation of the septum—always assuming that the posterior free border of the septum does not deviate from the vertical.

The study of crania is not the best standard for clinical study. From my experience, the number of instances of asymmetry of the choanæ is vastly greater than can be gleaned from ethnological cabinets.* The entire number has not been recorded, but it can be stated in general terms that a difference exists in the diameters of the choanæ, and that the left is the smaller, as a rule. Even when the contrast is slight, the left middle turbinal is commonly more vertically inclined than is the right.

The Boundaries of the Naso-pharynx directly back of the Choanæ.—The space directly back of the choanæ receives the turgescent ends of the turbinals when they can be no longer contained within the chambers. Above, the space is defined by the alæ of the vomer; below, by the velum in advance of the salpingo-palatal folds, and at the sides by the internal pterygoid plates and the orifices of the Eustachian tubes. As opposed to the vestibule which lies in advance of the true nasal chamber, the above space may logically constitute the *posterula*, if it be found convenient to employ a distinctive term.



Fig. 6.—View of the left nasal chamber from a specimen prepared by the alin-jection method of Professor Wilder. The subject was believed to be free from disease of the nasal mucous surfaces. Since the saw used in making the section fractured the horizontal plate of the palatal bone, it is possible the measurements given in the text are approximately correct only. In any event it will be seen that the ends of the middle and inferior turbinal lie beyond the plane of the choana.

In a specimen of the human head which has been carefully injected by Professor Burt G. Wilder, of Cornell University, it is shown that, in a normal condition of the membranes, the mucosa and submucosa became infiltrated and distended in such wise as to cause projections of the lower and middle turbinals into the naso-pharynx.* The measurements in this specimen are as follows: Inferior turbinal beyond the end of horizontal plane of palatal bone, 5 mm.; middle turbinal beyond the end of horizontal plane of palatal bone, 7 mm.; from the end of vomerine alæ to the plane of the choanæ, 15 mm.

During life the presence of the posterior ends of the turbinals in the naso-pharynx is not unphysiological. I have frequently observed that perfect comfort is compatible with the existence of such masses. If, however, nasal breathing is arrested, if the turbinals are pressed against each other in the same chamber, if the Eustachian tubes are pressed upon, if the salpingo-palatal folds are impinged—and it must be said that one or more of the above conditions are apt to be present—the reduction of the swellings is demanded.

German Measles and Vaccination.—"German measles, and possibly some scarlatina, is prevalent in Pontefract" (says the "Lancet," Dec. 15, 1888), "and the guardians have in consequence suspended the work of the public vaccination stations for two months. This is sound policy, for such a lesion as is brought about by the protective operation of vaccination must necessarily run some risk in cases where an eruptive fever is following its course at the same time, and it is always important that every avoidabe risk should be met in advance."

* "Trans. Am. Laryngolog. Assn."

* I desire to return acknowledgments to Professor Wilder for an opportunity of exhibiting this interesting specimen.

THE IMMEDIATE CORRECTION OF DEFORMITIES RESULTING FROM DISEASE OF THE HIP.*

By V. P. GIBNEY, M. D.,
SURGEON IN CHIEF TO THE HOSPITAL FOR THE RUPTURED AND CRIPPLED.

It has occurred to the reporter that the immediate results of operative interference in deformities of the hip joint might present some points of interest, especially as many of us have been accustomed to treat with great care this class of surgical maladies. Buck's extension and hip splints of various kinds have enabled us to do much in the way of correcting deformities of this joint, and the risk attendant on such procedures is so slight that the preference has been given to this method of correction. Statements like the following teach a certain amount of caution, and surgeons generally are indisposed to adopt means which seem to be violent. In the October number of the "Annals of Surgery," page 19, is an article on "Acute Suppuration after Correction of Ankylosis by Manual Force. By Dr. E. Miller, Tübingen." The author describes a case of ankylosis of hip joint after acute osteomyelitis, in which mobilization was attempted by manual force, but where suppuration of the joint followed the attempt. Oberst has published four similar cases from Volkmann's clinic where acute suppuration was set up in ankylosed joints, resulting from acute infectious diseases. It is probable in all these cases that germs which had not lost their vitality remained imbedded in the tissues, and were again set free by the method adopted.

It is, moreover, remarkable that such operative measures in ankylosis after tubercular disease or perforating shot-wounds are not followed by suppuration ("Beiträge zur klinische Chir. Mittheilungen aus der chirurg. Klinik zu Tübingen." Bd. iii, Heft 2).

The term mobilization leads us to infer that *brisement forcé* was employed, and surgeons generally are familiar with similar results which have followed this mode of procedure. In a carefully selected number of cases during the past ten months I have employed the following treatment:

Under an anæsthetic, simple manual force to pull the limb into position; the division subcutaneously of adductors and flexors by means of the Adams fascia knife; the division of the deeper flexors by open incision; division of the femur below the trochanter minor (Gant's operation); the plaster-of-Paris bandage over a closely fitting stockingette or cheese-cloth bandage from the ankle to the free ribs; and rest in bed for a week or ten days.

I have made no attempt whatever to secure motion or to break up the adhesions. My aim has been to supplement the manual force with tenotomy, myotomy, or osteotomy—one, or all combined when necessary—and to secure parallelism of the limbs at one operation if possible. In many cases the deformity has been so great and the resistance so obstinate that a second or third operation was necessary to secure the object desired. The duration of the disease or the stage of deformity has not been taken into consideration. Where abscesses exist, or where numerous sinuses remain, I have freely opened the one and curetted the other.

The treatment subsequent to operation has been as follows:

To continue the plaster-of-Paris dressing for a few weeks, and then to employ the long hip-splint for traction of the limb and protection of the joint.

In no single case that I have operated upon has any acute joint suppuration followed. It is true that where abscesses or sinuses have existed, the suppuration has not always ceased; but, from a pretty intimate acquaintance with the natural history of these discharges, I am warranted in stating that the suppurative process has not been aggravated by the treatment employed. It is true that friends of hospital patients have in a few instances complained that positive injury was inflicted, and I shall present in detail the histories of one or two of this character.

Case I.—In the spring of 1886 a poorly nourished boy, five years of age, was brought to me at the Polyclinic, suffering from tuberculous osteitis of the spine in the dorso-lumbar region. The deformity was very pronounced, and an abscess presented in the left gluteal region The mother seemed delighted at having again an opportunity of placing the boy under my care, he having first been treated by me in the out-door department of the Hospital for Ruptured and Crippled in 1883 and 1884.

During this interval he had been treated in Bellevue Hospital without relief, the mother claimed.

I could find no positive evidence of disease of the hip joint, but applied a plaster-of-Paris jacket, and determined to keep him under as close observation as clinic patients will permit.

During the winter of 1886–'87 the signs of disease at the hip joint became more apparent, and the proper management of the case became exceedingly difficult. As soon as the mother heard I had returned to the hospital she begged his admission on the ground that it was necessary for her to enter one of the hospitals on Blackwell's Island, and that as a consequence there was no one to take charge of her child. He was accordingly admitted November 29, 1887. He had become greatly emaciated; there was an ulcer on the outer side of the thigh leading to diseased bone, and some fistulous tracts on the posterior aspect. The movements of the hip were greatly restricted, the angle of greatest extension being 125°, greatest flexion 110°, while the limb was held in marked adduction; in fact, all the signs were present which go to make up a case of osteitis of the hip, third stage.

The spinal deformity had increased a little. An attempt was made to secure both spine and hip by apparatus; this was found exceedingly difficult by reason of the unprotected bony prominences. Tonics and stimulants were administered quite freely, but his condition continued until April 4th without essential change. The discharge from sinuses was very profuse, and the approach of amyloid changes was feared, yet his urine did not contain any albumin.

At this time, under an anæsthetic, I laid open the sinuses quite freely and employed the Volkmann's spoon pretty extensively. The joint cavity was not exposed, but one or two foci of disease along the femur were scraped. Very little resistance was encountered in placing the limb parallel with its fellow. Antiseptic dressings were used and plaster-of-Paris bandage applied from ankle to axillæ. He rallied well from the operation, and two days later a large fenestrum was cut in the plaster for the purpose of dressing the wound. Discharge was found as profuse as before the operation. Dressings were em-

* Read before the New York Surgical Society, October 24, 1888.

ployed daily from this time forth, and on the 22d of April, realizing that it would have been better to have made an excision, I had Dr. William T. Bull see the case, with a view to a more thorough operation, but he decided against any operative interference on the ground that removal of the diseased bone at the hip would not relieve the disease in the spinal column. The suppuration continued with little change, the boy gradually failed, and on May 25th died from exhaustion, six weeks after the operation.

For the first time since his admission the mother's interest in the case became awakened, and she professed to believe that his death was directly due to the operation.

Case II.—In marked contrast with the above is that of a girl, six years of age, admitted to the hospital April 17, 1888.

This patient presented a degree of deformity that rendered her gait almost quadrupedal. There was an immense boss occupying the greater part of the dorsal and all the lumbar regions, studded on either side by fistulous openings, a rectangular deformity of right hip with open sinuses in gluteal, posterior femoral, and scarpal regions, nearly all of which were discharging quite profusely. Some were covered with dirty scabs, surrounded by excoriations. The child was extremely thin, and the outlook was by no means encouraging.

The disease was of two years' standing, and during the winter of 1886 she had been under treatment in the out-door department. Her general health improved during the following month, and operation was postponed until the 18th of May, when, under ether, an incision eight inches in length was made over the great trochanter, connecting two or more fistulous openings and extending down to the bone.

The trochanter was fully exposed, and my finger passed around the capsule did not enter the joint. The fistulous tracts leading to the boss were curetted, the same procedure was cautiously employed in the sinuses on the inner side of the thigh, and free communication was established between these and the incision over the hip. The deformity was partially reduced after the subcutaneous division of the tensor vaginæ femoris and the adductors. While still employing manual force to correct the deformity, the femur was broken immediately below the trochanter minor. There was thus produced unintentionally Gant's operation. This enabled me to bring the limb into position, which was secured by plaster of Paris, after proper drainage, suturing the wound, and a heavy dressing. She rallied well, and her temperature during the next three days was as follows: morning, 99·8°; evening, 102°. Next A. M., 103·4°; evening, 104°. Next A. M., 103°; evening, 101·8°.

A portion of the plaster of Paris was removed in order to expose the incision wound and some of the sinuses. The iodoformized gauze packing was removed and the parts were well irrigated with a solution of carbolic acid (1 to 80). It was so difficult properly to dress the case by reason of the discharge from the sinuses of the back that she was anæsthetized on the 25th of May, all the sinuses thoroughly irrigated, and new plaster dressings employed.

Her general condition improved, and on June 4th, when the third plaster dressing was applied, the union at the site of fracture was found to be firm. The discharge continued, though not so freely, during the summer, and during the month of August a hip-splint was substituted for plaster of Paris.

For at least a month now she has been walking about on a splint with limb in good position, and at present writing all the sinuses have closed with the exception of a small one just over the crest of the ilium, and the discharge from this is so slight that a light dressing answers for three or four days.

Case III is that of a boy, now ten years of age, who was admitted to the hospital, August 21, 1883. The family history is reported on the books as being exceptionally good, although for several years neither father nor mother have appeared, and the impression prevails that phthisis and alcohol have contributed to the pauperism of the boy—in other words, he has become a fixture in the hospital. The examination at time of his admission, made with much care and attention to detail, shows that he suffered from articular osteitis of hip (hip disease), first stage. The treatment pursued with unvarying monotony until January 18, 1888, was purely expectant, and during that period he suffered from numerous abscesses, the limb had become very much deformed, and his general health had become greatly undermined. At the date just recorded there were several large sinuses so completely filling the groin, perinæum, and gluteal region that it was quite impossible to employ any traction-splint. The hip was locked at an angle of 115°, and adducted over very nearly a quadrant.

There was one inch real shortening and three inches practical shortening. Failing in my attempt to secure any amelioration by the usual daily irrigation of the sinuses and the administration of tonics and stimulants, I etherized him on the 28th of May, 1888, curetted all the sinuses, connected by incision two or three, and, finding pretty firm consolidation at the joint, did an osteotomy below the trochanter minor, after which I brought the limb into good position. The boy took ether poorly, and it was necessary to resort to artificial stimulation during the operation. His pulse continued feeble for several days, and his temperature varied from 99·2° in the morning to 101° in the evening. The treatment as in above cases was followed here, but the discharge from the sinuses has continued, with little if any abatement, up to the present time.

Good union was secured within four weeks' time, and the limb has been easily retained in the good position secured by the operation. His general health has not improved, and I have for two or three months had him on my list for excision. The extensive repairs, however, in the hospital, necessitating serious inconvenience by the work on plumbing and sewer-pipe, have deterred me from the operation.

While the result of the curetting and osteotomy has not been all that I anticipated, I do not feel that these procedures are responsible for the persistence of the suppuration.

Case IV illustrates the advantages this treatment affords where the disease has long since been arrested, but where a deformity renders the gait exceedingly awkward.

A boy, now eleven years of age, was admitted to the hospital, April 12, 1882, for disease of right hip, ten months' standing.

The case had already advanced to third stage, and was complicated by abscesses. This boy became a fixture also, and in November of last year, when I examined him, I found his general health excellent, but his gait was very awkward by reason of the adduction, the flexion, and the shortening.

There was some motion at the joint, but the limit of extension was 120° and limit of flexion 95°.

Pathological dislocation was present, as shown by the tip of trochanter major being two inches and a half above Nélaton's line. The thigh was marked by two or three cicatrices, but there was no sign of active or recent inflammation.

On March 9th of present year, under ether, the adductors and some of the flexors were divided subcutaneously, thus enabling me, by the use of moderate force, to bring the limb down to an angle of about 160°. The adduction was completely overcome, the usual after-treatment was employed, and he has not had an untoward symptom. I still employ a traction-splint, in order to minimize the shortening.

Case V is that of a boy, now ten years of age, who was admitted to the hospital, June 2, 1884, with a history of lameness for three years. The disease, from the account then given, had

been confined to the hip, but on admission there was found a disease of the lumbar spine, with a very small projection of the spinous processes. The treatment employed to date of operation, in March last, was chiefly constitutional, and a spinal apparatus. When I first examined him, on December 5, 1887, his general health was good; his left limb was three quarters of an inch short, as measured from the anterior superior spinous process, and three inches and a half short as measured from the umbilicus. He walked with his hand on the thigh, and was indeed very lame, although quite active.

There were one or two cicatrices about the hip, and all active disease seemed to have long been arrested.

Under ether, March 9, 1888, the adductors and flexors were divided subcutaneously, and with moderate force the deformity was reduced about one half. His temperature at no time reached 100°, and on May 9th, under ether, the operation was repeated. The gain this time was not so pronounced as on the occasion of the first operation, and it remained *in statu quo* until October 9th, when the third operation was performed, which resulted in complete reduction of the deformity. There has been no constitutional disturbance at any time, and the boy is now walking quite erect, with his hip protected by a splint.

It is my intention to remove the apparatus during the coming months, provide him with a high shoe, and discharge the case.

Case VI is that of a boy, eight years of age, who was admitted to the hospital February 9, 1888. Four years before admission he had an attack of measles, which left him with disease of the lids, and four months before admission, without apparent cause, he suffered from a continued fever for eight days. At this time he complained of pain in both knees, and double hip disease was diagnosticated. The deformity came on quite rapidly, and when I examined him he was unable to walk, cried if the least attempt at moving the hips was made, and sat with a tailor-legged deformity. He was very thin, poorly nourished, and presented a cicatrix of a bed-sore over the sacrum. The right thigh was strongly adducted; the limit of extension was 110°; flexion, 80°; so that the knee fell in a vertical line with the anterior superior spinous process of the opposite side; motion in any direction excited reflex spasm. The left thigh was abducted over an arc of about 10°. The limit of extension in this leg was about 120°, flexion about 90°. The hamstrings were shortened a little, so that extension of the leg could not be made beyond 170° for right side, and 150° for the left side. There was no deformity or disease of the spine. On the 9th of March, under ether, an attempt was made to correct the deformity on both sides by dividing any tendons that offered resistance, and by manual force.

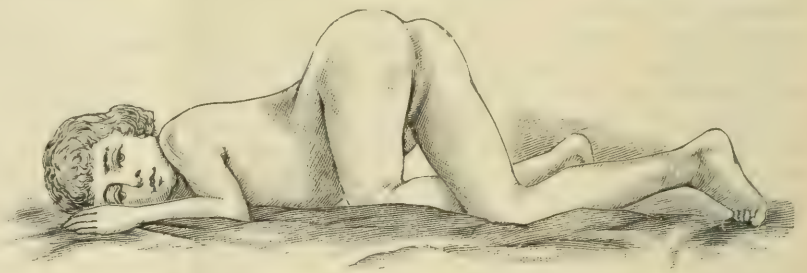
The deformity was reduced about two thirds and a double plaster-of-Paris spica bandage was employed. His general condition improved most markedly, the pain, which was slight, lasted only two or three days, and on April 25th the operation was repeated, the result this time being a correction of the deformity of both hips. Not an untoward symptom followed. He is still incased in plaster of Paris, goes about the wards in a wheeled chair, and continues to gain flesh. It is not my intention to make this communication unnecessarily long by the narration of cases, but I trust I shall be pardoned one or two more, which will illustrate the facility with which extraordinary deformities can be corrected.

Case VII is that of a girl, six years of age, who on her admission, August 28, 1888, presented a deformity of the hip difficult to describe. She could not stand, sat with great difficulty, and had to assume a very peculiar position in lying. I have attempted to get photographs showing these different positions, and the result is presented this evening.



Case VII.—Showing best effort at standing before operation.

The semi-prone decubitus, as shown in photograph, was her favorite position. The left thigh was strongly flexed and adducted on the pelvis, so that the angle of greatest extension was about 37°. She resisted any passive motion, and seemed really to suffer if this was attempted.



Case VII.—Habitual position when lying down before operation.

There was no evidence of abscess in either iliac fossa, although a kyphosis in the lumbar spine presented. It was simply impossible to get any accurate measurements of the limbs.

The history of her lameness and deformity extends over a period of one year. There was first pain in the left knee, with lameness. Six months subsequently the mother discovered some deformity of the spine. Six weeks prior to her admission the deformity became so marked that the child was unable to walk. On September 7th, under ether, the adductors and flexors were tenotomized, and with gradual force the limb was brought into good position. Adhesions were felt giving way about the hip, yet the muscles seemed to offer the most resistance. The deformity was really overcorrected, and the usual dressings employed.

Temperature on first evening, by rectum, was 101·6°. On the morning of September 8th, 100·4°; in evening, 102·1°.



Case VII.—After operation. Showing also splint.

On morning of 9th, 100·2°; evening, 101·4°. Morning of 10th, 100·4°; evening, 100°. From this time the temperature became normal, and on September 15th she was placed in a rolling chair. On October 9th a hip-splint, with windlass for making extension, was applied, and she now walks about with comparative ease. Her photograph will show the position of the limb.

Case VIII.—A girl, ten years of age, with osteitis of spine and of left hip, was admitted October 10, 1888. Her spinal disease was of three years' standing, while the deformity at the hip was of more recent date—ten months. The case is best shown in accompanying photographs. Suffice it to say that the hip was practically fixed in the position shown in photographs. It was thought that motion existed through an arc of 10°, but this was difficult to demonstrate. There was no evidence of any active disease, and her general health, while fair, seemed sufficiently good to permit an operation at once; so on the 18th of October,



Case VIII (Fig. 1).—Best effort at standing erect before operation.

under ether, the tensor vaginæ femoris was first divided. This brought into prominence some bands of the deeper flexors which



Case VIII (Fig. 2).—Habitual sitting posture before operation.

were divided. I should state, however, that the ham-strings were first submitted to tenotomy, inasmuch as it was impossible



Case VIII (Fig. 3).—Day after operation.

to extend the leg beyond an angle of 120°. We observed great care in extending the leg, and were satisfied with the correction as shown in Fig. 3.

I have followed this practice, relying on the subsequent correction of the deformity by means of the jointed splint incorporated in plaster of Paris and wedge of cork inserted in a transverse section of the plaster made in the popliteal

space. This method of correcting deformity at the knee was presented to this society last spring.

To return now to the division of the flexors of the hip:

I found that some deeper structures needed division, and I made an open wound, which enabled me to divide band by band as they presented. Having gained the amount of correction as shown in Fig. 3, I desisted from further attempts, closed the wound by suture, inserted a small drainage-tube, and applied a full antiseptic dressing.

The plaster-of Paris bandage for spine, hip, and knee was applied.

The temperature on evening of first day was 100°. Morning of second, 101°; evening, 101°. Morning of third day, 101·2°; evening, 99°. Morning of fourth day, 100·2°; evening, 101·6°.

A fenestra in the plaster was made over the wound, sutures and drainage-tube were removed, and to-day her morning temperature is 100°.

I expect to resort to another operation within a month, and hope then to secure complete correction of the deformity.

In a few instances I have operated with most satisfactory results in adolescent cases, removing all apparatus within two or three months' time. In one case, a boy about ten years of age, who presented rectangular deformity of hip, with an old cicatrix of groin and a boss in lumbar region from Pott's disease, the sac of the old abscess refilled six months after the operation. From all appearances, the pus comes from the vertebra, and has caused no pain at hip or knee.

In still another case an abscess appeared for the first time three months after the operation. In this case, however, no cutting was done, as the limb was brought into position quite easily. The father discovered a slight fullness under the tensor vaginæ femoris four days ago, with tenderness, and yesterday, with an aspirator, I removed about half an ounce of pus, completely evacuating the sac.

I shall present in statistical form the cases upon which this paper is based, without any attempt, however, to give final results. It has been my aim to present the subject as fairly as possible, and, from my own study of the cases, I feel warranted in stating that it is safe to resort to this procedure in a very large number of dispensary and hospital cases, where any kind of apparatus is abused and where it is important to gain time.

In operating, I have resorted to the expedient of completing the section of bands divided by the fascia knife by means of my thumb pressed deeply over the skin. This is done while the assistant makes extension of the limb.

Much importance is attached to appropriate fixation of the limb after the operation, and I do not, as a rule, resort to traction until a week or a fortnight has elapsed.

Whenever I find bony union, or pretty strong fibrous adhesions at the joint, I prefer section of the bone. The proper disposition of sinuses is at times difficult to decide upon, and I confess that an excision often confronts me in some of the more desperate cases. In some of my earlier cases I am quite sure that an excision should have been performed. Parents, I find, will consent to the correction of a deformity under ether while they strenuously object to any operation on the bone.

This explains the absence of the more formidable operation of excision in the cases I have reported this evening.

In closing this paper, I desire to express my thanks to Dr. S. E. Milliken, my house surgeon, for valuable assistance in tabulating the cases for reference.

Summarizing the tables, I find that seventeen patients were between three and eight years of age, ten between eight and twelve, and three were over twelve years of age. The disease had existed as follows: Six months in one case, one year in four cases, two years in three cases, three years in six, four years in four, five years in four, six years in five, seven years in two, and eight years in one case.

In four cases there was double hip disease. In six cases Pott's disease also existed, and in one of these osteitis of the knee was likewise present. Ten cases presented deformity in a *moderate* degree, in eighteen the deformity was *great*, and in two it was *extreme*. In only three cases the result has not been as good as was anticipated.

STATE HOSPITALS FOR THE INSANE POOR.

By HIRAM CORSON, M. D.,
CONSHOHOCKEN, PA.

In "The New York Medical Journal" for October 6, 1888, page 392, I find some resolutions of the New Jersey Medical Society, condemning what they call the "dual system" of management. The society believed itself called on to give expression to its views on account of some alleged mismanagement in the Morris Plains Hospital, which I therefore infer is organized on the dual system. The system which has long prevailed in New Jersey, Pennsylvania, and indeed in all other States where hospitals for the treatment of insane people are found, is what the superintendents in Pennsylvania call the one-head system; the other, the New Jersey dual system, they call the two-heads system, and declare that a hospital thus organized can not successfully be carried on. Now, this one-head system and the other dual system need fairly to be described. The old plan gave to the superintendent the exclusive management of the whole farm and the hundreds of insane males and females, and also the duty of providing everything for the great household of patients and more than a hundred employees. The trustees, generally from seven to nine or more in number, had no power to effect changes of any kind; they were privileged to eat dinner, and authorized to pay bills contracted by the superintendent, when at stated times they visited the hospital, but they had no power to institute any reform; they were the mere servants of a superintendent, whose power controlled every operation from the purchasing of a hundred thousand dollars' worth of needed supplies to the oversight of the hennery and pig-sty. Such is the one-head system. The other, which our New Jersey brethren call the dual system and which they condemn, and which I infer prevails at Morris Plains, is quite different. It exists at Norristown. There are thirteen trustees, some appointed by the Governor, some by the Philadelphia City Councils, and the others by the Commissioners of the counties composing the "district." I know of no others than this one

and the one at Morris Plains organized on this plan. The trustees have the entire control and the entire responsibility. In the *one-head* organizations they have all the responsibility and no control.

As the Eastern Hospital at Norristown has been in operation under the thirteen heads for eight years, allow me to speak of its workings, so that you may know whether the Medical Society of New Jersey has acted wisely in denouncing a plan of management of which they had little knowledge, if any at all.

These thirteen trustees received the buildings from the hands of the builders in a very unfinished condition, and the patients were hurried in upon them at a rapid rate. The physicians were appointed by the trustees for a single year, subject to removal at any time—a male physician for the males, a woman physician for the females. These physicians have no other duties than the medical treatment and care of their patients. The sexes have different departments and the male physician has no more concern in the management on the female side than if he were a thousand miles away. Already we see that in this hospital the trustees govern and the physicians are relieved from all outside work, and have time to attend to every need of their suffering patients. These thirteen heads have introduced another change. They have appointed a skillful woman doctor to have charge of her insane sisters. Now, have these changes worked well? your readers ask; for, if they have, the New Jersey Medical Society may have erred in their denunciation of the *system*. I should be quite willing to abide by the testimony of trustees and physicians who have come from various States to examine their hospital with its 1,666 patients (more than 800 of each sex), and who have gone away convinced that it has no equal in things promoting the welfare of the patients in this country.

For more than forty years the *one-head* system—the plan so unanimously approved by the New Jersey Medical Society—has been in operation in Pennsylvania and New Jersey. Has any improvement in the treatment and management of the insane resulted in the hospitals thus conducted? Have there been advances made by the superintendents in a knowledge of mental disease? Have they inaugurated and carried into practice measures calculated to improve the welfare of the insane? No; even the appeals of Dorothea Dix in behalf of the sufferers were unheeded by the *one head*, even when the trustees were anxious for more freedom from restraint and for measures adapted to draw the mind away from its delusions. While in other countries buildings were being erected at less cost, and agreeable employments of various kinds were introduced to engage the minds of the patients and lead them on to sanity, the "Association of American Superintendents" was insisting on an adherence in building to their plan of hospitals of several stories in height and at frightful expense to the State. The suggestion, by men greatly interested in the care of the insane, to introduce the system of employment which was adopted in the hospitals of other countries with great advantage, and which many boards of trustees in our hospitals earnestly approved, was opposed by the *one-head* power which controlled our hospitals. It was comparatively easy to manage hundreds of insane when, for the slightest disobedience, for even an excess of gayety, or a show of desire to resist an attendant, the door of a cell or dark room could be closed on the witless and innocent offender. So, when greater freedom from restraint and utter disuse of straps and muffs, dark cells and Utica cribs, were advocated by the humane, a deaf ear was turned against any change by the *one-head* managers. Has the so-called dual system done better? We shall see.

The opinions held by the New Jersey Medical Society are not accepted by some who have had ample opportunity to see the workings of the two systems. Two weeks ago a meeting of trustees and superintendents of hospitals in Pennsylvania was held in Harrisburg, where Dr. Thomas George Morton, the chairman of the "Lunacy Board" of the State, made an interesting report of the condition of our hospitals and some suggestions relating to needed improvements. Allow me to quote one of them. It is entitled:

"Propriety of the Board of Trustees relieving the Medical Superintendents of State Hospitals of all Duties other than the Professional Care and Treatment of the Insane." He said:

"As a hospital should be a hospital and not a mere receptacle for the insane, the care of those committed to it should be the primary object of attainment, and whatever operates to retard this end, it would seem, ought to be carefully excluded. In this light it becomes a question of consideration whether the time and attention of a medical superintendent should be, even in a measure, engrossed with matters extraneous to the professional care and treatment of the patients committed to his charge. Could not the medical superintendent be relieved of the onerous duties and petty annoyances which must come to him in his present capacity as superintendent of an extensive farm and purveyor to a large household, in addition to what must be admittedly his first and most important duty—the medical care and direction of the treatment and oversight of the inmates of his institution?

"Would not the ability to devote his entire time to the scientific study of the individual cases of complicated disease, so abundantly furnished him, with more ample leisure for the instruction and guidance of his medical assistants, result in a larger percentage of recoveries, a more skillful corps of assistants, and a better administration of the wards?

"Even though a medical superintendent be quite capable of filling the threefold position of physician, steward, and purveyor, ought he not to be relieved in a measure of all cares and exactions which properly could be left to an unprofessional person, which would thus permit his entire time and energies to be devoted to the more legitimate object of his calling as a physician, in improving the condition and restoring to health the patients depending on his skill?

"The trustees of the Norristown Hospital have taken the advance in this important change in hospital administration, and have given the resident physicians of that institution the largest liberty in the management, throwing the entire medical responsibility on them, and at the same time have relieved them of all work other than the professional care and treatment of the patients.

"The trustees state that 'the entire relief of the physicians from the business responsibilities of the institution has continued to work most satisfactorily and *greatly to the benefit of the inmates.*'"

Such are the words of that eminent surgeon, member of the Board of Public Charities and chairman of the Lunacy Committee.

SOME PRACTICAL HINTS IN CONNECTION WITH INTUBATION OF THE LARYNX,

AND A RÉSUMÉ OF 206 CASES OPERATED ON FROM 1886 TO 1888.

By J. MOUNT BLEYER, M. D.

Through the recent publications of our journals, particularly in New York, Chicago, and Philadelphia, we have been able to obtain by experience positive data upon which to base an estimate of the merits of intubation of the larynx. Every new therapeutical measure must be judged by its results, and if on extended use it can not produce better results than some older and tried remedy it deserves to fall into oblivion. According to these and the following statistics published up to the present time, we find that Dr. J. O'Dwyer's method compares more than favorably with tracheotomy as regards the saving of life, while certainly, to consider it from an æsthetic point of view, it is much to be preferred, and no doubt will prove itself a valuable addition to the medical discoveries and advances of the age.

I have long taken great interest in the subject which deals with the medical and surgical aspects of diphtheria. All difficult subjects are interesting, and this, one of the most difficult, is therefore one of the most interesting that we are called upon to deal with. At present we know little or nothing of the essence of diphtheria, although it is being studied closely; until we do, I take it that our treatment will have to be directed against the effects rather than against the disease itself.

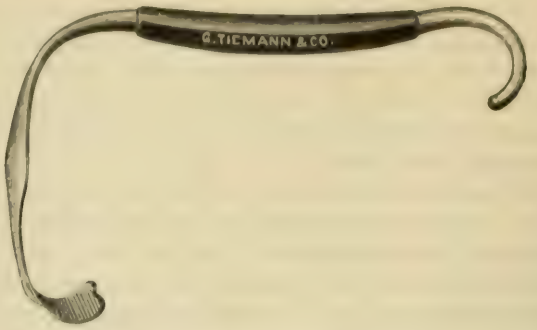
I have found it to be of special importance to make a laryngeal examination in all children that are presented to me for intubation. Few having the experience of the laryngoscope will decry the practical lessons taught by its revelations, or its certainty as a means of differential diagnosis, but still it seems that this method has not yet been fully appreciated in all its aspects by the general physician and surgeon. The importance of such procedure is neither to be underrated nor neglected.

Why Laryngoscopy should be practiced before and after Intubation.—It should be urged upon operators practicing intubation to examine, by means of forced or normal laryngoscopy, every case which is presented. I have made this a cardinal rule previous to intubing.

With such means at my disposal, I see the position which the membranes occupy and the general conditions present, so that if membranes are in the way of the operating field they may be removed, and not pushed before the tube downward into the trachea. Forcing down the membranes before the tube, which is so much practiced, is the rule and not the exception.

The differentiation and diagnostication of other laryngeal diseases may be made out at the same time, and the extent of the diphtheritic or croupous lesion seen.

Suggestions as to how Forced Laryngoscopy is made.—Forced aryngoscopy is performed by means of my tongue tractor, gag, and a mirror. This tractor and gag have been described fully in the "Archives of Pædiatrics" for October, 1888. An illustration of the tractor is seen below.



In children under five years of age it will be found most convenient, without losing any time, to envelop the child's body and arms with a strong towel, pinned closely about them, and then place it upon an assistant's lap, who takes the legs of the patient between his knees and holds the body well and firmly down upon his lap with the left arm and hand, while with the other over the child's forehead its head is pressed backward against the chest, and thus its attempts to turn it from one side to the other are resisted. The mouth is now opened by means of the gag, which has a wedge attached to the gagger for forcing its way in between the teeth and into the mouth. The alveolar rest has soft-rubber paddings to prevent the breaking of the teeth, or injuring the gums in those where no teeth are present; at this stage of the operation a five-per-cent. solution of cocaine is employed, with which the pharyngeal and laryngeal surfaces are sprayed, or without the use of cocaine, as I often do when the examination is of a short duration, as in the ordinary cases for inspection purposes. The operator passes the tractor down, guided upon the forefinger of his left hand, and secures the base of the tongue, which, being drawn upon, favors partial elevation of the larynx. The tractor is to be drawn upward, outward, and downward. The downward motion depresses the tongue.

Often a very common difficulty is met with in the position of the epiglottis, as it is more or less depressed, overhanging the larynx, or compressed and rolled together at its sides. By forcing and steadying the epiglottis against the base of the tongue, this difficulty is nearly obviated, and the larynx and neighboring parts may be viewed and treated.

Examinations of the larynx can be made at any time during the wearing of the tube, in order to see the same, or to guard against any sudden or unforeseen circumstances, and thereby gain an immediate diagnostic point.

For purposes of illumination, where gas can not be obtained, any lamp which gives a bright, steady light will suffice, and one practiced may obtain a good image even with a candle in a bull's-eye lantern, or with a carriage lamp. Several useful portable lamps can be procured for such work. In the absence of a condensing lens, a piece of white paper placed behind a lamp or candle will add considerably to the brilliancy of the light. If the patient lives in rooms where the sunlight is available, I prefer it for this use.

The degree of success will depend upon the skill and management of the laryngoscope by the operator. Small laryngeal mirrors—the No. 2 and No. 3—are the proper sizes.

The Daily Extraction of the Tube.—In my last fifty cases I have extracted the tube daily. This was done for the purpose of removing the accumulation of loose membranes, tenacious mucus, pus, etc., which might block up the tube or the pharyngeal and laryngeal surfaces. Often the child has not the power left, from repeated attempts, to expectorate or cough up these materials. After the employment of this measure it was found that the little patient was helped to rid itself of a large amount of blocking poisonous *débris*. When the tube has been extracted, irrigate the posterior nares, pharynx, larynx, and entire surface with a mild solution of bicarbonate of sodium, and half an ounce to fourteen ounces of lukewarm water. Half an hour later food is offered. I have then seen them take it ravenously. If I found any difficulty at this stage, the stomach-tube was at once applied.

Reintroduction of the Tube.—After the food has been given, the tube is reintroduced, and I have found, it advisable in some cases, where the stenosis is not so urgent, to wait for some hours before the reintroduction of the tube is again tried. In a large number of cases it was seen that the tube had done its service on the second or third day, and with but few exceptions it was not reintroduced again.

The Differentiation between the Tube being in the Larynx or Œsophagus.—After the tube has been introduced, remove the gag at once and wait a few seconds; now, if your tube has been passed into the larynx, you will immediately observe the difference in the breathing; the cyanosis disappears; a characteristic hollow-sounding cough, which, if once recognized or heard, you will be able to distinguish from all other coughs; this is then followed by a second sudden spasmodic cough, with a large amount of expectoration of muco-pus and membranes; if water is now given to drink, it will still increase this spasmodic cough, followed by still more mucous discharge from the tube.

The signs which present themselves if the tube has been passed into the œsophagus are different. Cyanosis increases, breathing is not relieved, the stenosis increases, the characteristic cough is absent, and the thread of eighteen inches long which is attached to the tube begins to disappear by the gravity of the tube drawing it toward the stomach. Cough may also be present, due to irritation at an attempt of introduction, but without that special described cough.

If there is any doubt in your mind about the presenting signs, then, before the removal of the thread from its attachment to the tube, you had better replace the gag, pass your finger down upon the head of the tube, and feel for the surrounding anatomical parts. But the most certain way is to make a forced laryngoscopic examination, which will distinctly show you the tube in the larynx and relieve you from all further anxiety.

One should make himself thoroughly familiar with the anatomy of the larynx and all surrounding parts before he attempts to practice intubation.

The Removal of the Thread from the Tube.—The thread which is attached to the tube is removed last, after you are positive that the tube is in its right position; this is best accomplished by replacing the gag, so as to prevent the operator from being severely bitten; pass the index finger down upon the head of the tube, add slight counter-pressure upon it, while with the other hand draw gently on one end of the thread.

Selection of the Tube in every Case.—This depends more upon the judgment of the operator than upon the age of the child, as the size of the larynx differs very often at the same age. It will be found that a larger tube has to be inserted than the indication shows at the age. I generally pass the tube of correct size and, if coughed up for no other cause, introduce the next size larger.

A good plan is to have more than a single set of tubes on hand for those who are practicing intubation, or otherwise, if one of the set is lost, that is generally the tube most required when least expected. Carry in your intubation bag two of each size, so that you can at any moment replace any of the missing ones. Also it is highly necessary to have on hand a few with a larger lumen; these ought to accompany every intubator, as you certainly will run across a case which will not be relieved by the tube with the small lumen.

Irrigation.—This is an admirable method of washing away the products of the local lesion. I use a No. 8 soft-rubber catheter which is attached to a fountain-bag syringe; the catheter is passed into the nostrils, first the right and then the left. The solution which is used is made by taking peroxide of hydrogen (Charles Marchand's), fifteen-volume solution, chemically pure, one ounce to twelve ounces of water. With this solution irrigate each nostril thoroughly. After this has been done, the next move is to wash out the mouth, pharynx, and larynx. If the child can be managed without forcing the mouth open, there is no need of the insertion of a gag; but if not, use it. The patient is to be held well forward over a basin for the reception of the returning fluid. Make a second mixture of the peroxide of hydrogen of the strength of four drachms to twelve ounces of water. The catheter is passed well down into the larynx, the surrounding parts, and thoroughly irrigated. The fluids are very seldom swallowed, and if this fluid mixture should be swallowed there is no danger of poisoning, as it is a perfectly harmless antiseptic. The fluid is generally immediately expelled by coughing. The mouth is to be kept wide open and the head well forward. By this mode of treatment, patches of membrane, inspissated muco-pus, etc., can be washed away without difficulty and without pain. My experience with peroxide of hydrogen for the last four years has made me familiar with its varied use in the treatment of the diseases of the nose and throat. From a consideration of the action of peroxide of hydrogen upon the deposit of diphtheritic membranes, and the rapid reproduction of bacteria, it will at once be evident that the earlier the application of the remedy is adopted the better. While the membrane is thin and friable, the action of this agent is thorough, quick, and effective; the deposit melts down before the contact of it like sugar in water, to be reproduced in a short time and again removed until the diseased tissue

beneath can be plainly seen free from this characteristic covering. In this way also the spread of the membrane is checked and its limits often sharply circumscribed, until after some days, which it seems to me is within a week, the germinating power of the membrane is conquered and the poison ceases to produce its kind, no more deposit takes place, and the diseased tissues heal. In view of the rapid reproduction of bacteria already mentioned, it is evident that the applications should be no longer apart than two hours, or even less, according to the rapid reproduction of the membranes. Gargling may be practiced by those who are able, but irrigation is preferred, as a more thorough application is thereby made. Irrigation is easily learned by the nurse, and there is absolutely no danger connected with its use.

The peroxide of hydrogen should be kept at a temperature below 65° F., as it begins to decompose slowly at the above-mentioned temperature.

No metallic substance must come in contact with peroxide of hydrogen on account of its oxidizing power.

For internal use I give the preference to glycozone, which is chemically pure glycerin saturated with active ozone, or the formula $C_3H_8O_3 + O_2$. It is intended to be used as a substitute for bichloride of mercury, carbolic acid, permanganate of potassium, etc. This is the most powerful of all organic disinfectants and bactericides. The advantages that are claimed for it in comparison with other powerful antiseptic compounds are its non-toxic properties and inodorousness. I give to a child over two years of age a quarter of a teaspoonful diluted well in water or milk every two hours, and under that age twenty drops.

Before adopting this compound I made use of the peroxide of hydrogen for internal use in diphtheria, but it was not tolerated by the stomach as well as this preparation.

Fluids and Feeding.—As a general rule, fluids are swallowed badly. This has been partially overcome by my false epiglottis tube. The child is placed upon the nurse's lap in a recumbent position and fed through a nursing bottle with such fluids as water and milk; shaved ice or ice-cream may be given in the natural way. Nevertheless, some of the fluids will pass into the tube unless great care is taken. I supply the system with fluids and semi-solid food mostly by the stomach-tube. The reason why feeding by the stomach-tube should be adopted is to avoid irritant substances entering the bronchi and tube. Water can be allowed to be taken whether it passes through or not. It is necessary that the intubated children should cough and expel whatever materials are lodged in the tube and air-passages. By feeding them without the stomach-tube you will certainly stop up the tube and favor *Schluckpneumonie*, thereby complicating every case.

The procedure of thoroughly irrigating the mouth, pharynx, and larynx as herein described has been found to act most beneficially in all cases, as then the child does not feel the want of fluid so much, but only has a desire to rid himself of the constant tenacious material which is always lodged in the passages during such a disease.

A Suitable Bed.—The best means to secure pure air for a patient with diphtheria or croup is by surrounding the bed by a pair of ordinary curtains. This should be done wherever it is possible; then the window can be freely opened, and thereby the room thoroughly ventilated. The curtains act as a protection to the patient from draughts; the air can be kept immediately surrounding him at an equal temperature, and, with the assistance of the steam atomizer, the air within the inclosed bed can be medicated and disinfected.

The steam atomizer is to be recommended highly, as there is no doubt that by keeping the interior of the pharynx and larynx moist by means of hot steam, it tends to liquefy and loosen crusts of mucus, which favors expectoration of the membranes; or otherwise, without steam, there may be increased laryngeal obstruction. This will always be found a valuable adjunct in the treatment.

The Protection of the Operator's Eyes. — Never make any examination of the larynx, mouth, or pharynx of any suspicious nature without the eyes being protected by a pair of eye-glasses, for if a sudden cough or forced expectoration takes place and any particle of this happens to pass into your eyes, a great chance is run of losing the eyesight.

The Cleansing of Tubes and Instruments.—Before and after intubation a great deal of attention should be given to this in order that no contagion should be carried to another case which is to be intubated, and perhaps not suffering from the same degree of diphtheria or croup as the one previously operated upon. The remedy that I suggest is that all tubes and instruments used should be scrubbed and boiled before and directly after for ten minutes in a closed pot of water at 212° F., and then left for ten minutes longer in a one-to-forty solution of carbolic acid. In conclusion, I will say that I intended this paper essentially as a practical one, based on the experience of many cases of intubation of the larynx.

The following is a table, record, and *résumé* of my last 206 cases of intubation of the larynx, which shows a large percentage of recoveries. Out of 206 cases, 67 patients recovered—33 per cent. in all ages.

Table showing the Results of 206 Cases of Intubation of the Larynx.

Total number of cases operated on, 206.
Male, 137. Female, 69.
Recoveries, 67 (33 per cent.). Deaths, 139.

In the cases of recovery, the tube was:

Removed on the	1st	day in	3	cases.
"	"	"	2d	"	13	"
"	"	"	3d	"	10	"
"	"	"	3½	"	6	"
"	"	"	4th	"	12	"
"	"	"	5th	"	11	"
"	"	"	6th	"	3	"
"	"	"	7th	"	4	"
"	"	"	9th	"	2	"
"	"	"	10th	"	1	"
"	"	"	15th	"	1	"
"	"	"	20th	"	1	"

Out of 107 there were 24 recoveries in children under three years of age, and in 99 three years and over there were 43 recoveries.

UNDER THREE YEARS OF AGE.				OVER THREE YEARS OF AGE.			
AGE.	Number.	Deaths.	Recoveries.	AGE.	Number.	Deaths.	Recoveries.
6 mos.	1	1	..	3 years	17	17	..
9 "	2	2	..	3 "	7	..	7
9 "	3	1	2	3¼ "	1	1	..
10 "	1	..	1	3½ "	9	9	..
10 "	1	1	..	3½ "	4	..	4
1 year	9	9	..	3¾ "	3	3	..
1¼ "	4	3	1	3¾ "	9	9	..
1¼ "	1	..	1	4 "	6	..	6
1½ "	11	11	..	4½ "	3	3	..
1½ "	2	.	2	4½ "	8	..	8
1¾ "	13	13	..	5 "	4	4	..
1¾ "	5	..	5	5 "	3	..	3
2 years	21	21	..	6 "	5	5	..
2¼ "	8	8	..	6 "	3	..	3
2¼ "	1	..	1	7 "	3	3	..
2½ "	10	10	..	7 "	5	..	5
2½ "	7	..	7	8 "	3	..	3
2 yrs. 10 m.	1	1	..	9 "	2	2	..
2¾ "	2	2	..	11 "	1	..	1
2¾ "	4	..	4	16 "	1	..	1
				18 "	1	..	1
Total	107	83	24	31 "	1	..	1
				Total	99	56	43

Causes of Death in 140 Cases.

Sepsis	11
Broncho-pneumonia	14
Heart failure	6
Pneumonia	23
Extension membranes to bronchi, or diphtheritic bronchitis	57
Bronchitis	11
Double pneumonia	1
Asphyxia—not being notified, and tube lost in the bed mattress.	1
Exhaustion	10
Scarlatina	1
Nephritis	2
Membranous croup	1
Hæmorrhage of the nose	1
Asphyxia due to closure of the tube by membrane	1

83 Second Avenue.

AMPUTATION OF THE THIGH FOR TUBERCULAR DISEASE OF THE KNEE JOINT.

*RECOVERY.**

By W. DUNCAN McKIM, M. D.

Henry B., of Newport, R. I., aged about twenty months, a negro, was kicked by a horse on the left knee in the summer of 1887. There was no special complaint of injury at the time, but in the autumn the joint had become much swollen. In February, 1888, an opening appeared on the right side of the joint, from which there issued a constant and profuse flow of pus. About two months afterward a similar opening appeared upon the opposite side of the joint, and shortly after this a third opening, just below the patella.

On September 6, 1888, the patient, now aged three years, was first seen by me. The three openings into the joint ranged in size from that of a twenty-five cent piece to that of a silver dollar. The purulent discharge was very profuse. The evening temperature for the next few days ranged at about 101·5° F., the pulse at 150, the respiration at 40. Over the right lung, in the supra- and infra-clavicular regions, there was decided roughening of the breathing and marked prolongation of the expiratory sound. Dullness I could not make out. The child's skin was constantly moist, and at night the sweats were profuse. Two specimens of urine were examined; the first showed a trace of albumin, the second none. There was no diarrhœa; the appetite seemed fair. The patient had been under the care of no physician, and during the seven months of suppuration the more or less constant application of poultices had been the only treatment.

On September 10th, with the assistance of Dr. Kenefick and Dr. Rives, I opened the joint, intending to do a resection if, after closer inspection, this should promise any success, but otherwise to amputate through the thigh. The articular surfaces of femur, tibia, and patella were all diseased, but the greatest ravages of the tubercular process had occurred within the soft parts, and to such an extent as peremptorily to preclude resection. Accordingly, by a modified circular method, I amputated the thigh at the junction of the middle and lower thirds. It being now found that the muscular mass of the stump was likewise the seat of extensive tubercular deposit, the diseased tissue was cut and scraped away, and the bone sawn again, this time just below its middle. The skin-flap was slit up by a longitudinal incision on each side, a drainage-tube introduced into each angle, the flaps sutured with catgut, and a corrosive-sublimate dressing applied. Throughout the operation, asepsis and antisepsis were duly regarded.

On the evening after operation the temperature was 101° F. —lower than on the previous night—and within a few days it fell to the normal. Pulse and respiration likewise improved. The rough breathing and prolongation of the expiratory sound, after several weeks, had become much less distinct. The first change of dressings was made ten days after the operation, and the drainage-tubes removed. The flaps were found well united, and the drainage-tracks contained no pus. About four weeks afterward the drain-canals were entirely closed, the patient apparently in perfect health, and about to use his crutches. At this time, unfortunately, the lungs were not examined.

The case reported is an interesting one as showing the value of amputation even after apparent secondary deposit of tubercle in the lung; as being one of those rare cases of joint disease which, through neglect, demand primary amputation; and by reason of the patient's tender age.

* Read before the New York Clinical Society, October 26, 1888.

HOME HEALTH RESORTS.

By J. M. WINFIELD, M. D.,
BROOKLYN, N. Y.

During the past few years physicians have endeavored to find a suitable climatic resort so near at hand as to enable them to render personal attention to their patients.

Much has been said and written in reference to the different resorts of the United States. Each has its own peculiar advantages, and when the careful and interest-taking physician is confronted with the question where to send his patient in need of climatic change, his decision becomes one of great moment, and requires very careful deliberation. If the doctor, when in search of such a place, could have a personal acquaintance with the spot, and if he could carefully note the kind of soil, quality of water, average thermometric and barometric variations, how much easier the decision would become! No doubt many patients would be improved accordingly.

Sending invalids from home under any circumstance is no easy task. The responsibilities are great in advising

them to go either a short distance or to the south of France. If we could send the almost hopeless patient where his friends might readily visit him, the decision would seem much brighter. It is undoubtedly true that a number of fatal results are hastened by that "sickest of all maladies, home sickness." Physicians in search of climatic aids have been led to send their patients to Jacksonville, Fla., Aiken, S. C., Asheville, N. C., and many other resorts in the South. The climate of Florida for the greater part of the year is undoubtedly fine. While the patient is put in a state to resist the *Bacillus tuberculosis*, he is laying up a store of malarial (and sometimes yellow-fever) germs, these only awaiting the time when he returns home to appear, thus rendering his physical state as bad as before. The other places mentioned are eminently suitable for patients seeking the advantages of an inland resort. The only and great objection to these places, however, is that they are so far distant.

Aside from the sentimental and other objections to sending patients so far from home is the question of expense. Many of the places of note are difficult of access, the cost of travel alone being enough to keep the invalid comfortably for a number of weeks at some home resort.

The mountain resorts of the North are numerous. On account of their beauty, the Catskills have long been noted as a summer resort. However, until quite recently, there have never been any steps taken to establish their reputation as a health resort; and yet, from their proximity to the city, there might be many cases in which these mountains would be preferred to similar places in the far West.

The Adirondack region has long enjoyed a reputation for healthfulness. It is so well known that little need be said regarding it.

The extreme cold of winter is compensated for by the great altitude and the consequent rarity of the atmosphere. When the relative moisture is small, though the evaporation is more rapid yet the direct abstraction of body heat is greatly diminished. It is a well-known law of physics that the rarer the air the greater the radiant heat from the sun—now popularly shown by the radiation thermometer. Thus patients find themselves unexpectedly comfortable in such a climate.

There are a number of well-known coast resorts in the vicinity of New York.

Atlantic City, N. J., is easily accessible from Philadelphia and New York. It is much sought for by those suffering from bronchial affections, and, notwithstanding *fogs*, it answers many of the requirements of a health resort.

For the past eight years Lakewood, N. J., has enjoyed a constantly increasing popularity as the resort for persons affected with pulmonary diseases. Nature seems to have endowed this part of Ocean County with peculiar therapeutic advantages. The soil is of sand and gravel, with only scattered beds of clay, providing almost perfect drainage.

The air, already pure, is surcharged with the antiseptic odors from the pine forests which surround the village on all sides except the east. The temperature during the winter is soft and quite warm, owing to its admirable southern exposure.

For some reason the attention of physicians has never been properly called to the healthfulness of the middle portion of Long Island. According to the statistics, the death-rate is below that of the adjacent counties of New York and New Jersey. Endemic malaria and pulmonary diseases are almost entirely unknown. An observing physician of national repute once remarked that the two counties in the United States most remarkable for health were Suffolk, Long Island, and Berkshire, Mass. The temperature of this portion of the island is several degrees warmer in winter and cooler in summer than that of the mainland (the average difference being about 15°). The reason for this is that the prevailing winds are from the south and southwest, blowing directly over the water from the Gulf Stream, which is only ninety miles distant. The soil is of sand and gravel, giving perfect drainage. The level of the ground-water is at an average of thirty-three feet below the surface, with a very slight annual variation.

There is probably no other place short of the Adirondacks where there are such immense pine forests, composing a belt fifty miles long by six wide.

The belief in the good effect of pine forests in pulmonary affections is quite unanimous. The way the odor of the pine exerts its beneficial results is probably due to the peroxide of hydrogen formed from the oxidation of the turpentine vapors, thereby rendering the air antiseptic as well as aseptic. In the midst of this pine forest, at the village of Brentwood, about two hours from New York, there has been a health resort opened. The park surrounding the hotel is protected on the north and east by a solid belt of evergreens, making the temperature in winter several degrees warmer than that of the adjoining village, thus enabling patients, at all times of the year, to enjoy out-of-door exercise in the *immediate* midst of pines. There is neither lake nor fresh-water pool of any kind within three miles of the village, consequently malarial influences are impossible. The advantages of this new resort will be seen at a glance. Its contiguity to the cities of New York and Brooklyn, the healthfulness of this portion of Long Island, its pine forests, its admirable protection from wind and fog, pure drinking-water, perfect drainage, a well-appointed hotel where the invalid receives solicitous care—a thing so often neglected at the American resorts—all of these should call the attention of the physician in search of a home resort for his patient, whether suffering from pulmonary or any other disease, in need of climatic change.

11 New York Avenue.

A CASE OF COMPLETE ABSENCE OF THE UTERUS.

By W. D. HAMAKER, M. D.,
MEADVILLE, PA.,
LATE RESIDENT PHYSICIAN, UNIVERSITY HOSPITAL, PHILADELPHIA.

I will give briefly the facts in the following interesting case:

Mrs. S. consulted me July 18, 1888, on account of amenorrhœa and sterility. She gave the following history: Family history good and no evidence of a similar case among her rela-

tives; she is twenty-three years of age and has never menstruated, nor had any of the symptoms of menstruation, and there was no history of vicarious menstruation. She was married at the age of nineteen years, and her married life has always been happy. Sexual intercourse is pleasurable. She has always had excellent health and says she never had an ache or pain.

Her breasts were well developed and the pelvis wide, and the whole appearance was that of a woman with complete development.

Upon inspection of the external genitals nothing abnormal was noticed. The pubis and labia majora were covered with the usual growth of hair. The clitoris was of normal size and appearance. Under chloroform the vagina was found to be extremely short, being not more than an inch and a half long, and to terminate in a *cul-de-sac*, which was symmetrical and smooth and contained no trace of a cervix.

By combined abdominal and vaginal palpation, no swelling, hardness, or fluctuation could be detected. Negative results were also obtained by combined rectal and abdominal palpation.

On inspection of the vagina by means of the speculum, it was found to be of natural size throughout its entire length, and its wall presented a natural appearance. There was no prominence or depression at any point to indicate an os uteri or a rudimentary cervix.

When she was not under the influence of the anæsthetic no tender point could be found either by vaginal examination or by deep pressure over the ovarian regions.

Dr. J. C. Cotton, who examined the patient with me when she was under chloroform, concurred in the opinion that this woman had neither uterus nor ovaries.

889 Water Street.

Correspondence.

LETTER FROM LONDON.

The "British Medical Journal" and Professor von Bergmann. —Rheumatism and Chorea.—"Guy's Hospital Reports."— A New Dental School in London.

London, *January 9, 1889.*

An agitation, which at one time threatened to produce serious results as regards the welfare of the British Medical Association, has been going on for some weeks, and, though matters are somewhat in abeyance just at present, it is impossible to say that the affair is over. About the time when Mackenzie's book was published, the "British Medical Journal" published a script of the deceased emperor relative to what may be termed the Bergmann incident, alluding to that eminent surgeon's skill in no very complimentary terms. Some of his friends in this country vigorously took the matter up, declaring that the publication of what a patient said about one of his medical advisers was a breach of professional etiquette. A meeting was called and a formal protest sent in to the Council of the Association. The Council held a meeting, heard what Mr. Ernest Hart had to say on the subject, and replied to the memorialists expressing their regret that the paragraph had been allowed to appear, etc. This, however, does not seem to have been enough for the protesters; they desire the publication of a formal apology to Professor Bergmann in the "Journal," and the matter is still under consideration by the Council. In connection with this subject I may mention that Sir Morell Mackenzie has taken the prudent step of severing his connection with the College of Physicians, of which he has been for twenty years or more a member, and has thus avoided the risk of a possible censure from the Censors Board.

At the meeting of the Medico-chirurgical Society this week the much-discussed topic of the connection between chorea and rheumatism was under discussion. Two papers, each dealing with eighty cases, were brought forward, one by Dr. Herringham, the other by Dr. A. Garrod, a son of the well-known authority on gout. Dr. Garrod concluded that the endocarditis of chorea was probably always of rheumatic origin, but that there was no evidence to show that all chorea was of rheumatic origin. Dr. Herringham adopted a more agnostic spirit; he was content to find that a large number of choreic patients were subject to rheumatism, and that choreic patients had nearly always a delicate constitution. Dr. Chedale, who followed, may be regarded as the champion of the rheumatic origin, while Dr. Sturges, who spoke at a later period, is certainly the champion of the non-rheumatic theorists; Dr. Sansom declared himself among the latter, while Dr. Stephen Mackenzie sided with the former. In discussions of this sort, as a rule, neither side succeeds in convincing the other, and this last debate was no exception; but the numbers of those who believe in a non-rheumatic form of chorea are steadily decreasing every year, for the very simple reason that the longer choreic patients are observed, the more frequently is rheumatism to be found among them. Dr. Garrod mentioned one instance of a person who had her first attack of rheumatic fever fifteen years after her attack of chorea, and it seems therefore quite fair to argue that at the time she had her chorea she could not really have been non-rheumatic. I was rather surprised that none of the speakers referred to the very excellent paper of Weir Mitchell on the seasonal relationships of chorea, for he is a writer who is very well known and highly appreciated in this country.

The new volume of the "Guy's Hospital Reports" which has just made its appearance contains three excellent statistical papers, the first being the record of ten years' experience in the Lying-in Charity, the number of women attended being 25,489, showing a considerable increase over the number during the preceding ten years. Mr. John Poland contributes the statistics of secondary hæmorrhage after amputation during a period of forty-two years; the total number of cases comprised in that period is 1,641, and when one considers that these have all occurred in one hospital and have been recorded upon a definite system, the enormous value of such a collection of statistics will be at once apparent. The third paper, of a similar character, is by one of the students, and deals with all the cases of cancer of the tongue treated during the last four years at the hospital.

Guy's Hospital is coming to the front, or trying to, as a center for the instruction of dental students, and an advertisement has lately appeared announcing the fact that the governors are prepared to appoint six assistant dental surgeons to the hospital; whether they are well or ill advised in taking this step it is difficult to say. The dental school in Leicester Square has been long established and is very successful; it has, moreover, the pick of the London dentists on its staff. The students who wish for a medical education in addition to their dental one generally go to Charing Cross or to the Middlesex, and it remains to be seen whether the new venture at Guy's will attract many students.

I hear rumors that a co-operative post-graduate association is being formed by some of the leading special hospitals to provide systematic clinical instruction for the large number of strangers who find their way to the metropolis in quest of knowledge; at present the scheme is quite in embryo, the preliminary stage of "pourparlers" having not yet been passed, but it is said that the proposal has met with a favorable reception in several quarters.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.

Published by D. Appleton & Co. Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, FEBRUARY 2, 1889.

THE LIMITATIONS OF MODERN MEDICINE.

The nineteenth-century doctor leaves the world far better than he found it, largely through his patient, steadfast efforts along lines of scientific research. In all matters of advanced thought and human progress the medical profession occupies the outposts. The power and influence placed earlier in other hands now belong to the scientist. The physician is the greatest of all missionaries. To him the practical needs of humanity are best known, and the questions of the hour form a part of each day's study. The problems of human life confront him at every turn. In spite of himself, the physician of modern times is elevated to the position of a functionary of the highest order, invested with the welfare and happiness of the human race. Usually he is equal to the emergency. To-day the intelligent minority calls upon him to state his place in nature, to define his limitations. Enlightened society has become one vast interrogation-point.

The limitations of the physician are the limitations of medicine. The old superstition that for every disease there exists some special remedy is fast wearing away, and with it the implicit faith in drugs that originated when the healing art was the monopoly of monks and priests. Diseases themselves are perfectly natural, arising in obedience to law and pursuing an orderly course. They are the best possible conditions (under the circumstances), and the expression of beneficent forces striving to rid the organism of an influence that produces chemical or mechanical combinations not in harmony with the present environment. A state denominated disease in the complete human being may be common to fœtal life or to some lower form of animal existence. Diseases are all right *whenever they exist.* They are not inimical entities, to be fought with all manner of earthly and unearthly weapons. It is quite reasonable to suppose that the power which called them forth is, in many instances, quite adequate to their removal. Of this there are countless proofs. Clinical annals furnish records of the spontaneous cure of cancer, tuberculosis, and malignant fevers. Marvelous recoveries take place under the most rude and pernicious medication. Nature is not only capable of removing the original disease, but also the artificial disease that is too frequently superadded by energetic ignorance. The strong tendency to recovery in all acute affections is now generally admitted, and the self-limitation of certain maladies an established fact. The *vis medicatrix naturæ* is no imaginary power, but a living reality. Otherwise it is quite impossible to explain the former reputation of substances now known to be inert or of small curative value. To this source may be attributed in large measure the healing powers of the Voudoo, medicine-man, and the priests of savage tribes. In the midst of life we are in the hands of nature. From this there is no escape. It is at once our greatest comfort and despair.

A paper read recently at the Post-graduate Clinical Society, by Dr. S. S. Burt, on "Some of the Limitations of Medicine," amplifies this idea in suggestive and instructive fashion. The probable reason, says the author, why treatment has not kept pace with pathology is that therapeutics has gone astray. The fruitless search for specific remedies wastes time and talent. Useful and indispensable drugs, tested by experience and close free-minded observation, are double-edged tools, working both ways, only safe in trained hands. Eagerness to relieve pain and restore health tends to make the physician overlook nature's agency in the cure of disease. The skillful practitioner stands by, ready to do his part in the restorative process, knowing when to act and when to do nothing. The man who recognizes fully the limitations of medicine is the safest and most practical adviser. The ills that flesh is heir to are, to a great extent, the ills that flesh brings upon itself. Ignorance of the law is no excuse. A man's motive weighs nothing in the scale of nature. The inability to appreciate that man is but a molecular vibration in the great pulsation of life allows him to hope that action will not be followed by reaction. No amount of therapeutic skill will ever be able to atone for the fatal mistake of unwise parentage. The laws of generation are as applicable to man as to the lower animals. Inheritance is made clear by the hypothesis of pangenesis—viz., "every unit or cell of the body throws off gemmules or undeveloped atoms, which are transmitted to the offspring of both sexes, and are multiplied by self-division. They may remain undeveloped during the early years of life, or during successive generations, and their development into units or cells, like those from which they are derived, depends upon their affinity for and union with other units or cells previously developed in the due order of growth." Here is a rational explanation of transmitted predispositions to disease, and also of that particular form of inheritance known as atavism. It is futile to attempt to construct a perfect being out of poor material. To suppose that drugs possess any such power is the height of human folly. Yet this belief—expressed in less bald terms, perhaps—is the foundation of differences of medical opinion among superficial observers, the reason for the survival of absurd therapeutic hypotheses, and the only explanation of mind- and faith-cure vagaries. And, what is perhaps most lamentable of all, this false doctrine makes it possible for the designing to trade upon the credulity of an ignorant public, and do positive harm with nostrums of different degrees of vileness.

The time is fast approaching when hygienic and preventive medicine must supersede in great degree the methods of the old healing art. Less credit given to drugs results in greater reliance on measures that render them unnecessary. And thus a knowledge of limitation becomes an increase of power. It is the physician alone who can lift to a higher level public conceptions of life, death, and disease. In order to fulfill his high

vocation of supreme educator — controlling the relations of human life to the outer world—an exhaustive knowledge of all the surroundings of man is essential, a survey of the whole of nature. Without it, the best-intentioned must inevitably fail. To place medicine upon the plane of biology is to give it the only foundation that accords with the spirit of the times. Any effort in this direction deserves recognition and encouragement. When man rises—by means of modern medical instruction—to the momentous cognition that he has power over his own destiny and that of his offspring, life for the masses will begin to be truly worth living.

THE TRANSMISSION OF DIPHTHERIA FROM ANIMALS TO MAN.

Hydrophobia, glanders, farcy, tuberculosis, and scarlet fever have been, until recently, the only morbid entities generally considered susceptible of being transmitted from animals to man. Dr. Cazenave de la Roche publishes an article in the "Revue générale de clinique et de thérapeutique" for January 2, 1889, to substantiate the new theory that diphtheria shall be added to the list. About a fortnight before writing the article he was called to attend two young women, aged, respectively, seventeen and twenty-three years. They were both suffering from diphtheria. It had developed with abnormal rapidity in each case. Active treatment was adopted, which resulted, on the ninth day, in a radical and almost simultaneous cure. Nothing in the general economy of the villa threw any light upon the ætiology of the disease. Built on the brow of a hill having a southern exposure, the villa was surrounded with pines and eucalyptus trees. Apparently there was no center of mephitism or miasma in the neighborhood, neither was there any trace of an epidemic. The author's suspicions were finally directed toward a pigeon-house near the cistern, and also to a hen-house, each of which was inhabited. This cistern provided the drinking-water for the family. There, doubtless, was to be found the source of contagion—a hypothesis rendered all the more tenable by the fact that, a few days before the disease manifested itself, a violent rain-storm had washed the roofs of the out-buildings and carried the fæcal deposits into the cistern.

Twenty years ago, while in Venice, the author had noticed many cases of diphtheria in the hospital of San Juan y Paolo. He then attributed the pathogeny and the frequent recurrence of the disease to the mephitic emanations of the lagoon. At present he considers that the disease was due to the contamination of the cistern by the numerous pigeons which infest that city. Admitting the possibility of the transmission of diphtheria in this manner, the means of combating it are simple. In places where spring-water and well-water are not available, or where the supply consists of rain-water collected in cisterns, it is well to limit pigeon-breeding and to construct dove-cotes as far away as possible from dwelling-houses. As to the construction of cisterns, they should be built according to the rules of public hygiene laid down by Gania in his work entitled "Utilité des citernes."

MINOR PARAGRAPHS.

A NEW DEODORANT.

Bromine has for a long time been recognized as being valuable in the treatment of gangrene and foul-smelling ulcers, but until recently its merits as an effectual and cheap deodorant have not been appreciated. It was brought into prominence a few months ago by Mr. Martin, the chemist of the Health Department of this city, who suggested its use upon the earth thrown up in laying the electric subways. As it is a by-product obtained in the manufacture of salt and is not used extensively in the arts, it is sold at a very reasonable price—about seventy cents per pound. It has the property of precipitating the hydrocarbons of illuminating gas, and thus can be used to deodorize the earth exposed in excavations in the vicinity of gas-mains. More valuable than this is its effect upon decomposing organic bodies, which it renders completely inoffensive. This property renders it particularly valuable for use in stables, privy-vaults, urinals, cess-pools, or in any place which may contain foul-smelling organic matters. It is soluble in about thirty-three parts of water, but a solution of this strength is not advisable, as there is a constant escape from it of the vapor of bromine, which is very irritating to the eyes and air-passages, and which may even attack wood and metals. For ordinary purposes it is used in solutions containing one part by weight to about eight hundred of water. In this strength it may be used freely without its affecting anything which it may touch. A few gallons used daily will remove all ammoniacal odors from stables, or a few quarts will thoroughly deodorize the entire plumbing system of an ordinary house. It also might be used with advantage upon ordinary house garbage, which usually becomes offensive so speedily in warm weather. There would appear to be scarcely any limit to its usefulness in this branch of sanitary science, and it will, as soon as its merits are better known, undoubtedly be adopted universally as a substitute for the deodorants now in use, which usually act by substituting one unpleasant odor for another. The only drawback in its use lies in the fact that the undiluted bromine is strongly corrosive, and, if it touches the skin, causes a painful burn. Where it is used in large quantities this can be obviated by opening the bottle or, what is simpler, breaking it under water. As its use becomes more extended it will undoubtedly be put up in pearls or tubes containing only as much as would be needed at one time in the average household.

THE DURATION OF LIFE IN CANCER OF THE BREAST.

In a recent number of the "Lancet" we find that considerable discrepancies are apparent in the results arrived at by different investigators. Sir Astley Cooper says: "The progress of this complaint is in some persons extremely slow. In general, however, it destroys life in about four years from the commencement." Paget maintains that the average duration of life, from the patient's first observation of the disease, is a little more than four years. Gross gives 38·5 months as the duration of life for those operated on, and 28·6 months for those in whom the disease has run its course without operative interference. His statistics were obtained from combining the results of more than a dozen surgeons, for the most part German. He did not expressly state that in all his cases the duration of life is dated from the time when the disease was first noticed by the patient. W. Roger Williams, F. R. C. S., believes that from this cause, or some other, Gross underestimates the total duration of life in this disease, and that the experience of English surgeons will be found more in accord with his own figures:

The average duration of life in cases of cancer affecting the breast or lower lip is 60·7 months; the rectum, 27 months; the uterus, 24 months; the tongue, 18 months.

THE HOMING INSTINCT.

Dr. George M. Gould, in a recent number of "Progress," suggests an explanation of that peculiar faculty which enables animals to return to their homes from far distant places and under the most adverse circumstances. He bases his hypothesis upon certain facts in regard to the magnetic and electric forces of the earth, such as their continuity, differentiation, and well-known influence. The theory of an organic magnetometer is neither illogical nor contradicted by any inherent impossibility. At home this magnetic sense-organ is in a state of equilibrium begotten by habit, but remove the animal to a locality where (as is the case) there is a difference of magnetic tension, the sense-organ feels stress, and there are unrest and dissatisfaction. Motion toward the animal's north pole—the home—gives relief; motion away from it, the reverse. The pineal gland, with its diamagnetic acervulus and paramagnetic blood, may be the organ of the magnetic sense. Dr. Gould also hints that nostalgia may result from a physical cause.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending January 29, 1889:

DISEASES.	Week ending Jan. 22.		Week ending Jan. 29.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	10	5	17	4
Scarlet fever	339	51	287	48
Cerebro-spinal meningitis	2	2	3	3
Measles	335	32	301	21
Diphtheria	159	39	181	39

Mineral-waters contaminated with Sewage.—A particularly unpleasant state of affairs was revealed, as stated in the public press, by a recent report to the Health Board of this city by the Sanitary Superintendent to the effect that water contaminated with sewage was being used in some instances in the manufacture of carbonated waters. The profession should bear this fact in mind when prescribing artificial carbonated waters, and should insist that they be procured from reliable manufacturers.

The Middleton Goldsmith Lecture for 1889, under the auspices of the New York Pathological Society, will be given at the New York Academy of Medicine on Saturday evening, the 16th inst., at 8.30 o'clock, by Reginald H. Fitz, M. D., Shattuck Professor of Pathology in Harvard Medical School, on the subject "Acute Pancreatitis, with an Especial Consideration of Pancreatic Hæmorrhage, Hæmorrhagic Pancreatitis, and Subperitoneal Fat Necrosis."

The "Journal of the Respiratory Organs."—The first number of a monthly journal with this title, edited by Dr. J. Mount Bleyer, has been issued. It is a sixteen-page octavo journal, containing original and selected articles and extracts from current medical literature relating to diseases of the nose, throat, and larynx. In his "Introductory" the editor states that the journal "is intended to furnish a medium for the communication and interchange of ideas" upon these diseases.

A Naval Medical Examining Board is now in session at the United States Naval Hospital in Philadelphia, for the examination of candidates for admission into the Medical Corps of the Navy as assistant surgeons. The board will remain in Philadelphia until March 31, 1889, after which date its sessions will be held at the Naval Hospital in Brooklyn. Fourteen vacancies exist in the grade of assistant surgeon. Further information may be obtained by addressing the president of the board at the Naval Hospital, Philadelphia.

The Philadelphia Clinical Society.—At the annual meeting, held on Friday, January 25th, the following officers were elected for the ensuing year: President, Dr. Marie B. Weiner; first vice-president, Dr. Amy S. Barton; second vice-president, Dr. Rebecca Fleisher; treasurer, Dr. L. Bremer Hall; corresponding secretary, Dr. Emily W. Wyeth; recording and reporting secretary, Dr. Mary Willits; councilors, Dr. Anna McAllister, Dr. Cornelia Kahn, Dr. Mary E. Allen, Dr. James B. Walker, and Dr. I. G. Heilman.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending January 19, 1889:*

Dickson, A. H., Passed Assistant Surgeon. Detached from the Pensacola and ordered to the Atlanta.

Olcott, F. W., Assistant Surgeon. Detached from the Atlanta and ordered to the Vermont.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the five weeks ending January 26, 1889:*

Carter, H. R., Passed Assistant Surgeon. Leave of absence extended six days. December 29, 1888.

Wheeler, W. A., Passed Assistant Surgeon. When relieved at Buffalo, N. Y., to proceed to Cleveland, Ohio, and assume charge of the Service. January 3, 1889.

Urquhart, F. M., Passed Assistant Surgeon. To proceed to Buffalo, N. Y., and assume charge of the Service. January 3, 1889. Placed on waiting orders, January 12, 1889.

Carrington, P. M., Passed Assistant Surgeon. Granted leave of absence for thirty days. January 25, 1889.

Williams, L. L., Passed Assistant Surgeon. Granted leave of absence for fifteen days. December 26, 1888.

Pettus, W. J., Assistant Surgeon. Ordered to examination for promotion. January 15, 1889.

Magruder, G. M., Assistant Surgeon. To proceed to Louisville, Ky., for temporary duty. January 22, 1889.

Kinyoun, J. J., Assistant Surgeon. To proceed to Baltimore, Md., for temporary duty. December 29, 1888.

Condict, A. W., Assistant Surgeon. Granted leave of absence for thirty days. January 25, 1889.

Society Meetings for the Coming Week:

Monday, *February 4th:* New York Academy of Sciences (Section in Biology); Medico-chirurgical Society of German Physicians; Morrisania Medical Society (private); Brooklyn Anatomical and Surgical Society (private); Utica, N. Y., Medical Library Association; Boston Society for Medical Observation; St. Albans, Vt., Medical Association; Providence, R. I., Medical Association; Hartford, Conn., City Medical Association; Chicago Medical Society.

Tuesday, *February 5th:* Medical Society of the State of New York (first day—Albany); New York Obstetrical Society (private); New York Neurological Society; Elmira, N. Y., Academy of Medicine; Buffalo Medical and Surgical Association; Ogdensburgh, N. Y., Medical Association; Hampden, Mass., District Medical Society (Springfield); Hudson, N. J., County Medical Society (Jersey City); Androscoggin, Me., County Medical Association (Lewiston); Baltimore Academy of Medicine.

WEDNESDAY, *February 6th:* Medical Society of the State of New York (second day); Society of the Alumni of Bellevue Hospital; Harlem Medical Association of the City of New York; Medical Microscopical Society of Brooklyn; Penobscot, Me., County Medical Society (Bangor); Bridgeport, Conn., Medical Association.

THURSDAY, *February 7th:* Medical Society of the State of New York (third day); New York Academy of Medicine; Brooklyn Surgical Society; Boston Medico-psychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington).

FRIDAY, *February 8th:* New York Academy of Medicine (Section in Neurology); Yorkville Medical Association (private); Medical Society of the Town of Saugerties, N. Y.

SATURDAY, *February 9th:* Obstetrical Society of Boston (private).

Letters to the Editor.

HAND-WASHING AND LIQUID AND ANTISEPTIC SOAPS.

BROOKLYN, *January 19, 1889.*

To the Editor of the New York Medical Journal:

SIR: The practitioner who handles many patients in office or clinic finds the merely mechanical side of hand-washing an important one. It means an appreciable consumption of valuable time. In the eye clinic of the Zurich General Hospital I found the late Professor Horner using the following substitute for ordinary soap:

Spiritus saponis	140 parts;
Spiritus aromatici	40 "
Glycerin	20 "

Not knowing the composition of the first two articles, I have had made a liquid soap that, so far as I can judge, acts rather better than the above mentioned as a cleansing agent, and excels it in simplicity of formula.

Its composition is as follows:

White Castile soap	3 ounces;
Alcohol	1 pint.

Dissolve, then add:

Glycerin	2 ounces.

To this can be added any essential oil or oils that may be desired. A bottle of this liquid stands by my wash-basin, and its frequent use proves it an admirable detergent and a decided saver of time. Poured on the moistened hands, it attacks all "matter out of place" more quickly and thoroughly than ordinary soap—due, no doubt, to the solvent power of the alcohol and glycerin—and leaves the skin soft and clean. In "The New York Medical Journal" for August 4, 1888, the following occurs in the "Letter from Paris":

"Professor Reverdin gives the following formula of an antiseptic soap that is quite soft to the hands, cleansing and disinfecting them without causing any irritation:

Sweet-almond oil	72 parts;
Soda lye	24 "
Potash lye	12 "
Sulphocarbolate of zinc	2 "
Essence of rose	9 " ."

I fancy this is more detergent than antiseptic, for, as "soap is decomposed by all the acids, earths, and earthy and metallic salts" ("United States Dispensatory," 1884, p. 1277), only such antiseptics as are compatible with soap can have any value when combined with it, thus very much restricting our choice in this direction; but whatever articles could be so used could be quite as easily dissolved in the liquid soap I suggest as used by making a new soap, by Reverdin's formula, to which they are to be added.

To use a liquid soap most conveniently it should be kept in a bottle or jar (for example, such as is used for the nasal douche), fitted with a stop-cock, which should stand on a bracket over the wash-basin—thus, with least waste of time and effort, allowing us to keep our hands clean and aseptic.

J. S. PROUT.

CALOMEL AS A DIURETIC.

KNOXVILLE, TENN., *January 5, 1889.*

To the Editor of the New York Medical Journal:

SIR: I have noticed in the "American Journal of the Medical Sciences" of this month, as well as in other recent journals, a mention of the recent discovery of the diuretic action of calomel, ascribing this discovery to Jendrássik ("Deutsch. Arch. f. klin. Med.," Bd. xxxviii, p. 499).

I, for one, do not know who discovered the diuretic action of calomel, but I do know it has been used a number of years as a diuretic. In George B. Wood's "Practice," published in 1849, we find reference to the use of calomel in dropsies occurring from various causes. This fact many of our foreign worshipers, of course, are not expected to know, as they only read literature from a more distinguished source than the writings of their own country, for without a foreign stamp it is valueless in their eyes.

In 1849, Wood ("Practice," vol. ii, p. 339) said: "Calomel is often most advantageously associated with squill in cases which demand at once diuresis and the mercurial influence." In the same volume, on page 343 and subsequently, we find a most valuable dissertation upon mercurials in dropsies in general. It is here stated that mercurials have the power of increasing secretion, and are "often most happily combined with other remedies, whether diuretic, diaphoretic, or purgative, increasing the powers of those remedies at the same time that they exert an independent action of their own. . . . A combination of squill and calomel is considered one of the most efficacious remedies in dropsy."

In my notes of Professor A. A. Smith's lectures, taken at Bellevue in 1883–'86, I find twelve distinct uses therapeutically for calomel—among them a distinct claim for it as a diuretic. He even went so far as to urge it in acute Bright's disease in $\frac{1}{6}$-gr. doses three or four times daily, after all other remedies had failed of diuretic action. I have learned to value highly a combination of digitalis, squill, and calomel in many cases of heart trouble with scanty urine and dropsy; it often acts as by magic. Its merits were first called to my attention by my preceptor, who has used it well on to forty years with happy results in proper cases. The calomel has no small part in the decided diuretic action of this combination. I would urge Americans to search their own literature more carefully in the future, and not to take every foreign idea as original.

J. STERLING CARRIGER.

GIVE PYRODINE A CHANCE.

NEW YORK, *January 21, 1889.*

To the Editor of the New York Medical Journal:

SIR: A paragraph on "pyrodine" in your issue of January 19th, quoted from the "British Medical Journal," would, it seems to me, tend to discourage further investigation of what may prove to be a useful addition to our materia medica. A careful study of Professor Dreschfeld's published investigations of the drug, in addition to a limited personal experience with it, leads me to believe that its toxic effects are but little to be feared if

sufficient care is observed in its use. The only toxic effects noted are lebetude, jaundice, and icteric urine, which, from their resemblance to analogous symptoms occasionally following the administration of acetanilide and phenacetine, are supposed to be due to a mild form of hæmoglobinæmia. It has been demonstrated by experiments on lower animals that doses of the drug not exceeding one grain to a pound of the weight of the animal produce no ill effect. In none of the very large number of cases treated by Dr. Dreschfeld and his colleagues was there any tendency observed to heart-failure or collapse—symptoms which, as we know, drove kairine from the field of therapeutics and which occasionally occur from the use of antipyrine. It has seemed to me that the toxic tendency of pyrodine is amply counterbalanced by the fact that it is seldom necessary to administer more than one dose in eighteen or twenty-four hours, except in cases of very high temperature, as its effects are maintained for a longer period than those of other antipyretics. I have myself taken several average doses (eight grains) of the drug experimentally with no appreciable effect beyond a slight lowering of the normal temperature. In several cases of febrile disorders in which I prescribed pyrodine, and which I hope to report more fully at a later day, the antipyretic effects were well shown. No toxic symptoms were observed in any case. Dr. Dreschfeld believes from a limited experience that the drug may prove useful in migraine and other nervous complaints. I have not tested it in this class of cases. Without discussing the question of the value of antipyretics in febrile conditions, we may certainly say that a drug which has been shown to produce so marked an impression on high temperatures as this has done, merits a more extended investigation. It is my belief that pyrodine may be safely administered in doses of from eight to sixteen grains daily to adults, and from four to eight grains daily to children, for several consecutive days. It is a comparatively untried drug, however, and sufficient time should be allowed to elapse between the doses to ascertain that the patient possesses no idiosyncrasy with regard to its action. Those wishing to investigate the subject more fully are referred to the paper of Dr. Dreschfeld on the therapeutical action of the drug, and the report of Dr. R. Wild on its action in the frog and terrapin, published in the "Medical Chronicle" for November, 1888. These, with the exception of the observations of Lépine, which have not been accessible to me, are the only reports of the drug which have so far appeared. James K. Crook.

PERSISTENT URTICARIA, YELLOW SCLEROTIC, AND RED URINE FROM THE USE OF PICRATE OF AMMONIUM.

500 N. Jefferson Avenue, St. Louis.

To the Editor of the New York Medical Journal:

Sir: Your valuable Journal circulates to so great an extent in the malarial belt that it seems eminently proper that the writer should briefly note the experience indicated in the above-given caption with an aggravated case of long and persistent malarial toxæmia, in which there existed a constitutional idiosyncrasy against quinine, the smallest quantities of this salt invariably bringing on violent nettle rash, and the patient being so sensitive that the rash was a source of extreme misery and insomnia.

The patient is a business man, forty-five years of age, active, energetic, and prosperous, but subject in the autumn and spring to the toxic influence of the malaria of the Mississippi Valley. His business is that of a lumber dealer, and he can not well be away when malaria most prevails.

His treatment has been mainly Fowler's solution, tonics, mercurials, electricity, and the Turkish bath. Being of a vigorous and resistant organism, the effects of his malarial poisoning showed itself mainly on every third day—irresistible somnolence, nervous symptoms, and neuralgic pains and aches in back and limbs.

It was finally determined to add grain-and-a-half doses of the picrate of ammonium to his treatment every four hours. He had taken but six or eight doses before such an intolerable urticaria appeared that the medicine had to be discontinued after the second day. The urticaria continued for several days after, when the patient was sent North; the urine became a brownish-red and the eyes as yellow as if jaundiced.

No chemical examinations were made. Buchu and hot water nights and mornings changed the color of the urine to a much paler color after twenty-four hours, but the eyes still remained yellow and the nettle rash persisted when he went away a few days ago.

Perhaps some of the younger laboratory men will experiment with picrate of ammonium and tell us if this yellow hue of the eyes and brown-colored urine have any clinical significance.

C. H. Hughes.

Proceedings of Societies.

NEW YORK SURGICAL SOCIETY.

Meeting of November 28, 1888.

The President, Dr. Lewis A. Stimson, in the Chair.

Dr. Abbe showed a man of forty upon whom he had operated five years ago, by a complicated and unique plastic operation, to restore the lower lip. At that time epithelioma had recurred in the cicatricial margins of a scar, covering three quarters of the lower lip which during the three years previous had been extensively destroyed by caustic pastes. The absent lip allowed constant escape of saliva, and the gap extended somewhat beyond the commissure, exposing the teeth and the gums.

Dr. Abbe supplied the deficient lower lip, after excising the diseased tissue widely, cutting the upper lip free from the cheek and gum by incisions from the angle of the nose to the corner of the mouth, and twisting this around until the vermilion of the corner met the remnant of the lower lip. The gap thus left in the cheek was filled by a flap slid up from below. This left the mouth entirely at one side, and it was intended to split it laterally at a later date. Primary union took place with a small mouth, and, as this had stretched to nearly a natural size, the patient had not until now desired any change. The cicatrices were soft and no trace of recurrence of epithelioma had occurred during the five years. He now proposed to have it enlarged a little, as he was going into an out-of-door selling business requiring much stretching of his mouth.

Case of Perityphlitis; Operation; Recovery.—Dr. Hartley presented a male patient with the following history: C. A., aged twenty-five, in April of the present year had a sudden attack of griping pain in the right iliac fossa, accompanied by slight diarrhœa, fever, and tenderness in the region mentioned. He had no treatment except poultices, and recovered in the course of six weeks. In July he had a similar attack, from which he recovered in five weeks. On August 29th he had another attack, this time with more general abdominal pain, tympanites, and tenderness in the right iliac fossa. He vomited and had a temperature of 102° to 103° F., his pulse being 100 to 115 and full. The bowels were obstinately constipated and could not be moved by enemata. The reporter performed laparotomy on September 2d, making the incision recommended by

Dr. Sands. The vermiform appendix was found to be surrounded by a layer of yellowish fibrin, which also covered the adjacent coils of intestine. The appendix was much thickened, of a pyriform shape, and was constricted at its junction with the cæcum, but there was no perforation; it contained two fæcal concretions. It was ligated with silk close to the cæcum and was excised. The cavity in which the appendix lay was packed with iodoform-gauze, which was left at the lower angle of the abdominal wound, the latter being closed above this point. The patient had an uncomplicated recovery and was discharged at the end of five weeks. He was now in perfect health. The case was reported simply as contributing evidence to the intraperitoneal situation of perityphlitis.

A Contribution to the Surgery of the Bladder.—Dr. Willy Meyer read a paper with this title. (It will be published hereafter.)

Dr. Rockwell asked the reader why he gave the preference to epicystotomy in the removal of small calculi.

Dr. Meyer said that he preferred this method even in the case of small stones, since it required no more time for its performance than did median section.

Dr. Rockwell explained that he referred to lithotripsy.

Dr. Meyer said that most of the German surgeons preferred the cutting operation to lithotrity, perhaps because they were more familiar with it, and then on account of the few minutes the former required. Furthermore, a recurrence of stone was more frequently seen after lithotrity and litholapaxy respectively, than after lithotomy.

Dr. Wyeth asked if loss of muscular power had ever been noted after transverse section of the rectus abdominis.

Dr. Meyer replied that a hernial tumor, which contained the bladder, might develop, although this result had not yet been observed. Roser had cautioned against this, and proposed not to divide the insertion of the recti muscles entirely, but to preserve a portion of it on both ends of the incision. But such a loss of muscular power had occurred just as well if the recti tendons had been divided in using the incision in the linea alba. It was important not to incise the internal pillar of the inguinal canal at the external aperture of the same, since inguinal hernia might be the consequence. Bruns made this experience in a child. In one instance Dr. Meyer had seen the spermatic cord (but covered by tissue) from the line of the incision. Trendelenburg had made the cross-section sixteen times without having a case of hernia. He advised the operator not to cut, but simply to press his knife against the muscles until they gave way, and to make a long cross-incision somewhat downward, convex, so that the ends of it ran parallel with the inguinal canal. It was certainly possible to obtain more room by this incision.

Dr. Wyeth thought the poor drainage might be due to the T-tube. He was accustomed to make a hole on either side of the vertical arm, and to introduce a second smaller tube at the side of the long piece and attached to it, through which water was injected into the bladder. It would then flow back through the T-tube, on the principle of the double catheter. He had never sutured the wound in the bladder, and preferred not to do so except in cases in which the operation was done for the removal of a foreign body, and there were no evidences of cystitis. The vesical wound tended to close spontaneously without suture. The introduction of sutures was difficult, and served to prolong the operation; their use was contra-indicated in cases of hæmorrhage and chronic cystitis. The speaker believed that epicystotomy was useful in the case of elderly patients with enlargement of the prostate, or where the bladder would be injured by lithotrity. He had lost one patient from shock after lithotrity, the bladder being uninjured.

Dr. Meyer had never observed imperfect drainage when using the T-tube, nor had Trendelenburg in his forty-two cases, nor Assendelft in his one hundred and two cases. The urine escaped during the first time at the side of the tube, as well as through it. If a blood-clot or piece of a tumor should obstruct the tube, it could easily be removed by irrigation, a catheter being introduced by way of the urethra. In regard to suturing the bladder, he thought that it should be the aim of the surgeon to close the wound of the bladder in this way, the same as after opening any other hollow viscus, such as the stomach. Lange's statistics were most convincing on this point. Even when there was severe catarrh of the bladder, that surgeon had obtained primary union. Other surgeons, especially Schmitz and Couvée, had noted primary union in about one third of the cases they had collected. Leakage through the wound did not usually occur before the third day, and often not until the ninth or eleventh. In regard to selecting proper cases for suture, Dr. Meyer referred to what he had said in his paper.

Dr. Gerster testified to the advantages of the transverse incision, especially in the case of fat patients, or where it was necessary to make a large opening in the bladder. The longitudinal incision did not give sufficient room. The transverse cut was useful when the pubo-vesical fold of peritonæum was situated so low that the opening in the bladder could not be safely enlarged upward. The operation with this incision was performed more rapidly, since it was only necessary to find the symphysis pubis, to put the recti on the stretch, and then to divide them by simple nicking, the scalpel hugging the bone. The speaker had hoped that there would not be so much liability to renal complications when the bladder was opened and drained in the manner described, but he had had two cases in which the kidneys were affected, one of which terminated fatally. He thought that vesical drainage after epicystotomy was not always perfect, especially when the bladder was atonic and did not contract well. Pockets sometimes existed in the organ, which did not drain thoroughly, even when the patient was kept in a semi-prone posture; on irrigating the bladder through the urethra, masses of pus would suddenly escape at a time when the irrigating fluid had been returning in a clear state for some time.

The President called attention to the fact that the statistics of lithotrity were very favorable to this operation. As a matter of fact, most of the cases of lithotrity were in elderly subjects, and the majority recovered.

Dr. Gerster said, in reply to a question by Dr. Meyer, that in one of his cases of epicystotomy the bladder did not drain well after the third day. In another case it was found by cystoscopy that there was a diverticulum from the bladder. The patient had hæmaturia, the source of which was obscure; after cystotomy had been performed it was found that the kidney was also involved. Under such conditions—that is, in the presence of a diverticulum—good drainage could hardly be expected. The speaker thought that cystoscopy was one of the greatest advances in diagnosis, and that the use of the cystoscope was comparatively so easy that the instrument would come to be quite generally employed.

Fish-bone removed from a Hernial Sac.—Dr. Gerster showed the specimen, which he had removed from a peddler, aged fifty-one, who entered Mt. Sinai Hospital for the radical cure of a large irreducible right inguinal hernia (scrotal) that reached as low as the middle of his thigh. The hernia felt solid, except at its upper portion, where it was elastic to the touch and gave a tympanitic percussion-sound. The canal was widely distended, admitting three fingers. The speaker thought that omentum was adherent at the bottom of the sac. The gut was exposed near the ring, and the coils were found to be ad-

herent to the sac and to one another. While endeavoring to free the intestine, the operator suddenly opened an abscess-cavity, evacuating a quantity of fœtid pus. At the bottom of the cavity the fish-bone was felt and was removed; at least one third of the wall of the cavity was formed by intestine, which was covered with a thick layer of lymph, the deeper portions of which were organizing; the superficial ones, however, looked like greenish pseudo-membrane. The patient had given no history of intestinal trouble. The speaker decided not to excise the gut, but to clear away the fibrin from it, to return it to the abdominal cavity, and to close the ring according to Macewen's method. It was impossible to separate the cord from the mass, so that a portion of it was excised; the corresponding testicle was accordingly removed. The upper portion of the sac was used to form a plug, and the pillars of the ring were subsequently united by six Czerny sutures to give additional security. Peritonitis was feared, but the patient made a perfectly good recovery, the bowels being moved on the second day after the operation with small doses of salts.

In reply to a question by the President, Dr. Gerster said that at the point where the abscess was located there was a sharp bend in the adjacent loop of intestine, the wall of the gut being much thickened and indurated. Probably there was an obstruction of the lumen here, and the bone became impacted and gradually ulcerated, though there was no evidence of perforation.

Creolin as an Antiseptic.—The President showed a sample of pure creolin, and also one of a two-per-cent. mixture in water. It was a dark, viscid liquid with a tarry odor, insoluble except in alcohol, a two-per-cent. aqueous mixture appearing as a fine emulsion. He had been much troubled by the fact that secretions from wounds readily underwent decomposition under dressings of sublimate gauze, and had thus been led to try creolin. He had now employed it for two months at the New York and Chambers Street Hospitals, with very satisfactory results, using ordinary purified gauze wrung out in a ten-per-cent. aqueous mixture. The drug was rarely irritating to the skin. It was not only a good antiseptic, but it also arrested parenchymatous bleeding and hastened cicatrization. When applied to ulcerated cancerous surfaces, it was a powerful deodorizer. Chemically it closely resembled a cheap patented disinfectant, sold under the name of "soluble phenyl," but the latter was of somewhat thinner consistence; creolin contained no carbolic acid.

Dr. Hartley said that he had used a two-per-cent. mixture of creolin extensively as a local application in cases of acute dermatitis and eczema with very satisfactory results; it had a decided analgesic effect.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN OBSTETRICS AND GYNÆCOLOGY.

Meeting of November 22, 1888.

The President, Dr. Joseph E. Janvrin, in the Chair.

An Inexpensive Cell for Galvanism.—Dr. A. H. Buckmaster showed a cell and described its construction (see page 15).

Report of a Case of Placenta Prævia, with Specimen.—Dr. R. G. Wierner showed a placenta which had been centrally implanted over the internal os. He had bored through it with his fingers, turned and extracted the child by the feet, while the woman was under ether. The ether had kept the heart in strong action and the subsequent vomiting had aided in producing contraction of the uterus.

Hysterectomy for Fibroid Tumor, with Specimen.—Dr. J. R. Goffe showed a large multiple fibroid tumor of the uterus which he had found closely wedged in the pelvis of a woman. It had occasioned the patient much distress, difficult defecation and micturition, hysteria, insomnia, and nervous exhaustion. He had detached it with much difficulty from the bladder. The surface on the bladder from which he freed the tumor he afterward had carried back and used to make a flap over the stump. He then arranged for drainage of the stump by introducing into the cervical canal a Peaslee's applicator which he left there and through which he made daily irrigation. Dr. Emmet had used the same method once for covering the pedicle, dissecting off a layer of the tumor with which to do it; but he had made no drainage by way of the vagina; an abscess had formed and burst on the tenth day, causing the death of the woman by peritonitis.

Dr. A. P. Dudley remarked that he had obtained the best results from a similar plan of procedure.

The President spoke favorably of this new use of the Peaslee's applicator.

A New Method of Operation for Restoration of the Lacerated Perinæum.—Dr. A. P. Dudley read a paper with this title. He reviewed the Emmet operation, which he regarded as a difficult one to understand and to perform, and furthermore as based on an inadequate idea of the true nature of the injury to the parts. He had never obtained satisfactory results, although he had employed it for six years previous to his use of his present method.

The speaker then described the anatomy of the female perinæum and particularly called attention to the tendinous union of all its muscles in the median rhaphe. He believed that by far the most common and important element of the injuries sustained in laceration was a separation of these muscles by a rending of their central union with each other, which left them to contract away toward the sides of the pelvis, and thus practically destroy the diaphragmatic muscle of the pelvic outlet.

In a laceration of the first degree, where only the skin and a small part of the perineal body were ruptured, the inconvenience to the patient was but slight, and the muscular separation and the consequent falling apart of the labia would correspond only to that portion of the central tendon which united the fibers of the transversus perinæi and a portion of the fibers of the bulbo-cavernosus. Here rectocele would not be present in the majority of cases, although it might occur. But a laceration of the second degree, involving the whole perineal body down to the sphincter, was a far more serious matter, because it meant the rupture of the central tendinous attachment of all the muscles of the pelvic floor to each other. This took away the chief support of the anterior rectal wall. That thin remaining septum then had to withstand the force of exertion at stool or of other physical efforts. Rectocele soon made its appearance, for in any exertion the force would be exerted in a line parallel with the curve of the pelvic outlet, and therefore transmitted to the remains of the perineal body just at the point where the rectum turned in its course and curved backward toward the anus. The recto-vaginal septum, thinned and weakened as it was at that point, easily bulged forward under pressure from behind into a large pouch. As this pouch was formed, the whole septum or, in other words, the posterior wall of the vagina was dragged down, and so indirectly the uterus was pulled into the axis of the outlet, or even into complete prolapse. The shorter anterior wall being also relaxed, cystocele might also take place. Now, on the other hand, if the laceration had extended through the anus and up the rectum to a point intersected by the axis-line of the pelvic outlet, then all force exerted by physical efforts would meet with no resistance at the

point where the perineal resistance should be, and consequently there would be no rectocele and no dragging on the uterus. Not only that, but the cicatrix at the top of the rent in the posterior wall, filling it in like a spool held in the cleft of the fingers, was usually a very dense structure and added considerably to the rigidity of the posterior vaginal wall. It was true in such a case that prolapse of the uterus seldom occurred, but this did not prove, as some had supposed, that a rupture of the perineal body alone, in a laceration of the second degree, might not lead to uterine displacements. The laceration of the third degree required a different method of procedure for its restoration, which was not now to be discussed, except that he would say in passing that here, too, no operation on the perinæum which was not directed to a restoration of parts still present to their natural condition could be said to have a sound anatomical basis. He returned to the consideration of lacerations in the second degree attended by rectocele and secondarily by uterine displacements. To dispose of a rectocele caused in the manner described, by denuding and tucking in mucous membrane in the sulci of the vagina, as in the Emmet operation, thus drawing the wall straight between the two puckered-in portions at the sides, would certainly not restore the dilated and thinned tissue of the recto-vaginal septum to its normal thickness at the center of the posterior wall, where pressure was going to come again, just as before the rectocele began to be formed. Furthermore, the deep perineal sutures, made externally as the second step by Dr. Emmet and many other operators, could not return the separated fibers of the central tendon to connection with each other for the following reason: In Emmet's operation, and in all others where denuded mucous membrane in the vagina was brought together so as to make more or less of an infolding at the middle of the recto-vaginal septum, this fold interposed itself between the separated edges of the tendinous aponeurosis of the pelvic diaphragmatic muscle. Their union with each other, or any restoration of muscular action in this diaphragm of the outlet, was thus prevented, no matter how closely the sides might be pulled together by the sutures. The essential point in the operation which he was to describe, and the only one which was, as he thought, an original one, was to use a peculiar stitch which drew upward all the mucous membrane at the middle of the posterior wall, so that none of it could interpose itself when afterward he drew together into apposition the parts containing the tendinous central rhaphe.

The twofold object to be gained by operation was to get the tissue of the rectocele back into the vagina to the point from which it originally started, and to restore the lacerated fascia and muscles which had allowed it to occur back to their proper connections in the recto-vaginal triangle. To secure these results he had for two years past used with entire success the following method: The labia were separated with the fingers, and the rectocele was drawn down with a tenaculum until slight resistance from above was felt. The crest of the rectocele was then snipped slightly in the median line as a guide to the point to which the denudation was to be carried. The labia were then brought into apposition and the points noted and snipped where the remains of the hymen on each side came together. The two latter points marked the height to which the semicircular denudation should be carried on the external genitals or outer portion of the perinæum, also the points from which the triangular denudation of the posterior wall should start as a base, the apex at the center of the posterior wall reaching a much higher point. When the denudation made in this form was brought together from side to side, a long suture resulted, giving a thickened cord down the center of the posterior wall, where strength was most needed, while the peculiar stitch employed insured the whole being well drawn upward from below. The wound being ready for sutures, the left forefinger was passed into the anus and carried up to the apex of the denuded surface, and the first suture was introduced at that point. He introduced the needle a little outside the median line and passed it from behind forward or from above downward, and brought it out on the median line of the denuded surface. The needle was then reintroduced an eighth of an inch from its exit and carried out, back, and up through the opposite half of the denuded surface. The stitch then had the form of a V, the apex of which pointed toward the vaginal outlet. This first suture was then tied securely, and acted as a fixed point from which to work. This first suture, as it was drawn tight, would draw up its apex attachment toward its two basal attachments, and so a little of the tissue of the rectocele would be drawn upward. Without cutting his thread he then made another similar V-shaped suture just in front of or below the first, drew it tight, and held it so while he carried the thread over and made a third and a fourth. As each suture was drawn tight, more and more of the posterior wall was drawn up, and this process was furthered by taking a probe and tucking back the tissue of the rectocele under each suture. As the closure and drawing up proceeded from the apex toward the base of the triangular denuded surface, the sutures were each to be passed at a little less of an angle, until when abreast of the remains of the hymen they passed nearly transversely across. The inside work was then finished; the suture was to be passed twice through the same needle-track, and so made fast, and its course then changed so as to do the second part of the operation with the same thread. He preferred for suturing in this operation catgut taken directly from the juniper solution.

A number of deeply buried sutures were then passed through the external perinæum from this point as far down or back as the end of the rent. They passed through the edges of the separated tendon of the perineal body, and drew them into actual apposition, a thing now made possible by the stitch used in the first part of the operation, for reasons already given. They were not different, except in their effect thus obtained, from the deep sutures used in operations for lacerated perinæum by other writers. These being completed with an over-and-over stitch, he came back with superficial sutures to the point where the deep sutures began, and the operation was complete. A Sims speculum was then introduced and the parts were inspected for bleeding points or gaps in the mucous membrane, and were then thoroughly dusted with iodoform, no other dressing being needed. He then let the wound rest for four days without inspection, unless there was a rise of temperature. When the healing was complete all the functions of the parts were restored; the levator ani, bulbo-cavernosus, and other muscles acted as strongly as if no laceration had occurred, and scarcely any evidences, objective or subjective, remained of an injury ever having been received.

Dr. W. R. Gillett discussed the operation as done by Dr. Dudley, and thought the stitch used an entirely new one, which would accomplish what had never otherwise been done, in long-standing cases of laceration especially.

Dr. J. W. McLane remarked that he too had failed to get good results from the Emmet operation, and had done best with a method of operation similar to Dr. Dudley's, except that his successes had been in cases treated just after laceration. Where the muscles had had time to retract, and especially after rectocele had appeared, it must be necessary, in order to restore the parts, that the ground which had been lost should, so to speak, be retaken. He agreed with Dr. Dudley as to the importance of the muscular floor of the perinæum. He was not aware that any method similar to his, at least as respected the style of suture, had as yet been published.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN THEORY AND PRACTICE OF MEDICINE

Meeting of November 20, 1888.

Dr. R. C. M. Page in the Chair.

Oxaluria, especially in Relation to Uric Acid.—Dr. Debout d'Estréés, of Contrexeville, in the Vosges, France, read a paper with this title dealing with the excessive production of oxalate of lime in the economy. Deposits of the oxalates were as rare in France as they were common in the United States. On the other hand, the uric-acid calculi, so common among Frenchmen, had seemed to be the exception in those Americans who had come under his care. Various authorities had thought the production of oxalate of lime instead of uric acid due to a nervous influence, to excess of nitrogenous food, to lack of oxidation, either in the lungs or in the tissues, to acid fermentation (especially apt to occur on a diet of potatoes), or to several of these causes combined. His own observations had led him to believe that oxalate of lime in the normal urine might result from foods containing it—such as rhubarb, tomatoes, celery, sorrel, water-cresses, and green fruits. It might also represent an incomplete oxidation of uric acid. In calculi and in gravel, uric acid and oxalate of lime were frequently to be seen occurring side by side. They probably had a common origin, for in some patients they occurred both together and at particular times, each without the other.

As to the difference between his own countrymen and Americans in regard to oxalate of lime and uric acid, he would suggest causes and submit them to the Section for review. Uric acid in the urine seemed to occur more from heredity, overfeeding, and sedentary habits; oxalate of lime from dyspepsia and nervous exhaustion. Was not the mode of life in America, with its fast living, strain, and neglect of rest and good digestion, such as would rather produce oxalate of lime than uric acid? The French, certainly, sedentary by taste or profession and too fond of high living, made themselves subject to what he considered the prevailing cause of uric-acid formation.

Dr. E. L. Keyes remarked that he had visited Contrexeville himself, and had found the situation very pleasant. He had there found many Englishmen suffering from a uric-acid or oxaluria diathesis, and had also met Playfair, who was enthusiastic over the virtue of the place and its springs. He had sent patients there with catarrhal affections of the urinary tract, who had been much benefited. In the case of one patient a large amount of oxalate of lime in his urine was entirely replaced by fine crystals of uric acid. He returned home benefited in many ways, although, before long, oxalate of lime again predominated. However, after passing a stone, he had regained health. Various mineral springs in this country were of benefit in debilitated and catarrhal conditions associated with oxaluria through their laxative and diuretic effect, but none were so likely to cause the disappearance of oxalate of lime as the waters at Contrexeville.

Dr. G. B. Fowler believed in the existence of a so-called oxalic diathesis, of which indigestion and nervous depression were marked features, also that imperfect oxidation from heart or lung difficulties might be the cause of oxalate of lime in the urine. He thought that the treatment should be dietetic. A simple diet must be found which was completely digested, and which should vary with different patients. He thought no mineral water had any solvent action on oxalate of lime as such, but that the free use of some waters might promote assimilation and glandular action, and so give aid in oxaluria.

Dr. D'Estrées, in closing the discussion, said that the benefit obtained in both the uric-acid and the oxaluria diatheses at Contrexeville did not result simply from the patients drinking large quantities of the water, as Dr. Fowler seemed to infer. They had learned to limit the amount of the water drunk very carefully. He had not found oxaluria associated with phosphatic gravel, that Dr. Keyes spoke of having been so common in his experience.

The Treatment of Catarrh and Functional Disease of the Stomach and Bowels.—Dr. W. W. Van Valzah read a paper with this title, the object of which was to put forward a clinical method of dealing with catarrhal and some functional disorders of the digestive tract. The treatment consisted of a diet of animal food, especially of beef and beef-pulp. The best meat was the center of the round of a corn-fatted steer six years old, broiled over a charcoal fire and eaten with butter, salt, and pepper. Dried beef, chopped beef, oysters, game, and beef extract were sometimes of service in giving variety. It was sometimes necessary to begin treatment with the fresh beef-juice only; and often a little toast was useful for a short time at the outset. Lack of appetite was apt to mean either that bile or food still remained in the stomach, or that the patient was overtired. When catarrh of the stomach was present, the diet for from one to three months should be such as insured rapid digestion. For such patients he was accustomed to recommend milk warm from the cow, drunk very slowly, or peptonized milk. Milk and beef together gave the best results of all if they were well digested. As recovery became evident, peas, string-beans, and fruit could be added to the diet cautiously. However, the patient must always be careful of what he ate. The mucous membrane remained sensitive to the end of life.

Moreover, it was necessary to study everything about the patient's mode of life which could have a bearing on digestion. To stop the excessive fermentation of his food was of the most vital importance. Hot water before meals was useful to prepare the stomach, wash out bile, raise nervous tone, and increase circulation. It favored downward peristalsis, whereas cold water had just the opposite effect. It was to be drunk very slowly (twenty minutes to a glassful), at a temperature of 120°. Where catarrh of the stomach was present it should be taken at least two hours before eating. Where the heart was weak or a hæmorrhagic tendency existed, and during menstruation, it should be lukewarm.

If there was nausea, it only proved the need of washing the stomach out. Coffee and tea were to be limited. To rouse the energies in the morning the reader had got good results from one sixteenth to one twentieth of a grain of strychnine given in hot coffee sweetened with saccharin and glycerin. Lemonade was of use in some cases; pepsin and pancreatin in others. Of medicines, the less given, on the whole, the better. When catarrh of the duodenum existed, hydrastis before meals was of some value. Salicine was very good to check fermentation. The bowels were to be kept open by occasional laxatives of various sorts, or by enemata of water, oil, or glycerin and oil. In salol he had been disappointed. A happy mental state must be induced in a patient before recovery was possible. Resting before and after meals and much sleep were to be insisted on. He sometimes kept his patients in bed all the afternoon.

There was often a temporary loss of flesh and strength when this treatment was begun. The stopping of fermentation itself tended to weaken a patient for a time by the withdrawal of the stimulation previously caused by its morbid products. In catarrhal cases the condition might last for some months. It was important here that the patient should not become very tired at any time and that he should never eat when feeling wearied. However, during this time, examination of the blood-corpuscles would show an increase in their number and color.

At intervals there would be attacks of biliousness with head-

ache, pain, and much fermentation, followed by large evacuations containing mucus and bile. These represented a sort of house-cleaning process which the body carried out from time to time. At such times a short period of fasting was advisable.

Functional digestive disturbances did not need so radical a line of treatment. The diet should consist of three fourths of animal food and one fourth of starchy food in the form of dry toast, rice, or cracked wheat. Celery, cresses, or spinach might be chewed without swallowing the fiber.

If cases were at all recent, improvement would soon follow. In robust persons the mucous membrane in the bowels would remain unaltered by fermentation, but in the weakly very great changes were apt to occur in a short time. The carbonic-acid fermentation was the most harmful one. In all cases the blood, the urine, and the stools needed constant examination, both chemically and microscopically. The thing always to be ascertained was whether the patient was really taking to pieces and working up what he was swallowing.

Where patients could not afford, or had not time for, or lacked determination to persist in the radical method of treatment, other methods could be used; but in old, inveterate cases he knew of nothing to equal a milk-and-beef diet. Many mild cases would improve markedly if one solid meal were allowed at midday, with milk for breakfast and supper. But he would repeat that in every instance the physician owed it to himself to find out by direct examination what became of the food ingested.

Dr. A. Caillé believed that if digestive troubles were to be successfully dealt with it was necessary to have at one's fingers' ends all the common causes or conditions of disease in the stomach or elsewhere giving rise to dyspepsia. Such were simple acute indigestion from overeating, acute catarrh of the stomach, indigestion from bad teeth or neglect in chewing, from age, from constipation, from anæmia, or from dilatation of the stomach due to simple distension or to carcinoma obstructing the pylorus.

As to diet, he had succeeded best with a liberal diet, together with attention to other things. He would of course forbid such articles as cheese, pork, pastry, beans, and lobster; and he advised that fruits be stewed. Salt pickles and green salads seemed rather to aid a weak digestion than otherwise. He began his treatment by opening the bowels with calomel and podophyllin and then ordered muriatic acid, wine of pepsin, and hot water drunk before meals. In acid dyspepsia he used the dilute hydrochloric acid. When the patient was hungry between meals he had found that a piece of sweet chocolate would remove the disagreeable sensation. When cases proved intractable he washed out the stomach with the siphon, using warm, mildly alkaline water. But unless these washings brought away bile or mucus they were of no avail. They were very useful where dilatation existed, especially when combined with electricity and massage. Many cases of dyspepsia were due to the overuse of tobacco. Many of these patients should use no tobacco whatever.

Dr. Henry Schweig believed that dyspepsia was very frequently a constitutional thing and was often connected with catarrh of the upper air-passages. He had seen cases where no improvement in the digestion could be obtained until catarrhs elsewhere had been cured, and *vice versa*.

Dr. J. C. Peters remarked that he had come to rely on a dietetic treatment largely. He gave palatable and easily digested foods, but allowed scarcely more than a single article at each meal. With each meal he changed to a different article. This allowed for a wide range in choice, and yet the digestion, strength, and weight improved under it as rapidly as under any special regimen—more rapidly, in fact. The meals were given about four hours apart. Hydrastis and pulsatilla were each of use in appropriate cases; and sulphate of manganese was one of the best drugs he knew of to cause a healthy flow of bile. If we wished to give Carlsbad salts, sulphate of soda was the same thing, and far cheaper.

NEW YORK ACADEMY OF MEDICINE.

Meeting of November 1, 1888.

The President, Dr. A. Jacobi, in the Chair.

Sudden Heart Failure in Diphtheria, its Pathology and Treatment.—Dr. J. Lewis Smith read a paper with this title. He remarked on the singularity of sudden symptoms of failure of the heart's action which at times appeared during the convalescence of diphtheria, perhaps shortly after the physician had made to the family a favorable prognosis. The scene changes suddenly, the pulse becoming at first slow, then rapid and feeble, the respiration shallow, the surface pallid or even cyanotic.

In some cases by active stimulation the patient might recover from the attack, but it was likely to recur in a few days. These cases usually ended in death, although a recovery was possible. On account of this unforeseen and so often fatal complication, the reader regarded diphtheria as one of the most deceptive of diseases. He recited several typical cases which he had selected from the records of M. Cadet de Gassicourt, whose accounts were very complete. In the first case there were signs of palatal and pharyngeal paralysis on the eleventh day. On the morning of the twelfth day there had been a chilly feeling, slight cyanosis, and some dyspnœa. The pulse, at first slow, became rapid; the patient was agitated, trembled, groaned, and seemed prostrated. An hour later he became greatly excited, screamed loudly, and in a moment fell back dead. In other similar cases it was ascertained that the pain causing the cries was precordial or epigastric. In other cases death occurred without moaning or agitation, and the pulse remained abnormally slow. Vomiting sometimes succeeded in the cases where there were abdominal pains. A careful microscopic examination had shown no changes in the pneumogastric nerve, or the medulla, or in the heart muscle, in these cases; but in the spinal cord there had been swelling and degeneration in the anterior gray columns at points not specially connected with the heart. In several of his cases there had been an early development of paralysis in many parts of the body, and death had finally taken place from heart failure and asphyxia combined. In some instances the heart failure had been gradual. Gassicourt reported only one recovery to fourteen deaths where the symptoms of heart failure had once appeared.

When inquiry was made as to the cause of this sudden loss of power in the heart, we naturally looked in several possible directions. Was it from disease of the heart muscle, from thrombosis or clots in the heart cavities, or from disease affecting the medulla or pneumogastric? The branches of the latter nerve supplied lungs and stomach as well as heart, and these three organs seemed in most instances to be affected at the same time. The accompanying dyspnœa, nausea, and abdominal pains might be thus explained. It had been quite well established that endocarditis was not the cause of heart failure in diphtheria. A more probable cause was a weakening of the heart fiber by a granulo-fatty degeneration due to the prolonged action of the diphtheritic poison. Twenty years ago Oertel had described the condition of the heart muscle in cases dying of diphtheria as soft, pallid, and friable, with the initial stage of fatty change; but we knew this was so in certain cases only. In a larger number of the class of cases under consideration the failure came during convalescence; it was sudden and preceded by no weakening of the heart action in the days before the attack. The heart fiber was often found to be in perfect condition.

As to thrombosis or the formation of clots in the heart cavities, several writers had pointed out that, when present, they did not differ from those found after death from other causes and were probably formed during the death struggle. Dr. Beverley Robinson had been the leading advocate of the idea of their being causative of this form of heart failure.

The reader thought it well to bear in mind that in most instances paralysis had existed in the velum palati and elsewhere for some time previous to the heart failure. This paralysis extended from point to point until suddenly the heart and other central organs fell under the influence of some similar and powerful nervous disturbance. The best explanation to him was a more or less sudden arrest of the innervation of the heart, together with vomiting, epigastric pain, and dyspnœa—all from the same cause that had already produced the palatal paralysis and loss of tendon reflexes, etc.

Many observers, including Charcot, had believed these nervous disturbances were due to a peripheral neuritis, and that condition had sometimes been found, but not regularly. Others, finding at times changes in the central nervous system, credited the sudden heart failure to these. Dr. Jacobi in 1880 had expressed an opinion that it was not always due to the same cause. Now the supposition of a neuritis or central changes, or both, would not explain some cases where the microscope showed an apparently normal condition in the nerve supplying the paralyzed part, and also in the portion of the spinal cord from which it arose. Nor in other cases, where loss of tendon reflexes appeared in the first day and palatal paralysis in the second or third, was it likely that neuritis should have been developed so soon. Especially did it seem unlikely, when we considered the tendency of these paralyses to shift about suddenly from point to point, that there could be accompanying degenerative changes and recoveries in the central or peripheral nervous system. Furthermore, when changes had been found in nerves, not all the fibers had been affected, and we should not expect complete paralysis of a part unless this change were complete. Against the idea of a change in the central nervous system was the fact that it was often a single branch of a given nerve which suffered, the other branches escaping entirely. The present theory as to the ætiology of diphtheria and all its symptoms was the same substantially as the idea advanced by Trousseau that there was a poison present in the blood. We now believed that the bacteria producing the disease had a local site only, and multiplied on the diseased mucous membranes; but that the ptomaines or leucomaines which they produced were carried into the circulation and gave rise to the general symptoms of the disease. No microbes were found in the kidney unless the disease took on a septic form, which was now rare since antiseptic washes had been in use, and forcible removal of the diseased membrane and the use of escharotics had been abandoned.

As to treatment of threatened heart failure, it would necessarily consist in enforcing complete quiet of body, with the head placed low. Hypodermic injections of brandy, ammonia, musk, and the electrical current should be employed successively to sustain the heart action. If the first attack was survived, the patient should be kept on predigested beef and milk preparations, and iron, moderate doses of quinine, strychnine, and electricity should be employed as nerve stimulants, strychnine being the best of these by general consent.

The President suggested the following points for discussion: 1. Were cases where heart failure occurred early identical in nature with those where it came late in the course of the disease? 2. Were the cases with an abnormally slow pulse essentially different from those in which the pulse was rapid? 3. Was the cause the same in cases following a general paralysis as where heart disturbance preceded any other paralyses?

Dr. A. L. Loomis, being asked to open the discussion, said he had only met with two cases of sudden heart failure in diphtheria. In one of these he made an autopsy. In both, the attack occurred during convalescence, on about the twentieth day and very suddenly, and both died instantly. In one, the patient, a girl of twelve years, had attempted to rise from a sofa, and had at once fallen back dead. The autopsy, which in this case was permitted, showed a flabby heart, with a dilated right ventricle and a diffuse granulo-fatty degeneration of the muscle substance. The cavities were distended by large, firm blood-clots.

He considered sudden heart failure in diphtheria due to several possible causes, any of which might be the chief one in different cases. When it occurred early in the disease, he had supposed it due to the general diphtheritic poison, and similar to the heart failure sometimes occurring in typhus fever. To account for the other cases he had yielded to the generally received opinion that a suddenly developed neuritis was its immediate cause. He had no evidence either for or against this theory.

Dr. A. Caillé remarked that in the earlier years of his practice he had held that children with diphtheria should be kept as much as possible in the open air, but he now believed it better to keep them confined to bed, so as to reduce the chances of heart failure to a minimum. He had once had a case where a girl of ten years had an apparently light attack of diphtheria, a deposit being seen on the two tonsils only. He had given his usual order, according to which she daily took gentle exercise in the open air. However, on the eighth day, while walking slowly with her mother, she had suddenly become greatly distressed, and had to be carried home. He found her in bed and suffering from heart failure. She had refused to take any alcoholic stimulant for what she considered moral reasons. She had remained in bed two months, during which time there developed a thrombosis in the right leg, then hemiplegia of the whole left side with aphasia, then pneumonia, and subsequently acute nephritis with abundant albumin and granular casts. She had finally recovered, but was left with contractures on the left side and some atrophic affections elsewhere. He believed the complications were the results of the walking he had advised, and the refusal on the part of the child to take whisky. In another case fatal heart failure had come on, caused apparently by the patient's eating heartily of fried clams and cabbage two hours previously, of course contrary to advice. He believed that, if the physician could enforce absolute rest in bed and correct diet, and if sufficient stimulation was employed, sudden heart failure would become very rare in diphtheria.

Dr. Beverley Robinson had at one time made many autopsies on children dying of diphtheria. He had no definite opinion as to the paralyses which occurred late in the disease, but he had had reason to attribute the heart failure which occurred during the acute stage of the disease to the formation of clots in the right heart and to granulo-fatty degeneration of the heart-wall (a change which seemed to him more frequent in this than in any other disease, and nearly always to be found after deaths from diphtheria in its acute stage). He had found that these deaths by cardiac failure did not really take place suddenly, but were preceded by considerable heart distress for forty-eight hours previous to death. Fibrinous clots formed in the heart cavities, as he believed, some time previous to death. He had made a special study of them. They were entirely fibrinous and often disposed in layers, and seemed to have lain in the heart a considerable time. They remained a considerable time in the heart cavity without altering the cardiac contractions or affecting the general sensations of the patient. The possibility of their formation without a preceding structural change in the

heart had been shown by experiment. In some of these cases, where clots had formed, more or less broncho-pneumonia had accompanied. He had believed that the practice of giving large doses of the chloride of iron had a bearing on the formation of these clots, and was not a wise measure. He, too, had considered the late paralyses due to a form of neuritis, but this was only a presumption.

Dr. J. H. Fruitnight held that all of the conditions which had been found at post-mortems were still incompetent to explain the heart failures such as occurred in some cases; but that a sudden toxæmia from the liberation of ptomaines was an entirely plausible theory. On this supposition preventive treatment became of great importance, one of the best remedies in which was the tincture of the chloride of iron. If it produced heart-clots it should have done so far more often, seeing how many thousands of patients had been given this remedy.

Dr. Seibert thought we should distinguish between cases of collapse or heart failure in which the diphtheritic poison acted directly on the central nervous system during the acute stage, and the deaths late in the disease due to change in the heart muscle, where a slight exertion, as of sitting up or even raising the head, might cause heart failure. As illustrating the first class of cases, he related an instance where an able-bodied man of thirty years continued at work until within two days of his physician's discovering that he had a gangrenous diphtheritic membrane in his throat, a pulse of 40, and a temperature of 96° in the rectum. He recovered by a very liberal use of brandy during the next twenty-four hours.

Dr. Dessau thought sudden death in diphtheria might have two causes; during the acute stage particularly it was due to heart-clots, but in convalescence to paralysis of the pneumogastrics. He believed the administration of strychnine to children, even in small doses, a dangerous thing. It had appeared to be the cause of death in one instance he had seen.

Dr. Loomis doubted that clots could form in the heart previous to the failure of heart action, or that they could in any way cause the latter. A true cardiac thrombosis, when it occurred, went with a slow heart failure. He could not understand how the disease or any remedial agent, such as iron, could cause the blood to coagulate more easily. It was the slowing of the current which led to its coagulating.

The President remarked that cases of fatty heart died very suddenly in many instances, and that a degeneration of the heart substance in diphtheria was sufficient to account for sudden heart failure of itself. This or any other disease which left the patient much weakened might end on some slight exertion in death by syncope. The sudden anæmia of the brain thus caused in a very weak patient produced fainting, which was simply not recovered from. When death came late in the disease, a paralysis of the respiratory muscles might be its cause, and might be mistaken for heart failure. The shallow respirations and feeble heart would then be results, and if a perfectly normal heart was found at the autopsy, there would be no cause for surprise. For the treatment of threatened heart failure he recommended the frequent application of the galvanic current in short sessions; also strychnine, both internally and subcutaneously. Since we knew that every case of diphtheria tended toward heart failure, and that most cases died if they reached this point, we should keep this constantly in mind and save the strength in every way possible, and add to it by every available stimulant and heart-tonic. Sepsis was always present in diphtheria, and for this alcohol was needed. Alcohol never harmed in these cases; on the contrary, the most courageous of us usually gave too little.

Dr. Smith, in closing the discussion, recalled the fact that in the typical cases with which alone he had dealt in his paper there was a simultaneous disturbance in the heart, stomach, and lungs. This indicated that the pneumogastric nerve was in some way affected. As regarded heart-clots, patients sometimes rallied from threatened heart failure under free stimulation, and there would be quiet for several days, until the trouble recurred.

Book Notices.

BOOKS AND PAMPHLETS RECEIVED.

Atlas of Venereal and Skin Diseases. Comprising Illustrations and Selections from the Plates of Professor M. Kaposi, of Vienna; Dr. J. Hutchinson, of London; Professor I. Neumann, of Vienna; Professors A. Fournier and A. Hardy, and Drs. Ricord, Cullerier, Besnier, and Vidal, of Paris; Professor Leloir, of Lille; Dr. P. A. Morrow, of New York; Dr. E. L. Keyes, of New York; Dr. Fessenden N. Otis, of New York; Dr. J. Nevins Hyde, of Chicago; Dr. Henry G. Piffard, of New York, and others. With Original Text by Prince A. Morrow, A. M., M. D., etc. Fasciculus X. New York: William Wood & Co., 1888.

The Galvanic Treatment of Fibro-myomata. By A. H. Buckmaster, M. D., Assistant Surgeon to St. Peter's Hospital, etc. (Prize Essay of the Alumni Association of the Long Island College Hospital for 1888.) [Reprinted from the "Brooklyn Medical Journal."]

Pulmonary Consumption considered as a Neurosis. Being Two Series of Evening Lectures given by the Faculty of the Philadelphia Polyclinic in the Course of 1888 and 1889. By Thomas J. Mays, M. D. [Reprinted from the "Therapeutic Gazette."]

Recent Researches relating to the Ætiology of Yellow Fever. By George M. Sternberg, M. D., Major and Surgeon, United States Army. [Reprinted from the "Transactions of the Association of American Physicians."]

Nervous Affections following Injury. "Concussion of the Spine," "Railway Spine," and "Railway Brain." By Philip Coombs Knapp, A. M., M. D., etc. [Reprinted from the "Boston Medical and Surgical Journal."]

Some Post-hemiplegic Disturbances of Motion in Children. By Philip Coombs Knapp, A. M., M. D., etc. [Reprinted from the "Boston Medical and Surgical Journal."]

Miscellany.

The Medical Microscopical Society of Brooklyn.—At the next meeting, to be held at the Hoagland Laboratory, on Wednesday, the 6th inst., Dr. H. D. Bliss will read a paper on "Some Observations in Diphtheritic Membranes."

The Duration of Incubation and Contagiousness.—We have been requested to publish the following:

"Sir: Ten years ago the Clinical Society of London appointed a committee to investigate the periods of incubation and of contagiousness of the commoner communicable diseases. A certain amount of valuable material was received, but it was thought desirable to defer the presentation of a report until further experience was available. The society has now determined to gather additional information with a view to the preparation of an early report on the subject, and for this purpose has reconstituted the committee.

"The committee is desirous of obtaining particulars of cases which throw light upon the periods of incubation and contagiousness of the below-mentioned diseases, and will be grateful for notes of any cases where the facts can be ascertained with sufficient precision to afford grounds for conclusions.

"It is thought that gentlemen practicing at a distance from large centers of population, and especially those engaged in the public-health

service, or associated with schools, would be able to supply information of the kind required. A single case in which the dates of exposure to infection and the appearance of the first symptom can be accurately fixed, especially where the exposure has been limited in duration, would be highly valued.

"The following diseases are included within the scope of the inquiry: Variola, varicella, measles, German measles, scarlet fever, typhus, relapsing fever, whooping-cough, diphtheria, enteric fever, cholera, erysipelas, mumps, and infectious sore throat.

"The committee consists of Dr. W. H. Broadbent, Dr. George Buchanan, Dr. Cayley, Dr. Thomas Barlow, Dr. Alfred Hill, Dr. Isambard Owen, Dr. Thorne Thorne, Dr. Alder Smith, and Mr. R. W. Parker, with Mr. Shirley Murphy, 41 Queen Anne Street, and Dr. Dawson Williams, 25 Old Burlington Street, W., as honorary secretaries, to one of whom communications should be addressed.

"I am, etc., W. H. Broadbent,
"Chairman of Committee.

"Clinical Society of London, *January, 1888.*

"P. S.—An early reply would facilitate the work of the committee."

The Death-rate of Newport, R. I.—According to the "Summary of Deaths," published by order of the Board of Health, there were 315 deaths in 1888, including 8from croup, 19 from cholera infantum, 3 from cholera morbus, 2 from dysentery, 9 from diphtheria, 2 from malarial fever, 1 from remittent fever, 4 from scarlet fever, 7 from typhoid fever, and 2 from whooping-cough. The death-rate was 14·31, as against 15·1 and 14·20 for 1886 and 1887, respectively.

The Health of Kansas City, Mo.—According to the Health Department's "Weekly Return" for the week ending January 26th, there were 34 deaths, including 1 from croup, 2 from diphtheria, 1 from remittent fever, 1 from scarlet fever, 2 from pneumonia, 1 from pleuropneumonia, and 2 from septicæmia.

The Health of San Francisco.—According to the Health Department's "Condensed Statement of Mortality" for December, the whole number of deaths was 473, including 2 from cerebro-spinal meningitis, 1 from cholera infantum, 21 from croup and diphtheria, 1 from erysipelas, 12 from typhoid fever, 4 from typho-malarial fever, 1 from malarial fever, 3 from whooping-cough, 1 from septicæmia, and 2 from small-pox.

Mortality in Cities in the United States.—The following table represents the mortality in the cities named, as reported to Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, and published in the abstract of sanitary reports received by him during the week ending January 25th:

Cities.	Week ending—	Estimated population.	Total deaths from all causes.	Deaths from— Cholera.	Yellow fever.	Small-pox.	Variloid.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
Philadelphia, Pa...	Jan. 12.	1,040,245	360	..	..	..	..	..	..	10	9	2	..	1
Chicago, Ill.....	Jan. 19.	830,000	.....	..	..	..	..	..	..	5	2	17	5	....
Brooklyn, N. Y....	Jan. 19.	814,505	358	..	..	..	..	..	..	2	10	27	5	10
Baltimore, Md.....	Jan. 19.	500,343	142	..	..	..	..	..	..	3	1	3	..	5
St. Louis, Mo	Jan. 12.	440,000	164	..	..	..	..	..	..	1	1	10	1	3
San Francisco, Cal.	Jan. 11.	330,000	148	..	..	..	..	..	..	..	..	1	..	....
New Orleans, La...	Jan. 12.	248,000	110	..	..	..	..	..	..	..	..	3	..	....
Cleveland, Ohio....	Dec. 29.	227,861	70	..	..	..	..	..	..	..	..	3	..	....
Milwaukee, Wis ...	Jan. 19.	200,000	60	..	..	..	..	..	..	1	6	3	..	1
Minneapolis, Minn.	Jan. 19.	180,000	52	..	..	..	..	..	..	2	..	6	..	....
Kansas City, Mo...	Jan. 19.	180,000	38	..	..	..	..	..	..	1	..	1	..	....
Pittsburgh, Pa.....	Jan. 19.	.....	68	..	..	..	..	..	..	3	1	3	..	1
Denver, Col.....	Jan. 18.	96,000	32	..	..	..	..	..	..	2	..	3	..	....
Camden, N. J.....	Jan. 10.	70,000	31	..	..	..	..	..	..	2	..	..	..	....
Charleston, S. C....	Jan. 19.	60,145	29	..	..	..	..	..	..	..	..	..	..	....
Lynn, Mass.....	Jan. 19.	50,000	12	..	..	..	..	..	..	..	..	1	..	....
Manchester, N. H..	Jan. 12.	42,000	14	..	..	..	..	..	..	1	..	2	..	....
Portland, Me	Jan. 19.	40,000	12	..	..	..	..	..	..	..	..	1	..	....
Davenport, Iowa...	Jan. 19.	33,715	8	..	..	..	..	..	..	..	1	1	..	....
E. Saginaw, Mich..	Jan. 19.	33,000	7	..	..	..	..	..	..	..	..	..	..	....
Burlington, Iowa..	Jan. 11.	30,166	8	..	..	..	..	..	..	..	..	..	..	....
Altoona, Pa.....	Jan. 19.	30,000	5	..	..	..	..	..	..	..	..	..	..	....
Auburn, N. Y.....	Jan. 19.	26,000	8	..	..	..	..	..	..	..	..	..	..	....
Newport, R. I.....	Jan. 17.	22,000	4	..	..	..	..	..	..	..	..	..	..	....
Newton, Mass.....	Jan. 19.	21,105	4	..	..	..	..	..	..	..	..	2	..	....
Keokuk, Ia.....	Jan. 20.	16,000	4	..	..	..	..	..	..	..	..	..	..	....

Damages for the Bite of a Dog.—The "Boston Medical and Surgical Journal" says: "Some months ago Dr. G. W. Galvin, of Boston, while attending a patient and a new-born infant, defended the child from the savage attack of a large bull-dog, and thereby sustained severe injuries. It was presumed at the time that the brute, who was a pet in the household, was jealous of the new-comer, and carried his sensitiveness to the point of attack. The doctor successfully defended the infant, getting it out of the chamber in the arms of its nurse, but had another fight with the dog, which turned his ferocious attention to him. The man finally gained the contest, but not until he had been so severely bitten that he was compelled to relinquish his practice for a time. He fully recovered, and sought compensation for his injuries, and finally appealed to the law. In court, last week, Dr. Galvin was given a verdict of $700 against the owner of the dog and the mother of the child."

The "Gazette de gynecologie."—It is announced that the publication of this journal will be temporarily suspended in consequence of the ill-health of Dr. Ménière, of Paris, the editor-in-chief. For the same reason Dr. Ménière has closed his hospital clinic, and will, until further notice, limit his practice to his private patients.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the persons sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

THE MENTAL CONDITION IN HYSTERIA.*

BY GEORGE J. PRESTON, M. D.,
PROFESSOR OF MENTAL AND NERVOUS DISEASES IN THE BALTIMORE POLYCLINIC.

THE study of the curious set of symptoms or group of phenomena embraced under the generic name *hysteria* possesses, to the neurologist at least, a peculiar fascination. Although the condition has been recognized for so many centuries, hardly a decade has passed in its history in which new discoveries have not been made, old theories overthrown, and new ones set up. Charcot, that great apostle of hysteria, has cast a flood of light upon the subject, and his genius and indefatigable industry have placed the study of this interesting neurosis as nearly on a scientific basis as it is possible for it to stand on. The study of this condition is interesting from a diagnostic point of view, since it may enter as a complication into almost any disease of the nervous system for which it has a peculiar affinity, though its simulation is by no means confined to nervous diseases. It is necessary always to bear in mind the fact that with an organic lesion of the central nervous system, particularly in women, hysteria is very often present, and the danger, at first sight, is to give too much weight to this neurosis, at the expense of the organic affection. The wonderful mimicry of hysteria, simulating, as it frequently does in the most perfect manner, some complicated lesion, renders its diagnosis by no means easy. The study of hysteria is important from the fact that it is an affection in which so much can be done by patient judicious treatment. Owing to the many interesting features of hysteria, its literature is very extensive, especially in France, where the disease is seen in its most perfect manifestation. The curious sensory disturbances, the anæsthesias, the histogenetic zones, the paralyses and contractures, have all been described, and at great length, as also the *grande hystérie* and hystero-epilepsy of Charcot and the French school. There is one feature of the disease, if we may so call it, which has hardly received its due attention, and which is certainly one of the most important elements which go to make up the complex neurosis —namely, the mental condition in hysteria.

The limit of this paper allows but the briefest glance at the interesting history of the affection under consideration. We know what a very important part the mental symptoms played in the chorea of the middle ages, which, as we know from the full and graphic descriptions of them that have come down to us, were unquestionable hysterical manifestations. The dance of St. John and St. Guy, and about the same epoch the tarentism of Italy, possessed symptoms of mental aberration no less remarkable than the motor disturbance, or rather underlying these motor disturbances. Such, also, were the demoniac possessions observed in Germany in 1550. At Aix in 1609, and at Loudun in 1632, similar demoniac possessions were observed, the *dénoûment* of which is tragic. At these places the nuns in the convents of St. Ursula accused in both instances a priest of casting over them a diabolical spell. In addition to the bodily contortions which characterized these possessions, there were distinct evidences of mental disturbances, amounting in some instances almost to hysterical mania. Hallucinations, impulsive acts, tendency to suicide, melancholia, were all present in a high degree, and all attributed to the malign influence of a particular priest. Both at Aix and Loudun, as the records tell us, such was the force of the accusations of these hysterical nuns, so strong were their hallucinations and even delusions, and so great the superstition and credulity of the age, that several priests suffered the death penalty at the stake. Under a slightly different form of hysteria we see the *convulsionnaires* of St. Médard in 1731, in whom the mental condition rose to a pitch of wildest delirium, with hallucinations and delusions. Again the ecstatics, from Marie de Moerl in 1384 to Louise Lateau in 1868, together with the various religious epidemics, both in our own and other countries, evidence the stronghold that hallucination possessed over the minds of these unfortunate people, and the very important part played by the mental condition of hysteria.

The consideration of the mental symptoms of hysteria would at first sight seem trivial and lacking in importance, and, unfortunately, this idea has long prevailed, and still holds sway to an undesirable degree. Unquestionably this condition holds a place on the frontiers of lunacy—not nearly so important a place, it is true, as some other mental states, but one which must receive its due consideration. No one who has read Dr. Cole's masterly synthesis of a case of paranoia can fail to see in many hysterical patients the material out of which like affections are constructed. It by no means follows that a case of hysteria must of necessity develop into a case of hysterical mania. In one such case—hysteria, as we accept the term—may be found seeds which, under circumstances most favorable for their growth, may develop one of many forms of insanity. It is not necessary to elaborate this point further. As will be shown, certain hysterical patients show suicidal tendencies, some are inclined to mania, some to a fixed idea or paranoia, while a few, passing through various stages of hypochondria, arrive at last very near melancholia. The classification of the mental states of hysteria is beset by the same difficulties which attend a classification of the different forms of hysteria itself. From the irritable, perverse, unstable intellectual condition of the hysterical girl at or before puberty to the fully developed, violent hysterical mania there are countless steps. Legrand du Saulle presents the mental conditions of hysteria under four heads. In the first degree the hysteria is mild; there has been no profound alteration in the mental faculties; such a condition would be called nervousness rather than hysteria. In the second degree the trouble is more pronounced; the manner of receiving outside impressions, and the reaction that they call out, reveals a vicious equilibration of the faculties, and a very decided alteration in the character. The subject of such impressions no longer enjoys the free use of the will, which, while it may not be greatly impaired, is yet weakened to such an

* Read before the Clinical Society of Maryland, November 16, 1888.

extent that at certain moments and in the face of certain acts it gives way. A step further brings us to the grave forms of hysteria, with irresistible impulses and passing hallucinations, always with marked alteration of the intellectual faculties. The patient is impelled to strange actions, odious and false accusations.

The fourth degree constitutes the true hysterical mania. Of course, such classifications, from the nature of the case, must be very arbitrary, and the simpler they are the better. Probably the best division would be into three stages: First, those slight conditions of hysteria in which the intellectual faculties are not altered, and which are characterized merely by some want of mental co-ordination, by a heightening and want of control over the emotions. As has been said, this state would be called, especially in this country, nervousness. Secondly, a condition of very marked hysteria, in which the intellectual faculties are markedly altered, in which hallucinations and even weak delusions are present, and the will-power shows all degrees of weakness up to the tottering condition which precedes its final overthrow, which overthrow gives us the third and by far the best-marked and most clearly defined condition—hysterical mania.

The first or slight form of mental hysteria is the most difficult to recognize and the hardest to describe, yet the most important, since it demands most imperatively a judicious treatment, which is to prevent the trouble going further. While we find hysteria most fully developed in young girls, it is by no means confined to them, for one sees it in older women, married and single, in boys, and in adult or old men. It would seem (and this is a point which has never been clearly brought out) that we may have quite well-marked mental symptoms of hysteria unaccompanied by any of the various well-known phenomena, such as convulsions, paralyses, anæsthesias, pain, and other like symptoms. In this country especially is one apt to find the purely mental hysterias. In the slight forms the intellectual condition may be characterized by *instability*, *motility*, *capriciousness*. As Sydenham said long ago: "What is most consistent in them is their inconsistency." They are irritable, change rapidly from one state to another, are, to quote Ch. Richet, "like children in whom one may provoke laughter while their cheeks are still wet with tears." There is often present a decided exaltation of intelligence. Such a person may at times be a brilliant conversationalist; versatile, witty, and gracious for a time, some unimportant event, some meaningless remark, may bring on a torrent of tears or provoke a fit of uncontrollable anger. The mental reflexes, so to speak, are all heightened, and they present a striking analogy to the disease lateral sclerosis, in which the lightest tap with the finger will call forth a vigorous knee-jerk. The stimulation which is brought in from without seems to overrun its natural boundaries when it reaches the brain, and excites more centers than normally it should do, and excites them to too high a degree. Especially is this true as regards the emotions. The most unexpected events will produce powerful exhibitions of emotion; nor can we predict which emotion will be called forth. Given a certain stimulus—as, for example, the sudden relation of a piece of bad news—it is impossible to predict whether the hysterical patient will weep or laugh, will sing or break into a torrent of abuse. Most of the events in the every-day life of these individuals take upon themselves a sentimental cast, and questions of the most matter-of-fact nature are referred to this false and silly standard. Their whole intellectual life, like a kaleidoscope, is changed by the slightest movement, and all these changes come with great rapidity. They are incapable of long-continued application, and, as a consequence of this, are apt to be classed by their friends as idlers. The spirit of contradiction is very strong with them, and is a prominent symptom of the condition. They seem to take the greatest delight in denying to-day that which they affirmed yesterday. They are regarded as peevish and ill-natured, and the opposition which they often meet with serves but as fuel to the fire. They will oppose, contradict, and set themselves directly against the wishes of those who are dearest to them. They seem to experience a certain gloomy pleasure in thus torturing themselves by distressing their friends. This characteristic will be noted more fully when the graver form is described. One ever-present trait, acting as a mainspring for many of their actions, is an overweening egotism and a morbid desire for notoriety. In the more advanced forms of the disease this craving impels them to do the most extravagant things, not stopping short, as we shall see, of the most hideous crimes. Intimately connected with this latter characteristic is the well-known habit of simulation, and, as a consequence of this latter, a disregard of the truth.

It is not uncommon to find in these primary states a tendency to hypochondria or a slight tinge of melancholy. All these symptoms go to show a weakening of the inhibitory power of the will. They still have power to resist the impulse to commit acts which are clearly trespasses against morality and decency, while they yield to the slighter, more colorless, less important morbid desires.

Such are the more important features of the earlier stage. The limits of this paper do not permit any elaboration of them. Still it is easy to see that very close scrutiny is needed to determine just where the normal ends and the abnormal begins. Cases presenting such symptoms as have been detailed do not have to be sought for, but are met by the general practitioner in his daily rounds. Such characteristics as vanity, love of notoriety, inconsistency, simulation, and the like, which are exhibited by patients suffering from the slighter forms of hysteria, have led some author to make the very uncomplimentary and ungallant remark that in the first degree of the mental state in hysteria we see in an exaggerated form merely certain well-known feminine traits.

Passing now to the more pronounced forms of hysteria, we find the mental states differing from those of the earlier stages only in degree. The most noticeable thing is that the will power, which in the mild cases was only weakened, is now apparently lost. As Sir James Paget aptly puts it, "They say 'I can not'; it looks like 'I will not,' but it is 'I can not will.'"

The character of these unfortunates becomes entirely changed and the intellectual faculties grow somewhat im-

paired. There is loss of memory, complete inability to fix the attention upon anything except self, which seems to engross every thought. What in the slighter forms of the disease was merely a desire to attract attention now becomes a passion for notoriety of the most disgusting kind. When some hideous crime has been committed and the perpetrator of it is being sought for, claimants for the honor are always sure to present themselves out of this class, and the police have become quite skillful in making the diagnosis.

Dally relates a case of a young woman who killed her infant, apparently from no other motive than the love of notoriety and a desire to appear before the tribunal. As a consequence of this craving for notoriety is the wonderful simulation and deception of hysterical women. Numerous cases could be mentioned as illustrative of this point. Duponchel relates the case of a young girl who vomited every morning a quantity of urine, much to the astonishment of her medical attendant. On being watched, she was observed to drink her urine in large quantity. Many cases of fasting celebrities have been detected eating in secret. Very often these hysterical women will put foreign substances into the vagina. Vomiting of blood is another very common phenomenon, and patients have been detected abrading the gums until they would bleed in order to swallow the blood and afterward vomit it. Notoriety, attention, sympathy, they must have, and no price is too dear to pay for it. More disagreeable and annoying is the very common habit of making unjust accusations against innocent persons. The most common form of these is the accusation of violation of the person. Cases innumerable of this description might be mentioned, and certain of them convey a very important lesson, for undoubtedly many innocent men—from the time of Urbain Grandier, who was burned on the accusation of the hysterical nuns of St. Ursula, down to some very recent cases—have been made the victims of this most deplorable trait of hysteria. The greatest antipathies may exist toward persons nearest and dearest to them, and the unfortunate person takes the highest pleasure in tormenting all about her. A wife will declare that she no longer loves her husband and will lead him to suppose that she is enamored of some one else, or a mother will punish her children in the most unjust and cruel manner, though she may be quite willing to risk her life for them. Sometimes, but rarely, the sympathy of hysterical persons is enlisted in some good cause, and they will devote themselves to it most unsparingly. Side by side with a most despicable action will be a splendid outburst of generosity. To quote Moreau, "they are by turns gentle and passionate, kind and cruel, impressionable to a degree, rarely masters of their movements, incapable of resisting impulses of a kind most opposite to their nature, they seem to present a defect of equilibrium between the superior and inferior faculties, between the will and the conscience on the one hand, and passion, instinct, desire, on the other." There is often seen to exist a sort of automatism, or, as Esquirol calls it, a catalepsy of the intellect. They are dependent upon and solely influenced by external objects and external stimulation. By contrast to the ever-changing mental states, we sometimes find veritable fixed ideas. Such patients will refuse food because they imagine they have some digestive trouble, or will absolutely refrain from walking for fear of causing themselves pain. Not infrequently these patients fall into a hypochondriacal state, but it is not a true hypochondriasis. Their sole end is to attract attention and sympathy. A very interesting chapter might be written on the subject of attempted suicides of hysterical persons. The striking feature about all such attempts is the fact that the exact time, place, and manner of the occurrence is always insisted upon by the hysterical patient. Often they will pretend to conceal their project, but always in some way, often most adroitly, it will be made known. A patient in the Salpêtrière announced that she was going to throw herself from the heights of Grenelle, and of course when the time arrived some one was there to prevent her. Ogston reports a case of a young married woman who pretended to have taken arsenic, and some of the powder was found in the bottom of a glass, but no severe symptoms followed. Another amusing case was that of a woman who asked for an ounce of laudanum at a drug-store, and the druggist, suspecting her motives, gave her tincture of rhubarb instead, which produced a deep sleep from which it was difficult to arouse her. It was ascertained, by the use of the stomach-pump, that she had taken no laudanum. Very often one sees cases like the one reported by Hamilton, where a lady in a strange hotel telegraphed to her husband that she had poisoned herself, and after having aroused great anxiety, which she very much enjoyed, told the doctor that she had taken nothing. All this is very different from the true suicidal mania, though occasionally the hysteric will actually take her own life. In melancholia the patient makes all necessary preparation in secret, and far from any indiscreet scrutiny; the maniac takes the fatal step driven by the impulse of the moment; the victim of paranoia or monomania kills himself to escape from some imaginary danger, or as the result of the insane desire to commit the act. In the case of these latter the end aimed at is always self-destruction; with the hysteric it is a desire to create a sensation or to arouse sympathy. Very amusing is the case of the girl who with great parade threw herself into the Seine, and then swam ashore. Self-mutilation is very frequently practiced by persons affected with hysteria, but, like their attempts at suicide, they rarely do themselves great injury. They desire to be restrained from doing what they have no idea of doing. Hammond relates the case of a lady who terrified her friends and raised a great commotion by declaring that she was going to jump from the window. When the doctor came into the room she was strapped to the bed, surrounded by her excited relatives. He at once had her freed, when she walked to the window, looked out for a moment, roundly abused the doctor, and said no more about suicide. The question as to what part sexual passion plays in the hysterical condition is as old as the disease itself, as shown by the very name of the condition, and by the advice that Hippocrates gives to hysterical girls: *Ego impero virgines his morbis affectas quam citissime cum viro jungi.*

In the epidemics of the middle ages, and even those of later times, sexual excitement played a conspicuous part, joined as it often is to religious excitement. Generally

speaking, one may say that the sexual instinct plays a part no more important in hysteria than in many other conditions. It is very necessary to eliminate these cases of erotomania—such, for example, as the many revolting instances mentioned by Tardieu—from the category of hysteria, since it is merely a complication. It is the testimony of all writers that the sexual system is not more excited than the other systems, and indeed one will often find that the hysterical woman has lost sexual desire. The many affectations which they assume are merely to attract attention or admiration, and not usually from baser motives. In these graver forms of hysteria the condition of the patient is truly deplorable. Hallucinations, at one time terrifying, at another disgusting, crowd in upon her and render her life miserable. The highest abstract virtues—truth, honesty, morality—in general are continually changing places with their opposites. Fixed ideas strengthen almost into insane delusions. The will-power is in almost complete abeyance, and the poor creature is the sport of every passing impulse. Of course these conditions are never long the same. One day perfectly natural, the next day may find the hysteric in a most distressing frame of mind, so that this very uncertainty makes her own life, and especially the lives of those about her, wretched. These graver states of hysteria present a mental state bordering, as has been said, closely on insanity, lying along the frontiers in the debatable ground. Space does not permit more than a very brief outline of hysterical insanity. It may occur without any apparent cause, or it may seemingly be due to the influence of grief, some powerful emotion, menstrual trouble, pregnancy, extensive loss of blood, or acute disease. It is certainly not true, as has been so often stated, that sexual impressions, either continence or excesses, exert any decided determining influence. The delirium is very violent, resembling in many of its features ordinary acute mania. The patient is very much excited, running from place to place, talking loudly, gesticulating, singing, throwing herself upon the ground, assuming various expressive attitudes. They are terrified, disgusted, or amused by turns at the various hallucinations which engage their attention. There is often a striking similarity between this condition and alcoholic insanity. There is frequently present a destructive impulse which may lead them to suicide or homicide; generally it is confined to the destruction of objects about them, as the furniture of the room. Moreau, who is probably the best authority on this subject, says: "The shipwreck of the intellectual faculties (in hysterical delirium) is complete only in exceptional and essentially transitory cases. When one addresses these patients, seemingly given up to extravagancies and eccentricities, and betraying by every word their disordered mental condition, so that they seem completely subjugated by hallucinations of every kind, the first question one puts to them seems in a manner to bring them to their senses spontaneously — they recognize that they do not know what they are saying, and that there is nothing real in their visions; but as soon as one stops speaking they drop back into the same mental state from which they were for a moment withdrawn."

Some authors, among whom may be mentioned Auguste Voisin, have given a place to functional uterine troubles as a factor in the production of hysterical insanity, and have pointed to the analogy between certain forms of this affection and the mental condition sometimes seen at the climacteric, during pregnancy, and occasionally during painful menstrual periods. While the moral sense is completely upset and the judgment entirely at fault during the paroxysms, there come periods of lucidity when the patient presents very few traces of mental unsoundness, and this accounts for the skill with which persons suffering from hysterical mania will frequently defend themselves before a court of inquiry.

Ch. Richet has pointed out the analogy which exists between hysterical delirium and the hypnotic state. The distinction between what is sometimes spoken of as moral insanity and hysterical insanity is very hard to draw, and should not be insisted on. While one may not infrequently see revolting examples of sexual perversion in these cases, hysterical mania must not be confounded with nymphomania. In some cases hysterical mania may exist for years without very greatly impairing the intellectual faculties, as shown in periods of lucidity, though very often the patient is rapidly reduced to a state of complete bestiality.

Such, very briefly and imperfectly, are the principal features which characterize the various mental states of hysteria. From a diagnostic point of view, we generally have the other symptoms of hysteria—the well-known physical, objective symptoms—to aid us, though, as has been said, a case will sometimes present itself in which we can detect only the mental symptoms, and then it becomes very important to have a clear idea of them. The more humane and scientific spirit of our age has fortunately removed from the much-to-be-pitied hysterical girl the stigma of disgrace which formerly rested upon her, and shown that she is not, what was once supposed, a malicious and ill-natured person, but that she is the subject of a well-recognized and clearly defined disease.

ANTHRAX MALIGNA.*

By FRANCIS W. MURRAY, M. D.,
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At the present day our knowledge of infectious and contagious diseases—particularly as regards their causes and means of prevention—is, in great measure, due to the advances made in the past ten years in bacterio-pathology. Not the least important in this class of diseases are those which may be communicated from animals to man, and, although few in number, they include some of the most dangerous maladies to which the human race is exposed. One needs only to glance over the vast amount of literature written on the subject to appreciate the time and attention devoted to these special forms of disease. In addition to the discovery of new varieties, the results of the systematic study and investigation have been to add to our knowledge of their ætiology and pathology, to strengthen our powers of diagnosis, and to teach us that prophylactic measures are of the utmost importance. Apart from the fact that

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* Read before the New York Surgical Society, November 14, 1888.

prophylaxis is the best means of treatment, our progress from a therapeutic standpoint has not equaled the advances made in ætiology and diagnosis. Consequently, in some of these affections, although understanding their causes and able to make a correct diagnosis, we are powerless to avert their progress and to prevent a fatal termination. In malignant pustule, or, more properly speaking, anthrax maligna, the conditions are different, as here success in treatment depends mainly on the power to make an early and correct diagnosis. Of the contagious diseases among animals, anthrax has been the longest known. From the descriptions in ancient history of the great plagues affecting indiscriminately man and beast, it is fair to presume that they were of the nature of anthrax. In man, the disease has long been known. Over a hundred years ago Fournier first traced communicated anthrax of man to the eating of diseased animals' flesh and to the handling of their wool. The discovery by Pollender (1849) of the presence of fine rod-like bodies in the blood of animals suffering from anthrax was the beginning of a new era in the study of the disease. Davaine, in 1863, was the first to maintain that the contagion lay in these bodies, which he called bacteridia, but at the present day they are known as the bacilli anthracis. Without mentioning the arguments for and against this assertion of Davaine's, the careful investigations of the past few years prove that anthrax in man is due to the presence in the blood or tissues, or both, of the specific spherical and linear bacteria, known as micrococcus and bacillus anthracis. The spontaneous development of the disease, apart from the presence of the bacilli in animals or soil, is, therefore, impossible. The great tenacity of the poison, and its capability of being transported long distances, are well known, and will tend to explain many of the cases of so-called spontaneous origin. The bacilli are destroyed at a temperature of 145° F., but the spores withstand the temperature of boiling from five to ten minutes, while an exposure to a temperature as low as 1° F. simply renders them dormant, but does not destroy them. In man, the principal modes of infection are direct and indirect. The direct include the handling of sick animals, their carcasses, hides, wool, hair, bristles, intestines, and bone-dust. Physicians and nurses have been inoculated by their patients, and examples of infection by eating cheese, milk, or cream are recorded. Among the indirect are inoculation through the bites of insects and by water containing the poison. The direct inoculations are the most frequent, and occur mostly among farmers, butchers, tanners, workers in hides, hoofs, hair, bristles, and catgut, also in felt-hat works and paper making. In many cases, however, it is clearly impossible to establish the source of infection. The disease almost always attacks some exposed part of the body, the upper extremity and the face being the favorite situations, as among 1,000 cases collected by Koch, 370 were of the upper extremity, 490 of the head and face, and only 26 of the lower extremity. In man there are three varieties—the primary anthrax carbuncle (commonly known as malignant pustule), the malignant anthrax œdema, and internal anthrax; but I shall confine myself to the consideration of the first-named variety. Symptoms appear after a period of incubation varying from a few hours to twelve days. Where the poison has entered the skin there is felt a burning or itching sensation, and inspection reveals a small red spot with a dark center. This spot gradually enlarges into a small papule, and in a few hours there appears on its summit a small vesicle containing reddish-brown serum. On the rupture of the vesicle, the itching ceases and the skin beneath is seen to be of a brown or black color, and a local eschar forms. The surrounding skin forms an elevated livid red area, on which, in a few hours, appear vesicles similar to the first, and which pass through the same stages, leaving beneath a gangrenous surface. The eschar is now depressed, black, has a feeling like leather, is perfectly dry, and is not painful on pressure. The parts beneath swell and form a hard, well-defined lump, which can be raised from the tissues; occasionally the swelling is absent. The swelling of the skin increases, the color changes from red to a dark blue, new vesicles appear, the eschar increases through their rupture, and the disease keeps steadily extending. The affected part becomes the center of an ill-defined, œdematous swelling, and the œdema may invade the entire arm, face, or neck. A striking symptom is the little pain these swellings cause, and the occurrence of pain in them is a favorable sign of commencing reaction. When the disease is on the trunk or extremities, inflamed lymphatics are sometimes seen extending to the neighboring glands. Such is the usual but not invariable course of primary anthrax carbuncle: first the red spot, then the vesicle, then the solid circumscribed swelling beneath, surrounded by a diffused œdema, the dry, black slough, and the secondary formation of vesicles. The disease lasts on an average from six to ten days, and for the first forty-eight to sixty hours it is local, and afterward the system is infected. The constitutional symptoms in favorable cases are headache, slight fever, and signs of general depression; in fatal cases are observed the symptoms of septicæmia, often followed by collapse. The occurrence of anthrax in this city is by no means frequent, judging from the small number of cases reported in the journals, and also from the few deaths recorded by the Health Department (twelve cases of death in the last ten years). Even if the number of unreported case were known, I think it would still be found that the disease is very uncommon. In view of its infrequency, I desire to report the histories of four cases which have come under my observation.

Case I.—James B., fifty years of age, porter in a restaurant. On the morning of November 20, 1883, he felt an intense itching on the back of the left hand, and, on examination, found a small red spot like an insect's bite. The itching continued at intervals during the day, and by evening the red spot was slightly swollen. The following morning he noticed a "blister," as he expressed it, over the red spot; also more swelling, but, the itching having ceased, he paid no more attention to the hand until evening, when he found the blister broken and a black spot in its place. The swelling had increased during the day, and had now extended to the fingers, which were slightly stiff. No pain anywhere. On November 22d he applied at the out-door department of the Chambers Street Hospital for treatment, and gave the above history. On the dorsum of the left hand was a swelling about an inch and a half in diameter, in the center of which was a small black slough. The slough was

rather depressed, perfectly dry, and firmly adherent to the surrounding integument. The skin around the slough was swollen, of a dark-red color, which gradually faded away, and several vesicles containing dark colored serum were seen. Beneath the eschar and vesicles could be felt a small, hard, and well-defined induration, and beyond the tissues were swollen and œdematous. No pain on pressure at any point, and no local increase of temperature. Patient felt perfectly well, and complained merely of stiffness of the fingers, which were somewhat swollen. No diagnosis was made, and carbolized dressing applied to hand. During the following two days the swelling increased steadily, the eschar grew larger, and new vesicles appeared, but no pain was complained of by the patient. As he felt perfectly well, he would not allow any operative measures for the removal of the trouble. From fear of an operation, he remained away for two days, and was next seen on November 26th. By this time the entire hand, all the fingers, and the lower part of the forearm were œdematous. Inflamed lymphatics were seen running up to the axillary glands, which were tender on pressure. The man was anxious and depressed, had no appetite, was constipated, his tongue coated, temperature 100° F.; pulse increased in frequency. The eschar, with about a fourth of an inch of surrounding tissues, was excised, the wound cauterized and filled with corrosive-sublimate powder, and an antiseptic dressing applied over the hand and wrist. Constitutional treatment appropriate to the case was ordered. The eschar measured an inch long, three fourths of an inch broad, and was quite thick. No pus seen anywhere. The following day his general condition was improved, but he complained of great pain in the hand; the œdema and swelling were somewhat less. In a day or two marked improvement in local appearances was observed. The slough came away on December 6th, leaving a healthy granulating surface, which rapidly healed.

Case II.—James D., twenty years of age, longshoreman, was annoyed by persistent itching on the right side of forehead on the evening of November 22, 1883, and, on examination, found nothing but a small red spot. The next morning a small vesicle appeared on the spot, there was some swelling, and the itching had ceased. During the day the vesicle was broken, and the swelling increased, but the man continued at his work, as he felt very well. In the evening a black spot was seen in the center of the swelling, which was slightly larger. The man was at work the following day, as, beyond a slight headache, he felt well, and he noticed that there were a few "water-blisters" on the swelling. In the evening he applied for treatment at the Chambers Street Hospital, being alarmed from the swelling having extended to his upper eyelids. The following morning (November 29th) I saw him for the first time. He was strong and well developed, and said he had never been sick in his life. No evidences of syphilis. Over right frontal eminence was a circular swelling about two inches in diameter, indurated at its center and œdematous beyond, the œdema gradually disappearing. In the center of the swelling was a small black eschar, slightly depressed, of a leathery feeling, and firmly adherent to the skin. The skin was of a deep-red color around the slough, and in places was devoid of epidermis, due to rupture of the vesicle. Both upper eyelids and bridge of nose œdematous, right cheek swollen. Slight tenderness on pressure over upper part of the right parotid gland. Incision through eschar revealed entire absence of pus. Excision of eschar, together with small circle of surrounding integument. Wound cauterized and filled with powdered corrosive sublimate, antiseptic dressing. Patient had headache, loss of appetite, coated tongue, but pulse and temperature were normal. Several hours afterward he had a severe headache and was nauseated. On following day the general condition was improved, and from this time his history is that of rapid recovery.

Case III.—For the history of the early stages of this case I am indebted to Dr. Armstrong, of this city.

J. L., sixty years of age, clerk, called at his office on Thursday, August 16, 1888, to consult him about a pimple on his chin. He said he had had many before, but this one did not disappear like the others, having been there three days. On examination, there was seen, at a short distance below the middle of the lower lip, an indurated swelling, half an inch in diameter, and with a dark-red spot in its center. No pain in it, and patient perfectly well. Poultices were ordered, to be followed by arnica plaster in the morning. Patient was seen on Friday evening, and the swelling had increased rapidly, and a small black eschar was seen, but no vesicles. Lotion of carbolic acid ordered, and patient was advised to remain at home. On Saturday the swelling involved the lower part of the face, and extended far down on the neck. No pain complained of, and patient said he felt well; temperature 101°, pulse 98. On Sunday, temperature 101°, pulse 100. Patient was unable to swallow solid food, and spoke with considerable difficulty. On Monday, August 20th, I saw him in consultation with Dr. Armstrong. The lower part of the neck was enormously swollen, the œdema and swelling commencing at the lower lip and extending to the clavicle on each side. Just below the lower lip was a small brownish-black eschar, surrounded by an elevated bluish-red zone of integument, on which were two or three vesicles. Beneath was felt a well-defined indurated mass, and pressure on it caused no pain. No signs of pus. With some difficulty the mouth was opened, and an œdematous condition of the tissues at base of tongue was seen. Tongue brown and dry, dyspnœa well marked, the patient unable to articulate or swallow. Temperature 102°, pulse 120 and weak. Although there was no hope for the man, the slough was excised, the adjacent skin scarified, and deep incisions made into the tissues of the neck. Antiseptic dressing over neck and chin. No improvement followed, and in a few hours the patient died in collapse.

Case IV.—J. K., twenty-five years of age, groom, on the afternoon of September 28, 1888, after taking off his gloves, felt an itching on back of left index finger, and noticed small red spot with a black center. On retiring that evening, he noticed that the red spot was elevated, and the itching continued. On the following morning the finger was swollen, and a small vesicle was noticed. During the day the swelling extended to the dorsum of the hand, and by evening all the fingers were swollen and stiff. There was no pain, and the man felt perfectly well. On the 14th I saw him, and found an œdematous swelling involving the entire hand, all the fingers, and running up the forearm. On the dorsum of the left index finger, over the center of the proximal phalanx, was a brownish-black slough, about the size of a good-sized tack. The slough was depressed and surrounded by a dark-blue areola, on which were two or three small, dark-blue vesicles. No pain on pressure anywhere, and, beyond the stiffness of the fingers, there was no complaint on the part of the patient. Eschar and surrounding skin excised, powdered corrosive sublimate dusted over the wound, and a 1-to-2,000 bichloride dressing applied over hand. The history of the trouble after this was uneventful, and he recovered rapidly.

In Case II only could the source of infection be traced in a satisfactory manner. This man had been unloading hides from a ship from South America, and had carried them on his head. Case I was accustomed to handle all the raw meat which was used where he was employed, and possibly he may thus have been inoculated. In the other two cases all attempts to trace the source of the

poison were fruitless. On inquiry as to the prevalence during the past summer of the disease in animals in this city, official information was received that since 1886 no cases of true anthrax had been seen, but that a number of cases of malignant carbuncle (so-called splenic fever of Texas) had occurred. The differentiation of these two diseases in animals is very difficult at times, and there is fair reason to think that true anthrax has occurred here during the summer. In Cases I and II the tissues removed were examined for bacilli with negative results, and this may be accounted for by the fact that the specimens were preserved by mistake in a strong bichloride solution. No examinations for bacilli were made in the other cases. The diagnosis was made entirely from the local symptoms, which were those that characterize this variety of disease. There is one symptom which may be considered almost pathognomonic of external anthrax — viz., *the entire absence of pus*—and the recognition of the smallest quantity in a doubtful case shows the disease at once to be of some other nature than anthrax. The name "malignant pustule" is particularly inappropriate, as it gives a false idea of the disease, implying suppuration, and should be discarded. Prognosis in external anthrax is dependent on certain conditions. In anthrax districts the mortality is from 5 to 9 per cent.; outside of these districts the mortality is as high as 40 to 50 per cent. The difference is easily explained, as in districts where the disease frequently occurs medical aid is sought early, and the physicians, from their experience, are able to make a rapid and correct diagnosis, and energetic treatment is carried out while the disease is local In external anthrax with constitutional symptoms the prognosis is grave, but authenticated cases are on record of recovery after general symptoms were well marked. While the disease is still local the treatment is purely surgical, and it should be carried out in a *thoroughly antiseptic manner.* The eschar, together with a small zone of the adjacent tissue, should be excised, the wound cauterized or filled with powdered corrosive sublimate, or both, then 1-to-2,000 bichloride dressing over the affected part. Bichloride of mercury is the best antiseptic to use, as, from recent experiments, it has been shown to be superior to carbolic acid, iodine, salicylic acid, and other agents in destroying more rapidly the germs of anthrax. The danger of poisoning by filling the wound with bichloride powder is slight, as, in most cases, it turns into calomel in a very short time. Slessarewskji in forty-four cases cut away the surface of the pustule and covered the raw surface with bichloride powder, and poisoning occurred in none of the cases. Where constitutional symptoms have set in, general treatment is called for in addition, and along with the tonics and stimulants I would recommend a thirtieth of a grain of corrosive sublimate three or four times a day. Finally, after excising a pustule, one must carefully disinfect the instruments, the hands—in fact, everything which has come in contact with the diseased tissues.

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PHARYNGEAL MYCOSIS.*

By S. O. VANDERPOEL, M. D.

Although pharyngeal mycosis has been so well known since 1873, when Frankel's article appeared, but few contributions have of late been made to the literature of the subject, especially in the English language. It is not of infrequent occurrence, but frequently passes unnoticed, either from there being no subjective symptoms to call the attention of the patient to it, or because often it is confounded with some other affection. *Oidium albicans* is probably the most common form of vegetable parasite which occurs in the mouth. Less frequent are *nigrities linguæ*, *mycosis sarcinica*, *aspergillus mycosis*, and *mycosis leptothrix.*

Under the term *nigrities linguæ*, or black tongue, two different affections have been described—one an epidemic erysipelatous disorder, and the other a peculiar black pigmentation due to parasitic disease, seated upon and around the hypertrophied filiform papillæ. The affection appears to be due to some fault of nutrition, having been seen mostly in dyspeptics and hypochondriacs. It is characterized by a grayish-black or fully black discoloration of the upper surface of the tongue which gives it the appearance of the tongue of a parrot or sheep. The filiform papillæ are enormously elongated, so as to closely resemble hairs, lying about, as described by Dessois, in a confusion like that of a field of wheat thrown down by the wind. The cryptogams are first developed at the base of the papillæ and there give rise to an irritation and the growth of a muff-like envelope about the papillæ. The spores at the same time become insinuated between the most superficial epithelial cells of the envelope of the papillæ and dislocate them, so that they maintain their position around the papillæ only by means of the intervening parasitic masses. The latter soon become detached from the papillæ and carry away with them the epithelial cells, thus leaving the papillæ nearly bare. The discoloration of the tongue begins in its central portion and spreads, but later disappears by desquamation as described. The tongue is dry while the process is at its height. It tends to recur. In one highly nervous lithæmic patient who came under my care the affection almost disappeared when the lithæmic symptoms were strongly marked. When, however, they abated, the patch of coal-black fur grew in extent so as to occupy all but the tip and margin of the tongue.

The *mycosis sarcinica*, whose products consist of sarcina, was first described by Virchow. The *aspergillus mycosis* is seldom seen in the throat, though not infrequently in the ear. Schubert has written a most instructive article on this form of mycosis.

The last variety, *mycosis leptothrix*, occurs in two forms, diffuse and circumscribed. In the diffuse form the entire

* Abstract of a paper read before the Section in Laryngology and Rhinology of the New York Academy of Medicine, November 27, 1888.

surface of the tongue is coated with a shiny, milk-white mass, which is frequently of sufficient density to obscure from view the filiform and fungiform papillæ. However, even when, as occasionally happens, both upper and under surfaces are covered, there is no interference with the general health. The movements of the tongue and the sense of taste are not lost. In the circumscribed form, white glistening points appear, much resembling those seen in follicular tonsillitis, except that the mucous membrane about them is not congested by any inflammatory action and preserves its normal pink hue. According to Herring, the tonsils, their pillars, the pharyngeal wall, and the base of the tongue are the parts liable to be invaded. Glistening white or yellowish-gray spots appear, usually hard. They are arranged in groups or singly and form little excrescences on a normal mucous membrane. If on the base of the tongue, they take their origin from the circumvallate papillæ and follicular glands, and go to form filaments or tufts. They adhere very firmly to the surrounding parts and rapidly reappear if removed by a forceps. The patient sometimes has a sensation of a foreign body in his throat and a harsh rasping feeling much of the time. During sleep the throat seems to the patient to become very dry and stiff. There is a hacking cough with mucous expectoration. The efforts to clear the throat in one case under my notice often produced vomiting. In some cases there is no subjective sensation produced whatever. The only reliable measure for treating these parasitic growths is the galvano-cautery knife, repeatedly applied, and plunged deeply into the mucous membrane so as to reach the base of the growth. I have not obtained any results from the use of the bichloride, or of carbolic or acetic acids; and only partial success from applications of chromic acid fused on a stick.

The microscopical examination of specimens of these growths obtained from three cases which have been under my care, in each instance showed large numbers of basement epithelial cells surrounded by and mingled with different kinds of fungoid spores. These spores were unequally marked off into links, with numerous side branches and budding ends separated from the main stems by indentations or partition walls. The main trunks were of various lengths, some straight like rods, while others again terminated in curled hair-like filaments. They were colorless, but had sharp dark borders, the centers being filled with granular matter. The ends of some of the spores were rounded, frequently ending in club-shaped swellings, or were budding with bladder-shaped formations.

Besides these spores there were round or oval, highly refractive bodies with dark borders, arranged in colonies or placed separately between the branches. The whole went to make up a network-like formation, composed of spores and refractive granules. With methyl-blue or gentian-violet, beautiful preparations can be produced which bring out the rods and threads in a most distinct manner, with alternately colored and uncolored portions on the stems. It is believed by some that the colored portions are not spores, as many consider them, but that they consist of amyloid material, while the uncolored portions are separating partitions.

Mycosis has been seen more frequently in women than in men, and the left tonsil is more often the affected one. The age of the greatest susceptibility is between twenty-eight and thirty-five. A characteristic feature of this circumscribed variety is that, although it quickly redevelops (often in twenty-four hours) in the same spot from which it has been removed by instrumentation, its extension to other points in the neighborhood is comparatively slow. In other words, new foci of disease develop sluggishly, but when once established their tenacity of life is great, and they require the most radical methods to destroy them.

To avoid confounding this affection with diphtheria, it is only necessary to remember the entire absence of any febrile disturbance, the discrete exudation, the absence of inflammation in surrounding tissues, and its so often appearing first on the base of the tongue. From follicular amygdalitis it is distinguished by the same lack of fever and local inflammation, and by the difficulty in removing the exudate.

The mycosis fungus is, however, much more readily confounded with the concretions so frequent in chronic affections of the tonsils, which in recent cases are soft, white masses, but later become hard and chalk-like, and either discharge themselves or go on to the formation of abscesses.

According to Wagner, they contain phosphate and carbonate of calcium, a little iron, soda, and potassa, and, when soft, a considerable quantity of water and mucus. When the lacunæ are filled by a gray, semi-fluid or mortar-like matter, we have quite another condition presenting. The microscope shows that this matter contains epithelium, cholesterin, pus-corpuscles, bacteria, mold fungi, and chalk globules. These are the bodies to which Gruening called attention in the "Archives of Laryngology" for 1882. He found fifty cases in three months, and among them were seven in which the disease had extended over on to the pharynx. Considering that leptothrix is found in every mouth, this statement is not surprising. Every observer sees numbers of such cases. They are generally considered without significance, they have nothing to do with pharyngeal mycosis, and are to be sharply distinguished from it. They are either hard from the presence of chalk when touched by a probe, or, if soft, are easily expressed and do not soon recur. The ætiology of the different forms of mycosis is still uncertain.

AN EXPERIMENTAL STUDY OF FIXATION AND TRACTION IN THE TREATMENT OF HIP DISEASE,

WITH THE DESCRIPTION OF A SPLINT.

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It is virtually agreed among American orthopædic surgeons that the best results in the treatment of hip disease are obtained by the continued use of the long traction-splint described by Davis, Taylor, Sayre, and others. Englishmen, however, do not take the same view, and their opinion is expressed by Mr. Marsh, who says, in speaking of the

American splints: "These splints, however, after having been fully tried, have been very generally discarded by English surgeons on the grounds that not only is it impossible to maintain extension (that is, to prevent intra-articular pressure) with them, but that they do not secure adequate fixation to the joint." *

On the American side the opinion has been freely expressed that the American splint furnishes fixation to the joint by virtue of the traction exerted.† In any event, the surgeon using the splint should surely know whether or not he is using a fixation-splint, a question which seems to be still an open one for discussion, and the following simple experiments were made to determine how much fixation is furnished by the ordinary Taylor hip-splint when walking is attempted:

The problem was to register in some way the motion between the femur and the pelvis, if any such motion took place, when the patient walked wearing a Taylor hip-splint, and for this purpose the shaft of the splint was extended upward by an adjustable appliance two or three inches and terminated in a clamp carrying a pencil at right angles to the skin which touched the skin covering the ilium just below its crest. It was evident that if the leg and the pelvis moved as one, if there was no motion at the hip joint, the pencil would record on the skin a dot only. If, however, motion took place between the leg and the pelvis in the slightest degree, that motion would be registered as a line on the skin over the pelvis by the pencil attached to the splint, indicating the arc of motion at the hip joint that the leg had described in walking.

A Taylor hip-splint of the ordinary pattern with one perineal strap was used in these experiments. This registering appliance was first fitted to the hip-splint of a boy thirteen years old who had ankylosis of the left hip joint, the result of former hip disease. In two experiments the pencil recorded only a dot when the boy walked about freely and sat down and got up again, showing well enough that when there was no motion at the hip joint the register on the skin gave no arc, and that incidental errors were of little amount, such as might arise from a rotary movement of the splint around the leg, caused by slipping of the perineal band over the tuberosity of the ischium.

A splint fitted with the register was then applied to a boy, ten years old, whose hip joints were perfectly normal, and the traction exerted was measured by two spring balances inserted in the plaster extension, one on each side. A traction of three pounds and a half was then exerted by means of the ratchet extension, and the boy was made to walk freely about. It was found, in three experiments made under these conditions, that the register on the skin showed that the hip joint had moved through an arc of 35° in the simple act of walking. In sitting down and getting up again, about the same amount of motion was caused at the hip joint. These experiments were confirmed by a similar one upon an older boy with a normal hip joint where 40° of motion were found to take place.

In the case where 35° of motion took place with three pounds and a half, the traction was increased up to eight pounds, when it became almost unbearable, and the boy could only be induced to endure it for a very few minutes. When walking was attempted with this amount of traction (which was much more than any patient could endure continuously), the hip joint described an arc of 15°. This was determined by three experiments made on the same boy.

With regard, then, to a Taylor hip-splint with one perineal band, these experiments show plainly enough that it furnishes very incomplete fixation to a healthy hip joint with any endurable degree of traction, and consequently to a diseased joint it must furnish equally poor fixation.

An experiment upon the same boy was then made with the original form of Taylor splint as now used at the New York Orthopædic Hospital and Dispensary, which has a rigid waist-band encircling the pelvis and two perineal straps instead of one; and when walking was attempted with that, very much better fixation was obtained, although it still lacked a very little of being complete. But it was not by virtue of the traction exerted that the hip joint was held so firmly, because just as much fixation was obtained when no traction at all was exerted as when the leg was pulled upon by a force of four or five pounds. The fixation at the joint seemed to be due to the rigid band holding the pelvis and the long leg-shaft holding the leg.

So far, then, as these experiments go, the practical points shown are: That traction in itself furnishes very incomplete fixation and can not be regarded as in itself a means of *fixing* a diseased hip joint in the treatment of hip disease; and that a Taylor hip-splint with a rigid pelvic band and two perineal straps furnishes much more complete fixation to the joint than the newer form of the splint with only one perineal strap.

So far I have meant to speak of traction only as a means of fixation, not as a therapeutic measure. How it accomplishes its wonderful results in hip disease it would be hard to say. At any rate, it does not seem likely that it separates the surfaces of the joint in the early stages of hip disease. Experiments with a view to determining this question, made upon the cadaver and upon patients under ether, do not reproduce the clinical conditions, because muscular spasm, the most important factor of all, is left out of account. Consequently, conclusions should be drawn very carefully from these experiments as to what traction mechanically accomplishes in acute hip disease. Koenig and Paschen found slight separation when experimenting upon the cadaver and using traction of eight pounds and more, but Morosoff, on the other hand, was unable to produce separation of the joint surfaces in some experiments that he made with less than sixty pounds. Lannelongue,* by frozen sections, demonstrated a partial separation of the joint surfaces in a case of well-marked hip disease with an extension of ten pounds.

* Howard Marsh, "Diseases of Joints," Lea Brothers, 1886, p. 407.

† "Medical Record," Sept. 1, 1867, p. 290. Bauer's "Lectures on Orth. Surg.," N. Y., 1868, 2d ed., p. 282. "Medical Record," Jan. 12, 1878, p. 27. "N. Y. Medical Gazette," April 17, 1880, p. 243. "N. Y. Medical Journal," July, 1882, p. 17. "Medical Record," June 26, 1880, p. 738.

* Lannelongue, quoting Koenig, etc., "Coxotuberculose," Paris, 1886.

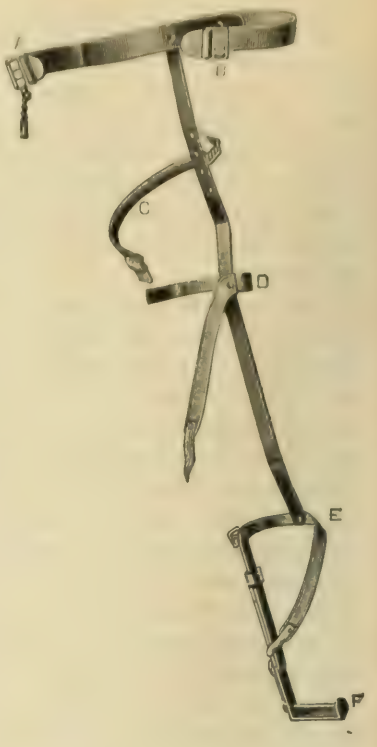
But when muscular spasm is present the conditions are changed; the muscles are all set in tetanic contraction, pulling the head of the femur against the acetabulum. A rough attempt to estimate their force was made in the case of the ten-year-old boy upon whom the hip-splint experiments were made. With the anterior thigh muscles, in flexing the thigh, he could exert twenty-four pounds' pressure, as registered by a spring balance; with the posterior thigh muscles he could exert a force of twelve pounds—a total force of thirty-six pounds exerted voluntarily by all the thigh muscles. If these muscles were all set in tetanic rigidity to pull the head of the femur against the acetabulum, they would work at better advantage than in the experiment, and it does not seem likely that they would exert much less than thirty-six pounds' pressure. To antagonize this we have a traction force at the most of eight pounds exerted upon the loosely movable skin. If any weight at all can be attached to the experiment described, it does not seem likely that the traction-splint produces separation of the joint surfaces.

No attempt is made to underrate the wonderful value of traction as a means of treatment in hip disease; simply to point out that traction alone does not serve to produce fixation and probably does not separate the joint surfaces, and to advocate the view that, in connection with as complex fixation as possible, it finds its best application in the treatment of hip disease.

Leaving aside altogether the question of whether fixation (as complete as can be obtained) is desirable in all cases of hip disease in addition to traction, certain cases must occur in the experience of every surgeon where complete rest to the joint is imperative. To put such children to bed for any length of time is always unfortunate. Dealing, as we are in most cases, with a tuberculous process, the maintenance of a good general condition is of the utmost importance, and confinement to bed shuts off the exercise, cuts down the appetite, and in general seems to handicap the patient. Knowing that certain hospital cases under my own observation were growing worse while wearing a Taylor traction-splint with one perineal strap, an attempt was made to find some apparatus which would practically eliminate motion at the hip joint at the same time that it exerted traction, and this splint was adopted (see figure), which is merely a modified combination of the English Thomas splint with the American Taylor splint.

In the last few months it has been used in a large number of cases of hip disease coming to the Out-patient Department of the Children's Hospital, and with very satisfactory results. It is not presented as a splint for the routine treatment of hip disease, but as a means of furnishing fixation and traction in bad cases while the patient goes about on crutches. It possesses these advantages: It necessitates the use of crutches, it makes it impossible for the patient to climb fences and knock about in the way that so many children do with such disastrous results, and it makes it possible for a child to go comfortably about, even with a joint exquisitely sensitive to every jar. It is clumsy, and for a while patients are much bothered about sitting down, but they learn to sit sidewise, and cease to mind the splint.

It possesses one further advantage in the treatment of deformity: it can be bent to fit a limb however much it is flexed, and can be gradually straightened as the muscular spasm relaxes without necessitating confinement to bed, and in a similar way adduction and abduction can be corrected by bending the splint laterally to fit the limb in its malposition, and gradually bringing it back to a straight line as the spasm relaxes under the influence of traction exerted in the line of the deformity.



The splint shown in the diagram is for the right leg. The chest-piece, A B, is made to open by a hinge at the back, and, when closed in place, is buckled across the chest. C is an arm for the perineal band, running in the same place as the perineal arm of the Taylor splint. D and E are the regulation thigh and calf pieces of the original Thomas splint. From the outer end of E the foot-piece runs down below the foot, and ends in the ratchet and key arrangement for producing extension in use in the Taylor splints. The splint is applied, the perineal band adjusted, and the traction-bar tightened last of all.

ARE THERE OTHER SPEECH CENTERS BESIDES THE ONE OF BROCA?

By Z. H. EVANS, M. D.,
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I was called April 21, 1888, to see Mr. K., aged twenty-four, a contractor by occupation. Upon my arrival at the house, I learned from the members of the family that two weeks previous to my visit, while engaged in removing a swing bridge, he had fallen about thirty feet, striking on the left side of his head and shoulder, rendering him insensible. In this condition he was removed to the Northwestern Hospital, where he remained unconscious for some forty-eight hours. The surgeons in charge regarded the case as a simple shock, and treated it accordingly. At the expiration of two weeks he had so far recovered as to be removed to his own home, a distance of only a few blocks. When I first saw the patient his general attitude was that of Fig. 1. Examination of the head revealed a slight depression over the upper and middle portion of the left parietal bone—the line of fracture extending down toward the temporal. Slight pressure exerted over the depression would cause him to fall to the floor, and at the same time produce a violent pain in the head which would last for hours. He was also suffering from

double vision which annoyed him exceedingly. His tongue when protruded would turn to the right. His sense of taste was gone, while his sense of smell was stimulated to a high degree. His hearing was not disturbed. Confronted with all the above-named symptoms, I at once concluded that it was a suitable case for trephining, and so expressed myself to the family; but, knowing there was a possibility of a lawsuit growing out of the accident, I asked the privilege of inviting other surgeons to see the case, which was granted. Accordingly I invited Dr. Vaughn, Dr. Carron, Dr. Miner, Dr. Landon, and Dr. Elliott. After giving the patient a thorough examination they concluded it would be better to wait for a short time and see what Nature would accomplish for the patient, as some of the doctors present thought that the lesion was beyond the reach of the trephine. They believed that there was a blood-clot at the base of the brain pressing on the third, fourth, and sixth cranial nerves, thus accounting for the double vision. Others thought, as the depression was slight, the brain would in a short time adjust itself to its new quarters and then cease to cause the patient any further trouble. We waited from April 23d to May 18th for the clot at the base of the brain to absorb and the brain to become reconciled to its new quarters. The patient in the mean time lost his reason, and during the paroxysms would, if left to himself, get out of doors and run in a circle, gradually increasing his speed until he became so exhausted that he would fall down in a spasm, when his attendants would carry him to his room and place him in bed, where he would sleep for some hours. On awakening, his mind would be clear, but he would have no recollection of what had taken place. On May 18th I again urged upon the family the importance of elevating the depressed bone, and gave my unqualified opinion that his mental and physical condition was wholly due to the skull pressing upon the brain, and if operated upon would improve just in proportion as the brain was relieved of its pressure and no more. The family finally accepted my views of the case, and, with the assistance of Dr. Miner, Dr. Carron, Dr. Vaughn, and others, we began the operation by first shaving that portion of the head that was likely to be involved in the operation. A crucial incision was then made over the depression and the flaps turned well back out of the way. The trephine was then placed a little to one side of the depression (marked O in Fig. 2), and a button removed without difficulty. The dura presented a dark, thickened appearance, due to recent inflammation. With the aid of the elevator the bone was raised to its normal position, the flaps were then placed over the wound, a few sutures inserted, and a light compress and bandage applied, which constituted the entire dressing. The patient, on recovering from the effects of the chloroform, expressed himself as feeling quite free from pain, the double vision was gone, the sense of taste was restored, and the sense of smell corrected. He remained in bed for three days, when he got up and dressed himself, declaring that he was feeling quite as well as before the accident. He remained in this condition until about the 20th of July, at which time he began to complain of pain over the left side of the head, which gradually increased until July 25th, when he called at my office to consult me in regard to it. As he was constipated, I prescribed ten grains of calomel to be taken at bed-time, and asked him to report to me at my office the next day in case he was feeling no better. On his way home, as he neared his house, he tried to call his dog, and for the first time he was made aware that his speech had gone, and also his sense of feeling. I was at once sent for, and on my arrival at the house found the patient sitting on the front stoop smoking a cigar and reading the evening paper. On asking him the cause of my being called, he wrote on a piece of paper stating that he could not speak nor could he feel, and at once convinced me of that fact by placing the lighted end of his cigar to his hands and face. After a little further investigation I became convinced that he was without feeling from the crown of his head to the soles of his feet. He remained in this condition from July 25th to October 6th (making in all seventy-five days), when a consultation of several physicians was called, and after giving the patient a thorough examination, there were as many different shades of opinion expressed as to the lesion involved as there were surgeons present. After communicating the views of the surgeons to the patient, I then asked him what I should do. He wrote on a piece of paper: "Operate; I am a winner, let the result be as it may." The next day, October 7th, with the assistance of Dr. Miner, Dr. Baker, Dr. Vaughn, and others, we again proceeded to the operation. After shaving the head it could be plainly seen that there was a slight depression of the size of a five-cent piece at the middle and lower portion of the left parietal bone. Slight pressure over this painful spot would cause the patient to wince and cry out with pain, which fact con-



Fig. 1.

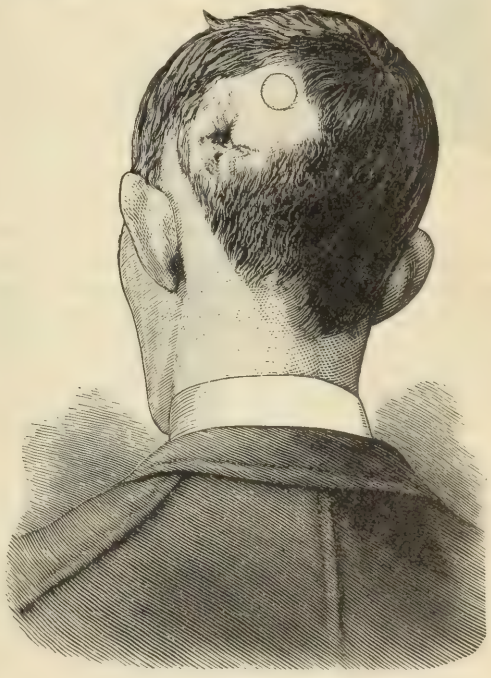


Fig. 2.

vinced me that there was either pus or a tumor in the immediate proximity of the depression. The trephine was then placed directly over this tender portion and a button removed—not, however, without some difficulty, as the upper portion of the skull was very thin while the lower border was quite thick, which caused the dura to be opened to quite an extent. There escaped a few drops of greenish fluid, the product of inflammation. The brain now pouted forward into the trephine-hole in the skull. After a brief consultation with the surgeons present we concluded, as there was evidence of pus being deeply seated in the brain, to leave the wound open for future exploration. A light compress and bandage were then applied, one fourth of a grain of morphine injected, and the patient placed in bed, where he slept for some hours. On awakening, he was delighted at the change that had been wrought. His speech was restored, the sensory disturbance corrected, and he expressed himself as feeling quite like his former self. He continued to remain in this condition for six days, when his speech gradually became a little thickened, and he found it a difficult matter to express himself intelligently, the tendency being to use the wrong word. On examination of the wound, the brain was found pouting still further forward, completely filling up the trephine-opening in the skull. From this fact I became convinced that there was pus forcing the brain forward. I then took a slender-bladed knife and passed it into the brain to the depth of an inch or more, when a dark, bloody pus commenced to flow and run down the side of the patient's neck. A pair of small issue forceps was then passed, with the blades closed, into the wound and the blades allowed to open, which enlarged the opening sufficiently to admit of its being washed out, which was done with lukewarm water. A few strands of oakum were then inserted into the wound for the purpose of securing free drainage. The flaps were then placed over the wound and maintained in position by means of a compress and bandage. Morphine was ordered to be given in case there was pain. On calling in the evening, much to my surprise I found the patient up, dressed, and conversing as well as before the accident.



Fig. 3.

The result obtained convinces me that there are other speech centers besides the one located by Broca in the third left frontal convolution. If there are not other speech centers besides the one of Broca, I should like to know why it is that this patient's speech was restored by trephining and evacuating pus over the region indicated in Fig. 2. While I am aware that it takes more than one case to establish a surgical truth, I am fully convinced that there are two forms of speech located over the region trephined, as before the operation the patient was unable to utter a loud sound, but could converse by writing. Since the operation he can talk, but is unable to write even his own name. In his own language, he says he has forgotten how to form the letters.

SOME FACTORS INFLUENCING THE FORMATION OF ACUTE ABSCESS.

By WARREN B. CHAPIN, A. M., M. D.

In the number of this Journal issued January 5th, Dr. H. Boyle Runnalls, under the head of "The Ætiology and Treatment of Acute Abscess," undertakes to answer the following questions which appeared in Dr. Hubbard's excellent article on the subject published last year in this Journal:

I. Why does an inflammation at one time result in suppuration and at another disappear and leave no trace?

II. Why in one instance is the process rapid and in another slow?

The first of these questions Dr. Runnalls explains substantially as follows:

"An abscess is disintegrated tissue resulting from the blood-supply *being shut off*. If the blood-supply has not been substantially cut off, the escaped corpuscles are quickly absorbed, and new blood-channels take the place of the damaged ones. Therefore the presence of suppuration demonstrates that complete separation has taken place between the healthy and damaged tissue." This explanation seems to me so utterly opposed to the modern views of pathology that I feel that I may be pardoned for undertaking to show that (α) an abscess does not result from the blood being cut off from a given part; that (β) it is not disintegrated tissue; that (γ) when complete separation has taken place between the healthy and damaged tissues, the result is not an abscess, but gangrene.

Suppuration is dependent primarily upon an increased flow of blood to a given part, being simply an exaggerated form of inflammation. Inflammation is the result of some stimulus applied, either from the blood or from some form of traumatism. The form depends upon the length of time the stimulus is applied and its power of producing irritation.

If the irritation is slight, there will be merely a slight increase in the flow of blood and a flushing of the surface, as is seen when the face is slapped; it may, however, reach a higher degree and produce capillary engorgement and inflammation but no formation of pus. If the damage is severe or the irritation has been of long duration, then the blood-current becomes slower, and the white corpuscles begin to pass through the walls of the capillaries into the surrounding tissue. It has been proved that these leucocytes have the power of absorbing any tissue with which they may come in contact. As the tissues become infiltrated with these corpuscles, they are absorbed, and finally we find a mass of new cells which have substituted themselves for the healthy tissue and which are surrounded by a fibrinous wall formed from the blood-plasma. This mass begins to disintegrate at the center and passes off as a creamy fluid which is pus. Thus it appears that the formation of an abscess

demands a degree of damage to the small vessels sufficient to retard the capillary flow and to favor the migration of white corpuscles. Anything short of this is simply hyperæmia; if it pass beyond, stasis is produced and the corpuscular migration is arrested, thus rendering suppuration no longer possible, and gangrene is the result.

It would seem from this explanation that pus is not "disintegrated tissue," but the leucocytes from the blood which have undergone degeneration; that the cutting off of the blood-supply to a part will not cause suppuration, but go beyond this; that when separation has taken place between healthy and damaged tissue, it does not demonstrate that an abscess is forming, but that gangrene will be the result.

That suppuration is rapid in one case and slow in another, depends upon a variety of causes. It may be due to position, as Dr. Runnalls thinks, but I have found that an abscess will form about as rapidly on the scalp as on another part more subject to motion, yet motion will greatly influence the intensity of the inflammation.

Suppuration takes place much more rapidly in alcoholic and strumous patients and in different cachexiæ, as Bright's disease or in certain conditions when the heart's power is feeble. The importance of seeking for and removing the cause as early as possible is self-evident. If it can not be determined or removed, I believe it is good treatment to hasten suppuration by poulticing early, and to open freely as soon as fluctuation can be felt.

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TEREBENE: ITS MEDICINAL USES AND VALUE.

By SEBASTIAN J. WIMMER, M. A., M. D.,
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In 1873 our attention was directed toward the importance of this new remedy by M. Ribau, of Paris, in a series of papers presented to the Pharmaceutical Society of that city. It remained, however, in comparative oblivion until advocated by Dr. William Murrell, of London, as an indispensable requisite in the treatment of certain bronchial affections. He based this advocacy upon his rich experience in the treatment of those diseases affecting more or less the mucous membrane of the bronchi and lungs. Terebene ($C_{10}H_{16}$), when perfectly pure, should be a white, crystalline mass, and, in the liquid form, a colorless, clear, volatile oil, having an odor like that of turpentine, with which it is isomeric. This odor, however, is much more agreeable than that of turpentine, and it has been compared by some to that of thyme. It is insoluble in water, and has a specific gravity of 0·860 and a boiling point of about 312·8° F. To prepare it, we add to any convenient quantity of turpentine, drop by drop, 5 per cent. of its weight of United States Pharmacopœia sulphuric acid. This mixture must be exposed to the influence of the atmosphere, in a porcelain vessel, for from twelve to eighteen hours. It is then distilled at a temperature not above 320° F. Remove the oil from the acid, and wash it with a solution of soda, sufficient to remove all trace of its former acidity. It is then subjected to the process of having a rapid current of air pass through it. This, then, is the *crude terebene.* Care must be exercised in mixing the turpentine and the acid, as the resulting action may become very violent. There is on the market a terebene which is totally unfit for medicinal purposes. It is simply *refined turpentine.* The only trustworthy test for *medicinal* terebene is the polariscope. The American oil of turpentine turns the plane of polarized light, with the sodium flame, about 14° to the right, and when terebene has been produced from this it becomes entirely indifferent to polarized light, and should therefore fail to turn its flame either to the right or to the left.

Terebene may be administered in several ways—by taking it internally, upon lump-sugar, by drops, in an emulsion, or, better still, in capsules. It may cause a tough, insoluble mass when dropped upon sugar; hence, capsules are preferable. The drug may likewise be used as a spray, particularly in all throat affections; locally it has also been used with success. The general effects of terebene upon the system have not been sufficiently studied to warrant any decisive discourse concerning their active principles; let it suffice to say that the therapeutic action of this drug has been so efficacious in the treatment of the diseases before referred to that we should be guided by the experience of capable men, and leave nothing undone in our earnest efforts to utilize it in those cases presented to us for treatment. Upon mucous surfaces terebene acts as a sedative and stimulant, particularly upon those of the bronchi and lungs. And as an expectorant it is almost equal to the oil of eucalyptus, though a trifle more stimulating. Its wonderful curative powers when used in any bronchial or pulmonary affection depend upon this effect. Its general effects are analogous in many respects to those of turpentine, although less pronounced. Dr. William Murrell,* of London, has had great success with terebene in chronic bronchitis, otherwise commonly called "winter cough"; also in cases of phthisis and emphysema. At the Birmingham Workhouse Infirmary, Dr. Suckling reports a hundred cases, of which ninety-four were those of chronic bronchitis and six of pulmonary phthisis. Of the former, sixty-eight were relieved, and also four of the phthisical patients—that is, 72 per cent. of all the cases were benefited. Several of the cases were greatly relieved, and twenty-eight were not. The symptom most commonly relieved was dyspnœa. All the patients treated said that the medicine considerably eased their breathing. Dr. Suckling gave the medicine in five-drop doses every four hours, increasing the dose to ten drops in a day or two. Most of the patients in the cases referred to were well advanced in years. In three cases of bronchorrhœa reported by Dr. John W. Martin† the results were very favorable. He administered the terebene at first on a lump of sugar, but, as this was disagreeable to the patients, he gave the following formula:

℞ Gum terebene,
Spirit. chloroform.....āā ♏ x;
Mucil. of tragacanth..... f ʒ j;
Syrup..... f ʒ ss.;
Water.....q. s. ad f ℥ j.

* "Brit. Med. Journal," December 12, 1885.

† "Medical Press and Circular," August 29, 1888.

M. Cammann,* in an analysis of eighteen cases, of which eight were emphysema, six bronchitis, three phthisis, and one asthma and bronchitis, shows that all were improved by terebene. The average length of treatment was fifty five days, and the medicine was given in doses of from ten to fifteen minims, three or four times a day, on sugar or in a mucilaginous mixture. Dyspnœa is the symptom most readily relieved by its use. A. M. McAldowie† used terebene in over two hundred cases of phthisis, both internally and by means of inhalation, with great success. He also used it with wonderful results in cases of bronchiectasis, chronic bronchitis, and other pulmonary complaints characterized by profuse purulent expectoration. Dr. Isaac Barton,‡ of Philadelphia, has treated with great success chronic rhinitis. Out of thirty-five cases, occurring in both private and hospital practice, permanently good results occurred in twenty-seven of the cases; the remaining eight were improved. He says: "*If hypertrophy of any of the nasal membranes be present, terebene is of little use, as surgical means are then necessary for the removal of such growth.*" His method of administering the drug was to begin with three drops of terebene on loaf-sugar three times a day for a week, and then to add one drop for each new week until six drops had been taken. At the end of this time he says that the discharge would have ceased and the nasal passages become clear, thus easing the breathing. The dull frontal headache so common in this affection disappeared. Used locally, he found no benefit resulting; on the contrary, it acted as an irritant. Mr. Stear, of Cambridge, England, says that a mixture of terebene and olive-oil, as an application to wounds, but more especially in cases of cancer and other foul-smelling sores, is hardly inferior to carbolic acid as a disinfectant and deodorizer, and has the advantage of not being poisonous and of possessing an ozonizing property and a pleasant odor. Good results have accrued from the giving of terebene in dyspepsia, especially the flatulent intestinal variety, and it has had good effects in chronic or subacute inflammation of the genito-urinary tract.# It readily relieves dyspnœa and lessens and thins all profuse expectoration. Advanced uterine cancers, with offensive discharges, are benefited by its use, and Betrin has applied it in tamponing, pledgets of cotton being saturated with it. I have known it to cause diarrhœa, although I have failed to notice any such effect in the cases noted. In some cases it has caused intense pain in the region of the left kidney, shooting into the pelvis and down the left thigh, but the symptoms ceased when the terebene was discontinued. These cases of intense renal congestion have been noted by several observers. In a case of bronchiectasis, terebene was given, twenty to twenty-five minims, four or five times during the twenty-four hours, when the patient suddenly developed most intense nephralgia, the urine being scanty, high-colored, and albuminous. The condition of the kidneys warrants our careful examination previous to giving the drug, and if any trouble be found to exist, terebene is contra-indicated. That terebene is a valuable adjuvant in the treatment of the diseases named before can not now be denied, and although, like all new remedies, its therapeutic actions may have met with a disbelief or skepticism in the minds of many medical men, the experience of those eminent in medicine should be received, not merely *cum grano salis*, but with the assurance that this experience is based upon a foundation so secure that the superstructure giving prominence to such views can not be but recognized as one worthy of the attention of all those interested in this new remedy.

* "New York Med. Record," Oct. 8, 1887.

† "British Med. Jour.," vol. ii, p. 666, 1881.

‡ "Philadelphia Med. Register," May 7, 1887.

"Therapeutics: its Prin. and Pract.," by H. C. Wood, M. D., 7th ed., Philadelphia.

HYSTERICAL BLINDNESS IN THE MALE.

By F. W. MARLOW, M. D., M. R. C. S. E., etc.,
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The following case of hysterical blindness in the male may be of interest in connection with the cases recently published by Dr. William Oliver Moore. It came under my observation and care while I was acting as house surgeon to the Royal London Ophthalmic Hospital at Moorfields.

In July, 1884, a man, decidedly below the average in height and physique, and aged about twenty-eight or thirty years, was led into the out-patient room of the above-named institution by his wife, a large and robust woman. He stated that while on his way home the previous midnight, and just before reaching it, he felt something come into his eyes, and fell down. There was no person near at the time. He found himself unable to see, and called out. He was led home.

On examination, he absolutely denied perception of light, and the results of different tests corresponded with this statement. There seemed no question of malingering, for both he and his wife were doubtless very anxious as to his condition; this supposition being also negatived by the termination of the case. His pupils reacted well to light, and his eyes were in other respects perfectly normal.

The patient was apparently not in the best of health, as indicated by his anæmic complexion, thickly furred tongue, and weak pulse, and he was out of work. It was suggested that the blindness was possibly an early indication of some acute specific fever, but the normal temperature, normal rapidity of pulse, and absence of all other symptoms rendered this hypothesis improbable. On the supposition that the case was one of hysterical amaurosis, atropine was instilled into both eyes, some given to the patient for his own use, and he was assured that he would be completely cured. He was directed to attend again the next day.

Examination at the second visit showed vision to be normal (V. = $\frac{20}{20}$), the pupils being widely dilated.

In this case these facts may be emphasized:

1. The patient was below the average in physique and general health. Contrasted with his wife, he might fairly have been described as "weak and effeminate."

2. The presence of a peripheral exciting cause—dust or some other foreign body on the surface of the eye.

3. As in Dr. Moore's cases, the cure was effected by a shock—namely, the flooding of the retinæ with an unusual amount of light by the instillation of atropine.

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TREATMENT OF CHRONIC ULCERS OF THE LEG.

By A. S. COE, M. D.,
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Professor Gross says, in his "System of Surgery," vol. i, p. 177: "Few practitioners look upon this class of diseases in their true light; their ideas of pathology are vague and indistinct; it is, therefore, not surprising that they find themselves so often and so completely baffled in their efforts to cure them. It is for this reason that chronic ulcers of the legs have so long been regarded as the opprobrium of surgery, and that so many patients are obliged to carry their malady to the grave; . . . all arising from the fact that its true nature was not properly understood."

Excluding chronic ulcers of the legs complicated with diseased bone, scurvy, or specific taint, the question arises, Why should an acute ulcer become chronic in the legs more readily than upon any other part of the person, and why should a similar ulcer, which defies treatment on the leg, readily heal when situated elsewhere?

It will be observed that this class of chronic ulcers are almost invariably associated with impeded venous circulation from varicose veins, disease of the heart or kidneys, or some protracted disease from which the circulation of the lower extremities has become much enfeebled. Usually there is a tendency to œdema of the ankles, infiltration into the areolar tissue, and inflammation and thickening of the skin; sometimes eczema, attended with intolerable itching. If there chance to be a slight solution of continuity of the skin due to scratching to relieve the intolerable itching, or a slight abrasion or contusion, an acute ulcer is apt to follow, which rapidly passes into the chronic form, deep seated, with thickened and undermined edges, its bottom covered with dark unhealthy granulations, patches of lymph, and sloughy matter. The concomitant discharge is profuse, fœtid, sometimes green and sometimes sanious. The surrounding skin is dark or livid, thickened, and sometimes covered with dry, scaly crusts. The deeper tissues are dense with infiltrated lymph. No treatment is of avail without restoring the venous circulation to its normal conditions; it matters not whether the obstruction is due to varices from destruction of venous valves, or to disease of the heart or kidneys, or to exhaustion by any long-continued disease, the indications are the same.

In the year 1853 or 1854 I saw an article published in one of the medical journals of the period, and written by Dr. Edward Parker, of Poughkeepsie, upon the treatment of these ulcers of the legs. His method was: Melt in a vessel a quantity, sufficient for one dressing, of the best quality of diachylon plaster; when thoroughly melted, spread it upon a piece of cotton cloth or muslin; if somewhat worn, and thus more pliable, the better. It should be spread evenly and sufficiently thick to cover the entire surface; then cut into strips of two inches or two inches and a half in breadth, and sufficiently long to reach around the leg or foot and lap about an inch. Apply these strips, beginning at the toes, around the foot and leg, allowing each strip to lap over the edge of the one below slightly, until the ulcers and all of the diseased tissue are completely covered. The pressure should be uniform, or perhaps somewhat tighter around the foot and ankle than above. After the plaster bandage has been applied, a cotton roller-bandage should be applied over it, and should extend to the knee. If the discharge is profuse and the ulcers are large, the dressings should be applied at first every day, after thoroughly washing and cleansing the ulcers. I generally cover the ulcers with equal parts of iodoform and Fuller's earth before applying the bandages. After the ulcers begin to heal by filling up with healthy granulations, and the discharge diminishes, it is not necessary to renew the dressings so often. Since adopting the foregoing method of treating chronic ulcers of the legs, of course excluding those complicated with diseased bone, scurvy, and specific taint, I have succeeded without a single failure, no matter how long-standing the ulcers or extensive the destruction of soft parts may have been. The ease and comfort which the dressings give to the sufferer from the start are remarkable. As soon as the veins are supported by the bandages the ulcers take on healthy action and rapidly fill with granulations, and the process of repair is immediate and continuous. The dense infiltrated tissue rapidly becomes absorbed, and the leg soon assumes its normal proportions. The diachylon plaster should be of the best quality and freshly prepared, and the plaster bandages should be spread as they are required to be used. If they have been prepared any length of time, they lose their softness and pliability, and become hard and brittle. The advantage which the diachylon plaster has over any other plaster is because it is soft, pliable, and porous, permitting the perspiration or moisture of the leg and discharge from the ulcers to pass through the dressing. Every other dressing I have tried as a substitute has confined the moisture of the leg and discharge from the ulcers, exciting a troublesome inflammation of the skin and aggravating the ulcers. I presume the reason why Dr. Parker's method of treating these ulcers has not been more generally adopted by the profession is that not sufficient care has been taken to procure the right quality of plaster, or other plaster has been substituted for it.

Two very unpromising cases of chronic ulcers of the legs have been treated in the Oswego City Hospital within the past year. They were veterans of the late war, much enfeebled by disease, and the disease of one of them was aggravated by vicious habits. The ulcers were of over twenty years' standing. The destruction of skin and cellular tissue was very extensive, encircling at least two thirds of the leg. The ulcers are now healed, and the men restored to comfort and usefulness.

Experimental Iodoform Poisoning.—"Dr. A. V. Koriander, of St. Petersburg, has endeavored to throw some light on the vexed question of the suitability of iodoform for use as an antiseptic by poisoning dogs with it, and examining the morbid appearances post mortem. The iodoform was introduced into the peritoneal cavity in quantities varying from 0·3 to 1·5 gramme per kilog. of the animal's weight. The microscopic sections of the organs were stained by hæmatoxylin and lithion-carmine. Nephritis affecting the renal glomeruli was invariably found, and the liver was infiltrated by minute fat granules. These appearances are considered by Dr. Philipovich to be characteristic of iodoform poisoning."—*Lancet.*

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THE GERM THEORY IN RELATION TO THE TREATMENT OF PHTHISIS.

The Presidential Address published in a recent number of the "Bristol Medico-chirurgical Journal," which was delivered by Dr. R. Shingleton Smith, on October 10, 1888, at the opening of the fifteenth session of the Bristol Medico-chirurgical Society, gives an interesting summary of the latest developments of the germ theory, more particularly in relation to the treatment of phthisis.

From what we know of diseased blood, blood-germs, and bioplastic matter, we have reason to suppose that "blood diseases" are due to morbid conditions of the blood-germs. If the germ be "regarded as the determining cause of infective disease and of its specific character, the proof that it is an independent organism, which can live and maintain its typical development unaffected by its surroundings, and finally breed true, is necessary before any reliance can be placed in the supposition that invariability of the morbid phenomena and of their sequence—in a word, of the type of disease—is the direct consequence and visible expression of the phases of germ life. This implies that each low organism detected and charged with the crime of poisoning has no *alias*, no variety of reproductive form or phase in its life history, or else that it is contagious in one particular form." Thus the old doctrine of *contagium vivum* rises from its ashes, material, and more definite than was possible in premicroscopic times.

If the bacillus is the *materies morbi*, the *contagium vivum*, we can no longer doubt the possibility of the dissemination of disease by means of germs such as are believed to exist in all contagious diseases, and which are now, in the author's opinion, proved for phthisis, because, he says, "if a local tuberculosis commonly results from the inoculation of a pure cultivation of the bacillus, and does not arise from anything from which the bacillus is certainly excluded, what possible escape can we find from the conclusion that the disease resulting from the presence of this contagion may be disseminated as other contagious diseases are?"

A contributor to the current number of the "Medical Chronicle" remarks that "Disinfection—or, in other words, the destruction of the *contagium vivum*—is the most effective means of combating the infectious diseases. The short-comings of this means of treatment do not spring from a want of methods, but from our deficient knowledge of the exact nature of the contagia in the different diseases, and because we do not yet know how those contagia are affected by the various physical and chemical agents proposed for their destruction." By experimenting on each kind of germ product we may find means of disinfection for all specific diseases which will yield results similar to those of mercury in syphilis, or quinine in ague. Admitting that the *Bacillus tuberculosis* is an essential condition of phthisis, we should attempt to destroy the parasite, either by the direct action of germicides or by rendering the soil unsuitable for its existence. When the problem relates to the lung it is especially difficult. Both lungs are often affected, a large area is involved, and a diseased patch can be reached only through the blood-channels. On the evidence furnished by experiment and by the observation of various forms of tuberculosis affecting the urinary tract, the skin, the bones and joints, and the alimentary canal, the author wishes to demonstrate that "in the great majority of cases tuberculosis is at the beginning the result of a local infection or inoculation from outside the body."

Tuberculosis pulmonum, even, is commonly limited to one lobe, and may continue for years to be limited to one lung or one lobe only. Thus we have at this stage to deal with a local tuberculosis. The author, believing that it may be treated in accordance with the same principles which are brought into operation in the case of other forms of localized tuberculosis and with equal success, calls our attention to the method of treatment by parenchymatous injection. His observations in regard to the general antiseptic treatment of phthisis by internal medication have been limited almost entirely to two sets of drugs: 1, iodoform and iodol; 2, creasote and guaiacol.

As all the methods of treatment by hypodermic injection are merely modifications of general medication, in order to be efficacious the drug must be introduced in such quantities that the whole mass of blood may have a percentage large enough to modify the germ development in the part affected. There is grave reason to doubt whether a quantity of any potent germicide sufficient to accomplish this purpose may be introduced, either by stomach or by cellular tissue, without producing toxic effects so injurious that they would more than counterbalance any possible benefit to be obtained. Yet it may not be utterly ridiculous to try "to find a germicide which the blood will tolerate in sufficient quantity for the manifestation of germicidal powers." The biniodide of mercury is said to be the most powerful antiseptic substance known, and is therefore, in the author's opinion, most likely to prove effectual if a solution could be found which might be injected into the lung in sufficient quantities without risk of injury. He has already treated some cases by the hypodermic and intrapulmonary injections of biniodide of mercury. Although injected day by day in doses of one tenth of a grain, it failed to give rise to ptyalism, and when injected into the lung in a dose of one fifth of a grain it gave only temporary discomfort with no rise of temperature. The author, much encouraged by the use of this drug, which is not only one of the most potent germicides but at the same time one of the least irritating for intrapulmonary injection, admits that we are not yet in a position to answer the questions, "What fluid is best?" and "How much is to be introduced?"

MINOR PARAGRAPHS.

THE BRITISH AND AMERICAN CONTINENTAL MEDICAL SOCIETY.

Under this or some similar title, as our Paris correspondent informs us, it is proposed to form a society of British subjects and American citizens who are engaged in the practice of medicine on the continent of Europe. A number of American and English physicians residing in Paris have been constituted a committee to arrange for a preliminary meeting to be held in Paris in July, and the hope has been expressed that some of the American physicians who intend to visit Europe next summer may attend the meeting. Communications may be addressed to Dr. Thomas Linn, No. 16 rue de la Paix, Paris. The number of physicians eligible to such a society is by no means small, and the usefulness of the organization, it seems to us, may be made very great.

COCAINE OINTMENT.

According to the "Lancet," Dr. J. F. Somerville has successfully used cocaine ointment for the relief of pain in a case of cancer of the breast. The patient had been operated on about two years ago, the entire left breast being removed. Twelve months after the operation the cancer reappeared, and developed to such an extent that the case was pronounced hopeless. Three months ago the usual intense pain set in, and it became merely a question of alleviating suffering. Other remedies having proved ineffectual, Dr. Somerville resorted to cocaine ointment. The pain was subdued almost immediately and kept constantly in check until the end, which occurred about eight weeks afterward.

PORRO'S OPERATION.

Dr. D. Berry Hart says, in a recent number of the "British Medical Journal," that the advantages of performing Porro's operation before the inception of labor are very great. Instead of being obliged to wait for skilled assistance and thus risking the child's life, the operator can make his arrangements for a definite hour. Moreover, there is but little danger of hæmorrhage when the operation is performed before labor sets in, provided one operates quickly, uses the elastic tourniquet, has an efficient assistant, and treats the whole matter as analogous to a rapid surgical amputation.

SOURCE OF INFECTION ON BOARD THE U. S. STEAMER BOSTON.

From the report of the board appointed to investigate the recent outbreak of yellow fever on board the U. S. Steamer Boston which was published in the "Sanitarian" for January, 1889, it would appear that the vessel must have become infected while lying at anchor in the harbor of Port au Prince. Before the occurrence of the two cases of Kelly and Dr. Simon on November 13th, Captain Ramsay learned from the minister that a very malignant type of fever prevailed among the shipping of the inner harbor directly to the windward of the Boston—about a mile and a half distant. Captain Ramsay sailed the next morning, and it is to this prompt measure, combined with the effective sanitary precautions practiced throughout the whole cruise, that we must attribute the escape from consequences more serious even than the fifteen cases of yellow-fever infection.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending February 5, 1889:

DISEASES.	Week ending Jan. 29.		Week ending Feb. 5.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	17	4	1	1
Scarlet fever	287	48	300	46
Cerebro-spinal meningitis	3	3	1	1
Measles	301	21	292	23
Diphtheria	181	39	193	44

The Medical Society of the State of New York.—At the annual meeting, held in Albany on the 5th, 6th, and 7th inst., the following officers were elected for the ensuing year: President, Dr. Daniel Lewis, of New York; vice-president, Dr. Alfred Mercer, of Syracuse; secretary, Dr. Frederick C. Curtis, of Albany; treasurer, Dr. Charles H. Porter, of Albany.

The Marine-Hospital Service.—We are glad to learn that Dr. Hamilton has decided to retain his position as Supervising Surgeon-General, as announced in press dispatches of the 2d inst., which also state that he has resigned the editorship of the "Journal of the American Medical Association," the resignation to take effect to-day (the 9th).

The New York Polyclinic.—It is announced that appointments of assistants to Dr. A. G. Gerster, Professor of Surgery, are to be made, and that preference will be given to those who have had surgical experience, either in hospital or dispensary service. Application should be made at once to Dr. R. H. M. Dawbarn, No. 345 West Fifty-sixth Street.

The Newark, N. J., City Hospital Training School for Nurses.—A trained nurse from this school has recently been appointed matron at the Mary Fletcher Hospital, Burlington, Vt.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from January 27 to February 2, 1889:*

Loring, L. Y., Major and Surgeon. Leave of absence for one month, on surgeon's certificate of disability, is granted. Par. 1, S. O. 6, Headquarters Department of Arizona, Los Angeles, Cal., January 18, 1889.

Price, Curtis E., Captain and Assistant Surgeon. Leave of absence granted in S. O. No. 257, A. G. O., November 3, 1888, is extended two months. Par. 1, S. O. 21, A. G. O., January 25, 1889.

Kilbourne, Henry S., Captain and Assistant Surgeon, will accompany Battery E, First Artillery, changing station from Vancouver Barracks to Presidio, San Francisco, Cal., as medical officer, and upon completion of this duty will report to the Commanding General, Division of the Pacific, for further orders. Par. 2, S. O. 6, Headquarters Department of the Columbia, Vancouver Barracks, January 22, 1889.

Burton, Henry G., Captain and Assistant Surgeon. By direction of the Secretary of War, the leave of absence on surgeon's certificate of disability granted in Special Orders No. 19, January 24, 1888, from this office, is extended six months on surgeon's certificate of disability. Par. 8, S. O. No. 22, A. G. O., Washington, January 26, 1889.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending February 2, 1889:*

Scott, H. B., Passed Assistant Surgeon. Detached from the Naval Hospital, Mare Island, California, and granted one year's sick leave.

Society Meetings for the Coming Week:

Monday, *February 11th:* New York Academy of Medicine (Section in Surgery); New York Ophthalmological Society

(private); New York Medico-historical Society (private—anniversary); New York Academy of Sciences (Section in Chemistry and Technology); Lenox Medical and Surgical Society (private); Boston Society for Medical Improvement; Gynæcological Society of Boston; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private); Baltimore Medical Association.

Tuesday, *February 12th:* New York Medical Union (private); Medical Societies of the Counties of Delaware (semi-annual) and Rensselaer, N. Y.; Newark, N. J., and Trenton (private), N. J., Medical Associations; Baltimore Gynæcological and Obstetrical Society.

Wednesday, *February 13th:* New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medico-legal Society; Medical Society of the County of Albany, N. Y.; Franklin, Mass., District Medical Society (quarterly—Greenfield); Pittsfield, Mass., Medical Association (private); Philadelphia County Medical Society.

Thursday, *February 14th:* New York Laryngological Society; Society of Medical Jurisprudence and State Medicine; Brooklyn Pathological Society; Medical Society of the County of Cayuga, N. Y.; South Boston, Mass., Medical Club (private); Pathological Society of Philadelphia.

Friday, *February 15th:* Chicago Gynæcological Society; Baltimore Clinical Society.

Saturday, *February 16th:* Clinical Society of the New York Post-graduate Medical School and Hospital.

OBITUARY NOTES.

William G. Breck, M. D., of Springfield, Mass., died on Tuesday, January 22d. The deceased was graduated from Harvard Medical School in the class of 1854, in which year he settled in Springfield, where he has since resided. He had a considerable local reputation as a surgeon. His sudden death occurred during a consultation in Chicopee, Mass. He was a member of the Massachusetts Medical Society.

George W. Fay, M. D., of East Weymouth, Mass., died on Friday, the 1st inst. He was graduated from Harvard Medical School in 1863, and since 1866 has resided in East Weymouth. He was a member of the Massachusetts Medical Society and of the Union Medical and Surgical Association.

E. Brallier, M. D., of Chambersburg, Pa., died on Wednesday, the 6th inst., at the age of forty-eight. He was a member of the Pennsylvania State Medical Society.

Proceedings of Societies.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

Eighty-third Annual Meeting, held in Albany, Tuesday, Wednesday, and Thursday, February 5, 6, and 7, 1889.

The President, Dr. Samuel B. Ward, of Albany, in the Chair.

On Confinement in Asylums by Certificates as to Insanity issued by Physicians.—The President called attention, in his opening address, to a recent decision made by Judge Learned, of the Supreme Court, to the effect that no man could be confined in an asylum on the certificate of two physicians unless it was shown that he was dangerous to himself or others. A suit had lately been brought by the man in whose favor this decision had been made, against two physicians who had issued a certificate of insanity in his case after satisfying themselves of certain mental delusions which had led him to imagine that his wife and daughter had been trying to poison him. No damages had been awarded, but the future liability to such suits deserved to be remembered.

On Suits for Malpractice.—Dr. B. F. Sherman offered the following resolution: *Whereas*, there is now a bill before the Legislature which requires those commencing suits for libel against publishers and editors to give bonds for all costs; and, *whereas*, ninety per cent. of all suits brought for malpractice are for blackmail; therefore, *Resolved*, that the Committee on Legislation be hereby instructed to use all honorable means to have the bill amended so as to include suits for malpractice. The motion was carried.

Report of Committee on Legislation.—Dr. Alexander Hadden read the report. It favored the legislative enactment in regard to the care of pauper insane and imbecile persons which had been approved of by the society at the previous annual meeting; also a bill to exempt medical supplies and surgical instruments from duty, as an offset to the fact that no patents were granted for the latter and on the general ground of their being for the alleviation of public evils. The committee had exerted its efforts in behalf of legislative action restricting undertakers in the use of embalming fluids which would interfere with medico-legal investigation until a special permit had been obtained. It was also in favor of urging the passage of the bill introduced into the State Senate, on January 28th, creating a State board of medical examiners.

Dr. Roosa, of New York, objected to the bill placed before the Legislature in 1886, on the ground that it could not pass while it contained the specification that of nine members of the proposed board seven should be named by the State Medical Society. Better regulations as to registrations had become legal since 1886 than those proposed in that bill.

The society finally resolved that it would request the Legislative Committee to prepare a suitable bill, in which a medical board of examiners should be asked for, a majority of whom should be nominated by the society, and which did not interfere with the State laws regulating the practice of medicine as codified last winter.

The Municipal Control of Diphtheria.—Dr. Charles Storer, of Amsterdam, read a paper with this title. It had been shown that by proper isolation and disinfection the number of cases of diphtheria in a community could be reduced to one fifth of the ordinary number. There were the same reasons for placing the disease under official supervision as applied in the case of yellow fever, cholera, or small-pox. Twenty-three times as many patients died by diphtheria as by variola. He recommended that in every community there should be an officer whose duty it should be to post notices of danger on all houses in which diphtheria had made its appearance. All physicians should be supplied with blanks on which to notify this officer as soon as a diagnosis of the disease was made in a case to which they were called. Tracts containing practical information as to isolation, sanitation, and general treatment were to be distributed to families one of whose members had contracted the disease; and notices should be sent to school-teachers, that they might at once exclude children coming from such families. In the country the schools were the leading means of spreading the contagion. In cities and towns it might also spread by contamination of the drinking-water, by sewers and cess-pools, and by aerial infection by means of ground-air or sewer-gas.

The Influence of the Mind upon the Body.—Dr. J. Leonard Corning, of New York, in a paper with this title discussed the truths and delusions of psycho-therapeutics, and particularly the phenomena of the "mind cure" and the "faith cure." He showed that by the ordinary operations of the mind, sensation

might be either evoked, diminished, exalted, or perverted. Nothing more than undivided attention to a part of the body was needed; expectation or suggestion acted still more forcibly in the same way.

The Prevention and Treatment of Typhoid Fever.—Dr. S. S. Burt, of New York, read a paper with this title. (It will be published hereafter.)

Dr. S. Baruch, of New York, gave an account of Brandt's method of using water in the treatment of typhoid, and explained how its real utility was in arousing the reflex centers controlling vital functions, such as excretion, respiration, and circulation, and also in promoting nutrition. Baths given by any and all methods had been found to reduce the mortality from 25 to 7 per cent.; a fairly strict observance of Brandt's rules had reduced it to nearly 4 per cent., a strict observance to 1 per cent., while no patients had died who had come under treatment previous to the fourth day.

Dr. B. F. Sherman, of Ogdensburgh, remarked that in country practice it was much easier for a family to believe that God had seen fit to remove a beloved member from their midst than for them to take a statement from a physician that it was due to filth about the premises that death had come among them.

Embolic Pneumonia.—Dr. T. E. Satterthwaite, of New York, in a paper on this subject, showed the distinct nature of this disease. It was often connected with heart disease, especially with disease of the mitral valves. Thrombi also entered the bronchial arteries and caused embolic pneumonia. Cancerous nodules and placental clots were other sources of emboli. The arrest of emboli was favored by the infantile state of portions of the lung, which often persisted after growth had been attained. The congestion which preceded inflammation also favored it.

The Prevention of Summer Diarrhœa among Infants viewed in the Light of the Lesions.—Dr. L. Emmett Holt, of New York, in a paper with this title called attention to the lesions amounting to an entero-colitis commonly found in feeble children after dyspeptic catarrh and diarrhœa had existed for a short time. Autopsies had shown in nineteen out of fifty-seven cases enlargement of the solitary follicles, with softening at their summits, which soon resulted in a large number of small round ulcers. It was thus an affection of the lymphoid elements in the intestinal tract. The dyspepsia which caused the beginning of this change often came with teething. As these ulcers never healed, so far as he had discovered, and went on to the death of the child, preventive treatment was of the utmost importance, and to this end milk free from the germs of fermentation must be secured and care exercised to prevent the almost invariable overfeeding of infants which was customary in all classes of society. Loose movements continued for any length of time were never a physiological relief, but represented the beginning of a fatal process.

Dr. Baruch said that, to emphasize the importance of Dr. Holt's deductions, he would only instance how much the avoidance of lesions in the vagina and cervix was known to lessen the liability to puerperal complications.

The Treatment of Chronic Constipation by Electricity.—Dr. G. M. Hammond, of New York, in a paper with this title spoke of the great value of electricity in permanently overcoming constipation, and the neglect of this means by both general practitioners and also by specialists. He had relieved cases of apparent fæcal obstruction in five minutes after months of ineffectual catharsis, and in one case had thus cured sciatica. He used a mild galvanic current, the negative electrode being passed well within the sphincter. Faradaic currents were of use only to strengthen the muscles of the abdomen and so aid in defecation.

Dr. A. F. Currier, of New York, remarked that those who had women as their patients might get much aid from electricity as used by Dr. Hammond, especially where constipation came from lack of action in the large intestine. He suggested washing out the colon before such an application. Weaker currents would then be sufficient. A small sponge to pass within the rectum might replace a metal cathode with advantage. Massage and faradism ought to be very useful in restoring strength to muscles of the abdomen relaxed by pregnancy.

Dr. H. R. Hopkins, of Buffalo, recommended galvanism for the cure of inertia of any of the hollow viscera; atony of the bladder causing incontinence of urine had yielded to its use in his experience.

Membranous Rhinitis.—Dr. F. H. Potter, of Buffalo, read a paper with this title. About 2 per cent. of all his cases of acute rhinitis had been membranous. There was no assignable cause for the affection and it was accompanied by no systemic disturbances of any moment. It began like any other acute attack of rhinitis, but about the third day the discharge formed a white tenacious coating. If denuded, the surface beneath was tender and showed numerous bleeding points. It resembled the membrane of diphtheria in several respects. Cocaine caused no contraction of the capillaries until healing commenced, although it benumbed the parts. The disease continued through a course of three weeks whether treated or not. Atropine gave no relief; salicylate of sodium only gave a headache when he had used it; bromide of potassium relieved the general nervousness. Tampons of dry cotton in pellets, kept in for five minutes, gave a slight relief, as did menthol also. In one case he had found the inflammation on its first appearance almost entirely in one nostril. The drift of opinion certainly was in the direction of regarding disease in local parts as an expression of some constitutional taint or condition.

Dr. C. C. Rice agreed in regarding the disease under consideration as constitutional. In his own cases he had found gout, rheumatism, hay-fever, and various local causes for a liability to catarrhal inflammations behind the local disease.

Dr. Pooley spoke of a form of membranous conjunctivitis occasionally met with which resembled the fibrinous exudate of diphtheria, but was quite mild.

Dr. Douglas suggested that these might be among those "walking cases" of diphtheria which Dr. Delafield had called attention to so strongly.

Dr. C. E. De La Vergne, of Brooklyn, instanced a family in which diphtheria appeared, of which two died, and a third was very ill, but a fourth had a membranous rhinitis which filled the nares, grew again in two days if removed, and resisted treatment by astringents.

Dr. Pomeroy had seen similar cases in asylums.

The Efficacy of the Older Methods of treating Nasal Disease contrasted with those of To-day.—Dr. C. C. Rice, in a paper with this title, reviewed the changes which had occurred within the last ten years in the treatment and understanding of nasal diseases. He said that our knowledge had especially advanced concerning the nature, cause, and treatment of hypersecretion from the nasal mucous membrane. We had found that medication by solutions or sprays failed to change its state at all. We had learned the relative importance of inflammation of the larynx, and that it was secondary to catarrh in the nasal passages. Remarkable progress had been made in the way of recognizing the difference between the mucous membrane in the nose and that in any other part of the body. The occlusion, changed color, and hypersecretion observed in the nasal cavity often invited astringent remedies, which only increased these conditions, for we now knew that we had to deal with erectile tissues, a true cavernous body, any stimulation on

the surface of which caused turgescence. If this stimulus were excessive or protracted, the nervous control of this congestion became lost. Either drugs or physiological overaction might bring this about. In health this erectile tissue represented a sensitive, nervous mechanism by which the warmth and moisture of the inspired air were regulated. Thus was proved the necessity of nasal breathing and the evil of mouth breathing. The hypersecretion itself differed from that in ordinary mucous membrane. In the first place, it was a serous secretion; when apparently muco-purulent, it was so from long accumulation due to the air not passing freely over it. The many and far-reaching nervous reflexes which arose from nasal diseases we knew partly, but more were constantly coming to our notice. We had learned in the past ten years to use atomizers for cleaning the nose only, to employ cocaine and the galvano-cautery.

Report of the Committee on Hygiene.—Dr. E. V. Stoddard read the report. The committee had investigated the causes of inefficiency of local boards of health as now constituted, and expressed the opinion that probably further inquiry into the subject would show the advisability of changing the so-called unit of territory upon which local boards of health were based, and have them embrace a county instead of a town or city. The committee suggested that the society pass a resolution recommending legislation to compel the removal of the acute insane from county to state institutions.

Dr. A. Jacobi amended it to include the chronic as well as the acute insane. After some opposition, the amendment was carried.

Vaginal Hysterectomy.—Dr. James B. Hunter, of New York, read a paper upon this subject.

Purulent Conjunctivitis of Infants, and Blindness, in the State of New York.—Dr. Lucien Howe, of Buffalo, in this paper showed by statistics the rapid increase of blindness in the United States, and in the State of New York in particular. He said that it was chiefly due to purulent conjunctivitis of infants, and that this could be greatly diminished by Credé's method—viz., thorough cleansing of the eyes of the newly born, and through the application of a two-per-cent. solution of nitrate of silver. Midwives should be required to report at once all cases of ophthalmia coming under their observation.

Disorders of Menstruation.—Dr. Andrew F. Currier, of New York, read the paper. It was a peculiarity of the organs of the body that their functions, when normal, were painless. This he thought was true of menstruation. Disordered menstruation he divided into amenorrhœa, dysmenorrhœa, oligomenorrhœa, polymenorrhœa, and adipomenorrhœa—words whose derivation suggested the nature of the affection. Brief suggestions were made as to treatment. In vicarious menstruation electricity applied to the pelvic organs favored flow of blood to those parts and normal menstruation.

Delegates to the Society.—After the report of the special committee, Dr. Wey, Chairman, a resolution was passed instructing the Committee on By-laws to frame a by-law allowing one delegate to the society from voluntary incorporated medical organizations in New York.

The Medical View of Inebriety.—Dr. Crothers, delegate from the Connecticut State Medical Society, read this paper. It appeared that at different times, in different countries, inebriety had been regarded and even treated as a disease. At present several journals and societies were devoted to the elucidation of this subject, and over fifty institutions were in existence for the treatment of inebriety. There were numerous circumstances, occurring both before and after man's birth, which favored inebriety. It was all-important that the general profession study the cases, be the judge of the treatment, and not leave it to clergymen, prohibitionists, or politicians.

Surgical Section.

Dr. A. W. Sutter, of Herkimer, in the Chair.

The Diagnostic Value of Spinal Rotation.—Dr. Bernard Bartow, of Buffalo, read a paper with this title calling attention to the spinal rotation which was seen in the early stages of spondylitis. He concluded that both in this disease and in the beginning of rhachitis the patient took this position to lessen the pain in an inflamed and sensitive cord. Muscular contraction in time followed and the position became involuntary. Self suspension was inadequate to overcome the deformity. A real cure could be obtained by the following method: A plaster jacket was made in the usual way and removed from the body. It would be, of course, a hollow mold of the body in its existing shape. It was then to be softened and remodeled into the shape which it would have had if the body had been normal. A plaster trunk was then cast in this mold and on it he shaped a leather strait-jacket, which was then put upon the patient. A few days of quiet in a recumbent position followed, and after that the patient could go about, the jacket being always a means of keeping the trunk in its normal condition. Slight scoliosis might be treated thus to great advantage if the other means—such as diet, massage, exercise, etc.—were added. As strength returned, the leather jacket could be perforated so as to become lighter and less and less resisting. This jacket did away with the need of a series of plaster jackets.

Dr. L. A. Weigel, of Rochester, remarked that he had observed a rotation of the spinal column early in spondylitis. If the rotation were then really due to an irritable condition of the cord, would not simply a recumbent posture from the outset of the disease be as good as and better than any apparatus to restore position?

Dr. A. M. Phelps, of New York, objected to having the treatment of Potts's disease associated with that of lateral curvature, a disease which he considered incurable. He did not use a succession of jackets, but kept a single jacket on for six months, a year, and even two or four years. After it was removed, if a need came for a light, flexible, strong brace, nothing could be better than the wooden corset.

Recent Advances in the Treatment of Hernia.—Dr. W. B. De Garmo, of New York, in a paper with this title treated the subject of strangulated hernia and recent advances made in its treatment. It was necessary to consider: 1. The varieties. 2. The operations which different leading men had put forward, each using his own method in all cases. 3. The need of selecting methods which best suited different varieties of herniæ. Each step in the operation had been made a subject of argument. Bryant, of London, had said that the opening of the sac multiplied the risk four times. But other writers thought differently. When herniæ were small and recent, it could be assumed that there were no changes inside. If of long standing, some portion always adhered, and remained so if the sac was returned to the abdominal cavity. Masses of omentum must always be removed, even if reducible. To prevent the secondary hæmorrhage which might follow amputation of a piece of omentum, it was only necessary to spread out the stump of omentum and tie the vessels separately. Stitching the stump of the sac into the canal was always followed by return of the hernia. In recent small herniæ, torsion of the sac was a good measure. As to the treatment of the canal, there was much difference of opinion among authorities. Dr. McBurney, of New York, split the anterior wall and filled the canal with iodoform gauze, thus forcing the wound to heal by granulation. However, it was known that in time scar-tissue became weaker than sound tissues, and might leave the patient in a worse condition than

before the operation. He used Barker's method of narrowing the anterior wall by heavy sutures of black silk and leaving a drain in. As to after-treatment, there was disagreement again. Some used a truss in all cases, and some not at all. Correct practice lay between these two extremes. None was needed after small herniæ had been treated by torsion, but for the larger a pad should be applied so as to press on the canal above the site of the wound.

Dr. J. P. Creveling, of Auburn, had always opened the sac much as he would an abscess.

Dr. Phelps, of Buffalo, recommended permanent sutures of silver wire.

Dr. De Garmo, in closing the discussion, doubted the need of Dr. Creveling's manipulation of the sac, and objected to the silver wire on the ground that in the New York Hospital, under Dr. Weir, ulceration had several times followed its use.

Dr. L. S. Pilcher, of Brooklyn, and Dr. William Hailes, Jr., of Albany, also discussed the paper.

Operation for Hyperostosis of the External Auditory Canal.—Dr. T. R. Pooley, of New York, read a paper with this title. He considered the dental engine a good means of removing such accretions of bone from this situation where mismanagement or accident might have such unfortunate results; but still better was the electro-osteotome of Dr. Roberts, of New York, with the chuck attachment, carrying saws, knives, burrs, drills, and hollow trephines of different sizes. The electro-osteotome was even more delicate than the dental engine. It was less tedious than removal by gouges, files, galvano-cautery, or écraseur. There was not the danger of injury of deeper parts by pressure or slipping of the instruments, and a lateral excavation could be made by a burr, which often greatly aided in the removal of spiculæ of bone. He related the history of several cases in which he had operated, in one of which suppurative inflammation of the middle ear had at once followed, probably due to the shock of the operation in neighboring tissues. When the soft tissues became swollen in the course of inflammation following the operation he had found dilatation of the canal by rubber tubes, catheters, etc., worse than useless, whereas hot water repeatedly applied soon brought about a cure.

Dr. C. C. Rice, of New York, spoke in favor of using every precaution, after such an operation, to prevent the absorption of septic material. He preferred an open wound kept clean by constant irrigation.

Dr. O. D. Pomeroy, of New York, thought the advisability of doing no operation at all should often be seriously considered, in view of the sea of troubles which sometimes followed operation. Applications of iodine, etc., were certainly always useless. In exostosis a large growth could often be easily removed by paring it away piecemeal with a chisel. Inflammation of the drum was too apt to follow the operation for hyperostosis independently of sepsis. It had followed operation on the inferior turbinated bone by the galvano-cautery.

Dr. Pooley closed the discussion by remarking that plugging the Eustachian canal had been found to cause hæmorrhage into the cavity of the middle ear, and so inflammation.

(*To be concluded.*)

NEW YORK ACADEMY OF MEDICINE.

Meeting of December 20, 1888.

The President, Dr. A. Jacobi, in the Chair.

A New Study of Lobar Pneumonia.—Dr. T. E. Satterthwaite read a paper with this title, which was based on an exhaustive examination of old and new literature relating to the disease, and on fifty-six fatal cases occurring in the reader's own experience. He concluded that epidemics of pneumonia had occasionally occurred, but not often; and that they had followed either long-continued cold winds or confinement in foul air. They varied with the locality. Thus in 1709, in France, an epidemic of pneumonia in Languedoc and Provence blended into severe influenza in England. The isolated cases of pneumonia were caused in some cases by prolonged exposure to cold, especially to cold winds and draughts, by impure air in other cases, but often by still other things of which we knew almost nothing. He recognized as separate types which presented both pathological and clinical differences: 1. Acute lobar pneumonia. 2. Secondary lobar pneumonia. 3. Embolic lobular pneumonia. 4. Bronchial lobular pneumonia. 5. The interstitial pneumonia of heart disease. The paper dealt with the first two of these varieties only. The first occupied a unique position in the catalogue of diseases, being unlike any known disease either in anatomy or symptoms. It should also be distinguished from the catarrhal phthisis of Niemeyer known in some quarters as catarrhal pneumonia, from syphilitic pneumonia, from the interstitial pneumonia caused by the inhalation of foreign substances, and from hypostatic pneumonia due purely to chronic venous congestion. The term lobar pneumonia was to be preferred to croupous pneumonia.

In the reader's experience, acute lobar pneumonia was likely to begin with symptoms in the following order: 1. Pain, prostration, and cough. 2. A severe chill. 3. Nausea. 4. Rise of temperature to 103° or 104°. Pain in the limbs, headache, difficult breathing, and an alteration in the usual ratio between the pulse and the respiration.

The chill might be overlooked from its occurring during sleep, or might be mistaken for an exposure to cold which existed only in the imagination. It was of exceedingly common occurrence. The cough might be absent in old people. The characteristic expectoration of pneumonia, ordinarily of a rusty or prune-juice color, might in exceptional cases be red, black, green, or colorless. This sputum had three characteristic qualities—color, consistency, and coalescence. It was sometimes absent, and always absent in very young children. A rusty-colored sputum was occasionally met with in other diseases than pneumonia; thus, in naso-pharyngeal catarrh where there was hæmorrhage, but without the other characteristic qualities. Acute laryngitis sometimes gave the characteristic sputum of pneumonia in every respect except the color.

The reader had found acute renal disease present in thirty-six per cent. of his cases, and an exacerbation of a chronic kidney trouble in five per cent. He was convinced that examination, if it had always been made, would have shown higher percentages.

Among the earliest of the physical signs was a loss of elasticity in the chest-wall on percussion, as described by Grisolle, especially in the supraspinous and infraspinous fossæ. Much more important was the crepitant râle produced by fluid matter entering the vesicular substance of the lung, and it might almost be regarded as a characteristic of lobar pneumonia. It was, however, admitted in the best quarters that the crepitant râle occurred not only in œdema of the lungs and pulmonary apoplexy, but occasionally in the other types of pneumonia, in phthisis, pulmonary syphilis, and even in bronchitis. The reader discussed the other physical signs, the prolonged expiration, the voice, the pain in the chest, the pulse, and the respiration. Where the pulse was twice the normal, the respiration was frequently three times the normal in frequency. Delirium was especially common in alcoholic patients. The duration was usually between five and nine days. Any case for which a duration of over two weeks was claimed was to be looked upon with the gravest suspicion.

Death was most frequent at the crisis, which occurred usually on the sixth day. Its immediate cause was usually heart failure, resulting either from overwork and exhaustion, or from the influence of the poisoned blood on the nerve-centers, or both. Of eighteen cases in his own experience, where noted, in eleven death came by heart failure, in five from anæmia, and in only one from respiratory stoppage.

Returning to the subject of the causation of pneumonia, the reader quoted various diverse opinions. Sturges had believed that cold, dry, penetrating winds caused the disease. Grisolle thought exposure to cold only an occasional cause, being recorded in a fourth of his cases only, and other observers were quoted who had recorded previous exposure in from one fifth to one half of their cases, while Ziemssen had been able to trace it in only ten out of one hundred and eighty-six cases, and Griesinger in but four out of two hundred and twelve. The speaker had found it ascribed in twenty-two per cent. of his cases, but, as Grisolle had observed, the initial chill may frequently have been mistaken for an exposure of the body. The epidemic form had often been traced to the confinement of many persons in a single room, thus to foul air. It was frequently associated with diarrhœa or dysentery. A certain number of cases could be set down as due to exposure. The causation of a considerable number was then unexplained. The connection specifically of any bacteria with pneumonia had not as yet been shown.

The mortality of lobar pneumonia varied greatly, in the opinion of the reader, with several factors; especially did it depend on the age of the patient. It also changed with particular years, because the types of pneumonia varied from year to year. The same physician using the same method of treatment obtained different results in different years. Furthermore, each case of acute lobar pneumonia stood by itself. The lowest mortality had always followed the expectant plan of treatment. The causes of death obviously pointed to the direction in which the main efforts in treatment should be made. It was not, then, by reducing the temperature that real aid was to be given so much as by sustaining the heart and obviating renal disease. It had been found by post-mortems that the use of antipyretics not only weakened the heart, but had some unfavorable action on the kidneys.

Every case should be treated by itself, and indications met as they arose. Thus copious and repeated cuppings gave relief in sthenic cases, cold applications where the patient was less vigorous, large doses of mercury where there was lack of action in the liver, alcoholic stimulants where the heart was weak, and diaphoresis where the kidneys showed loss of normal action. The temperature of pneumonia he regarded as a symptom of disturbance, and not as an added danger.

Secondary lobar pneumonia was a disease that followed other diseases, and hence might be called consecutive. It followed upon nephritis, alcoholism, phthisis, burns, and surgical operations. It was to be regarded as a subacute form, with its clinical signs often ill-defined and its approach so insidious as often to escape ordinary observation. It differed from the acute lobar pneumonia in respect to the age of the individual, the apparent causation, the character of the pulse and respiration, the temperature, and the tendency to suppurative changes in the lung. Still it was often first recognized at the post-mortem. The chill was very often absent or slight, and the pain in the side was not constant. The breathing might be easy, but the crepitant râle was usually heard. The temperature was, on an average, lower than in the acute form and had less relation to the severity of the disease. The pulse was slower. The most decided symptoms in the reader's experience were bronchial breathing and dullness. They had been present in seventy per cent. of his cases. The expectoration was apt to be scanty. He had noted it in a third only of his cases. Renal symptoms, however, were apt to be more acute than in primary pneumonia.

The President, in commenting on the value of the paper, recalled a time not long past when Dr. Francis Delafield read a paper upon so familiar a subject as typhoid fever, in which the society had been given a surprising amount of new information. New light had at least, as in the case of the present paper, been thrown upon old data.

Dr. A. H. Smith called attention to the peculiar range of the temperature so characteristic in pneumonia, rising rapidly at the outset of the disease, remaining well up until the fifth or sixth day, and then as suddenly falling, even to below the normal. This was unaccompanied by any corresponding change in the physical signs, and indicated the presence in the disease of some element other than the inflammation in the lung tissue, for that remained unaltered. Something undoubtedly took place at the same time as that in which a febrile movement was so marked; perhaps it was the formation of poisonous alkaloidal substances somewhere in the body. He thought that, to solve the question of the ætiology of the disease, search must be continued for a germ, a bacillus, either the pneumococcus or something else of the sort. The disease was peculiar in another way; the obstruction to the pulmonary circulation caused the blood to accumulate in the right side of the heart, while there came to be less and less blood in the arterial side, which was left without work to do. The heart was thus very apt to become overworked, and its stimulation became a matter of the utmost importance. The existence of vaso-motor nerves in the vessels of the lungs had been denied. The stimulant needed to be one which acted directly on the heart fiber. The treatment of pneumonia was hard to decide on in theory, and clinically so many measures had had warm advocates that this of itself showed there was no real treatment in existence. Bleeding had some justification, and it did give relief for a time, as shown by a lessening of the moist râles and improved respiration, but the time was very short, while the blood was impoverished to an extent from which it did not soon recover.

Death came by failure of the overworked heart, a result to which the high temperature and the presence of poisons in the blood, which acted on the nervous centers, contributed more or less. He believed that the depressing antipyretics inevitably lessened the chances of recovery, and thought cold affusions all that could be needed. The impairment of the circulation also led to the retention of waste matters. It was well to hasten their removal by stimulating the skin and bowels. In view of the ease with which great harm could be done in treating pneumonia, it was not surprising that the expectant plan had been so well received. Itw as certainly necessary to be very careful.

The speaker recommended inhalations of oxygen gas, the slight excess of it that was taken up by the blood seeming to be of service. The labor of respiration was lightened, and the consequent increased exudation into the lung checked. Besides this, heart stimulants were necessary; but they needed to be used cautiously, as heart stimulation could be easily overdone, and alcohol might easily become a direct irritant.

Dr. Beverley Robinson, taking up first the question as to the causation of pneumonia, could say only from his own observation that great bodily or mental fatigue, especially if there was exposure at the same time to foul air, was a very efficient cause, and commonly the only one found. In regard to the type of the disease varying from year to year, it had seemed to him to do so much as some of the infectious or epidemic diseases did. It had given rise to the great divergence of opinion

about the value of various methods of treatment. He agreed as to the bad policy of using dangerous drugs to remove what was, after all, only a symptom of the condition—namely, the high temperature. He had found that digitalis reduced temperature well and safely in this disease. His plan of treatment was to give oxygen gas, strong black coffee, brandy and milk, to keep the patient protected from draughts, and to give at intervals a special heart tonic, such as strophanthus. He disapproved of the oil-skin jacket and cotton over the chest. It produced a layer of moist air and a wet, clammy surface, so that the risk of the patient's taking more cold was seriously increased.

Dr. Simon Baruch referred to the process of evolution through which his mind had gone with respect to the treatment of pneumonia, and recalled a time when calomel, nitrate of potassium, antimony, and veratrum viride were regularly administered to patients. Patients frequently recovered from the disease, as shown by a subsidence of all the physical signs, but they very commonly died afterward. The profession owed much to the homœopaths of the old school (not the present nondescripts who carried that name), whose remedies, so-called potencies, were absolutely without any effect at all, and enabled all to see what good nursing alone could do. He considered that, of all diseases accompanied by a rise of temperature, pneumonia was least likely to do badly on account of the latter. Not even quinine was really called for. In regard to the stimulation of the heart (and only the right heart needed any aid), he considered drugs as simply spurring a jaded horse, so to speak. To give real relief to the overcrowded ventricles, he recommended that the amount of blood in the portal circulation be reduced by giving eight or ten grains of calomel with a saline cathartic. Afterward it would be in order to give whisky and digitalis, but not before. He attached less importance to the change in type of the disease than many did. The cotton and oil-silk jacket he thought useful. Common raw cotton, not absorbent or "medicated" cotton, was the thing; it kept the skin hot and made as good a poultice as could be desired.

Dr. Robinson repeated his belief that a poultice of any sort was radically improper in pneumonia, and so too a cotton jacket. It kept a layer of water retained on the surface of the skin, in case the patient was perspiring at all. Calomel he thought quite as effectual in much smaller and more frequent doses instead of in the single large dose given by Dr. Baruch, while at the same time the general strength was not so diminished.

Dr. Satterthwaite was pleased to find so general an agreement in regard to the significance of temperature in pneumonia. Cases of the disease were not uncommon with temperatures of 107° or even 110° which were recovered from, while patients with a subnormal temperature frequently died.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN SURGERY.

Meeting of December 9, 1888.

Dr. R. F. Weir in the Chair.

The Results of Complete Extirpation of the Tongue.—Dr. W. T. Bull presented before the Section a man whose tongue he had entirely removed three years previously on account of tuberculosis. Notes of the case and a description of the operation had been published in the Journal two years before. The man had remained free from disease since. It was interesting to observe how slight was the deformity produced in the face. Beyond a slight sinking of the submaxillary regions, there was no change in the general contour, although the tongue had been excised quite down to its attachment to the hyoid bone. The man swallowed food and drink with entire ease. He had also learned to speak without a tongue—so well, in fact, that he had recently been in the New York Hospital for two weeks for the treatment of a fracture before the attendants noticed sufficient peculiarity in his speech to lead them to inquire as to its cause. It seemed that when the patient went to work among strangers there was at first some difficulty in making himself understood, but in time this passed away. Words containing the sounds of "m," "n," "th," "d," "k," and "g," were imperfectly vocalized. The sense of taste was as good as ever, the sensation being felt in the floor of the mouth. The outcome of the operation should inspire considerable confidence in this radical treatment of malignant disease of the tongue.

The Chairman remarked that in five out of seven cases which he had known of where the tongue had been extirpated for tuberculosis there had been a recurrence in surrounding tissues, despite great thoroughness in the operation. Dr. Bull was to be congratulated on a very fortunate result in the case presented.

Operation for Incontinence of Fæces.—The Chairman presented a man on whom he had operated eighteen months before to obtain a restoration of sphincter action at the anal outlet, which had been destroyed by division for fistula. The condition previous to operation had been such as to force the patient to abandon work altogether. It had been possible to place three fingers with ease into the canal-like cavity where the anus should have been. The broad, leathery cicatrix lining this cavity had been dissected off till the mucous membrane of the bowel was reached and the retracted sphincters were restored to position and function, so that gas could be retained, and the patient had normal passages.

A Heel restored by Graftings.—Dr. C. A. Powers presented a patient who, some months before, had suffered a comminuted fracture of the os calcis in a railroad accident. The larger fragments had been wired together, and had healed by first intention. Many smaller fragments had been removed or else had sloughed away. A considerable amount of the surrounding soft tissues had been irreparably injured, and had been removed. It had become evident that the loss of substance would result in making the foot entirely unserviceable. By a series of small transplantations of skin and, finally, by a large graft taken from the calf of the opposite leg, the gap in the heel had been filled in so as to restore both the shape and the usefulness of the foot to a large extent. A large, thin cicatrix had lined the bottom of the cavity, which adhered to the bone and had nearly ceased attempts at granulation. In former times such a foot would have been amputated at once. This cicatrix and all the weakly organized bordering parts had been cut away when the graft was made. To insure complete rest during the healing of the latter, the knee had been put across the other in a "figure-4" position; however, in order to accustom the knee to remaining flexed in this position, it had been previously kept for some time in plaster of Paris.

Dr. W. T. Bull, being requested by the chairman to open the discussion, spoke in praise of the operation and its quite remarkable results. He advised that, whenever grafting was found to be necessary, it should be undertaken as early as possible, since every added week of confinement to bed lessened the general vitality of the tissues, and so the chances of success in any plastic operation. Absolute immobility of the limb was necessary, and the plaster-of-Paris splint beforehand, to get it accustomed to the desired position, was an excellent idea.

Dr. R. Abbe mentioned a case where both palms had been destroyed by fire and a broad cicatrix formed, being about all there was left over the bones. He had dissected off this cicatrix, and had prepared flaps in the thighs, under which he had then

slid the hands. The patient having to keep bent forward in a single position, which before long became intolerably irksome, he had, by giving her morphine, made it possible for her to endure it for two weeks till union took place.

Enormous Nævi cured by the Galvano-cautery. — Dr. Abbe presented a child of twelve years whose treatment for nævi of phenomenal size was nearly complete. These had appeared as soft vascular tumors just beneath the skin, at first on the fingers, then on the forearm and arm, and finally about the root of the neck, where, from their size, they became, so to speak, great bags of blood which filled the whole hollow of the shoulder. He had at first treated some of the smaller of these tumors on the fingers by electrolysis, using fine needles, making from fifty to a hundred punctures, and holding the needles inside till he heard the blood bubbling; but this method had not succeeded when used to reduce the larger tumors in the arm. He had had better success with the Paquelin cautery and the galvano-cautery. At the elbow he had cut out one of the tumors, but the hæmorrhage had been such that he had not dared attempt to remove the larger ones about the shoulder. For these he had arranged a device which was, so far as he knew, a new one. A platinum wire had been introduced beneath the skin, carried around the vascular tumor, and brought out again nearly at the point of entrance. Then a strong galvanic current had been sent through the wire and the loop of the latter slowly withdrawn, burning its way through the vascular mass and out from the skin between the points of its entrance and exit. It had left but a slight red cicatrix an inch in length where the loop had been withdrawn, and the nævus had been almost entirely reduced. The only other method which the speaker considered adequate for the treatment of large nævi was that recommended by Roser, who drew through the tumor fifty or more threads charged with persulphate of iron.

The Chairman observed that marked cerebral and cardiac symptoms had sometimes followed injections of very small amounts of persulphate of iron.

Dr. Bull had only dealt with small nævi. He was much encouraged by Dr. Abbe's results. Once he had attempted to dissect out a nævus of some size at the elbow, but the hæmorrhage had been such that only a saline transfusion had saved the life of the patient.

The Chairman related a similar instance.

Dr. J. D. Bryant related an instance where hæmorrhage during removal of a nævus was controlled by temporary ligatures about the supplying vessels.

Dr. Abbe remarked that these large nævi consisted of arteries as well as veins, although no pulsation was felt, since it was muffled by the abundant veins which made up the larger part of the mass.

Laparotomy and Nephrorrhaphy.—Dr. J. D. Bryant gave the history of a very complicated and obscure case in which intestinal constriction from some cause had been combined with displacement of the kidney. The case had passed through the hands of several physicians and surgeons of note before cure was effected by a radical operation. The patient, L. H. W., a clerk, aged twenty-eight, single, temperate, and with good family history, had for a long time previous to his acuter illness suffered from dyspepsia, and three or four years previous to it had had an acute attack of peritonitis on the right side of the abdomen. He had been engaged in continuous hard work since the age of eleven years. As much as seven years prior to the operation, while at work one day, he had felt a peculiar sensation in the right lumbar region attended with fatigue. This had been soon followed by severe constipation, loss of appetite, pain and tenderness in the right side, chilliness, and nausea. The pain had prevented walking, standing, or sleeping. This attack had entirely ceased in two or three days, but it had returned, and had continued to return at intervals of three months or less. The nausea in many of these attacks had passed into vomiting, and the stools had become so small as to resemble a pencil in size and shape. Food could not be retained and strong purgatives had been without effect. The lower abdomen had become distended, this and the other symptoms becoming worse with each attack. A painful movable tumor could be felt in the right lumbar region, which had led Dr. Janeway, himself, and others to believe that a partial obstruction of the ascending colon was associated with a floating kidney.

When the abdomen was laid open by an incision through the right linea semilunaris they had found the hepatic flexure and the upper half of the ascending colon adherent to the parietal peritonæum, and eleven fibrous bands stretched across the ascending colon below the flexure, reducing its lumen at one point to a fourth of its diameter. These had been divided and the colon separated from its adhesion to the abdominal wall. The wound had then been closed; it had healed rapidly and relief had seemed complete for the next three months, when the kidney had again become enlarged and very painful. At intervals thereafter, especially when standing or engaged in any physical effort, the kidney had continued its peregrinations, and the patient had suffered from nervousness, debility, nausea, and sometimes diarrhœa. He had been accordingly advised to submit to an operation for anchoring the kidney. Nephrorrhaphy was performed on the 28th of last November. The usual incision had been made in a vertical direction along the outer border of the quadratus lumborum, and the kidney, inclosed in its fatty capsule, had been brought into view. The latter being torn through and about three inches of it removed on each side (after drawing it up and out through the wound), it had been turned over the edges of the external wound and firmly fastened to them with carbolized silk. This measure had confined the kidney in the wound, but had not prevented its moving with each act of respiration. However, gentle pressure made in front had readily confined the kidney in position. Therefore, in dressing the wound, a counter-pressure had been applied in front, over the kidney. Complete recovery had followed, only an occasional burning sensation and an indefinite sense of drawing being left to remind the patient of his previous condition. These were due, in the opinion of the speaker, to the contraction of the cicatrix where the capsule had healed to the edges of the incision, and to the shortening and tense state in the capsule which nearly surrounded the kidney and now kept it in place.

The Chairman commented on the connection between displacements of the kidney and disturbances in the stomach and bowels. In his own experience, pads had given little relief. A large sponge of suitable size had been more useful; but he now preferred operation to any external appliances.

Dr. Bryant had tried pads most religiously and had failed to get any aid from them. In a discussion on pads which ensued, one speaker referred to ten or fifteen cases which he had treated by pads, many of which he had cured and three of which he had entirely relieved after an operation had failed to do so. He used a spring truss and a pad as large as his hand, placing the latter quite low so as to make pressure on the parts beneath the kidney.

Another member recommended a band of strong duck, reenforced by hoop-skirt wire, applied and adjusted by the patient himself.

Dupuytren's Contraction.—Dr. Willy Meyer presented an elderly man upon whom he had operated for this condition. He mentioned different theories held as to its causation and the various modes of surgical relief. He preferred, on the whole,

the removal of a long strip of the palmar fascia in the line of the contraction, the strip tapering to a point above.

Dr. ABBE recommended making a series of sections across the line of contracture, but had also obtained good results from excising a band of the fascia. Either operation could be done in ten minutes under local cocaine anæsthesia. He thought it very important not to put the hand into full extension or over-extension afterward, as it set up a state of excitement in the fascia and caused pain and œdema. The condition was already one of hyperplasia of the aponeurotic structures, possibly due to irritation made liable by the absorption of the underlying cushion of fat.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Meeting of November 26, 1888.

The President, Dr. A. S. HUNTER, in the Chair.

Inaugural Address.—The PRESIDENT, on taking the chair, read an address in which, after a review and commendation of the society's career in the past, he called attention to some of the means which would tend to give it greater influence, interest, and usefulness. In the first place, he urged the necessity of a full attendance of members at the meetings. A full attendance and a good discussion by competent men were needed in order that the best men might be induced to write. On the other hand, papers should be on subjects of popular interest, they should have full titles suggestive of the questions to be discussed (and sent out on the cards), and they should be much simpler than was usual. Less historical matter in the paper, and more discussion after it, were to be desired in most cases. It would be of much advantage if more patients were presented for examination, and if more condensed, written reports of interesting cases were read by various members. If these reports were short, clear-cut, and shorn of every unessential detail, the early part of the meeting could be profitably employed, and the paper be read afterward to a fuller audience.

The Significance of Cough and the Use of Expectorants.—Dr. W. H. THOMPSON read a paper with this title. He called attention to the routine into which physicians often settled in their treatment of cough. Cough was an effort at expectoration caused by irritation of a body in the respiratory tract, or some other similar irritation. It was a reflex action of which there were many afferent sources, and in many instances might thus be without effect in the expulsion of anything. There were about fourteen different causes of cough. All the non-expectorating varieties had one feature in common. The sound was single, like the stroke of a hammer, and successive coughs had no variation of note. Expectorating coughs, on the other hand, ran through a series of notes, like the sound made by a chain dragged over a hard body, and always continued to the end of the series, or till the expulsion of the foreign body. The speaker then reviewed the various coughs and the rational means of relieving each according to its cause, sometimes by small opiates, at other times by demulcents, and at others by expectorant drugs. He spoke of the hacking cough of pleurisy, its meanings, and its relief by strapping that side of the chest so as to secure rest. This done for a pleuritic cough in the beginning of phthisis much delayed the development of the latter. The cough of pertussis could be stopped in a week's time by full doses of belladonna (sometimes with the addition of a little chloral), although the disease went on to the end of its course. Other coughs—due to uterine irritation, aneurysm, digestive disturbances, enlarged bronchial glands, foreign bodies in and diseases of the ear, mitral insufficiency, irritation of the pharynx, abscess of the liver, or to some cerebral affections—were also discussed with regard to their diagnosis and treatment.

When a cough of the expectorating variety was difficult on account of the viscidity of the phlegm, the administration of an oil greatly lessened this difficulty by causing liquefaction of the secretions. The best oil for this purpose, although unmentioned in most text-books, was the raw linseed-oil given in an emulsion. It was also an excellent substitute for cod-liver oil, when this could not be borne, in phthisis. It relieved bronchial asthma and asthma in those much affected by changes in weather; also congestive bronchitis, the bronchitis of heart disease, and senile bronchitis. He recommended the following formula:

Linseed-oil	℥ xv;
Oil of wintergreen, }	
Oil of cinnamon, }	āā ʒ ij;
Glycerin	℥ v;
Simple syrup	℥ x;
Water	℥ xxiv

—made into an emulsion. Dilute hydrocyanic acid (ʒ ijss.), Magendie's solution (♏ xl), or chloral (ʒ jss.) might be added in suitable cases.

Dr. A. JACOBI wished to take a gentle exception to some points in the paper. There was little to be added to it. He did not think the non expectorating cough due to enlargement of the bronchial glands could positively be recognized before an autopsy. We could assume the presence of enlarged bronchial glands under certain conditions, but the character of the cough alone did not point to them. The pharyngeal coughs were sometimes caused by the tickling of an elongated uvula. When cough occurred on lying down or on rising from sleep, it was apt to be due to collections of mucus in the pharynx. Food collecting in the crypts behind enlarged tonsils sometimes caused cough. Where pharyngitis caused cough it was best relieved by frequent sipping of water or Vichy.

Dr. BEVERLEY ROBINSON thought the prescription given by Dr. Thompson contained too many ingredients in mixture. He considered that an examination by a man familiar with rhinology and laryngology was always necessary if we would decide on the source of an obscure cough. As to the quite common cough due to adhesions of the pleura, it was better, in his opinion, to prevent the formation of adhesions by a timely removal of a long-standing effusion than to strap the chest afterward.

Dr. SIMON BARUCH thought a sufficient search was rarely made for the real causes of cough, and deprecated the giving of prominence to any medicinal remedy for cough lest it prevent full search for its cause being made. These so-called expectorant drugs were given more as a fashion than from experience. Rossbach had shown that squills, ipecac, and other agents of a similar kind so often given for coughs were really without any expectorant effect, and that only apomorphine had such an action. He believed the chloral, morphine, and hydrocyanic acid which Dr. Thompson often combined with his linseed-oil emulsion were the really efficient ingredients.

Dr. J. O. TANSLEY enumerated conditions in the auditory apparatus, especially the presence of plugs of wax or bits of paper, etc., in the external auditory canal, which produced coughing.

Dr. T. DARLINGTON, of Kings Bridge, testified to good results which he had for some years past seen obtained in bronchial coughs by doses of pure linseed-oil. It was a well-known and trusted remedy in the repertory of many old nurses and housewives, and of its potency his own experience made it impossible for him to doubt.

Malaria caused many coughs, and these yielded to quinine. The laborers in the tunnels of the new Croton aqueduct frequently suffered from cough due to the fumes from the explosion of dynamite.

Dr. THOMPSON, in closing the discussion, replied to Dr. Jacobi

that he suspected a hacking cough due to irritation of enlarged bronchial glands when he found increased bronchial breathing in some spot between the scapulæ and the expectoration was free from pus. The irritation of the pneumogastric was apt at the same time to cause vomiting, palpitation, or aphonia, with perhaps ulcerative inflammation of the vocal cords.

To Dr. Robinson he would reply that an oil emulsion seemed to be at least a practical if not a scientific prescription. He had seen it relieve coughs which throat specialists had failed to benefit.

NEW YORK STATE MEDICAL ASSOCIATION.

(*Concluded from page 78.*)

Officers for the Ensuing Year.—The following officers were elected: President, Dr. William T. Lusk, of New York; vice-presidents, Dr. S. H. French, of Amsterdam, Dr. R. C. McEwen, of Saratoga Springs, Dr. E. Lester, of Seneca Falls, and Dr. T. D. Strong, of Westfield.

Address in Medicine—"Medical New York in 1800."—Dr. John Shrady, of New York, read an interesting paper with this title, which recalled at the outstart the social and political conditions of New York city in the year 1800. There were then in the city eighty-five physicians. Sketches of a number of the more prominent of them were given. As regarded the practice of the day, not much had come down to us. General laws based upon what were called general principles had been given the burden of responsibility, disease being regarded as an entity. It was curious to observe how opinion had retroceded to the doctrine of Boerhaave that the acrimony of the fluids as a disturbing cause required to be neutralized by chemical remedies. It was this which had brought calomel into general use. It was essentially the same idea which had crowned its chemical cousin as well as itself with later honors in our own day. For their plethora and depraved humors we had almost equivalent new names. They recognized a certain power, although the form was unknown. Could we say that they had no vision because both sides of the shield were not seen?

Mechanism of Posthumous or Post-mortem Inversion of the Uterus after Somatic Death.—Dr. Isaac E. Taylor, of New York, read a paper bearing this title. He opened by remarking on the fact that the fœtus is cast off from the dead body of the mother after the respiratory movement and circulation have completely ceased. This constituted somatic or posthumous death. Furthermore, rupture, as well as inversion, more or less complete, had from time to time occurred. Three theories had been advanced to account for this posthumous delivery and inversion of the uterus: 1. Spasm of the uterus or rigor mortis. 2. Decomposition of the tissues and fluids in the abdomen and the evolution of gases. 3. Contraction of the uterus from muscular irritability which ensued after death. Physiology had established that muscles do not lose their irritability immediately after death, but gave no information as to why the muscles of the uterus, powerless or inert at the time of death, should after death, with such remarkable energy, deliver the child, much less how that force should turn the uterus inside out. The uterus after such a posthumous birth had been found as perfectly contracted as after a normal labor. It was known that the uterus was the last of the vital organs to undergo decomposition after death, often retaining for months its color, form, and consistency of structure.

As to the theory of rigor mortis causing the extrusion of the child, it was hard to suppose that it could affect the uterus alone and not the vulva and vagina or the rest of the body, or that a spasm should last longer in the uterus than in the passages through which the child must come.

As to the second theory of gaseous pressure, it was enough to remember that decomposition did not begin till several days after death, and always after the departure of the rigor mortis, when all irritability of the muscles would be gone. The delivery of the child would then have to be effected by the pressure of gas on the uterus alone.

With the third theory of a contraction of the uterus after death sufficient to expel the child the reader dealt at length. He cited Arbiter, who reported in 1862 that one hour after a woman had died undelivered he had extracted a child by version, had taken out the placenta, and had then seen the uterus contract firmly to the size natural to it after normal labor.

Several authentic cases were related where posthumous delivery and inversion of the uterus had been recorded. In a case described by Braxton-Hicks the contraction of the inverted uterus was so firm as to defy all efforts at reduction. He concluded on clinical grounds that organic action became concentrated in the uterus after death, and that contraction of the uterus was the sole motor element in producing birth of the child.

As to the detail of this mechanism he reviewed the established facts: 1. That the body and fundus of the uterus contain the long muscular fibers which alone furnish the propelling power for delivering the child. 2. That they terminate at the junction of the body and cervix, and have no power to pull back or expand the latter. 3. That their nerve-supply is entirely from the sympathetic system. 4. That the cervix and os are chiefly composed of circular contractile fibers and non-contractile elastic fibrous tissue. 5. That they are governed by the cerebro-spinal or reflex system of nerves.

He concluded that in a posthumous delivery, the cerebro-spinal system being dead, the cervix furnished no intermittent resistance to the action of the fundus, which by a single continuous effort drove the child out and carried itself into complete inversion. The cervix was infolded first, then the body, and the fundus appeared last.

Inversion might occur in life, beginning by indentation of the fundus resulting from traction on the cord and pressure of the intestines due to the action of the diaphragm and abdominal muscles. But other conditions were present in posthumous deliveries.

Dr. C. A. Leale, of New York, thought the paper might have an important bearing on medico-legal questions connected with the inheritance of property, where, if it were established that the child died after the mother, the property would pass through it to the husband, but otherwise to the legal heirs of the wife.

Traumatic Gangrene.—Dr. T. H. Manley, of New York, read a paper with this title, in which he concluded: 1. That the causes of gangrene must lie beyond a loss of circulation, and were due to spreading degenerations in the nervous system. 2. That antisepsis alone was not enough to combat the condition. 3. That diet and general conditions were to be very carefully regulated. 4. That mercurials in external application, but also in small internal doses, were of great benefit. 5. That while recovery had, without doubt, taken place spontaneously in a few instances, amputation should be generally relied on when we were convinced, by its icy coldness, crackling, discoloration, and puffiness of the skin, etc., that death had occurred in a part. 6. That bloodletting in the vicinity of badly swollen parts often gave relief. 7. That in spreading moist gangrene resulting from violence an early operation was best, not waiting for a line of demarkation to appear. 8. That it was not always necessary in such cases to cut entirely above the affected tissues if a joint could be saved by retaining some of the latter.

Discussion on Puerperal Septicæmia.—Dr. C. C. Frederick, of Erie county, opened the discussion with a paper propounding a number of questions on which subsequent papers were based.

Dr. E. D. Ferguson, of Troy, read a paper in answer to the questions: 1. Is there a special febrile disease peculiar to the puerperal woman, or are the various forms of puerperal fever the result of septic infection similar to or identical with septicæmia? 2. What ætiological relations exist between the zymotic diseases and some forms of puerperal febrile diseases, and in what manner are the zymotics modified by implantation upon the puerperal state? He said, admitting the possibility of a puerperal fever *sui generis*, it would still be possible for the puerperal woman to have other types of fever, or one identical with septicæmia. But he had concluded that there was no specific febrile disease for the following reasons: 1. It was impossible to show that there was any infectious material to which the parturient woman alone was susceptible, or that puerperal fever had clinical features peculiar to it. 2. The condition of the body in infectious diseases, such as measles and scarlatina, was known to determine the greatest variations in the virulency of an attack where the poison was the same. 3. There was no evidence pointing to an essential change in the nature of measles or erysipelas when ingrafted in the tissues of the puerperal woman. He said it was not always easy to believe that puerperal fever was the result of infection at all. Semmelweise, over thirty years ago, had ascribed the disease to the absorption of decomposing animal matter, but he recognized two sources of infection: 1. Where it was introduced into the body from without through abrasions. 2. Where it was developed within the patient's body. We believed to-day that inflammation in connective tissue, with pus-production, depended on infection from without. Now, many cases of puerperal fever had no signs of local inflammation, no local pain or change in the lochia, even up to the time of death, from pyrexia and exhaustion. Again, he had seen a marked fever produced by tamponing with antiseptic material the vagina of a pregnant woman suffering from hæmorrhage, where not the least local inflammation had been produced. This fever promptly subsided when the tampon, blood-clot, etc., were removed, and without irrigation. It seemed like a "urethral fever" resulting from the passage of a clean catheter. Of late years we were learning that physiological ferments, the overproduction or retention of leucomaines, as well as irritations of sensitive mucous membranes, might all give rise to fevers. The occurrence of aseptic fever in transfusion of blood, and after subcutaneous effusions of blood, looked in the same direction.

The reader concluded that even some of the fatal cases might be due to material arising in the patient's own body, though in the majority of instances infection was to be credited with the causation of the fever. As regarded the relation of the zymotic poisons to puerperal fever, he concluded that we should endeavor to distinguish between zymotic diseases complicating puerperal diseases of other origin and those in which the zymotic poison had been the direct exciting cause. This was not always easy, because local pelvic disease did not necessarily result from a local infection, though it commonly did. Mere severity of the zymotic disease in the puerperal woman did not imply that the genital tract had been the point of entrance unless there were local inflammations.

Erysipelas and diphtheria were known to be capable of producing puerperal fever with the ordinary local developments. Of measles less was known, but scarlet fever he knew capable of causing puerperal fever when locally infected, both with and without local inflammations. The virus of small-pox could undoubtedly produce them, but whether by direct contamination or the products of pustular inflammation was uncertain. There was no evidence to show that the poisons of typhoid or malaria had any special influence in the production of that complex of symptoms termed puerperal fever.

As regarded the manner in which the zymotic diseases were modified by implantation in the puerperal state, it appeared that the gravity of the disease was increased without its essential character being changed. If imparted by a puerperal patient to children or men, it reproduced itself as the ordinary scarlet fever or erysipelas, as the case might be. Erysipelas affecting the face was not notably worse in a puerperal woman.

Book Notices.

BOOKS AND PAMPHLETS RECEIVED.

Text-book of Medical Jurisprudence and Toxicology. By John J. Reese, M. D., Professor of Medical Jurisprudence and Toxicology in the University of Pennsylvania, etc. Second Edition. Revised and enlarged. Philadelphia: P. Blakiston, Son, & Co., 1889. Pp. xvi–9 to 646. [Price, $3.]

Hand-book of the Diagnosis and Treatment of Diseases of the Throat, Nose, and Naso-Pharynx. By Carl Seiler, M. D., Instructor in Laryngology and Lecturer on Diseases of the Upper Air-Passages in the University of Pennsylvania, etc. Third Edition. Thoroughly revised and greatly enlarged. Illustrated with Two Lithographic Plates containing Ten Figures and One Hundred and One Wood Engravings. Philadelphia: Lea Brothers & Co., 1889. Pp. xii–13 to 373. [Price, $2.25.]

Transactions of the Association of American Physicians. Third Session, held at Washington, D. C., September 18, 19, and 20, 1888. Volume III. Philadelphia: Printed for the Association. Pp. xix–404.

Hand-book of the Diagnosis and Treatment of Skin Diseases. By Arthur Van Harlingen, M. D., Professor of Diseases of the Skin in the Philadelphia Polyclinic and College for Graduates in Medicine, etc. Second Edition. Enlarged and revised. With Eight Full-page Plates and other Illustrations. Philadelphia: P. Blakiston, Son & Co., 1889. Pp. xv–17 to 410. [Price, $2.50.]

The Skin Diseases of Infancy and Early Life. By C. M. Campbell, M. D., C. M., Edin., etc. London: Baillière, Tindall, and Cox, 1889. Pp. xii–202.

The Functions and Disorders of the Reproductive Organs, in Childhood, Youth, Adult Age, and Advanced Life, considered in their Physiological, Social, and Moral Relations. By William Acton, M. R. C. S., Late Surgeon to the Islington Dispensary, etc. Seventh Edition. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. xii–263. [Price, $2.]

Transactions of the American Gynæcological Society. Volume XIII. For the Year 1888. Philadelphia: William J. Dornan, 1888. Pp. 8–13 to 502.

Annual Report of the Supervising Surgeon-General of the Marine-Hospital Service of the United States for the Fiscal Year 1888.

Problems in regard to Yellow Fever and the Prevention of Yellow-Fever Epidemics. By Jerome Cochran, M. D., State Health Officer of Alabama. [Reprinted from the "Transactions of the American Public Health Association."]

Contributions to the Anatomy and Physiology of the Thymus Gland. By A. Jacobi, M. D., etc. [Reprinted from the "Transactions of the Association of American Physicians."]

Electrolysis: its Value in Diagnosis as well as in Treatment of Intra-abdominal and Intra-pelvic Tumors by the Aid of a New Instrument. By Eugene C. Gehrung, M. D., St. Louis, Mo. [Reprinted from the "American Journal of Obstetrics and Diseases of Women and Children."]

The Biological Cell. An Argument. By L. Harrison Mettler, A. M., M. D., etc. [Reprinted from the "Medical Register."]

Notes on Horned Mammals, with some Observations upon Policerate or Multiple-horned Sheep. By R. W. Shufeldt, M. D., C. M. Z. S. [Reprinted from the "Journal of Comparative Medicine and Surgery."]

Biennial Message of Richard J. Oglesby, Governor of Illinois, to the Thirty-sixth General Assembly, January 9, 1889.

Miscellany.

Antipyrine in Headache.—In order to obtain the beneficial effects of antipyrine when taken for the relief of headache, the patient should remain quiet for at least half an hour after the administration of the dose.

Bees as Sugar Testers.—Though to the human palate cane-sugar, beet root sugar, and saccharin are pretty much alike, it is said that bees are much more discriminative. They will have nothing to do with either of the last-named two substances. Glycerin they will take, only, however, if it be pure.—*Lancet.*

Mortality in Cities in the United States.—The following table represents the mortality in the cities named, as reported to Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, and published in the abstract of sanitary reports received by him during the week ending February 1st:

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—										
				Cholera.	Yellow fever.	Small-pox.	Variolois.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y....	Jan. 19.	1,551,244	779	..	..	..	..	..	..	4	54	50	31	9
New York, N. Y....	Jan. 26.	1,552,116	708	..	..	..	..	..	..	9	55	40	22	12
Philadelphia, Pa...	Jan. 19.	1,040,245	382	..	..	..	..	..	..	8	14	11	..	2
Philadelphia, Pa...	Jan. 26.	1,040,245	335	..	..	..	..	..	..	10	9	12	..	4
Brooklyn, N. Y....	Jan. 26.	814,505	360	..	..	..	..	..	..	1	11	33	14	6
Baltimore, Md.....	Jan. 26.	500,343	157	..	..	..	..	..	..	5	2	2	..	....
St. Louis, Mo.....	Jan. 19.	440,000	162	..	..	..	..	..	..	4	2	10	3	4
St. Louis, Mo.....	Jan. 26.	440,000	163	..	..	..	..	..	..	3	2	7	4	....
San Francisco, Cal.	Jan. 18.	330,000	116	..	..	1	..	..	..	..	..	1	..	2
Cincinnati, Ohio...	Jan. 19.	255,139	102	..	..	..	..	..	..	..	2	7	..	1
Cincinnati, Ohio...	Jan. 26.	255,139	101	..	..	..	..	..	..	7	1	6	..	....
Cleveland, Ohio....	Jan. 5.	235,000	73	..	..	..	..	..	..	8	..	4	..	....
Cleveland, Ohio....	Jan. 12.	235,000	54	..	..	..	..	..	..	5	..	2	..	....
Detroit, Mich.....	Jan. 19.	230,000	57	..	..	..	..	..	..	..	1	4	..	1
Detroit, Mich.....	Jan. 26.	230,000	60	..	..	..	..	..	..	2	1	2	..	....
Pittsburgh, Pa.....	Jan. 26.	.....	.....	..	..	..	..	..	..	1	3	3	..	1
Milwaukee, Wis ...	Jan. 26.	200,000	64	..	..	..	..	..	..	1	4	2	..	....
Minneapolis, Minn.	Jan. 26.	180,000	37	..	..	..	..	..	..	3	1	3	1	...
Kansas City, Mo...	Jan. 26.	180,000	34	..	..	..	..	..	..	..	1	2	..	....
Newark, N. J.....	Jan. 22.	179,000	72	..	..	..	..	..	5	5	1	8	..	....
St. Paul, Minn.....	Jan. 14.	175,000	35	..	..	..	..	..	..	3	..	3	1	...
Providence, R. I...	Jan. 19.	123,000	47	..	..	..	..	..	..	2	..	2	..	1
Providence, R. I...	Jan. 26.	123,000	48	..	..	..	..	..	..	2	2	2	..	1
Rochester, N. Y....	Jan. 19.	120,000	37	..	..	..	..	..	..	..	..	4	..	1
Rochester, N. Y....	Jan. 26.	120,000	43	..	..	..	..	..	..	..	..	7	1	2
Richmond, Va.....	Jan. 21.	100,005	34	..	..	..	..	..	..	2	..	..	..	....
Denver, Col.....	Jan. 25.	96,000	36	..	..	1	..	..	..	1	..	1	..	....
Toledo, Ohio	Jan. 18.	80,000	22	..	..	..	..	..	..	1	1	4	..	....
Toledo, Ohio	Jan. 26.	80,000	27	..	..	..	..	..	..	..	1	..	..	....
Camden, N. J.....	Jan. 17.	70,000	16	..	..	..	..	..	..	..	1	..	..	...
Nashville, Tenn....	Jan. 19.	65,153	24	..	..	..	..	..	..	..	..	..	..	....
Nashville, Tenn....	Jan. 26.	65,153	17	..	..	..	..	..	..	1	..	..	..	....
Fall River, Mass...	Jan. 19.	65,000	25	..	..	..	..	..	..	..	..	..	..	....
Fall River, Mass...	Jan. 26.	65,000	30	..	..	..	..	..	..	1	2	..	..	....
Charleston, S. C....	Jan. 26.	60,145	29	..	..	..	..	..	..	1	..	2	..	....
Lynn, Mass.....	Jan. 26.	50,000	9	..	..	..	..	..	..	..	..	..	1	....
Manchester, N. H..	Jan. 19.	42,000	16	..	..	..	..	..	..	..	..	1	..	....
Erie, Pa	Jan. 26.	42,000	10	..	..	..	..	..	..	..	..	..	..	....
Portland, Me	Jan. 26.	40,000	18	..	..	..	..	..	..	..	..	..	..	....
Galveston, Texas..	Jan. 11.	40,000	11	..	..	..	..	..	..	..	..	..	..	....
Davenport, Iowa...	Jan. 26.	33,715	7	..	..	..	..	..	..	..	..	3	..	....
E. Saginaw, Mich..	Jan. 26.	33,000	10	..	..	..	..	..	..	..	..	..	..	....
Auburn, N. Y.....	Jan. 26.	26,000	11	..	..	..	..	..	..	..	1	..	..	....
Haverhill, Mass....	Jan. 19.	25,000	6	..	..	..	..	..	..	..	..	..	..	....
Haverhill, Mass....	Jan. 26.	25,000	5	..	..	..	..	..	..	..	..	..	..	....
Newport, R. I.....	Jan. 24.	22,000	4	..	..	..	..	..	..	..	..	..	..	....
Newton, Mass.....	Jan. 26.	21,105	9	..	..	..	..	..	..	..	..	5	..	....
Keokuk, Ia.....	Jan. 26.	16,000	7	..	..	..	..	..	..	..	..	..	..	....
Pensacola, Fla.....	Jan. 19.	15,000	5	..	..	..	..	..	..	..	..	..	..	....
Pensacola, Fla.....	Jan. 26.	15,000	.....	..	..	..	..	..	..	..	..	..	..	....

The Boston Medical Library Association.—At a special meeting, held on Tuesday, January 29th, Dr. Oliver Wendell Holmes presented his library of medical books to the association. The collection comprised 968 volumes, the oldest of which was written in the year 1490 and the latest in 1887. Thus the library covers the space of four centuries, and contains many rare and valuable illustrated works on anatomy. In offering the collection to the association, Dr. Holmes said: "These books are dear to me; a twig from some one of my nerves runs to every one of them, and they mark the progress of my study and the stepping stones of my professional life."

The New York Academy of Medicine.—At the next meeting of the Section in Surgery, on Monday evening, the 11th inst., Dr. V. P. Gibney will read a paper entitled "Reproduction of the Entire Patella after Necrosis," and show the patient; Dr. A. M. Phelps will present cases of resection of the knee joint; and cases will be presented by Dr. R. T. Morris.

At the next meeting of the Section in Orthopædic Surgery, on Friday evening, the 15th inst., Dr. Henry Ling Taylor will read a paper on "The Prevention and Treatment of Crural Abduction."

ANSWERS TO CORRESPONDENTS.

No. 251.—It is done for the relief of prostatic enlargement. The details of the operation were described on page 389 of the "New York Medical Journal" for October 6, 1888.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Lectures and Addresses.

ON CURRENT DIFFERENTIATION.

A LECTURE DELIVERED AT THE
NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.

January 2, 1889.

BY A. D. ROCKWELL, M. D.,
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REPORTED BY H. S. CLARK, M. D.

A FREQUENT question, and one somewhat difficult to answer without qualification, is: Which of the two forms of dynamic electricity is the more useful in practice? The most satisfactory solution of the question is to possess apparatus for both forms and carefully study the therapeutic relations of each current.

If the question is pressed, then it may be said that, as generally used, the galvanic current has a much wider range of usefulness in medicine and surgery than the faradaic. In other words and generally speaking, diseases and symptoms of disease that are circumscribed and local indicate, as a rule, the galvanic rather than the faradaic current. If, however, a broader view of the remedial action of electricity be taken, and its powerful constitutional tonic influence recognized, when administered by the methods demanded for the production of such effects, it is quite another matter, and the faradaic current assumes an importance which any form of local use fails to give it.

It may be said, therefore, that if the general practitioner will make himself acquainted with general faradization, and take the time and trouble to apply it with the thoroughness that its successful use demands, he will accomplish quite as much with the faradaic as with the galvanic current, although in quite a different class of cases.

In discussing to-day the relative efficiency of the two forms of dynamic electricity in medicine I propose: 1. To consider the measure of their agreement and disagreement in their physical and physiological activities. 2. To state some of the differential indications for the use of the currents in the treatment of disease, and to demonstrate the truth and practical value of some of these points of differentiation clinically. The first of these considerations is necessary to an intelligent appreciation of the second, for the more thoroughly one studies electro-therapeutics in all its relations, the clearer it becomes that the real scientific basis for the use of electricity in medicine and surgery is found in its physics and physiology, and far more in its physics than in its physiology.

Now, electricity, however generated, whether through chemical action, through friction, or induction, and however modified by its passage through any resisting media, is electricity still. Both currents, the faradaic and galvanic, are obedient to the law of Ohm, and while there is a wide difference in the degree of their physical and physiological properties, these are in kind essentially the same.

Both currents are capable of producing electrolytic effects; and this I readily demonstrate to you with the current from the primary coil of this faradaic apparatus. The action of this current on a solution of salt and water is exactly the same in kind as the action of the galvanic current. Both currents also evolve light and heat, and the bright deflagrating spark caused by the electricity as modified by the thick, short coil of wire is even more brilliant and disintegrates metal more readily than the current direct from many cells. Both currents will electroplate, and by some of the giant magneto-electric apparatus this is done on an enormous scale. I have here a milliampèremeter, an instrument of precision which is now indispensable in the use of the galvanic current, and yet, by connecting the posts with the poles of a faradaic apparatus, you observe an appreciable deflection of the needle, and this deflection very naturally becomes still more marked if the current from the primary coil is thus utilized.

This power of the faradaic current to cause, like that of the galvanic, electrolysis and deflection of the needle, is so inferior in degree to the power of the faradaic current that we can not utilize the former in electro-surgery, nor is the galvanometer available to measure its strength. You thus have visibly demonstrated that, however differently generated, or however modified by the medium through which it passes, the various forms of electricity are only different manifestations of one great force.

Physiologically, we find the agreement between the effects of the two currents quite as close as when physically considered. The phenomenon of electrotonos, to be sure, has been demonstrated only as it relates to galvanism, but it is the common experience that, even with the faradaic current, the positive pole is the more calming and the negative the more stimulating. Applied *directly* to the brain or spinal cord, both currents excite muscular contractions, and about in the same degree, similar results having been obtained in the well-known experiments of Fritsch and Hitzig, who used galvanism alone, and Ferrier, who used faradism.

The result of *direct* electrization of the sympathetic nerve is a change in the caliber of the cerebral blood-vessels, and the only difference in the action of the two currents is the greater rapidity with which effects follow the application of the galvanic.

The nerves of respiration are affected in about equal degree by both currents, and even in their action on the nerves of special sense the close relationship of the two is unmistakably evident. You can not, as a rule, in a healthy person, or even in one that is sick, so excite the optic or gustatory nerve by the faradaic current as to call into activity the vital functions of these nerves. There are, however, some exceptions to this as exemplified in certain hysterical and neurasthenic cases where there exists an unusual susceptibility of the nervous system. In such cases the faradaic current has occasioned not only the appearance of flashes before the eyes and a metallic taste, but the auditory nerve itself has been known to respond to its influence.

These examples are quite sufficient to show that the action of the two currents is so similar as to prove them substantially the same in kind, but at the same time so widely do they differ in the degree of their physical and

physiological power that it is often practically equivalent to a difference in kind, rendering one current inferior or superior to the other in a most remarkable degree, according to the special indications of individual cases.

In view, therefore, of the superiority of the galvanic over the faradaic current as relates to its physical and physiological energies, it seems hardly necessary to say that the former is to be used when we wish to act with special electrotonic and electrolytic power on the brain, spinal cord, sympathetic, or any part of the central or peripheral nervous system. We use it when we wish to produce contractions in paralyzed muscles that refuse to respond to the faradaic current, and in electro-surgery when we desire to produce, through electrolysis and cauterization, the destruction or absorption of morbid products, and the coagulation of blood. We use the faradaic current to act mildly (probably for the most part through reflex action) on the brain, spinal cord, sympathetic, or any part of the central or peripheral nervous system. We use it to excite muscular contractions whenever the muscles are not so much diseased as to be unable to respond to it, and to produce those strong mechanical effects through which, in great measure, are obtained the remarkable constitutional tonic influences now everywhere so well recognized.

I am fortunate in being able to show you to-day two cases that illustrate a point in current differentiation of which I have spoken before, and which I regard as of considerable value.

I refer to the effects of pressure as indicating the kind of electricity most likely to prove of service in the different forms of pain for which relief is sought.

Without attempting to discuss the relation of pain to pathological states or its different forms and locations, allow me to call your attention to the well-attested fact that, of all innoxious remedies, electricity is the most powerful agent in nature for the relief of pain. Not that it never fails, for this it does often enough, but its failures would be far less frequent and its reputation along this line more firmly established if the differential indications for its use were more carefully considered.

It is a common observation that, in many forms of pain and so-called neuralgias, firm and equal pressure over the affected parts causes no discomfort whatever, and frequently affords marked temporary relief. In other cases the parts are sensitive to all external impressions, and pressure or rubbing decidedly aggravates the existing pain.

Neuralgia is undoubtedly, as a rule, represented by this last class of cases, while the former class, where pressure relieves and where the pain occupies certain areas and runs seemingly in the direction of certain nerves, must be classed among the hysterical and pseudo forms of neuralgia.

In true neuralgia the pains invariably can be definitely mapped out along the lines of certain nerve-trunks, and in these cases the galvanic current is, almost without exception, indicated, and not the faradaic. In the hysterical and false forms of neuralgia, however, the indications for the faradaic current are almost as invariable as they are for the use of the galvanic in true neuralgia. I say almost, for we do occasionally find cases of the pseudo and hysterical forms of neuralgia where the affected parts are not only sensitive to pressure, but also unusually sensitive to the effects of electricity, affording additional proof of the general correctness of the statement that painful parts that are sensitive to pressure indicate the galvanic and those that are insensitive to pressure call for the faradaic current. Cases of widely diffused and superficial neuralgic pains with sensitiveness to pressure, as well as those belonging to the true type of neuralgias, are best treated by the galvanic current alone.

I have now under my care three cases that well illustrate this practical point in electro-therapeutics, and two of them have kindly consented to come here for your instruction.

The history of the first case is briefly this: Six years ago he began to suffer pain in the head, diffused quite widely over the vertex but seldom affecting the forehead or occipital region, and up to the present time he has been able to find no remedy that has afforded more than temporary relief. His general health is fair, and careful examination has failed to detect anything specially abnormal in the urine. In the morning he is quite comfortable, but about 2 P. M. the pain begins and continues until he goes to bed, when he is benefited by sleep, as he is also by outdoor exercise, and frequently also by a hearty meal and cold-water applications. When entirely free from pain the part is not more than ordinarily tender, but while suffering the slightest touch is disagreeable, and any form of pressure or rubbing becomes decidedly painful.

Here, then, is a case where, if electricity is to be used at all, we must decide between its different manifestations. I have not the slightest doubt but that the faradaic current would have altogether failed to relieve him, while, at the same time, it might have aggravated the symptoms. The galvanic current, on the contrary, as he will be glad to assure you, has, during the few weeks that the applications have been made, resulted in a decided mitigation of his symptoms, and we confidently expect complete recovery.

I will now treat him by the method of central galvanization—placing one pole (the negative) over the solar plexus, and the positive on the crown of the head, the seat of pain. I begin with five milliampères of current and gradually increase it until twenty is reached—a strength seldom necessary to exceed in these cases. He says that the metallic taste is strongly marked, and the saliva flows freely, but there is no pain, because, as you observe, my electrodes are large and soft and applied firmly and with equal pressure. By decreasing the current as gradually and carefully as it was increased, all interruptions are avoided, and the treatment concluded without disagreeable flashes of light or shocks.

The second case is also a private patient and is a good illustration of the other side of the question.

The pains first began to trouble him three years ago, and so severe were they that he gradually formed the morphine habit, taking finally as high as eight and ten grains a day. From this habit, however, he at last succeeded in breaking away, and since August last has not indulged in it.

The pain is located in the forehead and temples, being

at times more severe on one side and then again on the other. It comes on two or three times a week, and, unlike the first case, all forms of activity aggravate it.

Unlike it, also, firm pressure and rubbing afford grateful relief, and the degree of insensitiveness to electrical influence (faradism) is quite remarkable. You are perhaps aware how exceedingly sensitive the forehead, and indeed all bony prominences, are to the induced current of electricity; but in this case the strength that is applied without discomfort is many times greater than any one in this room probably could endure.

The faradaic current is as strongly indicated here as was the galvanic in the other case, and I am glad to say that it has been followed thus far by almost equally good results.

I use my hand in applying the faradaic current to the head, because no electrode that human skill can devise can equal the hand in flexibility and power of adaptation to uneven and painful areas, and, as I now apply it, the current is so strong that only long practice enables me to manipulate the parts successfully. The significance of this statement is fully appreciated by the gentleman who has just now attempted the application.

While the galvanic current is always the same, however generated, the faradaic current differs widely as to its quality according to the form of the helix and the adjustment of the rheotome. There are therefore important points of difference in the physical and physiological, and therefore in the therapeutical, effects of the faradaic current. I do not refer so much to the ordinary separate-coil apparatus which is described in most text-books on physics, but to what may be termed the continuous-coil apparatus.

Both of these have been described in detail on a former occasion, and I here call your attention only to the fact that in the case under treatment I am using the current from the whole system of coils (primary—first, second, and third induction), which in its general toning and sedative effect is far superior to any of the others.

Original Communications.

A PLEA FOR THE ACTIVE TREATMENT OF PUERPERAL ENDOMETRITIS BY MEANS OF THE CURETTE.*

By EGBERT H. GRANDIN, M. D.

Progress in matters obstetrical is relatively slow compared with what obtains in other branches of medicine. When we consider the immense strides of the sister science, gynæcology, during the past decade, the inquiring mind is apt to ask, Why does obstetrics stand still? for, if we except the advances in the direction of asepsis, very little has been added to the methods of the past, and very little has been altered. And yet obstetrics has not reached the stage of an exact science as yet; there is room for advance all along the line. It is a curious fact that in other departments of medicine new methods are often accepted without much scrutiny, are followed with enthusiasm, almost blindly as it were, until eventually sober judgment, born of experience, teaches that the method is worthless. Witness the fate of the cures for phthisis, which spring into light like the mushroom, are heralded the world over, only to die as speedily as they were born. In obstetrics the reverse holds to such an extent that it is with the greatest difficulty that certain minds can be lifted from the ruts of centuries toward the acceptance of views which the large majority of practical accoucheurs have tested and have proved good. Let the gynæcologist report a series of successful operations for the removal of the variously diseased appendages, and as soon as the operation is accepted as good, the inexpert as well as the expert performs it. In obstetrics, on the other hand, progress is so slow that, even after the lapse of years, opposition of no uncertain nature meets well-grounded methods. Witness the discussion still of the value of the primary operation for the repair of the lacerated perinæum, and the divergent views in regard to the management of the third stage of labor.

This tendency in obstetrics is in some respects a good one, but in others it is open to objection. Methods which deal with the phenomena of labor and of the puerperal state should indeed be well tested before acceptance, but this test should never be allowed to go to the extent of characterizing steps which are different from the ordinary as approximating that meddlesomeness which, rightly interpreted, is bad. If improvement on the methods of our fathers' time is possible in other branches of medicine, so also is it in obstetrics. Every day adds to the knowledge of the obstetrician who carefully watches his cases, and, sooner or later, the fact may become impressed upon him that his early training has been faulty, and that he can improve over his early practice. He may even attain that stage when he is willing to admit that judicious meddlesomeness may be good—a conclusion which some men reach only after having been in practice a decade, while others, even on their deathbed, will not recant the teachings of their youth.

These prefatory remarks aim at emphasizing the fact that we are too much inclined in matters obstetrical to follow along the ruts of centuries lest we be open to the charge of meddlesomeness. Conservatism, respect for tested methods—these are good traits, but I question if they may not be carried too far. In this spirit I enter upon a plea for a method which, while not a strictly novel one, does not by any means in its argument represent a universal practice, and by some, indeed, it may be charged with verging on that meddlesomeness of which I have already spoken.

At the outset I desire to recall briefly the state of the interior of the uterus immediately after delivery and for a few days thereafter. The hypertrophy of all the elements of the organ which has accompanied the process of gestation must alter into a retrograde metamorphosis in order that the uterus may return approximately to the condition characteristic of the non-gravid organ. This retrogression

* Read before the Medical Society of the County of New York, December 24, 1888.

is secured by fatty metamorphosis of the newly-formed elements. The cavity of the uterus is filled with blood-clots of greater or less size, according to the degree of contraction secured, and with epithelial *débris*; the venous sinuses become closed by thrombi; a surface, varying in depth from one to two millimetres, resembling a false membrane, has to separate, break up, and be expelled; the site of the placenta in particular is rough, uneven, and jagged, the projecting portions being due in great part to the thrombi, which gradually occlude the sinuses. In brief, then, the interior of the uterus resembles a large wounded surface, differing only from a surgical wound in that it is physiological, not caused by disease. Ample provision exists in the system of the puerpera for the due absorption and expulsion of the products of retrograde metamorphosis. During the puerperium these vast degenerative and regenerative changes occur without special disturbance of the health equilibrium, and the chief part of the process is completed within seven to eight days. If now, from some cause or other, a septic cause in particular, this normal process of retrograde metamorphosis is interfered with or arrested, then the wound in the uterus alters even as does a wound on the surface of the body under the like conditions. The fat metamorphosis is checked or replaced by a necrosis; the cellular elements, the thrombi, etc., take on the so-called purulent degeneration. This process, starting from any point of the endometrium, although usually from the placental site, since there is the greatest wound, extends progressively until it involves the whole surface of the endometrium. Then, instead of finding the normal appearances I have sketched, the mucous membrane, down to and often including the muscularis, is converted into a mass of pus-cells and pus detritus. The conditions for absorption into the system are the best possible; during the time requisite for the shedding and expulsion of this mass the blood-vesselsand lymph-vessels take a greater or less portion into the system; the health equilibrium is disturbed, is disorganized, the puerpera suffers from putrid infection with all its possible local and systemic disturbances. From the third to the seventh day post partum the normal retrograde changes in the uterus are most active, and during the same period do the pathological changes announce themselves.

Such are the local pathological phenomena of puerperal endometritis. When the surgeon, after amputation of a limb, finds that the wounded surface is not covered with healthy granulations, but with a dirty-gray pseudo-membrane which he calls the slough, his aim is, as soon as possible, to get rid of the slough before the process has extended deeper, before his patient's system is poisoned. He removes what portions he can by his forceps, he furthers the separation of the adherent portions by poultices, he is not at peace till he sees again the red sprouting granulations which foretell kindly union. He is not satisfied with simply washing off this surface with boiled water or with antiseptic washes, nor, we will say, with sprinkling iodoform on it. Now, the uterine wound which has taken on an unhealthy process is not strictly analogous to the surgical wound for the reason already noted, and for the further reason that the decidual surface, which has been converted into a slough, is at the end of a few days largely loosened, but slightly adherent, owing to the fact that preparations for its disintegration normally set in even ante partum. We do not need to poultice this foul wound, therefore, even if we could; ought we to rest satisfied with simply washing it with greater or less frequency, and with possibly supplementing this by the insertion of a pencil of iodoform? Such is the question which my paper aims at answering.

Before proceeding to the consideration of the essential point of my paper—the treatment of puerperal endometritis—it will be useful to state very briefly the ætiology and symptomatology of the condition.

The doctrine of to-day is that all the essential deviations from the normal in the puerperal state are due to infection in one way or another of the puerperal tract. This explanation is even held to be valid for those very infrequently observed instances where, from the suddenness of the access of the symptoms after delivery, it is thought probable that infection occurred before labor. The germ or germs which are carried into the organs of generation by unclean touch or instrument, or which enter through some trifling abrasion, notwithstanding every possible rigid precaution, are the essence of the phenomena which go to form the clinical picture of septicæmia. Whether the future will impress with its seal the truth of this almost uniformly accepted doctrine or not I will not speculate about now. Let it be sufficient for my present purpose to state that, in the vast majority of instances, the septic process is localized at the outset. The exception to this statement is furnished by those very rare cases to which French writers have applied the apt term of *septicémie foudroyante*. In the form of sepsis of which I am speaking the endometrium is the site of localization of these germs. In whatever way they reach the endometrium, the first stage of development of the septic process is limited to that place, and hence we have a cogent reason for attacking the process in its cradle before the active vessels—lymph and circulatory—have sucked up the poison and carried it beyond the reach of our local measures. An adherent portion of placenta, however minute, or shreds of membrane, insignificant though they be, may prove the nidus of inoculation whence the septic degenerative process may quickly spread over the entire endometrium. If such foci of germ attraction are not present, some part of the endometrium whose vitality, we will say, is at a low ebb, affords a breeding place for the germ, and thence, again, the degenerative process invades progressively the entire endometrium. Beyond these broad statements it is useless to theorize. There are still many problems in pathological obstetrics to be solved, and not the least of these is the why and the wherefore of degenerative septic changes in certain cases.

Fortunately for the woman, the symptomatology gives us a very early clew at the very threshold, so to speak, of puerperal endometritis. The obstetrician, in his practical work, has need of all his senses. As he may be called upon to use his sense of taste occasionally in the estimation of the value of the secretion of the lacteal gland, even so, and as a routine matter, should he exercise his sense of smell. Over and again before the pulse, temperature, general aspect, or indeed change in the lochia suggest an ab-

normity in the puerperium, the nose may detect the odor of beginning decomposition. This odor, fœtor, slight though it be, of the vulvar dressing, should always awaken our keenest attention, even though often the differential means at our disposal will teach us that its source is not in the uterus.

The two broad facts, then, which I wish to emphasize from the ætiological and symptomatological standpoint are that, at the outset, the septic process may be purely localized in the uterus, and, secondly, that the danger-signal which often precedes other phenomena is fœtor.

To pass at once, now, to treatment, this is naturally divided into prophylaxis and into active local measures.

The first I will dwell upon only briefly, seeing that the main purpose of my paper is to deal with the latter.

I will not go so far as to say that puerperal endometritis should never occur, but I am satisfied that rigid prophylaxis in accordance with the demands of modern obstetrics will reduce the frequency to a minimum. The prophylactic treatment includes attention to all the minute details in the management of the labor and of the puerperal period which so markedly differentiate the obstetric methods of to-day from those of the past. The cardinal principles of prophylaxis are perfect asepsis of the lying-in woman, of her surroundings, of her attendants, patience with the physiological course of the labor—that is to say, no hastening of the stages, except an emergency calls for speedy delivery—and, finally, thorough emptying of the uterus and the securing of due contraction of the organ. I will not dwell here on the importance of asepsis and of patience on the part of the accoucheur. These are axioms too well established to-day. I desire only to lay stress on the necessity of thorough emptying of the uterus, a proposition which is still apparently a debatable one. I would not be understood as affirming that placental remnants or shreds of membrane will necessarily prove sources of septic endometritis, but *they may;* and to avoid this possibility I would assert that it is the duty of the accoucheur, if he is not satisfied that the placenta and its annexa are complete, to remove the remnants at once, and thus close the gates effectually against the chief source of degeneration of the endometrium. Such timely action is not alone easy immediately after the completion of the third stage of labor, because then the genital tract is dilated, but also involves less disturbance and nervous shock than will a resort to the same measure or to the douche a few days afterward, if these remnants should cause septic degeneration of the endometrium. It goes without saying that such manipulation should be followed by one douche, and the remaining essential prophylactic step is the securing and the maintaining of efficient contraction of the uterus.

The opinions which I have just advanced are not novel, but neither are they all generally accepted as justifiable. My own experience has proved them just, however, and not fraught with harm, and personally my mind and conscience are easier if I leave my patient without *débris* in the uterus. Indeed, I am inclined to lay greater stress on the thorough emptying of the uterus than I do, in my private practice, on the selection of one or another antiseptic agent, or the application of one or another antiseptic pad. It is good practice to keep out germs; it is better practice to leave nothing in the uterus which will afford a fertile soil for development in case, notwithstanding all our antisepsis, they effect an entrance.

So much for prophylaxis. If, nevertheless, endometritis develops, what shall we do? I believe I am correct in the statement that the majority of accoucheurs the world over are to-day wedded to the intra-uterine douche. There are a few gentlemen who still believe in and practice expectancy, either from fear of intra-uterine manipulation or because they live in the past instead of in the present, and believe that what was good enough for the physician and the puerpera of a century ago is good enough for those of to-day. Such blind geniuses, fortunately, are birds of a rare plumage, and the consensus of opinion is that when there is certainty of the presence of septic endometritis—that is to say, when extra-uterine septic localization has been carefully differentiated—then the sound practice is to wash out the uterus in order to arrest the degenerative process by removing all that the stream of water can bring away, and in order to kill or to check the development of the germs of putrefaction which the prevalent view of our time teaches are the originators and the maintainers of the process. This douching of the uterus is repeated with greater or less frequency, according to the bent of the individual accoucheur, some resorting to the douche every three hours, others every eight, and others even maintaining that it is called for every one to two hours. In mild cases, two or three douches will suffice to check the septic process or to alter it for the better, but in the majority of instances the douche has to be continued with greater or less frequency for a number of days, occasionally for a week or longer. The material in favor for the douching is a solution of corrosive sublimate varying in strength from 1 to 1,000 to 1 to 6,000. Some obstetricians are in the habit of inserting an iodoform suppository into the uterus after the douche, in the belief that the septic process is thus modified for the better, and less frequent douching is therefore essential.

The foregoing is a fair statement of the prevalent practice. There are objections to it, however, and consequently certain accoucheurs favor more active measures, for reasons which have seemed to me to be good, and which sufficient experience warrants me in maintaining are not only good, but as innocent of harm as is the simplest of any of the obstetric manipulations when performed with the care and the knowledge without which any manipulations may be bad.

The chief objections to the douche may be broadly summarized as follows: 1. It frequently has to be repeatedly administered for a number of days. 2. It is sometimes inefficient even after repeated administration. 3. The antiseptic added to the solution may cause toxic symptoms and even death.

Since the administration of the intra-uterine douche should never be intrusted to the nurse, cases which demand frequent resort to it tax the endurance of the busy practitioner severely. Moreover, notwithstanding asepsis as perfect as we can command, any interference with the genital tract of the puerpera carries with it the risk of the intro-

duction of infectious matter, which, in cases of septic endometritis, is simply adding fuel to the fire. This risk, even though small as an accompaniment of the single douche, is magnified by each additional douche.

That the douche is sometimes inefficient, so that eventually an adjuvant agent has to be resorted to, is a fact, I believe, within the experience of every one. I have myself seen a few instances where, after the lapse of a number of days of douching, the curette was essential in order to remove the mass of putrid *débris* which the stream of water had been unable to dislodge. An experiment of Auvard's may be cited in this connection as a proo of the assertion that the douche is occasionally inefficient. Taking the largest Barnes's bag, which in shape resembles somewhat the uterus, he made a section at the level of the inflation-tube, thus obtaining an opening about three centimetres in diameter. He filled the bag half full of ashes mixed with pieces of charcoal no larger than a small pea. Holding the bag obliquely, he introduced Budin's and next Doléris's irrigating tube to the fundus of the bag, and then washed it out with two litres of fluid, the douche-can being about a metre above the bag.

The first five hundred grammes of liquid issued soiled by the contents of the bag, but the rest of the fluid returned without *débris*. Repeated experiments of this nature satisfied him of the impossibility of thus completely cleansing the interior of the bag. He pertinently remarks: "Now, if this *débris*, absolutely free within the bag, can not be all washed out by the current of fluid, it is readily apparent why shreds of membrane and products of septic degeneration of the endometrium, which are adherent to a greater or less degree to the surface of the uterus, are less likely to be detached and washed out."—("Archives de tocologie," October, 1888.)

The third general objection to the douche—that resort to it may eventuate in toxic symptoms which may be so aggravated as to lead to death—is a most cogent one, in view of the antiseptic which to-day holds the front rank. This note of warning began to be sounded very shortly after the introduction of corrosive sublimate into obstetric practice, and I presume that now most obstetricians have records of cases where symptoms of mercurial poisoning have followed the use of even the weaker solutions. There have been reported a number of cases of fatal poisoning, with the result that in certain of the maternities of Europe the addition of sublimate to the douche has been discontinued. Personally, in my private practice, I have not used sublimate for nearly two years, a case of mercurial poisoning in my service at the Maternity Hospital that resulted fatally having taught me to fear this possible effect fully as much as I dread the germs.

Such, in brief, being the chief objections which may be urged against the douche, is there no method at our disposal a resort to which will render unnecessary repeated douching in cases which call for action? It is my belief that we possess in the dull curette an instrument which will efficiently replace the douche, and at the same time answer as perfectly, if not more so, all the indications.

What are these indications? To remove from the uterus the products of decomposition, whether these products are free within the cavity, are partially adherent, are limited to the superficies, or extend even to the muscularis. The effect of leaving these products untouched, or touched only in part, I need not dwell upon. Deep infection of the puerpera it is our duty to fight against with every weapon at our disposal. Particularly is timely action important, for at the outset the septic process is limited to the cavity of the organ. In a very short time the degenerated products may enter the circulation and the lymphatics, and peritonitis, general septicæmia, etc., ensue when the infection is beyond the reach of local means. The dull curette is a harmless instrument when used with the care that should guide every instrument. In cases where it has done damage I am inclined to think that it was not the fault of the instrument, but of the hand which held it. The practitioner should be as competent to use it understandingly as he is to use the forceps or to insert the irrigation-tube. It lies with the teachers in our medical schools to train the students in the use of every instrument which might be required in active practice, and it is not at all burdening the armamentarium to include the curette.

The method, then, which I prefer to the repeated douche, and the value of which I have had in a number of instances the opportunity to establish to my own satisfaction, is the following: As soon as fœtor of the lochia appears I proceed to carefully differentiate its source. Without going into the details of a differential diagnosis, let the statement suffice that a thorough vaginal douche of boiled water or of some antiseptic solution will cause this fœtor to disappear should it be due to the decomposition of a clot, we will say, in the vagina. If, after the lapse of a few hours, the fœtor reappears, I administer at once an intra-uterine douche in view of the fact that the cause may be the retention within the uterus of a clot or of loosened *débris*. In case, notwithstanding this douche, the fœtor reappears, then I believe that the time for active treatment has come, and, having determined bi-manually the position of the uterus, I place the patient in Sims's position, insert the speculum, hook a tenaculum in the anterior cervical lip to steady the organ, insert the curette curved to the requisite degree into the cavity, and thoroughly scrape every portion of the endometrium. I have thus literally removed handfuls of degenerated *débris*. When I am satisfied that the curetting has been thorough enough, I turn the patient on her back, insert the uterine tube, and wash out the cavity. In my experience, it has never been necessary to repeat the curetting, and rarely has an additional douching been called for. In certain aggravated instances of septic endometritis which I have seen, where the fœtor was intense, the pulse rapid, and the aspect bad, there has been such marked improvement within twenty-four hours after the removal of the putrid products by the curette that it was difficult to realize that I was dealing with the same patient.

In a word, we may accomplish at once by the curette what it may require days to do by the douche, and, moreover, a remote advantage of the former method over the latter is that the degenerative process may, by timely action, be checked in its inception, the patient, hence, rising from the puerperal bed not only in less time, but with a less degree

of subinvolution, than where the process has had a protracted course, owing to the slower effect of the douche.

One word as to the objections which may be urged against the curette.

Is it a dangerous instrument and likely to injure the uterus? I think not; indeed, I believe that the risk of injuring the uterus by the *dull* curette is as mythical as the charge once brought against the douche—that it was likely to set up peritonitis from the passage of the stream along the Falloppian tube into the peritoneal cavity. I can conceive of harm following any instrumental manipulation if the *tactus eruditus* is lacking. Even the insertion of the uterine tube may damage the uterus where the manipulation is rough. It can not be emphasized too strongly that, in the very cases which call for the douche or the curette, the cervical canal is open, and that, once having determined *lege artis* the direction which the instrument should take, it will find its own way, as it were. Still, if there are some who really dread the curette from the conviction that it may harm the uterus, these gentlemen have at their disposal the Doléris brush, which will as effectually clear the uterus of all *débris* as the curette, and can hardly be charged at all with the likelihood of damaging the organ. I question, however, if in aggravated cases of endometritis the brush will fulfill the indications as thoroughly as the curette.

A further objection to the manipulation I have described is that it entails disturbance of the patient. The same objection applies, to an equal degree, to the repeated administration of the douche, the only difference being that the disturbance for the curette occurs once, with the repeated douche two, three, or more times daily, according to the bent of the accoucheur. The use of the curette as I have described it is not painful to the patient; in a nervous woman it may cause a little transient shock, but so may the douche. The great gain by the method is the knowledge that the uterus has been efficiently emptied of the degenerated products, and that the absorption into the system of fresh amounts of sepsis has been, with the greatest probability, once and for all prevented.

In presenting this plea in favor of the dull curette over the repeated douche, I desire to record myself as deprecating, as much as any one can, unnecessary interference with the genital tract after labor. When the necessity arises, however, I believe in the utility of speedy action. It will be noticed that I do not advocate resort to a radical means of treatment until milder means have been tested and have failed. In no given case of puerperal endometritis are we in a position at the outset to predicate the course. Unquestionably, after a skillfully conducted labor, the higher grades of endometritis are exceptional, and, when the affection develops, one thorough douche may arrest the process. If this be not the case, however, owing to the proneness of the degenerative changes to affect the entire endometrium, it has seemed to me wiser not to temporize further with the douche, but to resort at once to the one measure which is capable of arresting extension of the process by attacking the affection at its source.

In the preparation of this plea I have not been unmindful of the contributions to our literature on the same subject. Reference has not been made to such contributions, because I desire this plea to stand as the expression of that which my individual judgment and experience have taught me is the safe, effective, and profitable treatment of puerperal endometritis. As such I submit it to your criticism.

109 East Fifty-fourth Street.

ON THE COMPLICATION OF DISLOCATION WITH FRACTURE OF THE FEMUR,

*WITH A CASE.**

By FRED. KAMMERER, M. D.

Dislocations complicated with fractures, although occurring in the various bones of the body, have always been considered rare injuries, especially when affecting the femur. As late as 1837 Liston,† speaking of the matter in regard to the humerus, says: "It is barely possible that after luxation force may be applied to the bone so as to fracture its neck. This is a very rare accident." Sir A. Cooper,‡ while admitting that "dislocations of the os humeri are also sometimes accompanied with fracture of the head of that bone," does not mention any dislocations of the humerus, and only one of the femur, complicated with fracture of the shaft, and that not from personal observation.

Malgaigne,# treating of dislocations complicated with fractures in general, says: "This complication is very rare. I have mentioned that of 2,358 fractures in the Hôtel Dieu, only 4 instances are noted. This proportion appears, however, too small. During my service at the Saint-Louis I have observed, among 1,054 luxations, 13 fractures." None of these were in the humerus or femur. Chelius, in his "Handbook," does not mention this complication. Krönlein‖ writes in a general way, referring to the frequency of these injuries: "As regards the simultaneous occurrence of fractures of the long bones and luxations of their articular ends, such injuries have been occasionally observed, both in the humerus and femur, in the bones of the forearm and leg, and even in the inferior maxilla."

When attention had been once called to these complications individual reports of them became more numerous, and in reviewing the literature of the past thirty or forty years it becomes apparent that these injuries occur with greater frequency in the humerus than in the femur. Gurlt,△ in 1862, compiled eighteen cases of dislocation of the humerus with fracture of either the anatomical or surgical neck or of both, but only mentions five cases in which the fracture was in the shaft. Thamhayn,◊ in 1868, tabulated sixty-eight cases of dislocation of the humerus with

* Read before the New York Surgical Society, December 12, 1888.

† Liston, "Elements of Surgery," p. 473.

‡ A. Cooper, "Dislocations and Fractures," Amer. edition, 1844.

Malgaigne, "Des luxations," p. 880.

‖ Krönlein, "Die Lehre von den Luxationen," "Deutsche Chirurgie," 1882, p. 34.

△ "Lehre der Knochenbrüche," vol. ii, pp. 728 and 765.

◊ Thamhayn, "Ueber die mit Fractur des Collum humeri complicirter Schulterluxationen," Halle, 1868. Inaugural Dissertation.

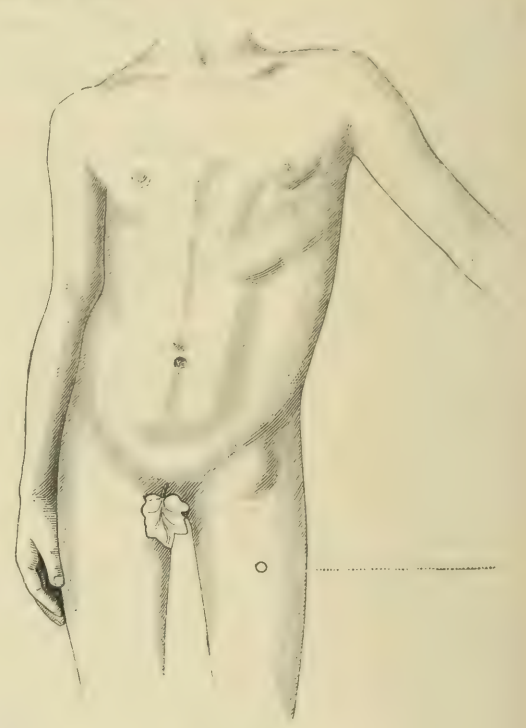
fracture of the neck, whereas Bardenheuer,* in 1886, was able to add only four new cases to Gurlt's five of luxation with fracture of the shaft of the humerus.

On the complication of dislocation with fracture of the femur a few general statements are made in the text-books on surgery of Holmes, Erichsen, and Agnew; nothing in the last edition of Konig's "Handbook." Lossen,† in his treatise on the "Injuries of the Lower Extremity," says that fracture of the neck of the femur complicating dislocation is very rare, but does not mention fracture of the shaft as a complication. Hamilton, in the last edition of his "Fractures and Dislocations," has collected five cases of this complication, one of fracture of the neck, and four of the shaft. Stimson‡ has increased this number to ten, of which three are fractures of the neck and seven of the shaft, excluding, no doubt, some cases that to him seem insufficiently recorded. In a careful survey of the literature of the subject I have collected nineteen cases# of these injuries. I have not included those cases in which the fracture seems to have resulted from an attempt at reduction. The cases are the following:

		Fracture of neck.	Fracture of shaft.
Dislocation backward	On to the dorsum ilii	2	6
	On to the spine of the ischium	1	..
	Into the ischiadic notch	1	2
Dislocation downward	Below the lower lip of the acetabulum	.....	1
	Into thyreoid foramen	.....	1
Dislocation forward and upward on pubes		2	3
Total		6	13

Including my own observation of dislocation on the pubes, complicated by fracture of the shaft between its middle and upper third, which I have the honor of presenting to the society this evening. The history of the case is the following:

J. M., aged thirteen years, no family history, has always been a healthy boy. The following accident occurred to him on July 18, 1887: He was pushing a swing, wherein were seated six children, the bottom of which was above the ground only about a foot and a half. He was running forward and backward many times, raising himself on the swing with his hands at his hips as it came back. At one of these moments, while trying to jump off, his left heel struck a stone, and, relinquishing his hold, he was precipitated to the ground on his back in a manner which he does not remember. As the swing came forward it passed over him without striking him, but coming back a second time it struck him on the left femur, between the middle and upper thirds, he having meanwhile raised himself on his feet and his right arm in an effort to extricate himself from his uncomfortable position. He says that he felt no pain at the hip joint after he was first thrown or while making movements with the limb in trying to effect his escape from under the swing. After he had been struck the last time he lost consciousness and was carried away. He was seen by two medical attendants soon after the injury, and treated for simple fracture of the femur, first by long splints and then by an extension-apparatus. Six weeks later, the fracture having united, the patient was allowed to get up. At this time he was entirely unable to move the limb at the hip joint, and a round, hard, painless tumor was noticed in the left groin. Passive movements were begun and continued for many months. I saw the patient for the first time in April last, and since that time the condition of the limb has changed very little.



O Seat of fracture.

The muscles of both lower limbs seem equally developed. The left lower limb is slightly everted, a little abducted but not advanced. At the junction of the middle and upper thirds the femur shows a distinct curving, with its convexity on the outer aspect of the limb. Somewhat to the inside and about two inches below the anterior superior spine of the ilium a round tumor bulges out the integuments. On the right side the distance from the anterior superior spine to the malleolus is twenty-eight inches; on the left, twenty-six inches and three quarters. The distance from the anterior-superior spine to the trochanter on the right side is four inches; on the left, two inches and three quarters; but in the injured limb the trochanter still lies in Nélaton's line, which means that it has moved upward and forward

* "Krankheiten der oberen Extremität," "Deutsche Chirurgie," 1886, p. 355.

† "Verletzungen der unteren Extremität," "Deutsche Chirurgie," 1880, p. 55.

‡ Stimson, "Treatise on Dislocations," p. 450.

Bloxam, "London Medical Gazette," 1833, p. 702. Etéve, "Gazette médicale," 1838; also Malgaigne, "Des luxations." Thornhill, "London Med. Gazette," 1839, p. 609. Douglas, "Edinburgh Monthly Journal," 1843, x, p. 241. (Badley) A. Cooper, "Fract. and Dislocations," American ed., 1851, p. 84. Bainbrigge, "London Med. Gazette," 1846, vol. iii, p. 1004. O'Connor, "Provincial Med. Journal," London, 1844, p. 77. Markoe, "N. Y. Journal of Medicine," 1855, p. 30. Cooke, "The Lancet," 1864, i, p. 37. Delagarde, "St. Barthol. Hosp. Reports," 1866, vol. ii, p. 183. Chitwood, "Med. and Surg. Reporter," Philadelphia, 1867, xvii, p. 353. Tunecliff, "Am. Journal of the Med. Sciences," 1868, p. 123. (Birkett) Bryant, "Practice of Surgery," 1869, p. 761. Harcourt, "Buff. Med. and Surg. Journal," 1870–'71, x, 241. De Morgan, "Med. Times and Gazette," London, 1873, i, 549. Murdoch, "Trans. of the Med. Soc. Pennsylvania," 1878, xii, i, 144. Allis, "Trans. of the Med. Soc. Pennsylvania," 1879, xii, ii, 682. Lorsen, "Die Verletzungen der unt. Extr.," "Deutsche Chirurg.," 65, p. 55.

from its normal situation. The distance from the round tumor to the trochanter is three inches and a half. The vessels lie on the inner side of the supposed head of the femur.

Flexion and extension in the hip are executed on an axis running through the bony tumor and the trochanter, the knee moving upward and outward in flexion. Passive flexion and extension are possible to the extent of almost a right angle, while active movements in the hip joint, without participation of the pelvis, can be executed to a very limited extent. The extent of rotation is apparently normal, extreme inward rotation bringing the foot into a vertical position when the patient lies on his back. During manipulations with the extremity the tumor in the groin is felt to move simultaneously with the trochanter. Corresponding to the curve in the femur a distinct axial displacement can be felt at the junction of the middle and upper thirds of about 150° to 160°. There is decided flattening of the left gluteal region.

In reviewing our nineteen cases, we find that thirteen were complicated with fracture of the shaft and only six with fracture of the neck of the femur, the reverse of the case in the humerus, where by far the greater number of fractures were in the neck of the bone, either surgical or anatomical, or as comminuted fracture in both. An explanation of this phenomenon may be looked for in the anatomical relations of these two joints and in the nature of the violence leading to the injury. The shoulder joint, although well protected by soft parts, is a very free ball-and-socket joint when compared with the hip joint. Again, Stimson,* speaking of the ætiology and mechanism of luxations in general, especially mentions the shoulder joint as one in which dislocation by direct external violence is possible, and in corroboration cites cases of Busch and Krönlein, where the head was driven inward, downward, or backward. Besides, in looking over Gurlt's eighteen cases previously mentioned, I find the exact nature of the violence stated in very few of them, but three times a fall upon the shoulder is distinctly mentioned, and only once a fall upon the elbow. When we take into consideration that the greater number of fractures of the humerus in the vicinity of the head are also the result of direct external violence, it seems that we are justified in assuming that in this bone dislocations complicated with fractures at its upper extremity are generally caused by a single direct force from without, leaving the succession in which the individual injuries occur an open question. Even theoretically this would seem otherwise in the hip. It is difficult to assume that direct violence applied somewhere near the head of the femur could produce a luxation. Again, we know that some intracapsular, and nearly all extracapsular, fractures of the neck are the result of external force applied to the trochanter. It follows that the complication of fracture of the neck and dislocation is either the result of two separate forces, or of one unspent after the production of the dislocation and attacking the bone at some distance from the seat of injury. But it is easily understood that violence exerted at a distance from the head of the bone will not bring about the double injury as easily as when it is applied to the head itself, provided, of course, that the individual injuries can be produced by direct violence, as in the humerus. Thus, I think, the infrequency of the complication of dislocation with fracture of the neck of the femur finds an explanation. Some of the cases of this injury which I have collected seem to bear out what has been conjectured about their ætiology. In Lossen's case the patient fell from a ladder on his feet and then on the trochanter of the affected side. A heavy load fell on the back of Tunecliff's patient, crushing his feet through the ice on which he was standing, he then being precipitated with great force with the trochanter of the injured side upon the ice. Chitwood's patient was thrown from a wagon, which fell on him, and unloaded on his hip when an attempt was made to free him. In these three instances it is evident that the dislocation, occurring first, was caused by another violence than the fracture of the neck, which every time resulted from force exerted on the trochanter.

Of the thirteen cases of dislocation in which the shaft was fractured, the following can be said: Etéve's patient was struck by a falling tree and suffered a dislocation backward; a similar violence acted in Thornhill's case, where a load of five hundred pounds fell on the patient's back while he was leaning forward. Markoe's patient fell from a ladder at the height of a third story, sustaining multiple bone injuries. Allis's patient was struck by a car while walking on a track. Badley's patient was buried under a fall of coal, receiving many other injuries. In all these instances it seems probable that more than one kind of violence entered in the production of the lesion. In four other cases it is distinctly stated that such was the case. In one (Bainbrigge) the weight of the body was thrown on the left leg to prevent falling, a semi-revolution of the trunk made, and the patient then precipitated with force to the ground. In a second case (O'Connor) the patient fell from a height of ten feet upon a beam, which passed between his legs, and then fourteen feet more to reach the ground. In a third (Cooke) the patient's right foot slipped into a hole and he fell with his legs separated; while trying to get up, still having his foot caught, he fell a second time upon his right side. In my own case I can not doubt that the dislocation was caused in the attempt to get off the swing, and the fracture when he was struck by it a second time. This statement that he was able to raise himself is counterbalanced by the fact that he did not succeed in this very rapidly, and that a dislocation on the pubes occasionally allows the use of the affected limb immediately after the accident. In the other of the thirteen cases the mechanism and ætiology of the injury are not mentioned, but, from our analysis of the cases in which they are stated, we are led to the conclusion that the complication of dislocation with fracture of the shaft of the femur is the result of at least two distinct violences.

It is certainly remarkable that in the six cases in which the dislocation was not recognized at the time of the injury the fracture was always in the shaft of the femur and never in the neck. Four of these were dislocations backward, one downward, and one on the pubes—my own. In one (Thornhill) it is stated that the hip had evidently sustained some injury, but the diagnosis was impossible on account of tumefaction of the soft parts, and was only made a week later. In Murdoch's case the head rested between

* Stimson, "Treatise on Dislocations," p. 25.

the lower lip of the acetabulum and the tuberosity of the ischium, and the displacement was recognized only a year afterward at the post-mortem. Allis's patient was dismissed from the hospital, his fracture united, but he reappeared after seven weeks, with his limb three inches shorter than when discharged, occasioned by a moving up of the head that had been dislocated on the ilium and remained opposite the socket until the limb was used. In Bainbrigge's case and my own the dislocation seems to have been overlooked, as it can hardly be presumed that great diagnostic difficulties presented themselves. I think that Allis's recommendation of introducing an exploring needle into the soft parts to ascertain the absence of the head from the socket is a procedure rarely called for. That, on the other hand, some unrecognized and unreduced dislocations have not been recorded can scarcely be doubted.

In the treatment of these injuries it is generally admitted that the reduction of the dislocation ought to be attempted at all hazards and as soon as possible. I regret to say that I have found so many incomplete data regarding the manner in which the reduction was effected. Thus, in the cases where it immediately followed the injury, Bryant, for example, tells us that Birkett reduced with the greatest facility a pubic dislocation, "the bone slipping into place on the application of gentle, well-directed force"; in Harcourt's case the reduction was effected during examination under an anæsthetic—in fact, the dislocation was diagnosticated only from a snapping noise at the time; in O'Connor's case it is assumed that the reduction was favored by the active spasm of the vasti, which brought down the head from the dorsum, while the fracture was reduced evidently by traction. Chitwood reduced by manipulation, but the fracture of the neck in his case was only partial, and became complete afterward in the course of treatment, and of Cooke's and Etéve's cases only do we learn that traction and direct pressure were the effective agents in reduction. In Markoe's case it is asserted that reduction was accomplished by manipulation, pure and simple. In the three cases in which reduction was made after consolidation of the fracture (Badley, Thornhill, and Tunecliff) during the fifth or sixth week, this was accomplished twice by traction in fracture of the shaft, and once by manipulation in fracture of the neck, a refracture, however, occurring in the last case. Such an accident will be more likely to happen when the neck has been the seat of fracture, on account of more powerful leverage during manipulation and the direction of that part of the bone during traction. Once the reduction was accomplished on the eighth day by manipulation, the fracture being bound up in splints. In eight other cases an attempt at reduction was not made, the dislocation in the majority of cases having been overlooked, but several times not attempted on account of the condition of the patient. I have not, therefore, been able, from the experience of others, to add much to that which is already known about the treatment of these injuries. Of the six dislocations with fracture of the neck, the former was reduced in only two immediately after the accident (Harcourt and Chitwood), and these were probably cases of partial fracture. Direct pressure on the head, assisted by slight traction on the femur in the same direction as pressure, will probably prove most successful. Neither have I been more fortunate in reviewing the thirteen cases of fracture of the shaft. Either, it seems, the dislocation was not detected or it was reduced very easily. Traction, pressure on the head, and manipulation were all effectively employed. About the value of traction in these cases opinion does not seem much divided. Malgaigne, speaking of Etéve's case, says: "Traction existed more in the imagination of the surgeon than in his method, and the latter was in reality composed only of flexion and pressure." Bloxam thinks that, in his case of pubic dislocation, "extension would have merely separated the broken ends of the bone from one another." Allis, in his admirable exposition of this subject, says: "Extension under such circumstances would not avail anything." Stimson writes: "It would certainly be injudicious and probably ineffectual to attempt to reduce by traction," and only Andrews is of the opinion that traction may be employed efficaciously, unless the fracture is in close proximity to the joint. It seems to me that this ought to be the case to a certain extent, that the force ought to be transmitted from the lower to the upper fragment through the soft parts, notably the vasti muscles, which are inserted along the upper half of the femur. Some experiments that I have made on the cadaver are in accord with the view expressed. But, even granting that the effect of traction is very slight, it is to be remembered that in applying it the limb will always be made to assume a position most favorable for the exercise of pressure—the powerful agent in the reduction of all these luxations. That simple manipulation will be of little avail has been generally admitted, and it is difficult to understand how it could be otherwise, if the upper fragment, either directly or by the use of splints, can not be controlled.

In case of failure to reduce the dislocation by other means, proposals for surgical interference have been made of late under protection of the antiseptic system. Allis, in 1879, recommended the use of a strong-pointed awl, or gimlet, or a strong screw thrust into the trochanter to aid in the reduction. Andrews, in 1883, advised for a similar purpose an incision below the trochanter, the seizure of the upper fragment with a lion-jawed forceps, and the reduction by manipulation. I have made a few experiments on the cadaver with a view of testing the practicability of these proposals. After dislocating the femur on the dorsum or pubes, I divided the shaft in the upper third with a chisel. I then cut down on the fracture, and seized the upper fragment, in the direction of the shaft, with a strong forceps, and found it easy to reduce either of the two dislocations. The same was accomplished with a long screw driven into the trochanter, but it seemed to me that more force could be exerted and the fragment better manipulated when it was caught with the forceps. I was astonished to find with what ease the reduction was effected by traction in the proper direction and pressure on the head of the bone. On the other hand, I did not succeed in reducing two dislocations by these means in which I had cut through the neck. The effect of traction in several experiments of fracture in the upper third of the shaft was less than I had anticipated, and nothing beyond what I have previously stated.

If it be remembered that the above suggestions were made at a time when the fruits of antiseptic surgery were just being reaped, I think we are much more justified in repeating them to-day. I would say that in all cases of fracture below the trochanter, in which it has been impossible to reduce the dislocation on account of the difficulty of exercising leverage by the small upper fragment, surgical interference to compensate for this is indicated, on account of the great importance of immediate reduction. In irreducible luxations, with fracture of the neck, the course to pursue seems to me more difficult to define. Stimson * has stated the position well when he says that the only alternative left is to seek a pseudo-arthrosis at the seat of fracture, or to correct the flexion and adduction in dorsal dislocation, and seek union with a view to the formation of a new socket for the head on the ilium, provided we do not wait for consolidation before attempting reduction. Stimson thinks the latter course the most advisable, as necrosis of the head has followed in one case of dislocation complicated with fracture of the neck,† and in two cases where the neck was fractured during the attempt to reduce.‡ I do not find that this accident occurred in any of the six cases that I have collected. Tunecliff's case is the only one in which the plan of allowing the fracture to unite with the dislocation unreduced was adopted, and here we are unable to judge the result, because the bone was refractured when the dislocation was reduced thirty-eight days afterward. But how are we to know, whether or not union had taken place without such displacement, that reduction would have been possible? We are informed that, at the time of the injury, "the limb could with facility be brought down to the side of its fellow; rotation, abduction, adduction, and even extension could be readily made." I can not conceive that under such conditions the two fragments could have been approximated to each other with any degree of assurance of union in their normal relations. And it has been somewhat surprising to me to note how little attention has been called to the displacement which will follow when fractures of the shaft are treated without regard to the existing dislocation. Sir A. Cooper cites the case of Mr. Badley, without any further comment, thus: "The hip was dislocated on the dorsum, and the same thigh broken about the middle of the bone. As the reduction of the hip was, of course, impracticable, the thigh was bound up in the usual manner and treated without any reference to the dislocation of the joint, with the hope that, when the thigh-bone was reunited, the hip might possibly be reduced. At the end of five weeks, the bone appearing tolerably firm, I had a very careful and unremitting extension made by pulleys, and in less than half an hour had the satisfaction of feeling the head of the bone re-enter the socket. . . . The patient became so upright as to show scarcely any signs of lameness afterward." Thornhill tells us that in his case of dislocation into the ischiatic notch "the fracture was reduced and the limb secured in the usual manner, and afterward placed in the straight position." A week later the dislocation was discovered. Yet we are told nothing of the rotatory displacement, which ought to have become very apparent after the reduction six weeks later. To my knowledge, Allis is the only one among the writers on this subject who has taken this point into careful consideration. He calls attention to the fact that the patient who has been treated as if he had sustained only a simple fracture is much better off with his dislocation unreduced, for, if reduction should be accomplished, the angular and rotatory displacement would immediately become manifest. I think an examination of the patient whom I am allowed to present to the society this evening will bear this out admirably. A reduction of the dislocation would, I fancy, cause an inward rotation of the lower limb of about 45°, and would certainly greatly impair its usefulness, unless the bone were refractured and set in the correct manner. And I think that no valid objections could be raised against such measures. Allis says the latter ought to be postponed until the head rests safely in the socket and the capsule has healed, which will be in about a month, "but by that time the fracture would be so firm that to attempt it (refracture) would be to endanger the bone at some other point. Hence, when a dislocated and fractured bone is treated from the outset as if it were a simple facture, it seems hardly justifiable to make any attempts at reduction after union of the fragments." I do not think that this opinion can be entirely upheld to-day. The division of the bone at the seat of fracture, whether immediate or consecutive, is a procedure devoid of danger under the necessary precautions. And no matter how perfect the movements of the limb in a nearthrosis are, that such a condition should be preferred to the normal state, even if the latter is only attained after many surgical interferences, is hardly a question to be seriously considered. In my own case, then, it is only the impossibility of reduction which has prevented the attempt. When I saw the patient the dislocation was of ten months' standing. We hear of dislocations that have been reduced even at a later period. The time when a dislocation is still reducible is not definable. It depends upon factors not accurately to be determined—the distance of the head from the acetabulum, the degree of reaction and of consequent formation of adhesions, the interposition of parts, the condition of the acetabulum, etc. I do not, however, think that I have been guilty of an omission in not attempting reduction. We have in our patient an excellent example of the powers of adaptation in our system. He can walk and run, and is little hindered in the activities of daily life. But that the ideal result would have been obtained only by a reduction and consecutive refracture I willingly admit.

Allis recommends another course: "to make the lower fragment assume the axis and direction of the upper fragment, and to secure it in this position until union has taken place." Theoretically, this is certainly a correct proposition, but it seems difficult to realize practically. We are told in a general way how to place the lower fragment by a statement of the direction that the upper fragment has assumed. I do not understand with what appliances the lower fragment could be brought in our case, for example, into such

* Stimson, "Treatise on Dislocations," p. 452.

† Post, "Medical Record," 1878, xiii, 366.

‡ Wippermann, "Archiv für klin. Chirurgie," vol. xxxii, p. 440. Bryck, *ibid.*, vol. xv, p. 279.

a position of abduction and eversion as would correspond to that of the upper fragment and thus be retained a length of time sufficient for osseous union without great discomfort to the patient, for we must not forget that the forces tending to place the upper fragment in a certain position in any dislocation of the hip will prove much more effective when working on the small upper fragment than on the entire lower limb. Moreover, when we apply traction by means of an extension-apparatus in simple fracture of the thigh, we have the upper fragment, with an intact hip joint, in a condition to accommodate itself to the movements of the lower, which are, to a certain extent, inevitable in the course of treatment. How changed are these conditions when the upper fragment is held down by the Y-ligament! But if we desire to reduce afterward, without refracturing, it certainly is of the greatest importance to insure faultless union, as any displacement high up in the femur will make itself very manifest at the other extremity of so long a limb. I am led from these considerations to emphasize as the most rational method of treatment in these cases the primary reduction, if at all possible, even by operative measures, knowing, as we do, that a complicated fracture, especially when the work of the surgeon, ought to run an apyretic and aseptic course.

FATAL PERITONITIS FOLLOWING OVARIAN APOPLEXY AT THE MENSTRUAL PERIOD.

By J. A. FORDYCE, M. D.

Fatal cases of peritonitis following menstrual suppression are among the rare occurrences of medical practice; at least, a search through the literature of gynæcology and personal inquiries of practitioners have failed to elicit reports of many such cases.

It has been my fortune to have observed two cases of death from peritonitis following menstrual suppression, in one of which an autopsy confirmed the diagnosis made during life.

Briefly stated, the history of the first case is as follows:

A single and previously healthy girl of twenty years of age, after exposure during menstruation, experienced violent pain in the lower abdominal region, soon followed by fever, rapid pulse, extreme abdominal tenderness and distension, vomiting of greenish-colored fluid, delirium, and death within forty-eight hours after the onset of the disease. Vaginal and abdominal examination in the beginning of her illness failed to discover any abnormal state of the pelvic organs. An autopsy was not allowed.

In the presence of the above-named symptoms a diagnosis of peritonitis was made. Occurring, as it did, after sudden suppression of the menstrual discharge, in an individual free from any local affection of the pelvic viscera, would be strong presumptive evidence in favor of a causal connection between the menstrual suppression and the peritonitis.

The other case occurred in a girl aged fifteen years, of previous good health. She had menstruated regularly for one year. Her mother attributed her illness to exposure to cold and wet at the time her menses were due; after such exposure she came home, and shortly afterward complained of chilliness and pain in the region of the right ovary. Fever, delirium, and rapid pulse were present almost from the onset of her illness. Her temperature (rectal) ranged from 102° to 104° F. At no time was there great abdominal distension, and, though she moved from one side of the bed to the other, she cried out frequently with pain. A marked degree of emaciation, together with a haggard and drawn condition of the features, were soon noticed. Diarrhœa of a light grade was present during her illness. During the thirty-six hours preceding death a greenish-colored fluid was vomited at frequent intervals.

Death resulted from heart failure after an illness of eight days. An *autopsy* made eighteen hours after death by Dr. H. P. Loomis, whose report is here given, revealed the following condition of the abdominal and pelvic viscera:

Body well nourished. Moderate distension of the abdomen; appearance otherwise normal. At the request of the family, the head and thorax were not opened.

Abdomen.—On opening the abdomen, an abundant deposit of fibrino-purulent material was seen covering all the abdominal viscera and matting the coils of small intestines together. The deposit extended as high as the under surface of the diaphragm, but was most abundant in the lower part of the abdominal cavity. No tubercles were seen, and no abnormal condition of the vermiform appendix.

The intestines were normal; no ulcerations were found. The liver showed passive congestion, but was otherwise normal. Spleen normal. Kidneys, cloudy swelling. The pelvic peritonæum was covered with a fibrino-purulent exudation.

At the junction of the right ovary and Fallopian tube a blood extravasation about the size of a cherry was seen. The blood seemed to have spread for a short distance between the layers of the broad ligament. No pus was found.

On opening the ovary by a longitudinal incision, the cut surface was intensely red and full of tortuous vessels. A *corpus hæmorrhagicum* about the size of a hazel-nut was seen. There was a connection between this and the blood extravasation without.

A slight catarrhal condition of the right Fallopian tube was noted.

Left tube and ovary normal. Uterus normal; blood-stained mucus covered its mucous membrane such as would appear after a recent menstruation.

Vagina normal; hymen present.

Dr. H. P. Loomis has informed me in a personal communication that he had performed autopsies in two cases of death following sudden menstrual suppression, in both of which a general peritonitis was found, which seemed to have originated in the pelvic region, but in neither of these cases was there an ovarian blood-cyst nor any cause, aside from the sudden suppression of the menstrual flow, to account for the fatal peritonitis.

In the literature at my command I have failed to find the detailed reports of any similar cases, though Schroeder, in the eighth German edition of his "Krankheiten der weiblichen Geschlechtsorgane," under the heading of hyperæmia and hæmorrhage of the ovaries, says that rupture of a Graafian follicle may in exceptional cases be followed by so profuse a hæmorrhage that it can (1) prove directly fatal; (2) cause a peritonitis which may terminate fatally; (3) produce a capsulated blood-clot in the peritoneal cavity; (4) form a retro-uterine hæmatocele.

Graily Hewitt (page 491 of the first American edition of his "Diseases of Women") discusses the subject of apoplexy of the ovary and explains the occurrence of blood-cysts and their rupture into the peritoneal cavity in the following manner: A Graafian follicle does not rupture as it should into the Falloppian tube; hæmorrhage takes place within it; it enlarges from continuous bleeding and rupture occurs. Should the bleeding be profuse, an intraperitoneal hæmatocele would be produced. Such an intraperitoneal hæmorrhage seldom causes a fatal peritonitis.

Olshausen ("Die Krankheiten der Ovarien," page 27) divides ovarian apoplexy into two varieties: (*a*) that which takes place in the follicle; (*b*) that which occurs in the stroma of the organ.

The first variety, by far the most frequent, occurs in the great majority of cases at the time of the menstrual congestion as a pathological exaggeration of the normal menstrual hyperæmia.

As causes of such follicular hæmorrhages he gives, quoting Winckel, general diseases impairing the quality of the blood, congestions of the abdominal organs, heart failure, phosphorus poisoning, extensive burns, etc.

As a rule, such blood-cysts do not burst, but terminate in absorption of their contents.

Should rupture occur, the case might terminate in one of the ways before mentioned.

Sir James Y. Simpson, in his "Clinical Lectures on the Diseases of Women," quotes Bernutz as giving twenty cases of pelvic peritonitis out of ninety-nine as a result of menstrual suppression. The author remarks, however, that, as nearly all such cases terminate favorably, it is impossible to detect the part primarily affected.

Thomas ("Diseases of Women," fifth edition, page 664), writing of ovarian apoplexy, says the great danger in such cases is from peritonitis arising from implication of the peritoneal fold which forms the broad ligament, or from rupture of the cortical portion of the ovary and the occurrence of hæmatocele.

In conclusion, I may say that the autopsy in the second case reported renders it extremely probable that the blood extravasation was the starting-point of the peritonitis which became general and proved fatal. Why, in the absence of any previous pathological condition of the uterus or its appendages, the presence of so small a quantity of blood without an added septic infection should cause a general peritonitis is not wholly clear. If, following the irritation to the peritonæum by the blood-clot, a secondary infection took place, its origin can not be accounted for by any previous abnormal condition of the genital organs nor by infection through the lymph-vessels following a vaginal examination, as no such examination was made.

66 West Fortieth Street.

"Superstition or Fact?"—Under this title the "British and Colonial Druggist" says that the following inquiry was recently made of an apothecary: "How much quicksilver would be necessary to cause a wet loaf of bread to float?" The question was prompted by the belief that by this means the location of the body of a drowned boy could be fixed, the loaf being supposed to remain stationary in the water over the body.

A CASE OF LABOR DELAYED BY ADHESIONS BETWEEN THE MEMBRANES AND UTERUS.*

By J. H. EMERSON, M. D.

I can not claim novelty or originality for the brief statement to which I now invite your attention; but the point in question does not very often present itself as in this case, and, from its infrequency, is deserving of a few moments' consideration.

Mrs. ——, quintipara, thirty-seven years old, fell in labor early in the morning of October 7th. The uterus had been very much distended and she had suffered for some weeks from the effects of pressure, so that for at least three weeks previous the increasing œdema of the lower limbs, which now reached above the knees, had made it impossible for her to take any exercise. She could hardly walk across the floor. At the same time neither the nervous system nor repeated examinations of the urine gave any evidences of degenerative changes in the kidneys. On examination, I found the vertex presenting but the head not engaged, and the os uteri hardly to be reached. Pains, not of great force but occasioning much distress, recurred at irregular but tolerably frequent intervals. Various measures were employed with a view to increasing the efficiency of the pains and mitigating the suffering, but, although these persistently continued, the head would not engage, and the only sign of progress after about thirty-three hours was a very moderate dilatation of the os to perhaps the size of a quarter of a dollar. The pains had latterly become much sharper, and I had given chloroform in small amount at their height. The patient was growing very weary and began to complain of acute pain in the forehead at the acme of the pains, though her general condition was otherwise very satisfactory. I asked to have Dr. Partridge see her at this time. I gave a little more chloroform for the purpose of his examination, and, on passing the examining finger very high up, he discovered some adhesions between the bag of membranes and the inner surface of the cervix. His advice was that I should pass one or two fingers far enough to separate these adhesions, then wait to see whether the great distension still interfered with the engagement of the head. If so, to rupture the membranes after first making some effort to dilate the os with the finger. While Dr. Partridge attended to a freer administration of chloroform I passed my index finger into the cervix to the depth of about two inches and a half and swept it round. I encountered, especially toward the left and posteriorly, several patches of adhesion, not stretched out so as to form bands, but simply uniting the opposing surfaces, and these I easily separated so that when the progress of the case subsequently seemed to demonstrate that these had been the chief impediments to dilatation and engagement, it was rather a source of surprise that the expulsive forces had not been sufficient to overcome this degree of resistance unaided. The head now promptly engaged, the os dilated rather slowly even after I had ruptured the membranes, but everything went on favorably. At the end of about thirty-six hours from the beginning of labor female twins were born, weighing, respectively, seven and eight pounds. The mother suffered severely from after-pains for fully thirty-six hours.

If we may judge from the attention given to the subject in the works on obstetrics, the existence of such adhesions as I have described can not be regarded as often exerting

* Read before the New York Clinical Society, November 23, 1888.

an important influence on the progress of labor. Thus I find no reference to it in the treatises of Charpentier or Winckel, Leishman or Playfair. On the other hand, it is spoken of by Spiegelberg, by Schroeder, by Lusk, by Parvin writing in Hirst's "American System of Obstetrics," and by Stoltz in his article "Dystocie" in the "Nouveau dictionnaire de medecine et de chirurgie pratiques." This latter writer says it is usually sufficient to detach the adhesions by passing the finger through the os, which may itself be at the same time occluded, and sweeping it round the lower segment of the uterus. Schroeder ascribes these adhesions to endometritis decidualis chronica and says that separation of them with the finger, or rupture of the membranes, will effect the dilatation of the os uteri. Spiegelberg speaks to the same effect, while Parvin says the remedy is rupture of the membranes.

This comprises the substance of what is said about this cause of delayed labor in the recent text-books. It certainly is not a prominent or frequent cause of dystocia, and on that account is the more likely to be overlooked. There is nothing which points positively or distinctly to the existence of this form of decidual endometritis during pregnancy, and when labor sets in there are only negative symptoms to direct attention to the seat of difficulty or the cause of delay. In cases similar to the one I have reported the overdistension of the uterus—in this instance due to the twin pregnancy, but in another perhaps to hydramnion—must be given due weight as an element in causing the delay in dilatation, the expulsive forces acting at so great a disadvantage as to be unequal to effecting a separation of tissues that would perhaps have yielded to the ordinary effort.

The method of remedying this condition does not seem to me indifferent. The separation of the adhesions should by all means be our first aim, and we should be slow to deprive our patient of the advantage of the dilating wedge of the bag of waters. Barnes's bags might, under certain conditions, render great service both in diagnosis and treatment. Another danger that might arise in connection with such adhesions would be, possibly, rupture of the uterus if the union were very firm and in a position not easily accessible. Rupture of the membranes in that case would also expose the patient to the danger of prolapse of the cord, or even of the placenta, an accident in regard to which Spiegelberg may be quoted to the effect that, although it is most often seen in conjunction with placenta prævia, it may sometimes occur when the placenta is normally situated, especially in the case of the second of twins, a caution quite apropos to the case I have reported. Even if no accident occurred till after the delivery of the child, we might still have to run the risks of hæmorrhage, etc., due to the retention of portions of the membranes. Finally, we should be more than ordinarily careful in such a case in the delivery of the secundines, remembering that the adhesions we have had to deal with in the lower segment may have been but one result of an inflammatory process which has perhaps involved other portions of the fœtal envelopes and possibly the placenta.

PAPILLOMA IN THE FAUCES.

By J. HERBERT CLAIBORNE, Jr., M. D.

A stoutly built German man of twenty-eight years of age presented himself at the Northwestern Dispensary, stating that his throat had been sore on the right side for some time. His impression was that something had become lodged in it while eating. Inspection revealed a whitish globular mass of about the size of the tip of one's ring-finger lying between the anterior pillar of the fauces and the tonsil on the right side.

The mass was brought plainly into view by the gagging produced by the tongue-depressor. It was grayish in color, reminding me strongly in the color and in the character of its superficies of an etiolated or unripe strawberry. When it was picked up by the forceps it could be seen to be pear-shaped, being held to the upper tip of the right tonsil and to the mucous membrane of the adjoining sulcus and to that of the posterior aspect of the anterior pillar by a thin, grayish pedicle.

At my suggestion, Dr. R. C. Myles passed the wire loop of a nasal polypus snare around it. Gentle traction caused the rupture of the pedicle. The tumor fell into the mouth and was spit out on the floor.

In its gross appearance it was the type of a papillomatous tumor. By some accident the specimen became dried and flattened between two pieces of paper, and its histological characteristics became in consequence altered. I feel certain that a microscopic examination would have confirmed our diagnosis.

A mild antiseptic gargle was prescribed. The patient has not presented himself for treatment since.

Temperance Drinks and Typhoid Fever.—"Travelers, and especially sailors, in Eastern ports," says the "Lancet," "are apt to find themselves placed at a disadvantage in choosing a suitable beverage for daily use. If, as often happens, they avoid stimulants—usually a wise precaution in the absence of active exertion—they must fall back upon water in some form, either simple or medicated. Here, too, unfortunately, dangers of another kind await them. The water itself is frequently contaminated with sewage, and is used in this state in the manufacture of the various temperance drinks which ought really to form the staple of consumption in hot climates. According to recent accounts, the utter carelessness as to its purity displayed by native makers of such drinks calls for very strict corrective measures. Led, it would seem, by the example of their poorer neighbors, they are credited with using even water from drains and gullies in the preparation of what ought to be the most innocent beverages. It is not therefore surprising that cases of enteric fever are said to have arisen among those very temperate seamen who should have remained the healthiest of their class. It is more easy to point out the fault than to find a remedy. In the way of prevention, however, one or two possible courses suggest themselves. For example, the civic governments would render excellent service by requiring every manufacturer to maintain on his premises a sufficient supply of pure water, and by enforcing its demand by adequate supervision. Again, our home producers and the shipping firms concerned might come to terms with a view to the export of a supply of non-intoxicant drinks of reliable quality. Lastly, it is very advisable that, until some such needful arrangements are in operation, a timely warning should be issued as required by ships' officers to those under their charge."

Pyrodine, the New Antipyretic.—"Notwithstanding the strongly worded caution which we published in our last issue (Dec. 8, 1888) against using this new drug, except in the most severe and critical cases, and even then in the smallest doses and at long intervals, we hear that it is being occasionally employed and causing grave and serious symptoms. We would again point out that doses of from eight to twelve grains sometimes gave rise to toxic effects, even when administered with every care, by Dr. Dreschfeld, as mentioned in his article, and we would reiterate our caution with regard to its employment."—*Lancet.*

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THE SO-CALLED "DUAL" SYSTEM IN THE MANAGEMENT OF LUNATIC ASYLUMS.

IN our issue for August 11, 1888, we commented upon the management of the New Jersey State Asylum for the Insane at Morristown, which management was upon what has been called the "dual" plan. According to this system, the medical officers of an asylum are charged only with the care of the patients in a strictly medical sense, while the administration devolves upon a steward or some other non-medical officer. The management of the Morristown Asylum on this plan was accompanied some months ago by the resignation of the chief medical officer under circumstances that seemed to indicate a sufficient degree of antagonism between him and the administration of the asylum to involve a diminution of the amount of relief that might have been afforded to the patients, and to provoke unpleasant comments in the newspapers. This state of things led to the appointment of a legislative committee "to inquire into and investigate the management, government, and discipline" of the asylum. This committee has now made its report, and we are glad to observe that it wholly exonerates the steward from all charges and insinuations of the improper management of the affairs of his department. It appears to us, however, that, had the same degree of leniency been shown by the committee toward the retiring medical officer, he would not figure in their report, as he now does, as more culpable for having failed to reiterate his complaints to the Board of Managers under discouraging circumstances than praiseworthy for having brought them to the attention of the board in the first instance. It seems that in this institution both the medical officers and the steward are governed by the Board of Managers; but it is evident that a board constituted of men who are occupied fully with their own affairs, as is almost always the case with such boards, is utterly unequal to the executive work required in the management of a large asylum. At most such a board can really be of service only in an advisory capacity or in the settlement of questions of magnitude arising but now and then. If anything were needed to corroborate this opinion, it could be found in the very fact that in this asylum the managers failed to detect for themselves the abuses which, in the opinion of the legislative committee, the medical director was culpable for not having called to their notice repeatedly.

The truth is that there ought to be a single executive officer responsible for the management of every such institution in so far as every-day details are concerned, and that officer should be the head of the medical department. It has been pretended that the medical superintendents of lunatic asylums were so burdened with the agricultural and other non-medical affairs of the institution as to cripple their usefulness in their own proper sphere; but it does not follow that, because the chief medical officer is empowered to give orders to the gardener, his thoughts are to be engrossed with matters pertaining to the latter's duties. As to the impression current among many persons that medical men are unfit to assume the entire control of a hospital or a lunatic asylum, we have only to call to mind the excellent management of our army hospitals during the late civil war, which was wholly in the hands of members of the medical corps. No hospital or asylum can long prosper under two masters, even with the backing of a board of managers, and, although the legislative committee in question has not seen fit to recommend any changes in the management of the Morristown Asylum, we trust that the so-called "dual" system will not be widely adopted.

A GERMAN VIEW OF MEDICAL WOMEN.

AT the last annual meeting of the Assembly of German Naturalists and Physicians, Professor Waldeyer delivered an address upon the "Practice of Medicine by Women," reported in "La semaine médicale," for September 26, 1888. He endeavored to clear himself from any accusations of unfairness or prejudice by referring in complimentary terms to the talented women who taught in the school of Salernum—to Louise Bourgeois, Marguerite de la Manche, Marie Louise Lachapelle, and many others eminent in the practice of midwifery.

He also admitted that for many centuries the healing art had been in the hands of women and that they had made valuable contributions to the literature of medicine. He believed that women should hold a position on a level with that of men, as their functions and attributes were as necessary to the existence and maintenance of the human species as those of men, but that their vocation should be the rearing and fostering of children. This vocation rendered them everywhere and always the equals of men. Since the number of marriages was diminishing every year, they had necessarily been driven into seeking other duties. Their entrance into medicine, however desirable it might seem to them, menaced not only their own interests but those of humanity at large. Although their opportunities had been abundant, they had never advanced medical science. Midwifery, for example, which for many centuries had been almost exclusively in their hands, had made no progress until it was taken up by men. They acquired great manual dexterity in the art, but little else. Women had never in any art created a masterpiece; even in music, which seemed properly to belong to them, they had done nothing that might immortalize a name. Their presence in colleges devoted to the instruction of men was a hindrance to the teachers and students. In laboratories they were unwelcome, as they were awkward and careless, the smallest difficulty discouraging them, and the assistants complained of women students who besieged them with inquiries upon trivial matters. Charcot, at whose clinics and lectures a large number of women attended, was quoted as saying that

women thought more of themselves than they did of humanity; they consented unwillingly to be dressers in the hospitals and to carry out antiseptic treatment — occupations for which they would appear to be well suited. They were too ambitious and aspired to the front rank and to the most prominent positions.

As nature had barred their way to rôles which they ought to fill, Waldeyer concluded that women doctors had no future before them and would never be more than the exception. Notwithstanding this opinion, he gave them credit, curiously enough, for their excellent memories, their close attention to lectures, and their frequent ability to pass better examinations than men. Professor Waldeyer concluded by stating that if man was fitted to take the initiative for the production of new ideas, if he had more sequence in his actions and in his plans, woman, on the other hand, was more clearly endowed with other qualities not less precious. It was therefore in the interest of humanity that he wished that medicine might remain in the hands of men.

Notwithstanding Professor Waldeyer's attempt to show his freedom from bias, his address leaves a very different impression. He seems to have forgotten that midwifery was taken out of the hands of women at a period when they were regarded as being of low intellectual capacity, were allowed no educational advantages, and were made to occupy a very humble position in affairs. This we believe was the true cause for the assumption of midwifery by men rather than any inefficiency upon the part of women. Many will demur to the statement that in art and in literature they have accomplished nothing. Women have certainly during the past half-century produced work which will last as long as that of most if not all of their contemporaries. No matter how one may feel in this matter, it is certainly unjust to decide the question in such an off-hand manner. The argumentative and sentimental period of this social problem has passed, and only time can decide whether women should enter the medical profession or be restricted to the duties of a housewife. This decision can be reached by allowing them every opportunity to fight the matter to a successful or unsuccessful finish.

MINOR PARAGRAPHS.

A NEW JOURNAL OF EXPERIMENTAL MEDICINE AND PATHOLOGICAL ANATOMY.

We have received the first number of the "Archives de médecine expérimentale et d'anatomie pathologique," a new bimonthly journal edited by M. Grancher, M. Lépine, M. Straus, and M. Joffroy, under the direction of M. Charcot, and published by G. Masson, of Paris. It consists of 160 octavo pages, mostly made up of original communications. It is illustrated with four handsome lithographs, two of which are in colors. Judging from the contents of this number, the new journal will form an important element in contemporary medical literature.

THE NAVAL MEDICAL SERVICE.

The "Report of the Chief of the Bureau of Medicine and Surgery" for the year 1888, although only a pamphlet of 60 pages, contains much matter of general interest to the medical profession, especially the notes on Alaska, by Passed Assistant Surgeon C. W. Rush and Passed Assistant Surgeon F. S. Nash; observations on an epidemic of sore throat at the Naval Academy, by Medical Inspector T. C. Walton; a report on the Museum of Hygiene, by Medical Inspector H. M. Wells; and extracts from a report on the Naval Hospital at Philadelphia, by Medical Director W. T. Hord.

THE ARMY MEDICAL SERVICE.

The "Report of the Surgeon-General of the Army" for the year ending June 30, 1888, forms a volume of 291 octavo pages, made up chiefly of interesting statistical matter. As in the preceding report, the country is divided into several geographical regions characterized by situation or topography, a plan which, as we have before remarked, makes the report a valuable contribution to medical climatology. Under the head of "Special Remarks" we notice a suggestion by Surgeon E. McClellan, stationed at Jefferson Barracks, Missouri, that seems to us worthy of adoption. In view of the fact that recruits are usually ill prepared to withstand abrupt climatic changes, Dr. McClellan suggests that they be sent to regiments serving in the southern departments during the winter months, and to those stationed in the northern departments in summer.

DR. KÁLLAY'S AERZTLICHER ALMANACH.

The issue of this useful publication for 1889 shows several improvements, notably a division into two dainty little volumes, so that those who prefer to carry about with them only the diary portion need not be encumbered with a thick book. Besides the usual contents of the other volume, it contains biographical sketches of Professor von Nussbaum and Professor Drasche, each accompanied by an excellent portrait.

AN OPERATION FOR IMPROVING THE USEFULNESS OF A THUMBLESS HAND.

In an article in the "Deutsche medicinische Wochenschrift," 1888, No. 30, quoted in the "Centralblatt für Chirurgie," C. Lauenstein recommends that for the purpose of increasing the usefulness of a thumbless hand the metacarpal bones of the forefinger and of the little finger should be sawed through the middle and then both fingers turned inward, brought into opposition with the third and fourth fingers, respectively, and allowed to heal. Lauenstein had an opportunity of resorting to this treatment in the case of a sailor, fifty years old, who had lost his thumb. The result was that, after the operation, as Lauenstein had prophesied, the patient could use his hand for everything except holding a pen.

A SPLINT FOR ANKYLOSIS OF THE KNEE.

Dr. E. Muirhead Little, Surgeon to the National Orthopædic Hospital, publishes in a recent number of the "Lancet" an article on a splint for the treatment of fibrous ankylosis of the knee. This splint is the result of an attempt to improve on the ordinary MacIntyre or other simple extension splint by adding an arrangement that shall tend to push forward the heads of the tibia and fibula as the extension proceeds. The splint is made of japanned sheet-iron. A sliding foot-piece enables it to be adjusted accurately to the length of the patient's leg. The upper and lower parts of the instrument are connected on each side by a short steel bar, about three inches long for the average adult. There is a rack-and-pinion joint at either end turned by a key. The upper pair of joints should be placed higher up than the condyles in order to increase the radius of the circle through which the head of the tibia moves, and thus, while extending the limb, to tend to force the articular surfaces apart.

The splint is applied so that the lower pair of rackwork joints are on a level with the tuberosities of the tibia. A square leather knee-cap holds the knee. Strappings and bandages secure the leg, foot, and thigh, the hamstrings having been first divided, if necessary. Extension is made by turning gradually the two upper racks. The lower pair are used to keep the splint adjusted to the leg, and to imitate the natural turning of the tibia. After the splint has been applied it should be removed only when absolutely necessary. The splint is made adjustable to any degree of subluxation and flexion by varying the degree of flexion and extension of the racks. It may be used to rectify displacement by applying it with the upper joints flexed and the lower extended in cases when, although the limb is fully extended, the tibia is subluxated.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending February 12, 1889:

DISEASES.	Week ending Feb. 5.		Week ending Feb. 12.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	1	1	13	1
Scarlet fever	300	46	366	50
Cerebro-spinal meningitis	1	1	4	1
Measles	292	23	303	17
Diphtheria	193	44	195	59
Small-pox	0	0	0	1

The Health of New York City.—During the four weeks ending Tuesday, February 12th, the following numbers of cases and deaths from infectious diseases were reported to the Sanitary Bureau of the Health Department: Typhoid fever, 41 cases and 11 deaths; scarlet fever, 1,292 cases and 195 deaths; cerebro-spinal meningitis, 10 cases and 7 deaths; measles, 1,231 cases and 93 deaths; diphtheria, 728 cases and 181 deaths; small-pox, 1 death.

The Post-graduate Hospital.—In addition to the purchase of the property 224 to 230, inclusive, the premises No. 222 East Twentieth Street have been leased for ten years, and will be occupied as a babies' hospital. The former babies' ward will be converted into a lying-in department.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from February 3 to February 9, 1889:*

BAXTER, JEDEDIAH H., Colonel and Chief Medical Purveyor, will, by direction of the Secretary of War, proceed to New York city on public business connected with the Medical Department, and on completion thereof return to his station in this city. Par. 17, S. O. 30, A. G. O., Washington, February 5, 1889.

BAILY, JOSEPH C., Lieutenant-Colonel and Assistant Medical Purveyor, and HEIZMANN, CHARLES L., Major and Surgeon, are, by direction of the President, detailed as members of the Army Retiring Board at San Antonio, Texas, convened by War Department order dated January 16, 1889, published in S. O. No. 12, January 16, 1889, from Headquarters of the Army, *vice* Lieutenant-Colonel EDWARD P. VOLLUM and Major FRANCIS L. TOWN, hereby relieved. Par. 15, S. O. No. 28, A. G. O., Washington, February 2, 1889.

STERNBERG, GEORGE M., Major and Surgeon, will, by direction of the President, in pursuance of the authority contained in the provisions of the Act of Congress, approved March 3, 1887, "making appropriations for sundry civil expenses of the Government," etc., relating to the methods of preventing the spread of epidemic diseases, proceed to the island of Cuba for the purpose named in the letter of the President, addressed to the Secretary of War, April 17, 1888, and upon completion of this duty will return to his proper station and submit his report to the President. Par. 16, S. O. 30, A. G. O., Washington, February 5, 1889.

STERNBERG, GEORGE M., Major and Surgeon, is, by direction of the Secretary of War, relieved from duty as attending surgeon and examiner of recruits at Baltimore, Md., to enable him to comply with the requirements of Par. 16, S. O. No. 30, of the 5th instant. Par. 4, S. O. 31, A. G. O., Washington, February 6, 1889.

SHUFELDT, ROBERT W., Captain and Assistant Surgeon, having appeared before the Army Retiring Board at Fort Leavenworth, Kansas, in compliance with Par. 1, S. O. No. 4, January 5, 1889, from this office, will, by direction of the Secretary of War, repair to this city to await action on the proceedings in his case. Par. 12, S. O. 32, A. G. O., Washington, D. C., February 7, 1889.

KILBOURNE, HENRY S., Captain and Assistant Surgeon, having complied with Par. 2, S. O. No. 6, Department of the Columbia, will return to his station, Vancouver Barracks, Washington Territory. Par. 1, S. O. 9, Headquarters Division of the Pacific, San Francisco, Cal., February 2, 1889.

LAGARDE, LOUIS A., Captain and Assistant Surgeon. The leave of absence granted in S. O. No. 290, December 13, 1888, from this office, is, by direction of the Secretary of War, extended three months. Par. 2, S. O. 31, A. G. O., Washington, February 6, 1889.

THEARNS, EDGAR A., Captain and Assistant Surgeon, Fort Snelling, Minnesota, will proceed without delay to Fort Pembina, Dakota, and report to the commanding officer of that post for temporary duty. Par. 3, S. O. 12, Headquarters Department of Dakota, St. Paul, Minn., January 31, 1889.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending February 9, 1889:*

HALL, J. H., Passed Assistant Surgeon. Ordered to Naval Hospital, Washington, D. C.

ECKSTEIN, H. C., Surgeon. Detached from the U. S. Steamer Adams and to wait orders.

DIXON, W. S., Surgeon. Detached from special duty at Baltimore, Md., and ordered to the U. S. Steamer Boston.

Society Meetings for the Coming Week:

MONDAY, *February 18th:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Medico-chirurgical Society of German Physicians; Hartford, Conn., City Medical Association; Chicago Medical Society.

TUESDAY, *February 19th:* New York Academy of Medicine (Section in Theory and Practice of Medicine); New York Obstetrical Society (private); Medical Societies of the Counties of Kings and Westchester (White Plains), N. Y.; Ogdensburgh Medical Association; Baltimore Academy of Medicine.

WEDNESDAY, *February 20th:* Northwestern Medical and Surgical Society of New York (private); Harlem Medical Association of the City of New York; New Jersey Academy of Medicine (Newark).

THURSDAY, *February 21st:* New York Academy of Medicine; New Bedford, Mass., Society for Medical Improvement (private).

FRIDAY, *February 22d:* Yorkville Medical Association (private); New York Society of German Physicians; New York

Clinical Society (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

Saturday, *February 23d:* New York Medical and Surgical Society (private).

Obituaries.

John Call Dalton, M. D., LL. D., died on Tuesday, the 12th inst., at his home in New York, at the age of sixty-four. For a number of months Dr. Dalton had been seriously out of health, being affected with renal disease, but his death was unexpected by most of those who knew him.

Dr. Dalton was born at Chelmsford, Mass., in 1825. He received both his academic and his medical education at Harvard University, being graduated in medicine in 1847. Early in his career he was appointed professor of physiology in the Medical Department of the University of Buffalo. In 1854 he accepted a similar appointment in the Medical Department of the University of Vermont. Five years afterward he was appointed professor of physiology in the Long Island College Hospital. In 1861 he entered the United States service as surgeon of a New York regiment, and afterward served as surgeon of volunteers almost until the close of the war. In the mean time he had been made professor of physiology in the College of Physicians and Surgeons. He continued to occupy this chair until 1883. He was made president of the faculty in 1884, and continued to be its president until the time of his death.

Dr. Dalton was the most renowned teacher of physiology that this country has ever produced. He was the first to illustrate lectures on this subject adequately by means of experiments and impromptu drawings. In the execution of the latter he was unrivaled. He had a peculiar talent for simplifying the intricacies of the subject and for expounding them in the clearest of statements. His best-known contribution to literature was his text book of human physiology, in which his excellence as a teacher is abundantly exemplified. Besides this work, he was the author of several valuable monographs, notable among which were his prize essay on the corpus luteum, his subsequent essay on the same subject published in "The Transactions of the American Gynæcological Society," of which body he was an honorary member, and his recent work on the anatomy of the brain.

Although Dr. Dalton was not a practitioner of medicine, he always manifested a lively interest in the affairs of the profession and was frequently heard in discussions at medical meetings, and his personal qualities endeared him to all with whom he came in contact.

Letters to the Editor.

AN INEXPENSIVE CELL FOR GALVANISM.

207 Clinton Street, Brooklyn, *February 4, 1889.*

To the Editor of the New York Medical Journal:

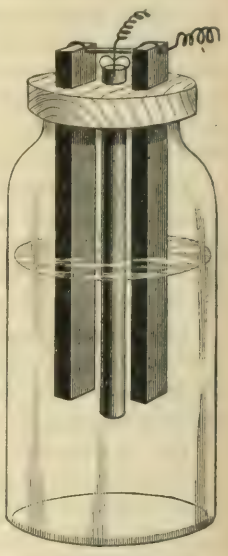
Sir: Under date of January 5th Dr. W. R. D. Blackwood writes in regard to my fruit-jar cell for electrolysis, and states that this and all chloride-of-ammonium cells are useless for electrolysis, and "will not act for more than a few minutes without the usual manganic depolarizer." The fruit-jar cell is essentially similar to the Law cell, as it has the same elements in the same fluid, the only dissimilarity being in the shape of the carbons and the shape of the jars. They have no manganic depolarizer, so that Dr. Blackwood's criticism applies equally to either as a class. He declares that they are of no use for electrolysis, notwithstanding my statement to the contrary, and notwithstanding the evidence of other gentlemen whose experience has been quite extended. In other words, the doctor claims a thing can not be done which others and the writer claim to have accomplished. Dr. A. J. C. Skene has used the "Law cell" for electrolysis, both at his office and in his sanitarium, for several years. Dr. Charles Jewett recommends its use in the article on the treatment of fibroid tumors by electrolysis, in Dr. Skene's recent work on the diseases of women. Dr. Robert Newman, one of the pioneers in this line, is using fifty "Law cells" for the purpose of electrolysis. There are probably many others who have used this form of cell with satisfaction.

Dr. Blackwood also found fault with the construction of the fruit-jar cell:

1. "The creeping incident to such cells will destroy the pasteboard cover in a day or two." I have used them for several months and the pasteboard covers were as good as new. I would not recommend the covers of pasteboard, because so much time is required to prepare them. I have had wooden covers cut out recently at a wood-turning establishment at a cost of a few cents apiece, and these are very convenient.

2. "The difficulty in handling the cathodes by one not skilled in construction will result in so many fractures as to raise the cost much above that of a good disc cell." One should bear in mind that carbon plates can easily be scratched through, but not *cut*. I have scratched through one with the point of a file in a few minutes.

3. "Wire can not be fastened to either electrode without clamps." I disagree entirely with the gentleman. If care is taken, as good a connection can be made without as with clamps. Some connections, of course, are detrimental, but they arise from careless workmanship. If it is desired to use a clamp, a small bolt with the nut will fasten it securely.



(The accompanying cut of the cell should have appeared in the article in which it was first described, "New York Medical Journal" for January 5, 1889, page 15.)

Having answered the objections raised by Dr. Blackwood, allow me in turn to criticise some loose statements in his letter:

"No Leclanché will act for more than a few minutes unless its carbon is fitted with the usual manganic depolarizer." There is no Leclanché cell that is *not* fitted with the manganic depolarizer; it is the essence of Leclanché's modification.

Again, the doctor says, speaking of my cell: "The form suggested will polarize rapidly when the resistance of the human body is intercalated in the external circuit. . . ." With a high resistance the cell will polarize less rapidly than with a low resistance, as is the case with other cells. In employing 100 milliampères my custom is to use my whole battery with the resistance of the rheostat interposed. By turning it on gradually the polarization is scarcely noticeable in short *séances*.

We object to the method of measuring the work done by employing the term coulomb. This indicates the amount of current multiplied by the time of using it. We do not know enough about the current to assume absolutely that a current of half the intensity of another will act in precisely the same way if continued for twice the time.

I have only to add that a gentleman having some mechanical ingenuity and time and patience can make a very excellent battery for electrolytic action. He can not obtain an ampère of current without using a great number, but we do not believe this is necessary, and we feel certain that two hundred milliampères should not be exceeded in the treatment. The writer has heard of one fatal case where a current of great intensity was used, and perhaps there are more of which we shall hear only from private sources.

I should be pleased to make an appointment to show my battery to any member of the profession who may be interested.

A. H. Buckmaster.

Proceedings of Societies.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

Eighty-third Annual Meeting, held in Albany, Tuesday, Wednesday, and Thursday, February 5, 6, and 7, 1889.

The President, Dr. Samuel B. Ward, of Albany, in the Chair.

(*Concluded from page 161.*)

The Technique of Vaginal Hysterectomy.—Dr. J. B. Hunter, of New York, read a paper with this title, in which he said that any operation to recommend itself to the profession must be shown to have a small immediate mortality, and to have immediate and remote beneficial results sufficient to compensate for the risks incurred. Vaginal hysterectomy had taken such a place among operations. The principal dangers following it were shock, hæmorrhage, peritonitis, and septicæmia. The time spent in operation largely determined the shock which would succeed; the hæmostatic forceps was therefore an important adjunct to success. He preferred placing the patient on her back, at the edge of the table, with the limbs flexed and supported. He irrigated with a two-per-cent. solution of creolin, and introduced the largest Sims speculum. In separating the uterus from its attachments, scissors and forceps were used, and one or two strong silk ligatures placed on the large arteries. The tubes and ovaries were to be removed if they came into sight. The vagina was then lightly packed with creolin gauze with strings attached, and the projecting handles of the forceps were packed about with cotton. The forceps might be removed after forty-eight hours. Six, eight, ten, or even fourteen, forceps were used, but scarcely any ligatures. When the forceps were removed, the gauze would be found saturated with an odorless, serous fluid; a light tampon of gauze was to be put in then, but no injection was to be used until the fourth day, no speculum introduced, or vaginal examination made. The opening in the vault of the vagina slowly closed of itself. Recovery was often established in three weeks. He had not been troubled by the occurrence of sepsis or prolapsed intestine. Often less than forty-five minutes were needed for the operation. The forceps made more firm and permanent compression, favored rapid healing and drainage, caused no pain, and exerted little force or traction on the tissues. A Tait's forceps with a bite of an inch and a half was recommended.

Office Photography with the Flash Light.—Dr. H. G. Piffard, of New York, explained his methods of getting pictures of diseased parts and of symptoms capable of photographic representation, and exhibited a series of views by the stereopticon.

Cranial Measurements in Twenty Cases of Infantile Cerebral Hemiplegia.—Dr. E. D. Fisher and Dr. F. Peterson, of New York, presented a report of their work in this field, which Dr. Fisher read. In all these twenty cases they had found the total volume of the skull reduced on the side opposite the hemiplegia. The causes were blows received by the mother, shock, syphilis or other diathesis, cranial malformation, parencephalus or absence of cerebral tissue, and very commonly pressure from delayed labor; also blows received in the first two years of life where the child was sickly from alcoholism in the parents. It was possible to develop a brain so malformed to a certain extent. A rich diet and the muscular training of the opposite side of the body, combined with some mental discipline, were the chief means. He related a case where a boy had been taken in hand by his father under the direction of a surgeon when five years old. The boy had been then apparently imbecile, very cruel, disobedient, and indifferent to rewards or punishments. A course of muscular exercises had transformed him after about seven years into a lad with considerable moral nature and much ability in mathematics and the languages, although still deformed and epileptic.

Dr. A. Jacobi, of New York, remarked that emboli were as often the cause as any other of those mentioned. He emphasized the speaker's remark as to the danger in delayed labor. The interruption to circulation so produced was a potent cause of idiocy; also, when the child was born asphyxiated and did not at once breathe, the brain might be permanently damaged.

Dr. Fisher added that children with heads much narrowed often showed an inability to answer when questioned and to speak clearly, which corresponded to an arrested development of the temporal and temporo-sphenoidal regions of the brain.

A Case of Intubation of the Larynx.—Dr. W. Hailes, Jr., of Albany, read a report of a case of membranous diphtheria in which casts of the trachea were three times coughed up through the tube, nearly strangling the child at the time, but in which a recovery finally took place.

The Causes and Increase of Blindness.—Dr. Lucien Howe, of Buffalo, read a report from the committee appointed two years previously to make investigations in this line. They had found that the number of blind were rapidly increasing in proportion to population, and more so the further south one went, and especially in the States of Nebraska, Arizona, Nevada, and Dakota. Most of the existing blindness was due to infectious diseases of the cornea and conjunctiva. Emigration was increasing the number of those going about with infectious conditions of the eye, such as trachoma, which was common among the lower Irish. They urged that the duty of cleaning the eyes of children after birth should be made more familiar to the public. In asylums and schools, children having such diseases should be quarantined. A similar regulation should be enforced in barracks and prisons.

The Management of Cardiac Dilatation based upon its Ætiology.—Dr. A. L. Loomis, of New York, read the paper. Twenty years ago cardiac murmurs were given great prominence. They were now considered of significance only in connection with the morbid changes which gave rise to them. To prevent dilatation by maintaining compensatory hypertrophy certain conditions must be met: first, the muscular tissue of the heart must be healthy; second, the heart muscle must receive a sufficient supply of good arterial blood; third, muscular waste must be rapidly removed from the body; fourth, the trophic nerves of the heart must be in a normal state. In studying the ætiology of dilatation the causes were divided into primary and secondary. Under the primary were impaired nutrition and extreme anæmia, degenerative changes in the heart muscle, excessive use of narcotics and venery, insufficiency of aortic and mitral orifices with obstruction to the circulation, atheromatous

changes in the coronary artery, arterial sclerosis, and renal disease. Secondary cardiac dilatation, or that following hypertrophy, gave a less favorable prognosis. As a general rule, digitalis was indicated when there was commencing or advanced loss of compensation. If the failure in compensation was extreme and accompanied by dilatation, more or less venous stasis occurred. The essential therapeutic action of digitalis was to raise arterial pressure. If the urinary secretion was increased by the drug, its administration was safe; otherwise its use should cease. The indications for the use of strophanthus, convallaria, strychnine, arsenic, iron, and hygienic management also received attention.

The Ætiology of Croupous Pneumonia.—Dr. G. M. Sternberg, of the U. S. Army, read a paper with this title. He concluded, after investigation of the possibility of a microbic cause of the disease, that such a cause probably existed in most cases, but that the condition of the system of the individual determined whether it became active or not.

Acoustics applied to the Human Chest in Physical Diagnosis.—Dr. J. R. Leaming, of New York, read a paper on this subject. (See this Journal for January 26, 1889, page 85.)

Hernia of the Pleura into the Neck.—Dr. G. B. Fowler, of Brooklyn, read a report of such a case which had occurred in a sickly child from perforation of the right bronchus.

On Expert Testimony.—The President, in his annual address, gave an able review of the trials of the medical expert at the hands of lawyers, and of the reasons for misunderstandings and perversions of necessarily complicated truths which arose whenever a man trained in medicine attempted to impart his views to an uneducated audience. He suggested, as a partial remedy for the evils inherent to the present system by which lawyers handled the medical expert (of their own selection) and the expert put forward by the opposing lawyer entirely with a view to winning their case, that a board of three or more experts be appointed by the court, one or more being nominated by each of the opposing counsel and the odd member by the court; that these experts should be paid by the court and the charge equally divided; and that questions on medical matters should be submitted to and answered by the board in writing.

Basedow's Disease.—Dr. H. R. Hopkins, of Buffalo, read a paper thus entitled in which he concluded that the pathology of the disease was not known. The bulging of the eyes, sweating, and enlargement of the thyreoid often took place on the right side first. Anæmia was often marked and was perhaps the cause. The mental condition presented either extreme irritability or marked placidity and hopefulness. Females were affected much oftener than males. A neurotic taint was often hereditary. Cardiac dilatation and failure occurred in a few cases, but more often the health remained fair after years of rapidity of beat, which also remained after the other symptoms were relieved.

Dr. C. L. Dana, of New York, remarked that a symptom not to be overlooked was the peculiar tremor in these patients, and the diminished electrical resistance due to the moisture of the skin. In treatment he had succeeded best with strophanthus and iodide of sodium. With Dr. Holmes, he had been told, carbacetate of ammonia had given improvement in all cases in which it was tried. The sweating, nervousness, and tremor, together with any one of the three cardinal symptoms, were enough to base a probable diagnosis upon. Dr. A. Jacobi believed the disease connected with changes of a causative nature in the thyreoid gland.

Chronic Headache.—Dr. C. L. Dana, of New York, read a paper with this title. His conclusions were: 1. Pains in the head were either neuralgias, migraines, or so-called headaches. 2. The latter were seated in or referred to the trigeminus, the vagus, or the four upper cervical nerves, in their periphery. 3. Neuralgias might be either central or in the nerve-trunks. 4. Migraine was a periodical discharging neurosis which affected not only the sensory cranial nerves, but also motor, vasomotor, and secretory nerves. 5. The most frequent seat of headache was the dura. Headaches were far more common between the ages of eight and twenty-five years, and thirty-five and forty-five years. 6. The chronic functional non-migrainous headaches might be classified as hæmic or anæmic and diathetic; toxic, as from alcohol, lead, or tobacco; dyspeptic; neurotic; and reflex, as from the tonsil, middle ear, pelvic organs, or bowels. 7. Frontal headaches were never due to conditions in the pelvis, ear, or pharynx, and rarely to dyspepsia, cerebral syphilis, or epilepsy. 8. Vertical headaches were rarely due to toxic or rheumatic causes, but were oftener anæmic, or neurotic, as from exhaustion. 9. Occipital headaches were never due to anæmic and rarely to toxic conditions. 10. Reflex headaches, including those of ocular origin, were best treated by constitutional measures. 11. The headaches resulting from overwork were apt to be neurotic, dyspeptic, and rheumatic combined, and were best treated by antipyrine, warmth, muriate of ammonia, chloral, rest, and diet.

Dr. I. N. Goffe, of Cazenovia, spoke of relieving sick-headache with cannabis indica; and Dr. O. B. Douglas, of New York, recommended phenacetin for persistent neurotic and malarial headaches.

Dr. C. M. Culver, of Albany, remarked that undue action of the ciliary muscles produced a fronto-temporal headache, and astigmatism a temporal headache, while defective action of the extrinsic muscles of the eye or of those of convergence produced an occipital headache.

Dr. E. D. Fisher, of New York, thought organic could not practically be separated from functional headaches, and that localizations were not reliable except in case of pachymeningitis. All the causes varied in effect and probably agreed only in producing a weakened state, from which, according to the nervous make-up of the individual, local anæmia and hyperæmia resulted in varying portions of the dura and brain.

A Contribution to the Surgery of Cerebral Tumors.—Dr. L. S. Pilcher, of Brooklyn, in a paper thus entitled, related the history of a case where a man had received a violent blow in the lateral occipital region from the results of which he had become scarcely more than a brute. The reader had made a large opening at that point, and had found the brain normal. In order to close the wound it had been necessary to slice off a large knob of cerebral substance which forcibly protruded, and death had followed in a few days. Autopsy had revealed a large gliomatous tumor in the fronto-temporal region, just opposite the point where the injury had been received.

The Uses of Galvanism in Gynæcology.—Dr. W. E. Ford, of Utica, read a paper with this title in which he endeavored to show from results obtained in his own practice that electricity could be made an agent of wide usefulness in gynæcology if the proper currents were obtained; and that the quality and action of the galvanic current depended equally on the total area of surface of the metal exposed in the solution, and on the number of cells used.

Inferior Dental Neurectomy.—Dr. J. H. Glass, of Utica, in a paper with this title, described an operation for severing the inferior dental nerve at its entrance into the dental foramen by an incision made from the inside of the mouth. He had thus cured neuralgia in the nerve which had nearly led the patient to commit suicide rather than endure the pain longer, and without disfigurement.

Alopecia Areata.—Dr. L. Duncan Bulkley, of New York, in a paper with this title, concluded that the disease was essen-

tially of nervous origin and non-infectious. If there was a parasite it was dependent on a peculiar constitutional state in the body to allow of its growth, and this state was controlled entirely by the nervous system. Successful treatment was therefore directed to diet, rest, and hygiene.

Surgical Section.

Excision of both Elbow Joints.—Dr. J. P. Creveling, of Auburn, read a description of an operation used in the removal of two syphilitic elbow joints.

The Orthopædic Treatment of Tubercular Diseases of the Knee in Children.—Dr. V. P. Gibney, of New York, in a paper with this title, urged that diseases of the knee joint should receive more attention as soon as a difference in the two knees could be discovered. Since the tubercular foci were then multiple, there could be only general treatment. He applied a light, thin bandage of plaster of Paris to prevent deformity, and also Thomas's perineal truss or crutch in those old enough to walk. He personally preferred rest to passive motion. Jointed splints were placed on either side of the knee; the plaster bandage was not applied over the cap of the knee, but very thickly in the popliteal space. In the latter situation it was then cut through, and, by placing pieces of cork in the cleft, the knee could, day by day, be made to take the extended position. He had other contrivances in connection with this by which any tendency to luxation, subluxation, or genu valgum could be corrected.

Dr. A. M. Phelps, of New York, agreed that immobilization was the first law in treating the disease. He regarded spasm of the muscles as a leading element in producing trauma and deformity of the joint surfaces. He therefore made his plaster splint include the ankle, cut the ham-string tendons, and used a combination of the Thomas and Sayre splints.

Dr. B. Bartow, of Buffalo, employed a leather-case splint, the straight position, and rest, but began passive motion as soon as the spasm of the muscles had ceased.

Dr. John Ridlon, of New York, had found it necessary in many cases, in order to prevent the pounding of the articulations on each other, to carry the bandage from the toe to above the hip. He thought no traction could be applied which would admit of the patient's walking during the continuance of spasm, even if this continued several years.

Dr. Gibney agreed that traction could not materially affect the state of the joint, but he thought we could not keep most patients in the horizontal position till the spasm had subsided, where that continued long, and that bandages passing above the pelvis would prove too troublesome to keep clean or renew when soiled.

Kocher's Method of reducing Subcoracoid Dislocation of the Humerus.—Dr. C. A. Powers, of New York, read a paper with this title, and demonstrated practically also the manipulations needed to reduce without ether or pain this commonest of dislocations at the shoulder. The flexed arm was to be grasped at the elbow with one hand, and the wrist with the other. The elbow was then brought close to the side of the chest and slight traction made. The arm was then rotated outward, until in line with the body, from side to side. The elbow was then lifted upward toward the middle of the chest, and the hand finally carried over toward the opposite shoulder. As used by twenty-five different men in the Chambers Street Hospital in the past five years, it had succeeded on the first attempt and without ether in ninety-eight out of one hundred and twenty-nine cases in which it had been used. He put the patient in the dorsal position, and had an attendant hold the opposite shoulder down.

Dr. Vanderveer, of Albany, remarked that his preceptor, Dr. Gunn, had published, thirty years ago, in the "Peninsular Journal" in Michigan, an account of the anatomy and pathology of this form of dislocation, and of manipulations by which it could be reduced, practically identical with Kocher's.

Dr. R. F. Weir and Dr. R. Abbe, of New York, testified as to the value of the method.

Surgery of the Spine.—Dr. R. Abbe, of New York, read a report of two cases in which he had opened down upon the spinal cord, had excised diseased parts or growths attached to it, and had obtained rapid recovery and relief of symptoms. He added an account of other operations in the literature of the subject. In the first case the symptoms of spinal tumor had developed, anæsthesia of the lower half of the body, twitchings in the legs, a girdle sensation, pains, incontinence of urine and fæces, and a marked hectic and progressive wasting. He had exposed the cord by cutting away the spines and laminæ with the rongeur, and had found and removed a large degenerated tumor. The patient had at once recovered.

In the second case an ascending neuritis had spread up the ulnar nerve from a bone disease of undetermined nature in the right hand. The pain had been violent and had persisted in spite of medical, electrical, and surgical treatment, including nerve stretching, undertaken by a large number of physicians in succession. Amputation of the arm high up had finally been performed, but the pain had not been changed in quality by this proceeding; the patient had developed tremor and other general nervous symptoms, and half a grain of morphine at short intervals had scarcely mitigated his suffering. He had first exposed the spinal cord as far as the dura, and severed the sixth and seventh cervical nerves on the right without the foramina, but afterward the old pain had returned unabated. He had then opened the dura (without ether), evacuated the spinal fluid, and severed the posterior roots of the seventh and eighth spinal nerves, by which at the time great pain had been caused. The least touch on the posterior columns of the cord had caused exquisite pain through the whole body below that point. After this operation the pain had been markedly lessened, so that the morphine had been discontinued. Under the microscope the nerve roots had been found changed by inflammatory exudation. The dura of the cord had been found not sensitive.

Dr. V. P. Gibney, Dr. R. F. Weir, and others discussed the operation, and the possibilities of spinal surgery in spina bifida, spinal sarcomata, injuries and dislocations of vertebræ, and some forms of Pott's disease. As in the brain, operations in which the dura was not opened were not complete.

On the Management of Hip-joint Disease.—Dr. A. M. Phelps, of New York, read a paper thus entitled and showed the apparatus he used. He considered the reflex spasm caused by the inflammation in the joint as mainly causing changes in the joint by pressure of the opposed surfaces. He relied on immobilization and extension and did not fear ankylosis; he put the whole body in a case-splint until the inflammation had subsided. Then he fitted an extension and abduction splint by which traction was made in the line of the neck of the femur and which also acted as a hip-crutch. All abscesses were to be incised, scooped out, and washed.

Dr. V. P. Gibney advocated a simpler apparatus which the patient could adjust himself, so that he could go away to a suitable climate and otherwise get the treatment necessary in any other form of tubercular disease.

On the Treatment of the So-called Perityphlitic Abscesses.—Dr. R. F. Weir, of New York, read a paper with this title in which he endeavored to show the really intraperitoneal nature of the beginning of the process and the wisdom of operation before septic symptoms appeared. He concluded:

1. That fæcal accumulation and cæcal perforation were not to be regarded as causes of the affection.

2. That absolute rest and sedatives, not purgatives, were likely to relieve an impending attack; such attacks might return several times and end in an abscess, but they might entirely cease.

3. That most cases tended toward perforation and gangrene, but that pus formed first inside the peritoneal cavity. The inflammation spread with each attack toward the adjacent bowels. It sometimes made a ragged perforation backward through the peritoneum.

4. That if a tumor was detected, it should be opened as soon as signs or symptoms appeared showing that pus had formed.

5. That when the symptoms showed an increase of the local peritonitis for thirty-six hours running, the danger from an incision was less than from expectant treatment.

6. That if general peritonitis was suspected it could be shown to exist or not by a fine needle thrust deeply into the hypogastric region or by an exploratory incision.

7. That if general peritonitis was found, irrigation and drainage without handling was best. Only one in twenty-five had recovered by treatment after suppurative peritonitis had appeared; all his six cases had died. Treves cured suppurative arthritis by simple irrigation.

8. That many deaths following operation were not due to suppurative peritonitis, as he had demonstrated at autopsies. These patients had apparently died of paralysis and obstruction in the intestine resulting from the septic process and from persistent vomiting. Washing out the stomach under these circumstances sometimes re-established peristalsis in the intestine, and saline purgatives were also in order.

9. Enterotomy was to be entertained in certain cases.

10. After an attack had lasted twenty-four hours the sooner it was operated on the better; but even where attacks were soon recovered from, sometimes, in time, the abscess burst. Pus formed more rapidly than was supposed; he had known a large grumous pus cavity to form in fifteen hours after pain first appeared, it being the third attack. Mackenzie was wrong in saying that a repetition of attacks made invasion of the peritoneal cavity less likely.

Considerations concerning the Operation for Hard Cataract.—Dr. H. D. Noyes, of New York, in a paper thus entitled gave an elaborate review of what cases were suitable for operation, the time to operate, the method, details of management, and accidents and their remedies.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Meeting of December 24, 1888.

The President, Dr. A. S. Hunter, in the Chair.

Cerebral Syphilis.—Dr. R. N. Parsons read a report of a case which illustrated the necessity of an early, long, and thorough treatment of syphilis. The patient, a man of forty-five, had suffered from loss of appetite, poor sleep, and depression, so that he feared "brain-softening" from overwork and anxiety. He had been stupid and excitable, or drowsy and irritable, by turns; his ideas had been confused; a feeling of faintness at times troubled him, at others a loss of speech or temporary unconsciousness. Subsequently there had been *grand mal*, succeeded by *petit mal*, and he had died shortly afterward, it being too late for successful treatment. The autopsy showed extensive syphilitic changes in the brain.

The Treatment of the Diseases of the Nose by the General Practitioner.—Dr. N. S. Roberts, in a paper with this title, urged the importance of the diseases of the nose, and their far-reaching effects on the general health. He thought too little attention was paid to them by general practitioners, especially when it was considered how perfectly accessible modern instruments had made the nose and its connected cavities. He gave instances where asthma, hay fever, headache, neuralgia, disturbed vision, vertigo, and other complaints had each been found due to easily cured conditions of the naso-pharynx.

The Treatment of Puerperal Endometritis by the Dull Curette.—Dr. E. H. Grandin read a paper with this title. (See page 171.)

Dr. J. E. Janvrin thought the points made by Dr. Grandin practical and well taken. In his own experience in confinement at full term the curette had never been called for. He should suppose that in many cases of abortion or miscarriage where a portion of the membranes was retained, the curette would be an excellent means of cleaning out the uterus, and he would think it justifiable to use it before any symptoms of septicæmia appeared. The dull curette—even the sharp curette—was quite safe in trained hands. He would advise washing out once after using the curette.

Dr. A. F. Currier took issue with Dr. Grandin as to the non-advancement of the science of obstetrics, and instanced the late introduction of the axis-traction forceps, the improved Cæsarean section, and Tarnier's method of sustaining prematurely born children. He was in favor of exploring with the curette as soon as three or four washings failed to destroy a fœtid odor in the lochia; but when a case was first seen late in the process, he would use the curette at once. French journals had lately been recommending the scraping out of all uteri after confinement, but this was an extreme. But in all cases where there was any doubt, by going over the uterine mucous membrane with a large wire curette, he could go away feeling sure that nothing was left which might afterward cause him trouble and regret.

Dr. R. A. Murray thoroughly approved of curetting the uterine cavity in all cases of septic endometritis, as evidenced by pain on pressure, temperature, and fœtor. When the finger, placed in the cervix just after the vagina was cleaned, came away with a bad odor, he went in with the curette. Washing out was hardly more than a palliative measure; at least it had no power to dislodge shreds and clots. On this account it had to be repeated many times in some cases. In using the curette, a finger should always precede to explore the cavity and to guide the instrument, and the uterus should be pressed downward by a hand on the abdomen. A brush for the same purpose as the curette was used by some with doubtful advantage. Pelvic abscesses, salpingitis, adhesions, and abscess of the ovary, which so often followed a confinement and subsequent endometritis, and which frequently made necessary a dangerous operation in order to save life, might be made far less common by a timely use of the curette. The uterus was more accessible to curetting and washing out with the patient on her back than on her side. After the operation we might expect the uterus rapidly to contract and the discharge to lessen in amount and to improve in quality.

Dr. Malcolm McLean, after curetting, wiped out the uterus with a piece of absorbent cotton dampened in a carbolic solution.

Dr. A. M. Jacobus discussed the question of the immediate treatment of abortion, when the woman was still bleeding. He preferred himself not to wait at all, but to remove bits of placenta remaining with a polypus forceps. Immediately after the escape of the fœtus, however, it was better to tampon the cervix for a few hours, but the curette should then follow.

Dr. John Messenger, speaking from a long and extensive obstetrical practice, thought prevention as important as cure, and had always directed his attention to securing a healthy condition in the uterus previous to the woman's delivery, using such drugs as actæa racemosa, viburnum, or stillingia for this pur-

pose, and giving helionas after delivery to aid involution (instead of ergot), and, in case of a weak back, cimicifuga. He believed curetting not without serious danger, especially if done by practitioners who were not also trained surgeons.

Dr. J. L. Morrill and Dr. B. P. Austin strongly indorsed curetting for puerperal endometritis, advising a careful exploration in all cases of doubt before ergot was given, the finger preceding the instrument always.

NEW YORK SURGICAL SOCIETY.

Meeting of December 12, 1888.

Dr. Charles K. Briddon in the Chair.

Successful Operation for the Cure of Ventral Hernia.—Dr. J. A. Wyeth presented an Italian woman, aged thirty-five, who had borne seven children. During her last pregnancy she developed ventral hernia, which reached an enormous size, so that it contained at least half of the small intestine. She entered Mt. Sinai Hospital, where the reporter operated on October 30th, excising the hernial sac, together with a large piece of the redundant skin, and closing the peritonæum, recti muscles, and fascia with a single row of Chinese twisted, interrupted silk sutures, the wound being about fourteen inches in length. The patient's bowels were moved on the third day, and the sutures were removed at the time of the first change of dressing (on the tenth day), the union being perfect.

Obscure Injury of the Elbow.—Dr. Wyeth presented a male patient who last July fell fourteen feet, striking upon the outer side of the left arm. The movements of the forearm were almost entirely suspended. The reporter thought that the radius had been dislocated downward and backward. There were no evidences of fracture now, although they may have been present at the time of the accident. The speaker intended to attempt reduction under ether, or, this failing, to perform arthrotomy.

Dr. Lange thought that there was originally a T-fracture, the external condyle being separated, but that there was no evidence of luxation.

Peculiar Congenital Deformity in an Infant.—Dr. Lange presented an infant two months old having four fingers on one hand and five on the other, one of the latter being a rudimentary finger which might be regarded as a thumb. The left shoulder joint presented a rare deformity; the acromion process could be felt distinctly and seen protruding, while the head of the humerus was felt in the infra-spinous fossa. There was evident shortening of the humerus, with a considerable degree of inward rotation. In most of the similar reported cases there was paralysis, which was absent in this instance. The deformity may have been due to some unusual pressure during pregnancy. Delivery was normal and spontaneous. There was little prospect of relief by an operation, as the glenoid cavity had doubtless undergone changes. There was no syphilitic history.

Dislocation of the Head of the Femur into the Obturator Foramen in an Infant.—Dr. Lange also presented a child, aged seventeen months, who when six weeks old had "pneumonia and convulsions," after which her left leg was found to be rotated outward and abducted, and was apparently longer than the right. Flexion was possible up to 160°. The leg could be rotated outward until the sole of the corresponding foot could be placed in the axilla. Every movement was possible except adduction. The head of the femur could be felt between the adductors; there was some paresis of the latter muscles, which might be due to pressure of the head upon the obturator nerve. The dislocation was doubtless due to relaxation of the ligaments and caused by sudden and violent muscular contraction. The treatment would consist in reduction under an anæsthetic. Probably a bloody operation would become necessary.

Dr. Wyeth asked if the child had presented by the breech; he had known of a fracture of the femur occurring during a difficult breech-delivery.

Dr. Lange replied that the presentation was a vertex one and the delivery rapid and easy, according to the mother's statement. He had only seen the child about a week ago at his office.

Successful Case of Nephrectomy for Pyonephrosis.—Dr. Lange showed a patient (with the specimen) and related the following history: The man, whose father died of locomotor ataxia and his mother of phthisis, was never ill until eight years ago, when he began to suffer from attacks of frequent micturition and vesical tenesmus. In the fall of 1886 he had a sudden chill, accompanied by pains in the loins and bladder. After passing some blood he felt relieved. He was first seen by Dr. Lange in the middle of February, 1888, in consultation with Dr. Stimson and Dr. Loomis. He had been treated by Dr. Loomis for pyonephrosis of the right kidney. The patient was confined to his bed and was in very poor general condition, so that it was decided to drain the kidney through a lumbar incision. On exposing the organ, however, it was found to be so extensively diseased that the reporter removed it. Koenig's oblique incision along the crest of the ilium was added to the ordinary lumbar one, which greatly facilitated the removal of the kidney. A temporary elastic ligature was placed around the pedicle. The latter probably became vascularized, as it was seen at the bottom of the wound some time after the operation, covered with small reddish points of granulation, and was never expelled. The ligature had to be removed at the end of four weeks, and a fistula remained, which eventually healed. The patient had a slow convalescence, being in a condition of acute mania for two weeks, so that he required two attendants. He was now in good health, his urine being quite normal.

In reply to a question by Dr. Weir, the speaker replied that the patient's mania could not have been due to iodoform-poisoning, as that drug had not been used in powder; the wound was packed lightly with weak iodoform gauze for the first twenty-four hours. There was very little elevation of temperature during the delirium, although the pulse was greatly accelerated.

Cystic Kidney removed by the Lumbar Incision; Recovery.—Dr. Lange showed a specimen of cystic pyonephrotic kidney of unusually large size. It developed on the left side, and reached the size of a man's head. The patient (who had been under the care of Dr. Waldstein) had had no pain, but only gradual loss of strength, and detected his tumor accidentally. The relations of the colon to the tumor had been satisfactorily established by inflating the gut by the aid of a stomach-tube introduced into the rectum. The incision was very long—longitudinal lumbar with two cross-incisions along the border of the ribs and the crest of the ilium—and it was necessary to resect a portion of the eleventh rib. There were several separate cysts, containing a thick, viscid, purulent fluid, which were emptied in turn. The operation lasted between two and three hours, and the patient had made a good recovery. The reporter said that he always performed retro-peritoneal nephrectomy when he feared infection; in the case of large tumors it might be necessary to open the peritoneal cavity.

Dr. Weir asked the reporter why he had departed from the usual custom of performing nephrotomy as a preliminary step to nephrectomy.

Dr. Lange replied that in a number of cases he had tried

to preserve a diseased pyonephrotic kidney by limiting the operation to nephrotomy, but patients generally lost more than they gained, in consequence of the prolonged suppuration. The only advantage was that it was easier to do nephrectomy subsequently. In only one instance did he succeed in saving a kidney by draining it. It depended upon the degree of disorganization whether the organ ought to be removed or not.

Dr. Weir said that experience had taught surgeons that in the case of patients who were in bad condition nephrotomy offered the better chance of recovery than primary nephrectomy. In some cases, however, the abscesses were separated from one another, or did not communicate with the general cavity of the pelvis of the kidney; in such, immediate nephrectomy was preferable.

Dr. Lange said that both of the cases reported belonged to this category. When there was one or several abscesses in the kidney which could be opened and drained, he would not remove the organ.

Dr. Abbe asked if the ureter was separated from the vessels when the elastic ligature was applied.

Dr. Lange replied that the rubber cord was thrown around the pedicle *en masse*, but that he always endeavored to separate them with silk ligatures before removing the cord. He did not tie the single vessels separately.

Dr. Briddon said that he witnessed the operation in the second case. The tumor resembled a large fibro-cyst of the uterus, the central cavity containing not less than a quart of fluid.

Dr. Wyeth approved of the transverse incision where the tumor was very large.

Dr. Briddon said that he had been surprised at the facility with which the kidney was removed through this incision.

Dr. Wyeth referred to a case in which he had gained sufficient room by making a T-shaped incision.

Excision of the Superior Maxillary Nerve for Tic-douloureux, Sequel to an Extraordinary Cerebral Injury.—Dr. Abbe presented a male patient upon whom he had successfully operated six weeks before.

The man's unique injury had been reported in detail by Professor Zenner, of Cincinnati, in the "Medical Record," October 10, 1885. It was very briefly as follows: In July, 1885, while lighting the gas in a millinery show-window, he fell and was pierced in the neck by a sharp upright iron rod used for holding hats. The rod entered under the right jaw and went upward, inward, and backward. It stuck so tightly, presumably in the bone of the base of the skull, that it took "a forcible effort by a powerful man" to remove it. It was at once observed that he could neither speak nor use his right arm or leg.

Professor Zenner saw him half an hour afterward and found complete paralysis of the right upper and lower extremities, of the tongue, of the muscles supplied by the lower branches of the facial nerve on both sides, and that he could neither swallow nor utter a sound. He was conscious, but restless and in much pain on the left side of the face. Later, anæsthesia was observed of the upper two branches of the trifacial nerve, which was probably present from the first. During one week he was nourished *per rectum*, but began to swallow a very little and to speak a few sounds a few days after the accident. In two weeks he could speak single words fairly and could walk by the aid of crutches, though there was still paresis of the right extremities. There was constant driveling of saliva. At six weeks his hemiplegia was no better.

Hemianæsthesia of the portions supplied by the fifth nerve—namely, the entire half-face and neck and scalp, except the lower half, the ear—was now present. The subjective sensations grew worse. Constant pain was in the left half-face. Polyuria set in. Excessive flow, with sp. gr. 1·010, and no sugar. This was controlled after a while. The right foot dragged badly, and the hand had feeble flexion and almost complete paralysis of extension. Slight paresis remained on the right side of the face, but no aphasia.

The diagnosis was made of a lesion of the pons and crus, with injury to the emerging fifth nerve from a penetrating wound of the basis cranii, giving crossed paralysis—viz.: right hemiplegia, with left facial hemianæsthesia. The patient since 1885 had been examined and lectured upon by the most eminent neurologists, both in New York and Germany, where he had been during the past year in search of relief from the tic-douloureux. Finding no encouragement, he had attempted to take his life by a pistol wound of the chest, the mark of which he bears.

He lately came under the care of Dr. Græme M. Hammond, who referred him to the reporter. Before operation he was shown by Dr. Abbe to the Surgical Society and showed the following condition: Absolute facial anæsthesia of the left side, the ocular conjunctiva bearing the finger to be rubbed about within the lids without noticing it. The nostril, lips, and mouth utterly insensitive to the prick of pins. The sense of taste and smell were gone on the affected side. The right foot showed a slight trace of the muscular weakness. The right arm and hand responded slowly and poorly to volitional attempts at flexion and extension, and, on attempted rapid or powerful actions of this limb, the patient experienced a sharp respiratory spasm, ending in a species of snort, which seemed to be explained by an interruption of the message at the site of the cicatrix between the surface of the convolution and the hand, giving a reflex irritation to the respiratory center. It was the opinion of the late Dr. Sands, who among others saw him in consultation, that excision of the nerve in front of the supposed cicatrix could hardly be expected to relieve the neuralgia. However, as only one branch was neuralgic, while all were anæsthetic, Dr. Abbe decided to operate.

On October 20th he removed the superior maxillary nerve through a vertical incision in the cheek by Carnochan's method, finding little difficulty in breaking through the front and back wall of the antrum and cutting off the nerve at the foramen rotundum. Meckel's ganglion was broken up by lacerating the tissues in which it was imbedded.

The wound healed promptly without suppuration. The neuralgic pain was at once completely relieved and has not returned. Furthermore, an unexpected and almost inexplicable sequel has ensued, in that sensation has returned completely over the entire side of the face, except in the immediate vicinity of the scar, the ocular conjunctiva, lower lid, and part of the upper lip. Careful tests of smell and taste made by Dr. Hammond and Dr. Abbe show that he has partially recovered both faculties on the affected side.

The patient, as shown, was in excellent health, free from pain, and experienced only slight disability of the right arm, with anæsthesia about the scar on the cheek.

The Complication of Subluxations with Fractures of the Femur.—Dr. Kammerer read a paper with this title. (See page 175.)

Dr. Weir cited the case of a very stout woman who was sent to the New York Hospital seven weeks after suffering a thyreoid dislocation of the femur. In attempting to reduce the dislocation by Bigelow's method, he fractured the thigh-bone below the trochanter. As he was unwilling to perform a cutting operation to effect the reduction of the displaced hip, the fracture was treated in the ordinary manner and the patient went home at the end of the fifth week. Nothing was heard from her for several months, when her physician reported that she was walking with only a slight limp. The speaker had intended, in case the attempt at reduction had failed, either to reduce the dislo-

cation by a cutting operation or to do osteotomy. He had had a case of fracture of the head of the humerus complicated with dislocation in which the latter was reduced by traction and manipulation, by the latter principally. In another case of compound fracture of the shoulder with dislocation, the upper fragment was drawn into position with lion-forceps.

NEW YORK CLINICAL SOCIETY.

Meeting of November 23, 1888.

The President, Dr. J. West Roosevelt, in the Chair.

Fresh Air and Bone Production.—Dr. R. Abbe presented a case showing the influence of pure air and hygiene in determining the formation of bone. The patient, a boy of six years, had had a tuberculous white swelling of the knee joint. Dr. Abbe had performed resection two years before, cutting away the diseased bone and leaving only a shell of healthy bone behind. The condition of the knee, however, had continued bad, fresh sinuses breaking out and the tubercular process going on to honeycomb the remaining bony structures of the joint until it appeared likely that amputation would before long be inevitable. He had decided, however, to make trial first of rest and country air. The child had been sent out of the city and been kept outdoors, and as a result a remarkable solidification had taken place in the joint, the sinuses had healed, and the boy had a good leg on which he could walk or run with but little inconvenience. Dr. Abbe regarded the case as an admirable result in conservative surgery, and as showing how powerfully hygiene influenced the growth of bone in a joint, even when riddled by tuberculous caries. The boy had shown no signs of tubercular deposits elsewhere. Bacilli in countless numbers had necessarily been disposed of by the body at the same time that the structures about the knee joint had healed and the general health had been restored.

Dr. B. F. Curtis presented a young man whose knee joint he had resected last September for tuberculous caries. The patient had been troubled with his knee for four years previously. On admission to St. Luke's Hospital the knee was much swollen and the patient in a markedly hectic state, the temperature reaching 102° to 103° every afternoon, so that a pulmonary complication was suspected. In the resection that was at once performed it had been found necessary to remove only the synovial membranes and a thin layer of bone. The knee was fastened together with awls in a slightly flexed position. The wound healed by first intention, and complete recovery was obtained both in the joint and in the general health.

Dr. Abbe remarked that a slight flexion of the limb after resection gave always a more useful member. He had taken care to secure it in the case previously presented. He thought primary union unusual after these operations.

The President thought there was no doubt but that the tuberculous deposits extended in all cases far outside the principal foci, and that all of them were never removed in our operations. Their presence in the neighborhood of the diseased bone, which the surgeon recognized as tuberculous and cut out, explained to him the prolongation of the process which was usual for some time after a resection, with its slowly healing sinuses and tenderness of the parts.

Dr. W. H. Katzenbach presented two patients with aneurysm of the thoracic aorta. He thought it remarkable what improvement was usually obtained from small doses of iodide of potassium, beginning with five grains daily and going up slowly to fifteen, always stopping at the point where coryza was produced.

A New Treatment for Aneurysm.—The President reviewed a plan of treatment for aneurysms which he and Dr. Abbe had used, and their accounts of which had been misunderstood. Following the lead of an English surgeon—Barwell—they had introduced into the sac a quantity of closely coiled piano-wire, and had then passed through the wire a strong electric current, causing the whole contents of the sac to clot about the loops of the wire. Clotting would not take place about the wire without a current, and, on the other hand, electro-acupuncture with needles did not lead to a clotting of the whole contents of the sac. Small clots formed about the tips of the needles, which fell off when the needles were withdrawn. In one instance he had introduced a hundred and fifty feet of wire by mistake. It had curled up inside without producing any disturbance. His method was to use the finest wire obtainable, coil it on a small spool, and run it into the sac through a hypodermic needle. He had used a current from thirty Smee's cells, of over fifty milliampères, and had continued it for fifteen to twenty minutes. In all cases marked relief of pain and pulsation had followed and continued for a considerable time, and the tumors had grown smaller. Coagulation could be experimentally produced in an egg in the same way. In a number of cases where this plan of treatment had been followed and marked relief obtained for a time, autopsies had shown a firm clot which, with the coils of wire, entirely filled the sac. In applying the current, in order to insure the discharge of the current within the sac, he coated the hypodermic needle with collodion.

Labor delayed by Adhesions between the Membranes and Uterus.—Dr. J. H. Emerson read a paper with this title. (See page 181.)

Paralysis of the Third and Sixth Cranial Nerves following Moderate Doses of Quinine.—Dr. H. C. Coe read the following account of a case occurring in his practice: Mrs. W., aged forty-five, entered the Cancer Hospital with extensive scirrhus of the left breast, the axillary and supraclavicular glands being greatly enlarged. He operated October 22d. Owing to a serious error in the preparation of the sponges, the wound suppurated so that he was obliged to open and allow it to heal by granulation. During the first two or three days there was an evening rise of temperature to 102°, but subsequently it did not rise above 100°. The pulse remained at 120 and higher for two weeks and was rather feeble, but under three-minim doses of tincture of strophanthus, four times a day, it was finally reduced. The wound soon granulated and convalescence apparently set in, except that at the end of the third week there was still a daily rise of temperature to 100°. After a review of the case, he had come to the conclusion that this daily febrile movement might be due to malarial toxæmia, of which the patient gave a clear history. Quinine was given in doses of five grains four times a day with a drachm of dilute hydrobromic acid. This treatment was begun November 12th, the strophanthus being discontinued. On November 16th it was noticed that the patient had internal strabismus of the left eye, with slight ptosis. It appeared, on questioning the patient, that ptosis with slight internal strabismus of the left eye had developed on a previous occasion after the continued administration of fifteen grains of quinine daily. He had at once suspended the drug, one hundred grains having been taken in all. The paralysis became more marked, so that two days later the patient could not see to walk or even to grasp objects. Then the strabismus had improved rapidly, the ptosis more slowly, till at the present time there was only a decided droop of the left eyelid and a slight squint. No treatment had been employed. It was unusual for such moderate doses of quinine to produce paralysis of the cranial nerves, and also, in the opinion of Dr. Starr, whom he had consulted, quite uncommon for pto-

sis to be associated with internal instead of external strabismus. No other symptoms of cinchonism had appeared.

Subluxation of the Inferior Maxilla backward from Spasm of the Muscles. Dr. Coe also read an account of a case of this sort, and asked for any opinions which might throw light on this somewhat rare occurrence. A young married lady had lately consulted him on account of inability to close her jaws. She was of nervous temperament, but had no hysterical symptoms. In the state her jaws were then in she could not eat, but could talk with difficulty. On examination, he had found the jaws slightly parted and rigid, and the lower teeth some distance behind the upper. They could not be brought into contact. The muscles of the jaw were rigid and evidently in spasm. He had been unable to detect any unnatural bony prominences. The patient had borne his unsuccessful attempts to replace the jaw with considerable fortitude, although evidently in great pain. He had put her under ether, when, as soon as general muscular relaxation was complete, he had easily lifted and slipped the jaw into place, into which it returned with a snap, and he had there secured it with a bandage. After recovering from the anæsthetic, the patient had removed the bandage, and had suffered no further inconvenience for some time. It appeared that she had retired the previous night feeling very nervous and tired, and that the accident had occurred while she was asleep. She informed him that it had quite often happened, when she was tired and lay down, that her jaws seemed to become loosely articulated and the lower one to become displaced; but if awake at the time this happened, she was able to get the jaw into place again, the reduction being accompanied with a sound and causing her considerable pain. However, she said, on two or three previous occasions after going to bed in a state of considerable nervous excitement or of exhaustion, her jaw had become dislocated so that she had not been able to replace it, and had been compelled to summon a physician. The accident always occurred in the night after she was asleep, and was accompanied by a snap which awakened her. At the same time there would be considerable pain over the articulations. Attempts to replace the jaw without an anæsthetic had been invariably unsuccessful, giving rise to severe pain and an exaggeration of the muscular spasm. She had worn an apparatus for some time, but it had not prevented a recurrence of the accident. Several months after he had first seen the patient (who had been perfectly well in the mean time) she became very much tired one day by preparations for a journey, and that night her jaw again became displaced in the same manner. He had again reduced it under ether and had noticed that it was necessary to hold it forward in place till she became conscious enough to exert her will power again, as it tended to drop back by its own weight when the muscles were relaxed.

The speaker had no doubt that the condition had been one in which there was a subluxation backward, with a displacement of the interarticular fibro-cartilage, due to a peculiar laxity of the ligaments, especially the capsular ligament, and associated with a spasm of the muscles, of purely nervous origin. The spasm must have been particularly in the temporal and internal pterygoid muscles. The patient was a lady of great common sense, and had come to regard the accident as simply an unpleasant episode for which she was not responsible. She could not foretell its occurrence, but was always able to associate it with unusual physical or mental strain during the previous day.

Last summer at Long Branch he had been called to see a lady of a nervous temperament who had struck a boy, in a moment of great excitement and anger, and had immediately after been greatly alarmed lest she had injured him dangerously. As a result of these sudden and extreme emotions, she had had a nervous spasm, her jaw had become fixed so that she could not open her mouth, and her friends had feared she was suffering with lock-jaw. The condition proved only temporary.

Dr. Ashe remarked that he had seen cases of subluxation of the lower jaw from gaping, but they occurred in a forward direction and never during sleep.

Dr. L. E. Holt exhibited photographs and read an account of various intestinal lesions which he had found in children.

Dr. H. M. Biggs showed several specimens of the parasite *Distoma sinense* which he had removed in large numbers from the gall-ducts and liver of a Chinaman. He remarked that they occurred only in the Chinese or the inhabitants of countries south of China. The distoma threw off eggs in great numbers which passed away in the dejections of a person in whom the worms had found lodgment. From the soil of gardens fertilized with such excrement, the eggs probably adhered to the leaves of salad, herbs, cresses, etc., and so were taken again into the digestive tract of some other person. They seemed to stop in the duodenum, and from there to wander up into the gall-ducts and liver as fast as hatched out. Their presence in the liver was always associated with paralysis in various parts of the body. In the case in question the right arm had been affected. The specimens shown were about two thirds of an inch in length, flattened, with a diamond-shaped head tapering to a pointed extremity, and were of a dark color.

Renal Colic.—Dr. W. H. Flint showed some small crystals of oxalate of lime which had been passed by a patient under his care after a renal colic lasting for eight days. The symptoms had been very severe to have been caused by such minute crystallizations. Considerable blood had been passed every day. It had been necessary to keep the patient under morphine throughout. With the discharge of the little crystals, complete relief had come.

Dr. Coe suggested that there may have been a temporary impaction of a larger concretion at the mouth of the ureter. He related the history of a case where severe renal colic had proved to be purely hysterical, in which, of course, no blood and no crystallizations had been passed.

Dr. Biggs related the history of a case where there had been a violent renal colic at intervals of ten days, and only the most minute concretions had been passed at any time.

The President believed with Dr. Coe that in such cases there might be a large calculus impacted for the time at the outlet of the bladder.

Dr. Flint replied that the escape of blood at the time these fine particles came away made him think they must have been the cause of the attack.

Dr. W. Mendelson had also seen cases in which great pain was accompanied with the discharge of fine sand only, but believed that here a larger stone was in the bladder.

The President related the history of a case of purely hysterical renal colic in which there was violent pain radiating into the labium. The patient's father had had a true renal colic many times, in which the pain radiated into the testicle. The daughter imitated in every feature the attacks her father had suffered from, except that she passed nothing after her attacks.

Dr. Abbe gave the history of a case of hysteria in a girl of twenty-four in which there was apparent paralysis of one leg with partial atrophy from disuse, and where the patient had had attacks of general convulsions for three years—all shortly before menstruation. When she came under his care she was still frequently having the apparently epileptoid convulsions, in which she developed full opisthotonos and became apparently unconscious. He noticed, however, that some groups of muscles were at the same time relaxed, though she bit her tongue and frothed at the mouth. Suspecting hysteria, he made pressure on the ovaries, upon which the girl rolled about on the bed to avoid

him, and half a minute later spoke about her wishing to go home. Her next attack was checked by dashing some ice-cold fluid in her face. To prove her paralysis of hysterical origin or not, he had put her under ether. She apparently remembered about it, and had no use of the limb while going under the influence of the anæsthetic, but, on emerging from it, forgot, and moved the limb freely. Three days later she was walking all about the ward. The speaker thought the case would have furnished the practitioners of the mind-cure with an opportunity for some remarkable healing.

Book Notices.

BOOKS AND PAMPHLETS RECEIVED.

The Causation of Disease: An Exposition of the Ultimate Factors which induce It. By Harry Campbell, M. D., B. S. (Lond.), Member of the Royal College of Physicians, etc. London: H. K. Lewis, 1889. Pp. x–368.

Clinical Lectures on Diseases of the Urinary Organs. (Delivered at University College Hospital.) By Sir Henry Thompson, Surgeon Extraordinary to His Majesty the King of the Belgians, etc. Eighth Edition. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. xiv–470. [Price, $3.50.]

Hand-book of Materia Medica, Pharmacy, and Therapeutics. Compiled for the Use of Students preparing for Examination. By Cuthbert Bowen, M. D., B. A., etc. Philadelphia: F. A. Davis, 1888. Pp. vi–366. [Price, $1.40 net.]

Obstetric Aphorisms for the Use of Students commencing Midwifery Practice. By Joseph Griffiths Swayne, M. D., Consulting Physician to the Bristol General Hospital, etc. Ninth Edition. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. vii–159. [Price, $1.25.]

Exploration of the Chest in Health and Disease. By Stephen Smith Burt, M. D., Professor of Clinical Medicine and Physical Diagnosis in the New York Post-graduate Medical School and Hospital, etc. New York: D. Appleton & Co., 1889. Pp. xiii–7 to 206. [Price, $1.50.]

Bright's Disease of the Kidney. By Alfred L. Loomis, M. D., LL. D., Professor of Pathology and Practice of Medicine, New York University Medical College, etc. Detroit: George S. Davis, 1888. Pp. 117. ["The Physicians' Leisure Library."]

Proceedings of the Connecticut Medical Society, 1888. Ninety-seventh Annual Convention, held at New Haven, May 23d and 24th, New Series. Vol. IV, No. 1. Published by the Society. N. E. Wordin, M. D., Secretary, Bridgeport, Conn.

Message of Governor Robert L. Taylor to the Forty-sixth General Assembly of the State of Tennessee, Thursday, January 10, 1889.

The Comparative Danger to Life of the Alternating and Continuous Electrical Currents. By Harold P. Brown, Electrical Engineer.

Cornell University, College of Agriculture, Bulletin of the Agricultural Experiment Station. IV. December, 1888.

A Case of Hodgkin's Disease, accompanied with a Possible Result, ing Paraplegia. Reported by Lewis H. Adler, Jr., Resident Physician-University Hospital, Philadelphia. [Reprinted from the "Medical News."]

The Propriety of Surgical Interference in Perforating Typhoid Ulcer. By J. Ewing Mears, M. D., of Philadelphia. [Reprinted from the "Transactions of the American Surgical Association."]

How Micro-organisms enter the Body. By George N. Kreider. A. B., M. D., Springfield, Ill. [Reprinted from the "St. Louis Courier of Medicine."]

Proceedings of the Twelfth Convention of the Empire State Association of Deaf-Mutes, held in the City Hall, Rochester, N. Y., August 29–30, 1889.

Success and Failure of Electrolysis in Urethral Strictures, especially Dr. Keyes's Method reviewed. By Robert Newman, M. D., Surgeon to the Northwestern Dispensary, New York. [Reprinted from the "Philadelphia Medical Times."]

Twentieth Annual Report and By-laws of the New York Physicians' Mutual Aid Association.

Papilloma of both Falloppian Tubes and Ovaries; Primary Cancer of the Falloppian Tube. By Alban Doran. [Reprinted from the "Transactions of the Pathological Society of London."]

Osteotomy for Anterior Curves of the Legs. By DeForest Willard, M. D., Lecturer on Orthopædic Surgery, University of Pennsylvania, etc. [Reprinted from the "Medical and Surgical Reporter."]

Annual Report of the Supervising Surgeon-General of the Marine-Hospital Service of the United States for the Fiscal Year 1888.

Miscellany.

Medical Matters in Massachusetts.—Several matters of interest to the profession were considered by the Massachusetts Legislature or its committees last week:

First: The report of the commission on draining the valley of the Charles and of the Mystic Rivers.

Second: The condition of the Public Institution for the Insane.

And third: A bill to regulate the practice of medicine. This last is as follows and is entitled:

"An act to regulate the practice of medicine and surgery within the Commonwealth of Massachusetts.

"1. No person shall practice medicine, surgery, or midwifery within this Commonwealth without a license from the State Board of Health, obtained as hereinafter described.

"2. All persons now practicing in this Commonwealth shall be entitled to a license who have received the degree of doctor of medicine from a college or university having power to confer degrees in medicine, and duly and legally chartered under the laws of said Commonwealth; or who are members of at least one year's standing of any medical society, duly and legally incorporated under the laws of said Commonwealth prior to January 1, 1889; or who have practiced medicine, surgery, or midwifery continuously in said Commonwealth for a period of at least ten years prior to January 1, 1889, provided such persons shall make application to the State Board of Health for such license within two months after the passage of this act. Each such person, in making such application, shall make and file with the secretary of said board an affidavit stating the name and residence of the applicant, the fact that such applicant is a graduate of such college or university as aforesaid, or is a member of any such medical society as aforesaid, or has practiced for ten years continuously in said Commonwealth as aforesaid, and also such other information as said board may require. Said board, after due examination and proof of the truth of the statements in said affidavit, shall, upon payment of one dollar, issue to such applicant a license to practice medicine, surgery, or midwifery throughout said Commonwealth.

"3. All persons not hereinbefore provided for, who shall desire to practice medicine, surgery, or midwifery within this Commonwealth, shall make and file an application with the secretary of said board, stating the name and residence of the applicant, and by which of the three following medical societies—the Massachusetts Medical Society, the Massachusetts Homœopathic Medical Society, or the Massachusetts Eclectic Medical Society—said applicant elects to be examined. Upon filing such application, each applicant shall pay to the secretary of said board the sum of ten dollars. The secretary of said board shall duly record such applications in the order of their receipt, and thereafter forward each application forthwith to the medical society therein designated. Each medical society so notified shall issue due notice of the time and place of examination to each applicant. The Board of Censors of such medical society shall examine such applicant at said time and place, and after such examination shall forthwith return the applications, together with a certificate, setting forth that such applicant has passed, or has failed to pass, said examination. The Board of Health,

upon receiving such a certificate from a medical society, setting forth that an applicant has been examined and has passed a creditable examination, shall, upon being satisfied of the good moral character of such applicant, issue to such applicant a license to practice medicine, surgery, or midwifery within this Commonwealth.

"4. Any applicant failing to pass a satisfactory examination before any medical society, as provided in Section 3, may apply to the said Board of Health for another examination, at any time after a period of six months from a previous examination.

"5. Nothing in this act shall apply to any commissioned surgeon of the United States Army or the United States Navy, or to any physician from another State in actual consultation with a duly licensed physician in said Commonwealth.

"6. All persons who shall have obtained a license under this act shall cause the license to be conspicuously displayed in their office or consulting-room.

"7. Any person who shall falsely claim or pretend to have or to hold a license granted by the State Board of Health, pursuant to the provisions of this act, or who shall practice medicine, surgery, or midwifery, without previously obtaining a license as provided in this act, or who shall violate any of the provisions of this act, shall be deemed guilty of misdemeanor, and, upon conviction thereof, shall be punished by a fine not exceeding five hundred dollars, or by imprisonment in the jail not exceeding six months. Any person shall be regarded as practicing, within the meaning of this act, who shall profess publicly to be a physician, or to prescribe for the sick or injured, or who shall append to his or her name the letters 'M. D.,' or who shall treat or attend, as a physician, any person for money, gift, or reward.

"8. It shall be the duty of the State Board of Health to carry out and enforce the provisions of this act, and to prosecute all persons violating them. The said board shall also have power to revoke, for cause, the license of any physician, surgeon, or midwife.

"9. All acts and parts of acts inconsistent with this act are hereby repealed.

"10. This act shall take effect on the first day of June, 1889."

The Eighth German Congress of Internal Medicine will be held in Wiesbaden from the 15th to the 18th of April, inclusive, under the presidency of Dr. von Liebermeister, of Tübingen. The business committee consists of Dr. Nothnagel, Dr. Immermann, Dr. Binz, and Dr. Curschmann, and Dr. Emil Pfeiffer, of Wiesbaden, is the permanent secretary. Dr. Schultz, of Bonn, will deliver a memorial address on the late Dr. Rühle. The following subjects will be discussed: *April 15th*—"Ileus and its Treatment" (speakers, Dr. Curschmann and Dr. Leichtenstern). *April 17th*—"The Nature and Treatment of Rheumatism" (speakers, Dr. Ebstein and Dr. Emil Pfeiffer). The following-named papers are promised: "On the Functions of the Stomach in Tubercular Phthisis," by Dr. Immermann, of Basel; "On the Curative Methods of Hippocrates," by Dr. Petersen, of Copenhagen; "Impotence in the Male," by Dr. Fürbringer, of Berlin; "On the Preparation and Effects of Medicine," by Dr. L. Lewin, of Berlin.

The Source of Sugar.—We clip the following from the "British and Colonial Druggist": "The day was hot and stifling, the professor of physiology was tired and looking forward to the end of the day's examination, when a student presented himself who appeared to have been so much tried in previous encounters with examiners that his very aspect 'gave him away.' Perhaps with the intention of cheering him, the professor opened fire on the liver (not the student's, but that of the *genus homo* generally), and asked for an account of that organ's anatomy. The student forthwith commenced a wonderful discourse on 'operatic arteries,' 'porous veins,' etc., which the professor cut short by a question as to the function of the liver. The student murmured something about 'glycogen' and 'sugar,' and, 'following his lead,' the examiner inquired: 'Well, now, where does the sugar come from?' A sickly smile overspread the victim's pallid visage, and, summoning his fast receding faculties for a last despairing effort, replied, 'From America.'"

The Health of Michigan.—According to the State Board of Health's Report for the five weeks ending February 2, 1889, diphtheria was reported from sixty places, scarlet fever from ninety-four places, typhoid fever from thirty-eight places, measles from eleven places, and small-pox from eleven places.

The Cheshire, N. H., County Medical Society.—The physicians of Southwestern New Hampshire met at Keene on Tuesday, February 5th, and formed a new medical society, which is to be known as the Cheshire County Medical Society. By-laws were adopted and the following officers elected: President, Dr. George B. Twitchell, of Keene; vice-president, Dr. J. A. Craig, of Westmoreland; secretary and treasurer, Dr. I. J. Prouty, of Keene. A paper was read by Dr. M. T. Stone, of Troy, on "Empiricism and Rational Medicine," thoughts of which were suggested by remarks made before a committee of the Massachusetts Legislature by several "irregulars," who were opposed to the passage of a medical law. The paper was discussed, after which there was a discussion by different members on the treatment of pneumonia. The society meets monthly from September to May, inclusive, the annual meeting being held the first Tuesday in September.

The University of Vermont.—Dr. Charles B. Kelsey, of New York, has been appointed lecturer on diseases of the rectum in the Medical Department.

To Contributors and Correspondents.— *The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the persons sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

A CONTRIBUTION TO THE SURGERY OF THE BLADDER.*

BY WILLY MEYER, M. D.,
ATTENDING SURGEON TO THE GERMAN HOSPITAL, NEW YORK.

THE great interest that has been taken in the diseases of the bladder by surgeons of all countries for many years past has not yet relaxed. The question is still under discussion, Which is the most preferable operation of opening the bladder for the removal of stones or tumors? Surgeons have not yet agreed in regard to the best method of the after-treatment of epicystotomy, the operation lately so much more favored. The operative treatment of hypertrophy of the prostate is still in the early stage of its development. The improvement of the old cystoscope has created a perfectly new branch of surgical diagnostics.

At such a time the experience of a single man, gained even from a comparatively small number of cases, may be of interest to others, and I am of the opinion that it is the duty of all surgeons to publish their operative cases of diseases of the bladder, whether the result may have been good or bad. Only in this way can the important questions mentioned above reach a definite solution.

I do not hesitate, therefore, to put before you my experience in regard to the diagnosis and operative treatment of diseases of the bladder, which I have derived from a few cases in this line, coming under my treatment since I have been a resident in this country.

I shall not consider the question of the most preferable method of incising the bladder, whether above or below the pubes. Although I do not deny the great value of the median section in proper cases, I follow the views of my highly esteemed former chief, Professor F. Trendelenburg, director of the Surgical Clinic of the University of Bonn, and prefer suprapubic cystotomy, as not being in itself a dangerous operation. I adopt it, therefore, wherever I can, on account of its many great advantages—the easy manipulation inside of the vesical cavity, and the perfect view to be obtained by it of the interior of the bladder in the posture of the patient that has been advised by Trendelenburg.†

The points I propose to consider to-day, in reporting my own six cases of epicystotomy, are:

1. The best after-treatment of this operation; whether it be drainage of the bladder,‡ or whether we should prefer suture of the bladder.

2. The great value of cystoscopy in the preliminary examination of the patient.

Of the six suprapubic cystotomies recently performed by me, four were done for tumor of the bladder (one for recurrent cancer), one for stone, and one for foreign bodies. I shall report them chronologically.

CASE I. *Papilloma and Multiple Villous Growths of the Bladder.**—M. G., a native of Germany, a merchant, fifty-two years old, had been a healthy man up to March, 1886, when, without any previous warning, he suddenly passed bloody urine for two days. Four weeks later a more serious hæmorrhage from the bladder set in. Since that time the patient had suffered from frequent hæmaturia, especially at the end of micturition, catarrh of the bladder, pains in the glans, and now and then sudden stoppages in the flow of urine. His family physician had treated him for chronic catarrh in the usual routine way without any material benefit. On one of the first days in October retention of urine occurred. The catheter was introduced and the bladder washed out. A chill, with consequent high fever, pains in both lumbar regions, and aggravation of all the symptoms, resulted. The patient then consulted Dr. A. Jacobi, who advised an operation, and sent him to me for that purpose.

When I saw the patient first, October 26, 1886, he was very weak and still feverish. He passed his water about every fifteen minutes with great difficulty and excruciating pains. There was tenderness on pressure in both lumbar regions. The beak of a large-eyed silver catheter was caught in a soft mass immediately upon entering the bladder; moving the instrument caused bleeding. On withdrawing the same, a large shred of tissue was found in the eye, evidently torn off from a larger growth. On macroscopical examination and under the microscope I found this to be a piece of a villous papilloma. This was, most probably, growing at or near the trigonum, and pedunculated, as it sometimes closed the internal urethral orifice in urinating. The chemical and microscopical examination of the urine showed symptoms of pyelonephritis besides those of chronic catarrh of the bladder.

Having by these examinations established the diagnosis, I proposed to remove the growth by suprapubic cystotomy, then to drain the bladder, and in doing so to drain also the pelves of the kidneys. The operation was performed on October 28th. About thirteen ounces of warm water were thrown into the rectal colpeurynter and almost seven ounces of warm three-percent. boric lotion into the bladder. After the vesical wall had been incised to the extent of three inches the patient was placed in Trendelenburg's posture and I found a soft pedunculated growth of about the size of a medium-sized apple, its pedicle being about as large as the thumb, inserted a little above the trigonum, near the orifice of the right ureter. The greatest portion of the tumor was then cut off with the curved scissors. The hæmorrhage, in no way alarming, was controlled by small pieces of ice put into the cavity of the bladder. Then I pulled the posterior wall of the bladder forward with the help of Muzeux's forceps, and burned off the pedicle with the Paquelin cautery, cauterizing at the same time the wall of the bladder at this spot down into the muscular layer. (An arterial hæmorrhage from this spot was stopped by inserting under it a strong catgut ligature by means of a sharply curved needle.) A further careful examination of the bladder revealed a second tumor of the size of a cherry, a little to the right of and above the one just removed; and, furthermore, the fundus of the bladder was found to be covered with a great many velvety villosities. They were

* Read before the New York Surgical Society, November 28, 1888.

† Willy Meyer, "Ueber die Nachbehandlung des hohen Steinschnittes sowie über Verwendbarkeit desselben zur Operation von Blasenscheidenfisteln," von Langenbeck's "Archiv," xxxvi, 3, p. 514.

‡ Drainage of the bladder has been tried in different ways (Willy Meyer, *l. c.*, p. 494). I consider drainage with the T-tube in latero-abdominal position and open-wound treatment (as proposed by Trendelenburg) the simplest and safest, and therefore the best. It has been combined with an antiseptic dressing of iodoform gauze around the tube (Assendelft, von Langenbeck's "Archiv," xxxvi, p. 170). Although the real effect of an antiseptic dressing naturally is illusory in most of these cases, it may be handier now and then, especially in private practice.

* Cf. "New York Medical Journal," 1888, No. 16, p. 431.

all easily removed with the sharp spoon, and the hæmorrhage was again checked by ice. (I do not know of any better styptic than ice in vesical hæmorrhage after having opened the bladder; but hot water may have the same good effect.) Now Trendelenburg's T tube was inserted and the prevesical space loosely packed with iodoform gauze. The abdominal and vesical wounds were left open for the sake of establishing in this manner a thorough drainage for the secretion of the septic pyelonephritis—latero-abdominal position. The effect of this procedure soon became apparent. The same night there was still a slight fever, but on the following day the temperature was normal and never rose again. The septic symptoms quickly disappeared and the patient made a quick recovery. The tube was removed on the eighth day after the operation. Twelve days later the first urine was passed by way of the urethra. After five days more it came in a strong stream, nothing escaping by the abdominal wound. The patient got up and soon was outdoors. During the next few weeks a fistula established itself in the lower end of the abdominal cicatrix that induced me to make an incision and cut away the mucous membrane of the bladder that was lining the canal. This was done on January 4, 1887.

On the 29th of March the wound was firmly closed. The patient was able to work, and enjoyed life. He had gained considerably in weight, and passed his urine every three or four hours. I then lost sight of him. Six months later I saw him again. A ventral hernia had developed and the capacity of the bladder decreased. He urinated every two hours, and had slight tenesmus. He refused further treatment, but went around to consult other doctors. About a year after the operation I examined him again. He had then incontinence but no hæmaturia. There was about 50 per cent. of albumin in the filtered urine. I proposed an incision in the cicatrix, to establish a permanent fistula. He refused. As far as I could ascertain by inquiring, he died in May of this year (eighteen months after the operation) of dropsy and suppurative bilateral nephritis.

Case II. *Medullary Carcinoma of the Bladder.*—H. T., sixty-five years old, waiter, a native of Switzerland, had suffered from frequent attacks of painful, difficult micturition during the last six years. These attacks came on at intervals of about two weeks. In the mean time he felt comparatively well and strong enough to attend to his work. About a year ago hæmaturia was first observed. Since that time the vesical symptoms have been permanent. Not infrequently he voided particles of the tumor, sometimes as large as a medium-sized oyster, during an act of painful micturition and accompanied by a serious hæmorrhage. Vesical incontinence supervened six months ago. The patient was confined to his bed and became very emaciated. He lost forty pounds of flesh during this time.

On admission to the German Hospital, patient is very weak and extremely anæmic. The pulse is small—120; afternoon temperature about 102° F. There is a round elastic protrusion above the symphysis, reaching up to the middle between it and the umbilicus. The spot is dull on percussion. Bimanual palpation reveals a large semi-solid mass filling the bladder. The left lumbar region is painful on pressure. Examination of the urine shows symptoms of catarrh of the bladder and pyelonephritis. (Albumin five per cent. in urine which had been filtered.) The capacity of the bladder was barely three ounces, even in deep narcosis. Cystoscopy was practiced, but the field of vision remained dark, although the mignon-lamp was fully incandescent before introducing the instrument. I did not expect much from cystoscopy in this case, especially as the capacity of the bladder was so extremely small. But I believe that a negative result of cystoscopy of this kind, provided the fluid in the bladder is clear and the window and prism of the cystoscope are not found to be covered by a coagulum at withdrawal, justifies the diagnosis of a growth of large size.

Epicystotomy was performed on April 24th, of course with no other intention than to relieve the patient's deplorable condition somewhat and to establish a vesical fistula. The rectal colpeurynter did not hold more than about four ounces; the bladder held less than three. The tumor proved to fill the entire bladder. It was impossible to remove it otherwise than piecemeal. The growth was attached a little above the mouth of the left ureter with a broad base. The latter was well scraped with the sharp spoon and then destroyed with Paquelin's cautery in Trendelenburg's posture. The hæmorrhage, not being alarming, was easily controlled with ice. After thorough irrigation of the wound and the bladder, and dusting with subnitrate of bismuth,* the upper part of the abdominal wound was closed with four silkworm-gut sutures, the prevesical space loosely packed with iodoform gauze that had been thoroughly washed in Thiersch's lotion to remove as much of the drug as possible, and the T-tube inserted.

April 25th.—Patient comfortable. Rectal temperature 99·5°. Drainage-tube worked nicely.

May 7th.—The T-tube is removed and a simple straight rubber tube of medium size introduced in its place. The bladder is frequently washed.

14th.—Temperature normal. A small amount of urine escapes by the urethra, the most part by the fistula, which has been well established at this time. Measured quantity of urine passed in twenty-four hours, two pints. Patient has picked up somewhat.

21st.—Now and then particles of tumor are thrown out of the bladder in washing it. The urine shows blood.

June 1st.—*Exitus lethalis.*

The autopsy disclosed a recurrence of the growth within the bladder to a marked degree; suppurative pyelitis in the left kidney and a great distension and thickening of the left ureter. In the abdominal cavity about three ounces of pus were found between the coils. No symptoms of peritonitis having been present during life-time, I am inclined to think that the pus perforated from the left kidney shortly before death. The internal organs were free from suppuration. Hence we can not think of pyæmia as the cause of the abscess. No secondary deposit in other parts of the body.

Case III. *Foreign Bodies in the Bladder; Nephrolithiasis* (?).—B. v. P., forty-one years of age, a native of Germany, artist, was admitted to the German Hospital as a private patient, May 22d, this year. He had always been a healthy, stalwart man. Three years ago he was suddenly attacked by left renal colic and hæmaturia. Since then the latter had been intermittent. Frequently the first drops were mixed with blood during micturition; then the urine was clear. Now and then he passed pure blood. He had been examined and treated by the most eminent surgeons of Berlin without a diagnosis having been strictly established and without any remarkable benefit in regard to his troubles. According to the advice of one of the gentlemen, he had his bladder washed out with a mild solution of permanganate of potassium for a long time. Eight weeks ago a severe catarrh of the bladder set in. Now and then small particles of a semi-solid substance were pressed through the urethra. In passing water the flow of urine was frequently interrupted. The patient suffered greatly; he became emaciated and subject to the opium-habit.

Although the patient exhibited more or less the symptoms of

* I am very careful with iodoform in operations on the bladder of old patients, having seen poisoning even after the use of minute quantities. No patient has died, however.

stone, I was unable to find any on careful examination. There also were no traces of a vesical new growth. The urine, muddy and of alkaline reaction, contained three per cent. of albumin. Under the microscope, red blood-corpuscles, pus, and mucus were found in it, but no casts. A thorough bimanual palpation of both lumbar regions of the anæsthetized patient revealed a tumor of about two fists' size in the left hypochondrium, of the presence of which the patient had not the slightest idea. It had a smooth surface, and evidently belonged to the left kidney. Being convinced that the latter organ was the cause of the whole trouble, I intended to tap it for the sake of the differential diagnosis, to ascertain whether we had to deal with a tumor or with nephrolithiasis. But, as all the subjective symptoms pointed to vesical trouble, recourse was first had to cystoscopy. It had to be done under chloroform, the bladder being extremely irritable. The examination was a great surprise to all present. As soon as the instrument entered the bladder and the light was turned on I saw a few (four or five) curiously shaped, more or less flat, bent bodies of black color and covered with a deposit of white salts, tumbling over each other, but evidently of soft consistence. They frequently touched the beak, but gave no sound of stone. Besides these bodies, there was no stone, no tumor, only evidence of catarrh.

To establish a diagnosis in regard to the nature of these bodies from this cystoscopic picture was entirely impossible. None of us had ever seen anything like them. The most probable supposition seemed to be that of coagulated blood which had descended from the left kidney. But in that case the semi-solid condition and peculiar shape of the bodies remained unexplained. Nevertheless, the result of cystoscopy was highly satisfactory. We had seen, at least, the cause of all the *vesical* troubles, of the presence of which no searcher, no bimanual palpation ever had given or could give the slightest trace. It is worth mentioning that no vesical hæmorrhage set in during all these manipulations, but that a bimanual palpation of the tumor in the left hypogastrium caused immediate abundant bleeding, which lasted for nearly twenty-four hours. In view of this accident and of the result of cystoscopy, the plan of operating was:

1. Epicystotomy for the removal of these bodies, and catheterization of both ureters, if possible, to gather the excretion of each kidney separately for the sake of a distinct diagnosis.

2. Nephrotomy or nephrectomy, according to the result of tapping, or, if the latter gave no positive result, exploratory incision.

On May 28th I opened the bladder above the pubes. (The peritonæum reaching far down near the symphysis, its prevesical fold was opened by mistake to the extent of about a third of an inch. This wound was immediately closed by a continuous catgut suture, and covered with a pad of iodoform gauze during the rest of the operation. There was no bad result whatsoever.) I removed about eight bodies of various sizes. They were of a semi-solid substance, flexible, of black color, and covered with white salts, just as we had seen them through the cystoscope. Chemical analysis showed that they consisted of 60 per cent. organic substance (fibrin), and 40 per cent. permanganate of potassium. (The specimen was presented to the society.) The bladder proved to be healthy. The attempt at catheterizing the ureters was unsuccessful on account of the lack of proper small rubber catheters. The mouth of the ureters was well visible in Trendelenburg's posture and with illumination of the bladder by electric light. In pressing the tumor on the left side *now*, we did not succeed in producing a hæmorrhage. The wound in the wall of the bladder was then closed from above and below by several iodoform-catgut sutures up to an opening of about three quarters of an inch, through which the T-tube was introduced. The abdominal incision was also stitched up in its upper two thirds. Dressing as described above. Patient made a quick recovery. His temperature was normal all the time, except on the first and fourth days after the operation, when the thermometer registered 101°.

June 2d.—Removal of the iodoform-gauze tampon in the prevesical space. Patient doing very well.

8th.—T-tube removed. Abdominal wound healed by first union.

11th.—Patient out of bed.

16th.—Urine passed *per urethram* for the first time.

21st.—Wound closed. Only slight catarrh of the bladder. Patient sleeps without morphine; gains in weight constantly. Discharged at his special request, not wanting a second operation performed on himself right away. As far as I could ascertain lately, patient is doing very well. Whether hæmaturia returned I am unable to say.

Case IV. *Stone in the Bladder.*—B. H. D., fifty years of age, merchant, was admitted to the German Hospital as a private patient, June 18th, this year. For several years he had been troubled with chronic gastritis; otherwise he had been healthy. Returning from his summer resort in the mountains, he was seized with symptoms of stone, June, 1887. A thorough examination, which was made at that time, failed to detect any stone, and he was advised to take proper drugs. But, his condition getting steadily worse, his family physician courteously sent him to me for cystoscopy, June 11th. The patient's bladder being extremely irritable, and examination with the searcher having been accompanied before by great agony, I yielded to the patient's demand and immediately introduced Leiter's cystoscope. Having turned the instrument 180°, I saw at the first glance, as clear as in perfect daylight, an oval-shaped, brownish body, covered with white spots, of the size of an almond, lying in a groove behind the swollen prostate gland. It threw a very marked shadow upon the opposite wall of the bladder. Having turned off the light, I touched it with the beak of the instrument, and got the sound of stone.

June 19th.—Epicystotomy. Stone easily removed. Shape and appearance confirmed as diagnosticated with the cystoscope. Treatment as usual. Temperature in the first seven days constantly somewhat above the normal; general condition good.

26th.—T-tube removed.

July 2d.—Urine passed by way of the urethra for the first time.

20th.—Patient discharged. Wound superficially granulating. Since two days no urine escapes above the pubes. Patient leaves soon for the mountains.

When seen again, September 21st, he relates that the rest of the wound was entirely closed about the middle of August. At this time a flat, painful swelling had formed on the right side of the symphysis. It suddenly disappeared when he passed a quantity of pus with his urine on the 27th of August. (Most probably a pericystitic abscess had formed and perforated into the bladder.) To-day patient is all right.

Case V. *Recurring Cancer of the Bladder.*—N. B., fifty-five years of age, merchant, was operated on by Dr. F. Lange, of this city, in his private hospital, for cancer of the bladder, October 13, 1886. Epicystotomy had been performed, the tumor removed by an ellipsoid incision, which included a part of the muscular layer of the wall of the bladder, and the latter wound closed by stitches. The bladder then was sewed up by an interrupted iodoform catgut suture and drainage obtained through a Nélaton catheter, passed by the urethra. The bladder healed by first intention. Patient left the hospital on October 30th, cured. He had very much improved and attended to his business, when, eight months later, a new hæma-

turia with irritability of the bladder set in. Dr. Lange, as well as other surgeons who were consulted, refused to perform a second operation, there being no hope for a radical extirpation of the growth. But the establishment of a permanent vesical fistula was thought of as soon as the operation seemed to be urgent. It was decided to defer it as long as possible. On July 14th, this year, Dr. Lange being out of town, the patient came under my observation through the courtesy of Dr. J. H. Asch. I found him in a deplorable condition. Every ten to fifteen minutes he urinated with great agony, passing each time also a small amount of thin, very offensively smelling fæces. Prolapsus ani and tenesmus increased his sufferings. A hard, uneven tumor filled the space above the pubes, fully four fingers in width; it was adherent to the symphysis and pubic bones, and gave dullness on percussion. There was a slight ventral hernia in the cicatrix. Pressure in the lumbar regions, especially in the left, caused great pain. The urine was scarce and muddy. Its analysis showed catarrh of the bladder and pyelonephritis. Frequent chills, tongue dry, stomach rebellious, not retaining any food; temperature 105°, pulse 156.

Although the patient's condition was not very encouraging for operative interference, I proposed, after consulting with Dr. Asch, suprapubic cystotomy to the family, not concealing the risk that death might be expected on the operating table. On July 16th I performed the operation. No colpeurynter in the rectum. Bladder filled with three ounces of Thiersch's solution. On account of the ventral hernia and in order to have ample room, I used the Günther-Trendelenburg cross-incision.*

Making my way down to the bones, by an incision three inches in length, I found the cicatrix in front of the symphysis well provided with blood, and saw the prevesical peritoneal fold about half an inch above the symphysis, entirely adherent to the tumor. But I failed to feel the bladder distinctly. The patient then was put in Trendelenburg's posture and a small-bladed knife deeply thrust into the tissue just in front of the symphysis. Blood rushed out of the wound in large amount, but not a drop of the injected water escaped. It was evident that I had incised the tumor. The bladder had to be looked for somewhere else. I loosened the elastic temporary ligature around the penis; the water escaped. I injected again and was able to throw in the same amount as before—about three ounces. The hæmorrhage from the tumor having been checked by ice and loose packing with iodoform gauze, I went to search for the bladder. Strictly following Trendelenburg's rules† as to how to get down even to the empty bladder in epicystotomy without the help of the rectal tampon, I peeled the tumor off the posterior aspect of the symphysis and pubic bones with the second and third fingers of my left hand, turning the pulps toward the abdomen. I succeeded in loosening the growth, and there, down in the depth, *below the tumor*, I felt the gently distended bladder, of the size of a pear, pressed against the rectum and perinæum. I fixed it between the left second and third fingers, and incised it to the extent of about an inch and a half. Now the water poured out. After thoroughly scraping the bladder the T-tube was put in, the bladder well irrigated with a mild boric-acid lotion, the wound sewed up on both sides of the tube and drained in the angles with iodoform gauze, which also loosely filled the wound. Latero-abdominal position; stimulants.

The patient stood the operation remarkably well. On the next day the pulse went down to 108 and the temperature to 99·8°. The tongue was less dry. The bladder was washed out three times daily with a mild boric-acid solution. The septic enteritis alone gave some trouble. But it was overcome, too, after a short time by antiseptics frequently administered by the mouth. The sutured portion of the wound, although being entirely without reaction, did not unite, however. When the stitches were removed the wound gaped, but the granulations showed a healthy appearance. On the twelfth day after the operation the T-tube was changed for a straight one. On the 7th of August (the twenty-second day after the operation) the patient was out of bed for the first time. Meanwhile a slight œdema of the left lower extremity and left side of the scrotum had developed. The tube in the bladder worked very well. There never was any leakage in the fistula, except when a piece of tumor occluded the internal opening of the tube. Frequent flushing with a strong current then always removed the obstruction in a few days. Without any fever or new septic or uræmic symptoms, patient died from marasmus, September 20th, nine weeks and a half after the operation

Post-mortem Examination (involving only the uropoietic system): Medullary growth (cancer) of about the size of a baby's head above and in front of the bladder. Peritonæum all around adherent but nowhere perforated. A portion of the tumor projects into the bladder. The latter is very small, attached to the growth, its mucous membrane hæmorrhagic in many spots. Both ureters, greatly distended and thickened, pass through the tumor in a curved line. They can be probed without difficulty. Left kidney represents a large sac filled with pus, that breaks at the attempt of removal. Only a small zone of its glandular tissue is left. The rest is in chronic inflammation, as also is the right kidney, which exhibits a less destructive appearance. The posterior wall of the growth is firmly attached to the sigmoid flexure. It compresses the large vessels below, especially the common iliac vein. Small metastatic cancerous growths in both kidneys only; nowhere else. [The specimen is demonstrated to the society.]

Case VI.—A. D., sixty-five years of age, a native of Russia, was sent to me through the courtesy of Dr. A. Jacobi for hæmaturia. For two years he had had frequent pains in the glans; three months ago hæmaturia set in and has not stopped up to the present time. In washing the bladder at my office, it was found that the lower portion of it was very irritable. Water and catheter were speedily pushed out on attempts at slowly throwing in a very small amount of water. But, by conducting the instrument gently forward and depressing the handle, I succeeded in filling the bladder with about three ounces of water, the patient not being under ether. It seemed as if the bladder was divided into two parts, the lower being more diseased than the upper one. The prostate gland was very much enlarged in its entirety. Urine was scarce—about twelve to thirteen ounces in twenty-four hours. It contained a great deal of blood and some albumin. It was slightly sour. Microscopic examination showed blood and pus cells in great quantity. With Nitze's cystoscope I detected a sessile growth of about the size of a small hazel-nut in the upper part of the left side of the bladder. It had apparently a broad base (as it did not move on shaking the lower portion of the abdomen) and showed a few big papillæ. A small coagulum was adherent to its surface; the latter had a grayish-white color. About an inch lower down two more slender growths projected into the cavity of the bladder, floating up and down in the water. I concluded from the picture that all three growths probably were inserted on the same base, although their different appearance was strange and the mucous membrane between them appeared not to be materially changed. During the first examination the water became bloody, but I did

* Eigenbrodt, "Ueber den hohen Blasenschnitt," "Deutsche Zeitschrift für Chirurgie," xxviii, p. 66 *et seq.*

† Eigenbrodt, *l. c.*, p. 70.

not see the blood dripping down from the tumor. The mouths of the ureters I had no time to search for, the patient being in great agony to get rid of the injected water. On account of the result of cystoscopy, I proposed epicystotomy, not being quite sure that the tumor was the only trouble. Perhaps the *constant* hæmaturia was partially due to kidney disease; but, if so, I hoped to see bloody urine spurting out of one of the ureters during the coming intravesical manipulations.

On November 16th (twelve days ago) I performed the operation at the German Hospital. Before it was begun, cystoscopy was once more performed, the patient being under the influence of chloroform. I again saw very plainly the sessile growth as described above, and so did all the gentlemen present. But those two slender tumors were found lower down on the right side of the trigonum. I have no doubt that they had been detached from their base by the water that was repeatedly thrown into the bladder with some force by means of a syringe to get it clean, and then fallen down upon the trigonum. This explanation also reveals why they could not be found afterward when the bladder was incised. The outpouring water evidently threw them out. Again the mouth of the ureters could not be detected. But I must confess that I did not take sufficient time to search for them, the patient being under chloroform. In regard to the operation itself I used again the cross-incision three inches long. (There were about four ounces of warm water in the rectal colpeurynter and five ounces of Thiersch's solution in the bladder.) After dividing the insertion of the fascia, recti muscles, and the flat lower portion of the linea alba, the prevesical fat came into view. Now the patient was put into Trendelenburg's posture, the peritonæum pushed up with two fingers of the left hand, and between them the bladder incised about two inches and a half in length. The searching finger felt a small infiltrated spot at the location made out with the cystoscope. But, in looking at it, the bladder being held open by broad retractors, only the infiltrated bleeding base could be plainly detected; there was no projecting growth. It had evidently been of the same soft tissue as the other two, and my finger had unintentionally pushed it off. No more growths could be found, the bladder being illuminated by electric light, but on the opposite (right) wall of the bladder there was a flat infiltrated spot of a more yellowish color of about the size of a five-cent piece. The mouths of the ureters even now could not be seen. But the trigonum Lieutaudii and the anterior wall of the bladder formed a kind of funnel which led to the internal urethral orifice, and out of it ran blood, whether at intervals I can not say. I regret very much not having gathered some of this blood, as I am nearly sure, in thinking of the case *now*, that it was bloody urine. The rest of the new growth in the wall of the bladder was destroyed by Paquelin's cautery, as also was the suspicious portion on the other side. Then I sewed up the upper third of the wound of the bladder with iodoform catgut, put in the T-tube, and partially closed the wound in the abdominal wall. Both angles were left open; they were passed by small long strips of iodoform gauze which loosely filled the prevesical space. Now the patient was put to bed, the pulse being fair—about 84 and of good quality. I was unable to see the patient within the next twenty-four hours. Then I found him in a comatose condition, in which he was said to have been since early in the morning. (The night before he had taken water several times and answered the nurse's questions in a reasonable way.) The abdomen was soft, tongue moist, wound without reaction. Pulse extremely weak, despite constant stimulation for twelve hours; pupils of medium size, not reacting. He had passed scarcely six ounces of urine slightly tinged with blood in twenty-five hours; otherwise the T-tube worked well. Water thrown into the bladder by means of a catheter introduced through the urethra escaped out of it perfectly clear. We continued to stimulate the patient, but he died the same night, at 11 P. M.

A post-mortem examination was refused by the relatives in spite of my earnest demands. I feel pretty sure that the cause of death was uræmic coma, as we find it sometimes occurring after somewhat protracted manipulations inside of the bladder of older subjects, especially if the kidneys are diseased. It is not improbable that some serious trouble, perhaps a malignant growth, also would have been found in one of them by post-mortem examination, although I had not succeeded in feeling a tumor in one of the lumbar regions.

Certainly the fatal result was not due to the suprapubic incision. The wound was in perfect condition. I again found the cross-incision very advantageous. It was very easy to see and avoid the peritoneal prevesical fold, that reached here down pretty near to the symphysis, with the help of this method. There was ample room to operate inside the bladder. I should like to recommend the cross-incision very highly. I shall use it in future wherever I can.

It did not need this experience of successful after-treatment of epicystotomy, as described in my own practice, to convince me of the great value of Trendelenburg's method. During the time I was assistant surgeon to the surgical clinic of the University of Bonn I saw six patients * attended in this manner (three of them I attended personally). Although two of the patients died soon after the operation, the fatal result was not due to the mode of proceeding. A few months ago Professor Trendelenburg had published † forty-two cases (those six included) of epicystotomy for various troubles of the bladder. All of them were drained with the T-tube in lateral position for the first days. The result was, as far as this mode of treatment is concerned, always satisfactory. (The cross-incision that was proposed by Günther thirty-seven years ago and is now again practiced by Trendelenburg [cf. my Cases V and VI] is highly recommended in this treatise.) Others also have reported favorably upon it. ‡ But, nevertheless, it is not the *ideal* after-treatment. This is undoubtedly the suture of the bladder as soon as the intravesical trouble has been treated. If the results gained with it have not as yet been always satisfactory, the cause, it seems, has to be looked for in a failure to select suitable cases, and furthermore, probably, in the insufficient accuracy and technique of the surgeon. It seems that the latter is the main thing. This is proved by the statistics of van Iterson # (ten primary unions out of twelve cases of epicystotomy with suture) and those of Dr. F. Lange, of this city, who has been kind enough to allow me to mention his results in this paper. Lange had primary union seven times out of eight cases of suture of the bladder. (In the one case, patient of sixty years, where no direct union was obtained, slight leakage commenced on the fourth day on account of great restlessness of the patient. Otherwise the patient made a quick recovery.) Dr. Lange intends soon to publish the cases, ‖

* Willy Meyer, *l. c.* † Eigenbrodt, *l. c.*

‡ Assendelfft, "Chirurgische Erfahrungen eines Landarztes," Dorpat, 1883; "Archiv f. klin. Chir.," Bd. 36, Heft. 1; Rodziewicz, "St. Petersburger med. Wochenschr.," 1885, No. 8.

"Centralblatt für Chirurgie," 1886, ix, ref.

‖ "Medicinische Monatsschrift, Organ für practische Aerzte in Nord-Amerika," New York, Jan. 15, 1889.

together with the details of the technique employed. Neither of the two surgeons used the funnel-shaped incision, as proposed by v. Antal ("Ctrlbl. f. Chir.," No. 17, 1885).

But, even in view of this wonderful and highly remarkable success of the two authors mentioned, I think suture of the bladder ought not to be practiced in all cases of epicystotomy. Undoubtedly Tredelenburg's method of after-treatment is not only very simple and easily applicable, even without proper assistance,* but it is *safe*. The free drainage of the bladder also drains the suppurating pelves of the kidneys. As long as the ureters are not obstructed, a retention of infectious material up there is utterly impossible.

The method provides also for an easy and convenient way of washing out the diseased bladder thoroughly, since there remain two openings in it. This is of great importance.

In regard to the time of healing, only slight differences have so far been recorded. According to Kraske's advice, the abdominal wound is generally left open and loosely packed with iodoform gauze in suture of the bladder. If we succeeded in closing this wound in the granulatiug stage by secondary suture, as Lange proposes to do (about the fourth or fifth day), and leaving a drainage-tube in the lower angle of the wound, provided there is no leakage from the wound of the bladder, the time of healing would be materially decreased. Further experience is needed to decide this. Summing up, I should say on this question:

1. If there is no catarrh of the bladder, or only a slight one, the wound of the bladder ought to be closed by primary and eventually the abdominal wound by secondary suture.

2. If the catarrh of the bladder is serious and combined with septic suppurative pyelitis, the bladder ought to be drained.

3. In less serious cases both methods may be combined with advantage—*i. e.*, the greatest part of the wound of the bladder may be sewed up, and only a small spot in the middle left open for passing the tube.

In regard to cases of malignant growths of the bladder, which could not radically be removed with resection of the diseased portion of the vesical wall, I should like to raise the question whether it might not be better for the patient that we should always operate with the intention of establishing permanent fistula. V. Dittel's apparatus would greatly lessen the discomfort resulting from the fistula. If the growth returns, a second, usually more difficult, cystotomy will thus be spared.

One more word I should like to say in regard to the great advantages of Trendelenburg's posture, which, as it seems, has not been sufficiently tried by American surgeons.

Every surgeon who has once employed this posture for intravesical operation has enthusiastically acknowledged† its great advantages. It is by all means preferable to illumination of the inside of the bladder with an electric surgical light while the patient is flat on his back. The electric light ought to be used rather in that posture when the trigonum Lieutaudii, usually the most interesting spot within the bladder, is not covered by blood and urine, but, being the highest point in the bladder, may be sponged and kept dry. To be entirely satisfied with the posture, it should be kept in mind that the pelvis is to be raised sufficiently high (figure). Many fail in that respect. Eigenbrodt emphasizes the fact* that this elevation helps the surgeon to avoid the prevesical peritoneal fold at the time of incising the bladder.†



Trendelenburg's posture. (From an article by the author in von Langenbeck's "Arch. f. klin. Chir.," xxxi, 3.)

On the great value of cystoscopy I can not add much to what I had the honor to say before another meeting of surgeons a few months ago.‡ Since the improved instrument has been in the market, it has been applied wherever surgery of the bladder is practiced. A few favorable reports have been published already; more are to be expected.

In regard to the instrument of Nitze and Leiter itself, I should like to say this after a ten-months' experience: Nitze's cystoscope has one great advantage, namely, the short beak, as we find it in Mercier's prostate catheter (about half an inch shorter than in that of Leiter). As cystoscopy is and will usually be applied at the first examination of the patient without giving ether, and as the irritable bladder can sometimes only be distended to a very

* Assendelfft, *l. c.*

† Küster, "Sammlung klin. Vorträge," Nos. 267, 268, p. 52; Keyes, "Suprapubic Cystotomy," etc., "Jour. of Cutan. and Genito-urinary Dis.," July, 1887; Lange, *l. c.*; Gerster; and others. Only Géza v. Antal has found "little advantage" in this posture in the removal of tumors of the bladder by means of the suprapubic incision. "Spec. chirurgische Pathologie u. Therapie d. Harnröhre u. Harnblase," Stuttgart, 1888.

* *L. c.*, p. 72. Cf. Lange, "Med. News," Dec. 4, 1886.

† This posture is of great advantage also in intra-abdominal operations where the seat of the trouble is in the true pelvis. The latter will thus be found very easily accessible even in its depths. (Mendes de Leon, "Ein neues Untersuchungsverfahren," "Ctrlbl. f. Gynäk.," 1888, No. 21; Heyder, "Ctrlbl. f. Chir.," 1888, No. 57, p. 939; Lange, *l. c.*)

‡ "New York Med. Journal," 1888, p. 426.

small degree * (although the use of cocaine may enable us to inject a proper quantity—five ounces), the tip of a short beak will not touch the wall of the bladder so often as a longer one. The touch nearly always causes a burning sensation. The second disadvantage of Leiter's cystoscope—the short shank—has lately been removed. The newest pattern has the same length as that of Nitze. A sufficient length is an absolute necessity. It once happened to me in a patient, sixty-four years of age, with tumor of the bladder combined with hypertrophy of the prostate, that Leiter's instrument (with a short shank) did not enter the bladder at all, the urethra being materially lengthened. I then tried Nitze's. I easily succeeded with it and saw the tumor.† But I saw in this case everything dark-red and somewhat indistinct. I thought the water was mixed with blood; but when the cystoscope had been withdrawn, the water came out clear. On further examination, I found a very thin coagulum of blood on the prism. This, I think, had tinted the rays returning from the wall of the bladder. It was as if I had looked through a red glass. I found these adherent coagula oftener when I first began to practice cystoscopy, especially in cases with hypertrophy of the prostate. I had the impression that the recesses of the cystoscope at the window (Leiter), or the lamp itself (Nitze), had something to do with it, glycerin having to be used as a lubricant. Since I have made it a rule first to inject glycerin into the rear portion of the urethra by means of a rubber catheter, I am rarely troubled in this respect. To buy a second cystoscope for the fundus is unnecessary. Up to date I have always succeeded in inspecting the fundus and trigonum with the mouths of the ureters by simply turning the instrument 180° and depressing the handle. The inconvenience to the patient is slight. But both instruments do not illuminate the *internal* orifice and its immediate neighborhood. As is known, Nitze constructed his cystoscope, No. 3, for this purpose and praises its great advantages. A few days ago I received a communication by Dr. Nitze, notifying me that, after many experiments and trials, this instrument was now also ready for sale, but would be improved further in the nearest future. I shall report on its supposed advantages as soon as possible. Leiter's electric battery, specially constructed for the purpose, has also been greatly improved. He now sells a smaller and very powerful one containing twelve elements, the cells to be filled or emptied in a few seconds. The whole case is made of hard rubber. A small six-cell battery of the Galvano-Faradic Company of New York answers the same purposes.‡

How comparatively easily and yet distinctly we may succeed in clearing up obscure diseases of the bladder is plainly proved by my third and fourth cases. Even very experienced surgeons, who had examined the patients before, had been unable to come to a satisfactory conclusion.

I should like to report one more very interesting and, I think, quite rare case yet, where the diagnosis had been established by the cystoscope and proved to be right by treatment.

I. P., sixty-two years of age, merchant, was sent to me by a well-known physician of this city for cystoscopy on account of a fœtid catarrh of the bladder consecutive to hypertrophy of the prostate. The patient had formerly been successfully treated with antiseptic irrigations of the bladder and proper drugs. During his stay at a sea-bathing resort near by (last July) he caught a cold, according to his story, and soon found his catarrh materially worse. He followed all the orders given to him as punctually as ever, but the trouble grew worse. Then he consulted his family physician, who sent him to me, presuming that a tumor or a stone might be at the bottom of the trouble. He had to introduce the catheter about every half-hour in the day and three or four times during the night. The urine was of a light grayish color and had an extremely fœtid, gangrenous smell. Lately he had lost in flesh, although his appetite had always been excellent. I did not expect much of cystoscopy in this case. I resorted to it merely on account of the patient's and his doctor's request. But I was greatly surprised when I looked into this bladder. Although I had washed it out for nearly half an hour carefully until the water returned perfectly clear, I saw the whole mucous membrane of a grayish-black discoloration, more on the lateral sides and anterior wall than in the fundus and trigonum. Many long, thin coagula of mucus adhered to the wall and became fimbriated in the fluid. I most decidedly had the impression of "superficial gangrene" of the mucous membrane. This explained the terrible smell of the urine, such as I had never met with before. At first I did not know how to interpret this picture. I never had heard or read of gangrene of the mucous membrane of the bladder in cases of hypertrophy of the prostate. I therefore ordered rest and the continuance of the former treatment, in which I fully concurred, asking the patient to report in four or five days. I did not, however, see him again until ten days later. The catarrh was unchanged, rather worse; he had again lost several pounds of flesh, although having a fair appetite. This made me suspicious. I I made the sugar test and found about four per cent. of sugar. Upon this a strict antidiabetic regimen was ordered, together with the administration of opium, etc. This caused decided improvement in a few days. Now the patient holds his urine for three or four hours, he gets up during the night only once, has gained in weight, and attends to his business.

I am inclined to look at this case as one of "diabetic gangrene of the mucous membrane of the bladder." The gangrene perhaps just affected the *bladder*, as it was the *locus minoris resistentiæ*. That the diagnosis is correct we may conclude *ex juvantibus*.

I could add many an interesting experience yet which I have had in the last few months. Unfortunately, I can not support all that I have seen in the various bladders by ocular inspection at the operation. A few of the patients refused the operative interference which I had proposed in order to effect proper treatment. Nearly all of them were examined at my office by myself alone, no colleague being present to verify my cystoscopic diagnosis. But, nevertheless, I may be allowed to mention in passing that I have seen in this time, among twenty more or less interesting patients (Cases III, IV, and VI included), five tumors of

* In some cases I have had to satisfy myself with throwing into the bladder three to three ounces and a half. But even then I have usually had a satisfactory view.

† In practicing cystoscopy with Nitze's instrument it has to be kept in mind that its telescope magnifies.

‡ F. N. Otis, "Papillomatous Tumor of the Bladder demonstrated by Means of Leiter's Electro-cystoscope," "Med. Record," 1888, p. 493. Whether this battery destroys the filament of the mignon-lamp easier than that of Leiter, which allows of regulating the strength of the current very exactly, I do not know.

the bladder, two stones, once foreign bodies, and the case of gangrene of the mucous membrane as just reported.

There is no doubt, in my opinion, and no surgeon doubts it any more to-day, that cystoscopy has a great future. Of course we have to learn yet in many respects to recognize the disease in the picture, and may often be mistaken in explaining what we see, just as that occurs to the laryngologists, and very experienced ones, with diseases of the larynx. In many obscure cases of the uropoietic system the cystoscope will render great aid in arriving at a correct diagnosis. But, to be successful with it, it requires a close study and a great deal of personal experience.

A DESIGN FOR AN APPARATUS FOR PNEUMATIC TREATMENT IN HOSPITALS.

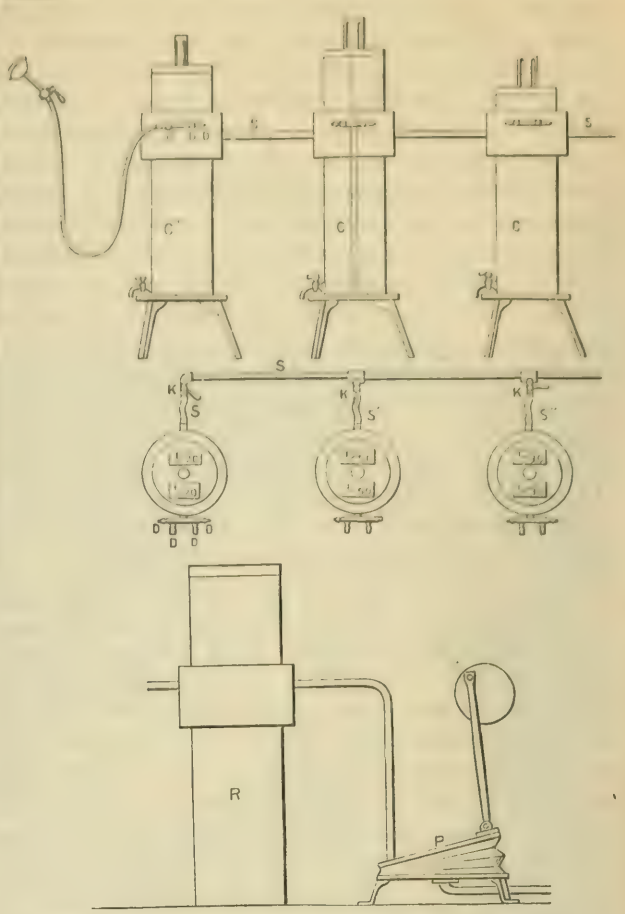
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PROFESSOR OF CLINICAL MEDICINE AND APPLIED THERAPEUTICS AT THE PHILADELPHIA POLYCLINIC; LECTURER ON SPECIAL THERAPEUTICS AT JEFFERSON MEDICAL COLLEGE, PHILADELPHIA, ETC.

For the proper utilization of the therapeutic properties of condensed and rarefied air, according to the differential method, in hospitals or institutions where a large number of patients are to be treated, it is desirable that there should be constructed at moderate cost an apparatus with which several patients may be treated at one time, but which will nevertheless permit of accurate adjustment of pressure to the varying necessities of different individuals.

The following sketch is for an apparatus for compressed air to treat twelve patients at once. As each patient inhales for but ten to fifteen minutes, and then rests for the same period before inhaling for the second time, seventy-two patients could be treated during two hours with this size of apparatus, so that it would be quite large enough for most institutions. It would be used, say, for fifty or sixty patients about three to four hours daily, as most patients would require two sets of inhalations—one in the morning and one in the afternoon. It could thus be run, say, from 9 to 11 A. M. and from 3 to 5 P. M.

C, C′, C″ are gasometers slightly modified from Waldenburg's—such, indeed, as employed in the Cohen-Richardson apparatus—except that, instead of being fitted with but one delivery-tube, each has four delivery-tubes, D, D, D, D, and the size of the cylinder is correspondingly increased.* C is weighted at the bottom for a pressure of $\frac{1}{80}$ of an atmosphere, and additional weights may be placed atop to bring the pressure up to $\frac{1}{40}$ of an atmosphere. C′ is weighted for $\frac{1}{60}$ atmosphere, and the pressure may be increased to $\frac{1}{50}$ atmosphere. C″ is weighted to $\frac{1}{40}$ atmosphere, and the pressure may be increased to $\frac{1}{30}$. S is a supply-tube with branches, S′, S″, S, leading to a reservoir, R, into which air is pumped from the outside atmosphere (pure air) by a pump or bellows, run by an electric motor or any other source of power. The power required will be between one quarter and one half horse-power. This reservoir is weighted to give an air pressure greater than any used in the cylinders, C, C′, C″, and will always force air into them.



When the reservoir is full, it can be adjusted to stop the pump or bellows, either by opening a switch if an electro-motor be used, or by interrupting the mechanical connection if the source of power be a steam-engine or other motor.

Valves in each of the cylinders, C, C′, C″, controlling the connection between R and the gasometers, are so arranged as to automatically regulate the ingress of compressed air into the latter, so that when the air-cylinders have fallen to the lowest point, the valves are open to their full extent, and, as the cylinders rise and reach the proper point, the valves are closed and the air-supply cut off. When a gasometer is not in use, the air-supply is cut off by the stop-cock, K.

A warming apparatus can be interposed between the pump, P, and reservoir, R, when the weather is too cold to use the air at the prevailing temperature.

Apparatus for drying or moistening the air, if necessary, may also be interposed at any desired point between the outer atmosphere and the patient. The gasometers, as in the ordinary Cohen-Richardson apparatus, have hook and sponge attachment for volatile medicaments, or special medication for the individual patient may be secured by interposing any appropriate medicating apparatus between the gasometer and the mask covering the face of the patient.

As many gasometers may be brought into communication with the reservoir as may be desired, and, if necessary,

* The air cylinder of the Cohen-Richardson apparatus for home use, as now constructed by Richardson & Metzgar, of Philadelphia, and Codman & Shurtleff, of Boston, is 8 inches in diameter and 24 inches high.

five delivery-tubes for patients may be connected with each gasometer. The gasometers may be arranged for any fixed or adjustable pressure desired. Of course all the patients using the same gasometer at the same time will inhale air at the same pressure. It is believed that the arrangement of pressures here suggested will meet ordinary requirements among the number of patients for which the apparatus is calculated. Patients beginning treatment would require $\frac{1}{80}$ to $\frac{1}{70}$; those who had become accustomed to it would need from $\frac{1}{60}$ to $\frac{1}{40}$; exceptional cases would be benefited by $\frac{1}{30}$.

Should a fourth cylinder be introduced, it might be permanently weighted for $\frac{1}{60}$, and furnished with additional weights up to $\frac{1}{30}$. Of course, if a cylinder is permanently weighted for any pressure whatever, that pressure may be increased to any amount desired; or, as in the ordinary apparatus for home and office use, each cylinder may be permanently weighted to $\frac{1}{70}$ only, and furnished with weights up to $\frac{1}{30}$. The sketch merely gives a general plan, capable of modification as required.

To supply three gasometers in constant use by twelve patients, estimating that the patients average ten respirations each per minute, and inhale on the average 200 cubic inches of air each at each inspiration—*i. e.*, that from the three gasometers 24,000 cubic inches of air are delivered a minute, at an average excess pressure of $\frac{1}{60}$ of an atmosphere, equal to 24,400 cubic inches at ordinary pressure—the reservoir, R, would not have to be larger than about 12 inches in diameter and 36 inches in height. Any form of bellows or pump can be used that will give sufficient air.

For intermittent use these figures can be reduced. I am indebted for revision of the calculations to my friend and co-laborer in pneumatics, Mr. Charles H. Richardson, of Philadelphia. Messrs. Richardson and Metzger estimate the cost of such an apparatus at from $340 to $400, according to the size of electric motor and the distance of the cylinders, C, C′, C″, from the reservoir. Where the motive power already exists, as in most hospitals, the cost of motor would be saved, say, $75 to $100.

In situations that can be reached by the wires of electric light and power companies, an electric motor would probably be the best, and the rental would not exceed $5 a month.

If desired, apparatus for expiration into rarefied air may be combined with this at a small proportionate advance in cost. As it is not right to exhale into the same cylinder from which inhalation is made, separate gasometers, counterpoised, should be provided for the purpose, and connected with a large reservoir or a reservoir and pump. The pump would be supplied from the reservoir and discharge into the outer air.

The effects of expiration into compressed air may be obtained, as described in this journal for December 3, 1887, p. 626, by attaching to the face-mask or its stop-cock one of the "resistance-valves" made for me by Messrs. Codman & Shurtleff, of Boston. Increasing experience in the treatment of pulmonary troubles, and especially phthisis, with inhalations of compressed air, more than confirms the opinions previously expressed as to the great value of this method and as to the possibility of securing its best effects with the simplest apparatus. The time required with an instrument that can be used by but one person at a time has been a great obstacle in the way of introducing the method into public institutions. It is hoped that this obstacle will now be overcome.

219 South Seventeenth Street, Philadelphia.

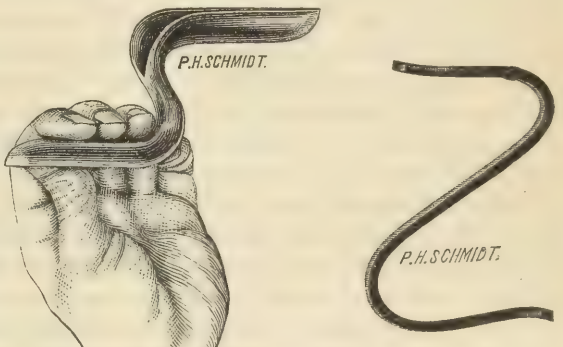
A PERINEAL RETRACTOR FOR THE DORSAL POSITION,

WITH ELEVATOR FOR THE ANTERIOR VAGINAL WALL,

*Especially adapted for Applications of Electricity to the Uterus and Vagina.**

By AUGUSTIN H. GOELET, M.D.

While some conditions of the pelvic organs demanding electrical applications may be satisfactorily treated with the patient in the Sims position, and the external or inactive electrode on the lower part of the spine, there are many conditions which require the dorsal posture and the external electrode on the abdomen, and none of the instruments designed for this posture are suitable, because they do not permit sufficient expansion at the vulva to allow the introduction of suitable electrodes without considerable inconvenience to the patient. Besides being made of metal and not insulated, they must be withdrawn during the application. Another, and often a very material, objection is that they fix the cervix in an unalterable position.



The speculum here exhibited consists of two Sims blades so joined as to form a letter S. It is made of light speculum or bell metal, cast thin, and coated with hard rubber for insulation. In presenting it to you I do so with perfect confidence in its utility, gained by six months' constant use. It is intended to be used as a retractor for the perinæum and posterior vaginal wall, to be held in the left hand of the operator, the patient being in the dorsal posture. The elevator for the anterior vaginal wall, to be used with it, is held by the nurse in her left hand as she stands on the right side of the patient. This is made of hard rubber, and is sufficiently yielding to allow free motion without causing the patient any unnecessary pain. This instrument allows enough space at the vulva for the introduction

* Read before the Section in Obstetrics and Gynæcology of the New York Academy of Medicine, December 27, 1888.

of electrodes of considerable size, and, being insulated, it does not need to be removed during an application of electricity to the vagina, though, when its removal becomes necessary, it may be readily reintroduced for the withdrawal of the electrode. Vaginal ball-electrodes with any protecting covering can not be either introduced or withdrawn without considerable inconvenience to the patient, unless through a speculum. Such manipulations as the introduction of vaginal and uterine electrodes without a speculum must be characterized as crude and imperfect, and as showing utter disregard for the patient's safety and comfort. With the instrument shown it is possible to alter the position of the cervix or uterus at will for the more easy introduction of intra-uterine electrodes.

Although it was designed for the dorsal position, it may be used for the lateral position in place of the Sims instrument. My nurse, after a little practice, has learned to hold this speculum in the Sims position with as much ease as the ordinary Sims instrument; and the general practitioner will find it more convenient to hold than the Sims instrument.

I have found it so convenient in many ways that I do not see now how I could well do without it. While it may be used with greater ease in the dorsal posture, when the nurse holds up the anterior vaginal wall with the elevator, a nurse is by no means essential, for the elevator is shaped so that it can be held over the pubes by the patient if she is willing to aid the operator, or the speculum may be used by the physician alone, aided by an ordinary depressor or the dressing forceps with a little cotton in its grasp to hold up the anterior vaginal wall. I often manipulate this speculum and introduce both vaginal and intra-uterine electrodes while the nurse is arranging the abdominal electrode. I do not wish to be understood as excusing the absence of a nurse in gynæcological practice, for I believe her a necessity for the safety and convenience of the physician as well as for the comfort and convenience of the patient, and believe that any physician who does much gynæcological work should always have one present; but I wish to show how conveniently the speculum can be used by a general practitioner, and do not hesitate to say that it forms not only a perfect and satisfactory substitute for the bivalve and trivalve instruments in use, but is a much more useful and convenient speculum in many ways, forming as it does a perineal retractor for both the dorsal and lateral postures. The saving of time may be no object to the general practitioner who has to see only one or two gynæcological cases a day, but the busy specialist can readily appreciate any instrument or method of manipulation which will economize his time. He will find frequent use for this speculum after he has once tried it. It often saves turning the patient on the side for a speculum examination when she has been first placed on the dorsum for digital examination. With it retrodisplacements may be detected with the sound which would be overlooked with the patient in the Sims position, because some are corrected by that position when the speculum is introduced and the vagina becomes filled with air. A pessary which may maintain a corrected position of the uterus while the patient is in the Sims position may, and often does, fail of its object when the patient assumes the erect or dorsal posture. This is the only speculum I know of which may be conveniently used in the dorsal position without removing a pessary from the vagina, and this fact alone would make it invaluable. The two blades are so nearly approximated at the shank that the couch does not often interfere with the manipulator's hand in holding the outside blade; but where this is the case a small leather-covered pillow, such as is used with almost every couch or table, may be placed under the patient's back to raise her. The proper cleansing of the vagina is an important matter before any manipulation of the uterine cavity or galvano-puncture, and is to be insisted upon in every instance. As the douche is not reliable and is very inconvenient, I know of no instrument so useful as this speculum in accomplishing this end. I use an antiseptic spray connected with a compressed-air receiver, and the vagina is sprayed with an antiseptic solution and wiped out thoroughly with absorbent cotton before an electrode or a sound is introduced into the uterine cavity or before a galvano-puncture is performed. And I find the *elevator* particularly useful in protecting the vagina and finger while passing the needle up to the seat of puncture.

The speculum, which is made by Mr. P. H. Schmidt, of 1311 Broadway, is finished with nickel as well as hard-rubber covering for the convenience of those who desire it for other than electrical applications.

To make this speculum more readily appreciated, perhaps it would be best to show you the form of vaginal electrode which I use. For a long time I was puzzled to know how I could protect the metallic vaginal electrodes so as to use galvanic currents of sufficient intensity to be effective. When we have to depend entirely upon the interpolar action, as we do in such applications, this is important, for mild currents are often inefficient and too slow. The usual covering of moistened absorbent cotton or chamois-skin will not allow the use of over 30 or 40 milliampères without inflicting serious injury upon the vagina. With the electrode which I show you I have been able to use currents of from 60 to 150 and even 200 milliampères with no more local effect than is produced on the integument of the abdomen by the large clay electrode of Apostoli. With currents of 50 to 100 milliampères there is a scarcely perceptible increase of redness of the surface after an application of ten to fifteen minutes, which is not noticeable in any way afterward. With the higher intensities the redness is increased, but no abrasion is produced to interfere with subsequent applications.



I use small copper discs of about the size and thickness of a penny, with a spindle attached to the center, which allows it to be screwed on any ordinary insulated handle. This I cover with a thick layer of potter's clay molded so as to cover the edge of the disc well. This is allowed to dry hard or it is baked, so as to make it retain its shape.

It is then attached to the handle and covered with a piece of gauze held on by a rubber band around the shaft of the electrode, which aids in retaining the clay in position. When it is to be used it is covered additionally with absorbent cotton which is well moistened. When once used, the cotton is removed and replaced fresh for every patient. I have used the metallic ball in this way also, but the clay will not adhere as readily to its smooth surface, and if the clay becomes soft, as it may do after many applications, the covering becomes thinner in some spot where the pressure is greatest, and the vagina may be cauterized in consequence. Besides, the current can not be so well concentrated with the ball as with the disc. For use with the positive pole I have the disc made of aluminium or hard carbon. The clay, when allowed to harden—or, better, if it is baked—will retain its shape for some time, and when well moistened is a good conductor, and forms a protection for the metallic electrode which greatly modifies the local action. When it has become necessary to increase the size of the electrode so as to multiply the intensity of the current, I have used a mixture of one third clay with two thirds plaster of Paris, which sets and remains firm, and is still absorbent.

One very decided advantage in favor of the clay-covered vaginal electrode is that where suprapubic punctures of fibroid tumors is necessary, because they can not be reached through the vagina, or, if frequent vaginal punctures have produced much local irritation, the current can be concentrated through the tumor by using it connected with the positive pole either against the tumor in the vagina or against the cervix, using negative puncture only. I have been able to concentrate 300 milliampères through the tumor without producing any local irritation in the vagina, and any pre-existing soreness is rather relieved by it. Puncture with both poles may thus be avoided. I did not believe at first that I would be able to get so much penetration through the small vaginal electrode; but by using a thick carbon disc well protected with clay, I have been able to reach 300 milliampères, using only 30 cells (Leclanché).

Those who profess not to cauterize the vagina when currents of over 40 milliampères are used with a metallic electrode covered only with absorbent cotton or chamois-skin, confess that they do not use a speculum, which explains why they believe this to be true. It stands to reason that they must burn the delicate mucous surface of the vagina when it is necessary to protect the large external electrode to avoid a similar effect upon the skin. I know that under the same conditions they must produce the same effect that I do. I once asked a prominent electrician how he avoided this action of the internal electrode. His reply was: "Well, do your patients object to it?" I replied, that was not the question. I objected to it myself most decidedly.

To those who would object to the high intensities mentioned above I would say that they can form no idea of what can be accomplished by galvanism until they have learned how to use these intensities with safety to the patient. I would not convey the idea that I believe high intensities are always necessary or even allowable, for there are certain conditions where they would be dangerous; but there are conditions which remain unaltered by low intensities.

THE OPERATIVE TREATMENT OF HÆMORRHOIDS.

By WALTER WHITEHEAD, F. R. C. S., F. R. S. Edin.,
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My attention has just been drawn to the "New York Medical Journal," published December 8, 1888, and the trenchant attack of Dr. Kelsey upon my paper entitled "Three Hundred Consecutive Cases of Hæmorrhoids cured, by Excision," read before the meeting of the British Medical Association in 1886. I think that had Dr. Kelsey read the paper in a more temperate spirit he would have done more to advance the genuine interests of surgery than he has accomplished by the license he has given to his powers of hypercriticism and his reckless disregard for fact. With your permission I will endeavor to show how illogical and inconsistent his criticism has been.

In the first place, I will attempt to restore to something like order the varied charges I find scattered throughout his paper, and, when condensed, I think that the following will fairly summarize the gravamen I am expected to defend:

1. That I have ventured with my limited experience to condemn the clamp and ligature when greater authorities, who number their operations by thousands "and never report failures," believe both these methods to be radical operations for the cure of piles.

2. That the operation I have "invented" is "naturally difficult, tedious, and bloody."

My objection to the ligature is, and has been for fifteen years, that it is an operation inconsistent with the pathological condition which constitutes piles, and consequently can not be radical. Now, Dr. Kelsey says: "Whatever else may be raised as an objection to the operation by ligature, this, I believe, is the first time it has ever been impeached on the ground that it was not radical."

From the tone of Dr. Kelsey's letter I should not expect that he would accept my assurance that I have seen numerous instances of recurrence after the use of the ligature by surgeons whose names have been identified with that treatment for the last half-century. I will, however, appeal to the writings of the two surgeons Dr. Kelsey names, who, according to his authority, have operated upon thousands of cases and never reported a failure, and we shall see how far they substantiate Dr. Kelsey's statement. In fact, throughout my reply, beyond quotations from Dr. Kelsey's own work, I shall only refer for corroboration of my views to his two authorities, both of whom I cordially recognize and respect. One of the two is Mr. Henry Smith, of London, the acknowledged advocate of the clamp and cautery. This distinguished surgeon tells us what has actually occurred in his own practice after the employment of the ligature of piles by other surgeons.

In the third edition of his Lettsomian Lectures on "The Surgery of the Rectum," Mr. Smith, after mentioning two cases where death followed the use of the ligature, records with commendable candor his experiences of this treatment. Page 98: "In some instances a prolonged convalescence followed, the patient being confined to bed for many weeks, while in others it happened that the wounds resulting from the separation of the ligatures would not heal up for a long period, and the patient would be subjected to much painful suffering, necessitating, perhaps, some other operation." Again, on page 106: "In one case where I applied the ligature, a patient of the late Dr. Wildbore, an old lady, very nearly lost her life from secondary hæmorrhage and sloughing about the time the ligature came away." Page 109: "In another case the ligature was followed by a great deal of suffering and the formation of an abscess at the site of ligature, which remained unhealed and caused severe pain for many weeks after the operation." Page 112: "This operation was followed by the most severe symptoms, notwithstanding the employment of large and continued doses of opium and the local application of ice. The pain was most intense, and the constitutional disturbance in a corresponding degree severe." Page 113: "This gentleman suffered a great deal of pain after the operation, and his pulse became and continued very rapid. On the 29th he became very restless, perspired profusely, and became delirious"; and on page 124 he concludes by saying: "It is impossible for any surgeon conscientiously to tell his patient that there is no danger whatever after the ligature."

Here we have one of Dr. Kelsey's authorities telling of deaths, patients confined to bed many weeks, wounds that would not heal, weeks of intense suffering, secondary hæmorrhage, sloughing, formation of an abscess, and recurrence and delirium, following the use of the ligature, and yet Dr. Kelsey asserts that this surgeon never reports failures, and that the ligature has never "been impeached on the ground that it was not radical."

I will now supplement what Mr. Smith states by giving Dr. Kelsey's own opinion of the ligature, and for this purpose I will extract from what I believe to be the last edition of his work on "Diseases of the Rectum and Anus." On page 153 we have the following opinion expressed: "There may be, and often is, severe hæmorrhage at the time of the operation, which, though not dangerous, will require a moderate stuffing of the rectum with lint for its control; and if this is resorted to, an additional element of trouble will be found when its removal becomes necessary." I will interrupt the author's remarks at this point to call attention to the fact that on the previous page he had written: "Nothing has been said regarding primary or secondary hæmorrhage, for the reason that it is not a complication to be looked for." He further states that after the ligature "the constitutional disturbance is often severe. There will often be considerable nervous excitement, a frequent pulse, loss of sleep, pain sufficient to demand the use of morphine for days, obstinate retention of urine which may render catheterism necessary for a fortnight, swelling of the parts around the anus, and finally undue contraction after cicatrization, which will entail the use of the bougie. That this picture is not overdrawn, the experience of most men who have had a large number of these cases will, I think, prove." After having expressed this opinion, Dr. Kelsey reproaches me for venturing to condemn the ligature.

I will now take the evidence of Mr. Allingham, who firmly believes in the ligature, Dr. Kelsey's second authority, one of the two who, according to him, never report failures, and we shall see what he has to say about the clamp-and-cautery operation, which is the other operation I ventured to condemn.

In Mr. Allingham's last edition of his work, "On Diseases of the Rectum," edited by his son, the following appears on page 127: "In my opinion, this operation (clamp and cautery) has little to recommend it. As regards danger to life—after all, the issue of the greatest moment—as far as my most careful researches have led me to a conclusion, it is quite six times as fatal as the ligature properly and dexterously applied. There are, moreover, these disadvantages: The burning causes very great pain after the operation, especially if the skin is involved; secondly, hæmorrhage is more likely to occur than after the best modes of operating, greater sloughing of the parts takes place, and a longer period is required for healing. The after-results are likely to be unsatisfactory, for contraction is common."

So much for these "greater authorities" never having reported failures.

It will now be instructive to turn to a passage in Dr. Kelsey's paper where he states: "Men have objected to it (the ligature) because it caused pain, because it has been followed by untoward consequences, and because they believed a radical cure could be effected by other methods preferable, but never because it failed to cure." What does one of his authorities say to this? Mr. Smith quotes a case, on page 115 of his work before referred to, where a lady had undergone one or two operations with the ligature, with only partial success. And on page 141 Dr. Kelsey in his work says that after operations for piles performed on women with uterine displacement the hæmorrhoids will speedily return, and this opinion is shared by Allingham on page 108 of that author's work. Mr. Allingham further states: "It is better to tie the small ones (piles) first, as there is danger of their being overlooked, and if they are left they are likely to grow, and a return of the piles may be confidently anticipated in a few months. I have seen many cases in which this has occurred." If such be the case, Dr. Kelsey must admit that, at least under these circumstances, the ligature fails. No more convincing proof could have been advanced to show that the ligature is not radical than by its failure under these conditions, because, had the ligature been capable in the first instance of removing the whole pile area, there would have been no material left for the production of fresh piles, and this is one of the conditions where excision always succeeds and where the ligature is liable to fail.

I think that Dr. Kelsey has been most unhappy in his selection of his two authorities. Mr. Smith and Mr. Allingham have evidently views diametrically opposed to each other, and he unfortunately is in the position that to save

the one he is logically bound to abandon the other. Dr. Kelsey believes in the clamp and condemns the ligature. Mr. Smith condemns the ligature and advocates the clamp. Mr. Allingham denounces the clamp and extols the ligature. How, then, is it possible for me to agree with two authorities, however distinguished they may be, when they do not agree with each other? I quite agree with Mr. Smith and Dr. Kelsey that the ligature has all the disadvantages they assert, and I can quite imagine that Mr. Allingham is correct when he states that the clamp is six times as fatal as the ligature, but I can not agree with Dr. Kelsey that his two great authorities never report failures, or that the ligature has never been "impeached on the ground that it was not radical."

It would indeed be heartless, even if space permitted me, to take any further advantage of Dr. Kelsey on this point of his attack.

I now come to the statement of Dr. Kelsey that my operation—excision of piles—is "a naturally difficult, tedious, and bloody operation."

Although Dr. Kelsey gives no assurance that he has ever excised piles, he repeatedly expresses the opinion that it is difficult. I am surprised to find a surgeon with his experience acknowledge an operation difficult when I have been assured so often by young surgeons, early in their professional careers, that they found no difficulties in the operation. He must admit that many operations are difficult compared with meretricious imitations, and that the merit of an operation does not consist in the facility with which it can be performed by incompetent surgeons, or that the interests of patients should become subordinate to the capacity of surgeons. But, even if excision were a difficult operation, his objection would fall to the ground could it, as I believe I have shown, escape most, if not all, the objections which have been so clearly indicated by Dr. Kelsey and his authorities to follow the use of the clamp and ligature. I am satisfied that it is an operation which can easily be performed by any surgeon possessing average skill and intelligence.

In reply to Dr. Kelsey's accusation that the operation is tedious, all I have to say is that it can be completed, in an average case, in ten minutes. If perhaps more tedious even than the ligature or clamp, it has the compensating advantage, to the patient, of being complete and permanent; and, if it takes five minutes longer in the performance, Allingham and Weir, among others, acknowledge that it gains at least six days in convalescence.

The application of the term "bloody" to the operation is quite in character with the rest of his paper. I have no desire to be associated with that school of timid surgeons who make bloodless surgery the pinnacle of their ambition, and allow the dread of blood to be the predominant feature of their treatment. At the same time I have as much regard to the disadvantages entailed by the loss of blood as any surgeon need possess. What would be an excessive loss in one operation would be considered a trifle in another, and the bleeding in excision does not exceed that daily lost by many patients suffering from piles. On one occasion, when I believed that more blood had been lost than had ever before occurred in my experience, I had it collected from the floor of the operating-theatre, when the blood, together with some sawdust which had been gathered with it, only measured four ounces. Hæmorrhage such as I meet with may very well take a subordinate position to other and more important considerations involved in the operation.

Dr. Kelsey reluctantly makes the concession, at the end of his paper, that he agrees with Weir that after excision "the recovery is quicker, and the reaction, as shown by pain and difficulty in urination, is less" than that following the ligature, and, as he says in the previous column, "The points upon which the merits of the operation must rest are not that it cures and fails to kill, but the amount of pain and constitutional disturbance it causes."

My opinion would be that the first test of an operation should be its safety; secondly, its completeness and the permanence of its results; and, lastly, the degree of freedom from pain. Judged by this standard, excision is in the position of never having had a death recorded against it; no complaint has ever been made that it has not been complete and its results permanent, and Dr. Kelsey himself admits the pain to be less than after the ligature. When any other operation can be shown to supersede in its results those I have mentioned, then a vacillating teacher like Dr. Kelsey may, so far as I am concerned, effectually destroy the reputation of excision.

Before I conclude I wish gently to remind Dr. Kelsey of a passage which appeared in the preface of his work published in 1884: "My special aim has been to make the book a safe guide for the student and general practitioners." How far has he fulfilled this laudable ambition? On page 143 of that work he says: "The treatment of hæmorrhoids by injection of certain substances, chief of which is carbolic acid, may now, I believe, be accepted as a surgical procedure of a certain definite value, and one worthy of a place among the recognized means of cure at our command. I wish now to emphasize what I wrote in the first edition of this work in favor of this method of treatment. For the past year I have treated nearly every case of internal hæmorrhoids for which I have been consulted by this method alone, and the favorable view I then held regarding it has only been confirmed by subsequent experience. . . . Since adopting the treatment by injection I have had very little use for either operation [ligature or clamp] except in cases of prolapsus, and in them I decidedly prefer the clamp and cautery." This teacher, with his imagination captivated by carbolic injections, and whose special aim was to make his book a safe guide for the student and general practitioner in 1884, has the audacity in 1888, whilst admonishing me, to admit that his faith in carbolic injection was unfounded, and that he has now abandoned the treatment in favor of the clamp and cautery.

Bromethyl.—Szuman ("Therapeut. Monatshefte," April, 1888) recommends bromethyl for brief operations, because the patients awake from it very quickly, while vomiting and other bad symptoms are rare after small doses. He does not recommend it in cases of hard drinkers or for operations of long continuance. It is just as dangerous as chloroform in cases of phthisis, heart and kidney disease.

A CASE OF EXCISION OF THE ASTRAGALUS.

RECOVERY, WITH ALMOST PERFECT USE OF THE FOOT

By W. H. DUKEMAN, M. D.,
OLEAN, N. Y.

I REPORT this operation because of the somewhat unique and complicated features of the case, and to place one more successful total excision of the astragalus on record:

On September 30, 1881, Mr. C. R., aged twenty-eight years, a healthy muscular man, weighing about one hundred and eighty pounds, while engaged in building a very large oil tank (such as is used by the Standard Oil Company for storing crude petroleum), by a misstep fell to the ground, a distance of about thirty feet.

He fell in such a way, he said, that when he struck the uneven ground his whole weight was brought to bear on his right heel in such a manner as to turn his foot inward and forward. He was immediately taken to his boarding-house, where I saw him about an hour after the accident.

On examination, I discovered a fracture of the fibula about three inches above the malleolus, a partial dislocation of the tibia forward, and a displacement of the astragalus forward and outward, almost protruding through the skin. The patient was at once anæsthetized, and the tibia and fractured fibula were reduced with but little difficulty; but, after the most careful and repeated efforts, I found it impossible to replace or even move the displaced astragalus; consequently I was obliged to let it remain as it was. The fractured fibula in the course of time united nicely. By this time the astragalus caused ulceration of the tissues on the dorsum of the foot, and necrosis of the presenting portion of the bone had taken place. This was about two months after the accident, and I found it advisable and necessary for his recovery that an exsection be made and the bone removed. The patient was anæsthetized and an incision of the soft parts over the bone was made in a line lengthwise over the displaced bone. The bone was displaced to such an extent that its posterior surface pointed outward and the entire bone was almost completely turned one half upon its axis, the scaphoidal extremity, which was necrosed, pointing upward. The bone was removed without any difficulty and with but very little hæmorrhage. Further examination revealed that the articulating surfaces of the os calcis and scaphoid were injured. Small spicula, together with the roughened surfaces, were snipped off with the bone-forceps, and, after being carefully smoothed and the cavity carefully and thoroughly cleansed, the wound was closed. A drainage-tube was inserted and antiseptic dressings were applied. The foot and leg were then placed in a wire splint with a foot-board firmly secured at right angles to give support to the foot, and firmly secured by bandages to keep it at perfect rest. The leg was then suspended by means of a rope and pulley to the ceiling. This allowed the patient to move, and at the same time kept the foot at perfect rest. The patient made a good recovery, being confined to his bed about six weeks, and in the course of four months he was able to use his foot with the aid of a crutch.

It is now over three years since the operation was performed. I saw the patient a short time ago at work for a grocer in Jamestown as a delivery man. His foot is a little shortened, but he has almost perfect use, with no impediment, of the ankle joint.

Small-pox in New York City.—The present season has been singularly free from this disease, no cases having been reported from December 11, 1888, to February 12, 1889, when one death was reported.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.

Published by D. APPLETON & Co. Edited by FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, FEBRUARY 23, 1889.

THE MARINE HOSPITAL SERVICE.

THE "Journal of the American Medical Association" for February 9th contained an announcement signed by the editor, Dr. John B. Hamilton, to the effect that his editorial connection with the "Journal" ceased with that issue. It is known to our readers that Dr. Hamilton assumed the editorship of the association's "Journal" at the beginning of the current year, having been given leave of absence in his capacity as surgeon-general of the Marine Hospital Service, with a view to the early severance of his connection with the service. In the article mentioned Dr. Hamilton says that, when he accepted the position of editor of the "Journal," he felt no certainty of the passage of the Marine Hospital Service bill, which was then pending, as it had been for ten years before, but that on the 4th of January it passed both houses of Congress and became a law prohibiting any original appointments into the service except to the rank of assistant surgeon and having the consequent effect of creating a life tenure in the office of surgeon-general. It is implied that it was this effect of the bill that induced the surgeon-general to give up his editorial duties and return to his post at the head of the Marine Hospital Service. This might well be the case, for he thus exchanged a condition of dependence on the inscrutable changes of political affairs for one of security.

The course that events have taken in this matter seems to us eminently satisfactory. It is true that an important journal, one representing the interests of a great association, loses the supervision of a man admirably calculated to heighten the creditable position that it has already reached, but the "Journal" is for the present under the trustworthy guidance of the American Medical Association's Committee on General Management, and little difficulty will be encountered, we presume, in soon finding another suitable editor. On the other hand, there is but one man whom everybody, barring a few malcontents, regards as the proper head of the Marine Hospital Service, and that man is Dr. Hamilton. We are quite aware that the service already numbers among its officers several gentlemen who could fill the office of surgeon general creditably, but we are equally sure that those very men are foremost among those who look upon Dr. Hamilton's resumption of what he very properly terms his life work in the service as the best thing that could have happened for its continued efficiency and for their own satisfaction. Had his withdrawal been consummated, and the bill failed to become a law, the appointment of an unfit man from civil life might have been made. Only a man familiar with the past achievements of the service and with its traditions can safely be charged with its conduct, espe-

cially as it now covers a field of far more generally recognized importance to the community at large than that for which it was originally established. That this enlarged scope of its operations will continue to be confided to it is better guaranteed by Surgeon-General Hamilton's tenure of office than by any other occurrence that was to be looked for.

THE HOSPITAL ACCOMMODATIONS OF NEW YORK.

The general agent of the Hospital Saturday and Sunday Association, Mr. Frederick F. Cook, in a letter to the editor of the "New York Times," quotes the following passage from Dr. Alfred L. Loomis's inaugural address delivered on the occasion of his recent assumption of the duties of the presidency of the New York Academy of Medicine: "The only appeal until quite recently has been for means to establish hospitals and charitable institutions, so that to-day hospitals and dispensaries so far exceed the needs of the city that there is actually a premium on patients to fill their wards." The words "until recently" referred to no cessation of this alleged state of things, but to the fact that munificence had of late been shown to some extent in the endowment of purely educational institutions. Whatever may be said of the dispensaries, it is somewhat startling to hear that New York's hospital accommodations are so far in excess of what is needed as Dr. Loomis's words seem to imply, or, for that matter, anything else than inadequate. Indeed, it is notorious that the lack of a spare bed is a frequent bar to the admission of patients in need of hospital treatment. Specific testimony to this state of things has been gathered by Mr. Cook from the superintendents of most of the general hospitals. It seems that the increasing demands upon the New York Hospital have compelled that institution to reduce the twenty-three days' average length of stay for each patient to one of fourteen days in the course of the last ten years, so that, as the superintendent says, "when it becomes a question between a man able to be about, though not yet in a condition to return to work, and another whose very existence depends on instant admission to hospital treatment, the choice is clearly made for us by compelling circumstances." Statements of the same general purport are attributed to the officials of Mount Sinai, the German, St. Luke's, the Roosevelt, and St. Francis's hospitals.

Mr. Cook has certainly brought forward sufficient corroboration of the general impression as to the inadequacy of the hospital accommodations in New York, but he seems to us to make an odd application of it when he says: "If what the president of the New York Academy of Medicine says about our hospitals is anywhere near the truth, there is not only no *raison d'être* for any such an instrumentality for hospital support as the Hospital Saturday and Sunday Association, but it is even permissible to charge it with seeking the gifts of the public under false pretenses." We think it is generally understood by the contributors to the association's fund that its purpose is to aid in maintaining the hospitals already in operation, and not to build others. It is to be presumed that neither the president of the Academy of Medicine, nor anybody else with the slightest title to be heard on the matter, would favor the demolition of any of the hospitals that we now have or oppose their maintenance in the highest possible degree of efficiency. The truth is that we need more hospitals rather than fewer, and that they ought to be placed beyond the necessity of refusing admission to any person needing their shelter and care on the ground that there is no bed to spare.

MINOR PARAGRAPHS.

PUPILLARY CONTRACTION DUE TO THE SALICYLATES.

In the January number of the "Practitioner" Dr. G. A. Gibson and Dr. R. W. Felkin record the singular effects of sodium salicylate in the case of a middle-aged woman to whom twenty grains were given every two hours for an attack that was taken to be of a rheumatic nature. Soon after she had begun to take the drug her pupils were found to be decidedly contracted, their reaction to light was absolutely lost, vision was distinctly impaired, tinnitus aurium and deafness were present, and there was severe headache, chiefly over the occipital and parietal regions. These effects soon disappeared, and the patient made an excellent recovery. The authors remark that such phenomena might lead to an error in diagnosis, and they are inclined to explain them in their case as due to an idiosyncrasy.

VESICAL EXPRESSION.

In view of all that has been said about uterine expression, it is somewhat singular that heretofore nobody seems to have thought of employing compression of the urinary bladder in cases of retention not dependent on a mechanical impediment to the flow of urine. A recent number of the "Deutsche Medizinal-Zeitung" contains an abstract of an article contributed to the "Berliner klinische Wochenschrift" by Dr. Julius Heddaeus, in which the author states that he has often made use of vesical expression with success. He gives a minute description of two different forms of manipulation, but it is sufficient for all practical purposes to say that, with the patient in such a position as to relax the femoral muscles, the bladder is grasped with both outspread hands and gentle and steady compression from above downward and backward made by approximating the thumbs to the fingers, the force being directed toward the neck of the organ. The procedure is said to be painless and free from danger in properly selected cases. If, however, it is not successful readily, recourse must be had to catheterism, and it is contra-indicated in cases of abdominal inflammation or great tenderness and during pregnancy. Corpulence, abdominal tumors, and the like make it difficult and sometimes impossible.

POISONING WITH CAFFEINE.

In the "Lancet" for February 2d Mr. T. Geraty gives a brief account of the case of a woman who, suffering with migraine, took by mistake 200 grains of citrate of caffeine. At first she complained only of the nauseating taste. As soon as she had eaten a little porridge faintness and nausea came on. In fifteen minutes after having taken the drug she was partly unconscious, much depressed, and extremely pale; all the muscles were completely relaxed, and there was a decided inclination to sleep; the pulse was slow, soft, and very compressible; and the respiration was slow and sighing. An emetic of a twelfth of a grain of apomorphine having acted promptly and very thoroughly, small quantities of brandy were given, she was

kept recumbent, and warm applications were made. In about an hour after she had swallowed the caffeine there was a well-marked chill. She recovered consciousness in about an hour and a half after the vomiting, and the faintness passed away gradually.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending February 19, 1889:

DISEASES.	Week ending Feb. 12.		Week ending Feb. 19.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	13	1	12	4
Scarlet fever	366	50	351	53
Cerebro-spinal meningitis	4	1	0	0
Measles	303	17	292	26
Diphtheria	195	59	202	72
Small pox	0	1	0	0

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from February 10 to February 16, 1889:*

The Medical Director will proceed to Fort Buford, Dakota, on public business connected with the Medical Department, and, upon completion of duty, will rejoin his station. Par. 8, S. O. 14, Headquarters Department of Dakota, St. Paul, Minn., February 5, 1889.

Loring, Leonard Y., Major and Surgeon. By direction of the Secretary of War, the leave of absence on surgeon's certificate of disability granted in S. O. No. 6, January 18, 1889, Department of Arizona, is extended six months on account of disability. Par. 23, S. O. No. 35, A. G. O., Washington, February 11, 1889.

Ainsworth, Fred. C., Captain and Assistant Surgeon, will, by direction of the Secretary of War, proceed to New York city and Brooklyn, N. Y., on public business. Par. 15, S. O. 38, A. G. O., Washington, February 14, 1889.

Mearns, Edgar A., Captain and Assistant Surgeon, is relieved from temporary duty at Fort Pembina, Dakota, and will rejoin his station, Fort Snelling, Minnesota, without delay. Par. 4, S. O. 14, Headquarters Department of Dakota, St. Paul, Minn., February 5, 1889.

Society Meetings for the Coming Week:

Monday, *February 25th:* Medical Society of the County of New York; Boston Society for Medical Improvement; Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement; Baltimore Medical Association.

Tuesday, *February 26th:* New York Academy of Medicine (Section in Laryngology and Rhinology); New York Dermatological Society (private); Buffalo Obstetrical Society (private); Boston Society of Medical Sciences (private).

Wednesday, *February 27th:* New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medical Society of the County of Albany; Auburn, N. Y., City Medical Association; Berkshire, Mass., District Medical Society (Pittsfield); Philadelphia County Medical Society.

Thursday, *February 28th:* New York Academy of Medicine (Section in Obstetrics and Diseases of Women and Children); New York Orthopædic Society; Brooklyn Pathological Society; Roxbury, Mass., Society for Medical Improvement (private); Cumberland, Me., County Medical Society (Portland).

Friday, *March 1st:* Practitioners' Society of New York (private); Baltimore Clinical Society.

Saturday, *March 2d:* Clinical Society of the New York Post-graduate Medical School and Hospital; Manhattan Medical and Surgical Society (private); Miller's River, Mass., Medical Society.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

Meeting of January 17, 1889.

The President, Dr. A. Jacobi, in the Chair.

Yellow Fever and its Ætiology.—Dr. Paul Gibier, of Paris, read a paper thus entitled in which he gave the results of experimental researches instituted in Florida under the direction of the French government to determine the nature of the recent outbreak there. Dr. Gibier, who is assistant to the chair of pathology in the museum of Paris, investigated the yellow fever which appeared in Cuba in 1887, and has on several other occasions been sent on similar missions by his government. He first considered the question which had been raised, and not yet satisfactorily settled, whether the outbreak in Florida was one of veritable yellow fever. This had been doubted by some because of the relatively slight mortality of the disease and in view of the fact that many of those who died were blacks. It had been observed in the West Indies that usually the colored people escaped almost entirely. The explanation seemed to him to be that the exodus of white families from the infected districts greatly increased the proportion of blacks in the population. However, taking an equal number of whites and blacks who had contracted the disease, it had been evident that the blacks suffered less severely. Moreover, while some veritable cases of yellow fever in both races had been established by autopsies, it had been shown in the same way, and also by the symptoms, that bilious fever and malarial intoxication had been present in many of those who died, and, by inference, in still more of those who recovered, sometimes being the only cause of sickness, and sometimes being combined with the true yellow fever. Such a hybrid form of yellow fever had already been recognized by Professor Verneuil, of Paris. Owing to the unhealthy location of the negro quarter (on low ground across the river from Jacksonville) and their carelessness in the disposal of dejections and their general uncleanliness, the blacks had in all probability died as often from the malarial as from the yellow fever element in the epidemic. The daily intermittent temperature in the course of the disease in both whites and blacks which had been observed left us free to suppose either that the yellow fever element had been hereditary or endemic in that part of Florida since its previous appearance in Jacksonville, so as to blend with the malarial element proper to that locality, or that, having been brought in afresh, it had awakened more or less paludal disease the germs of which were already present in the systems of those it attacked. Owing to their filthy habits, the blacks, at least, had often suffered from a type of fever which deserved the term malignant in the same sense in which we applied it to typhus.

The investigations made had thrown considerable light on the relations of a specific bacillus to yellow fever. In three out of seven bodies which he had had opportunity to examine he had found in the intestinal contents the same bacillus which he had found in Havana in 1887. In these three cases death had occurred on the fourth day. In the bodies of three of the vic-

tims who had died on the eighth day no characteristic bacilli had been found. They might have been present in the earlier stages of the disease without persisting in the later, perhaps owing to a change from an alkaline or neutral to an acid reaction in the intestines. The bacilli of phthisis sometimes disappeared when the disease was advanced, in a somewhat similar way. The speaker considered it as fully established that there was a single specific bacillus in yellow fever, which liquefied gelatin, produced a black discoloration, and had the odor of black vomit—the same bacillus which Dr. Sternberg as well as he had found in Havana.

Neither in Havana nor in Jacksonville, when autopsies had shortly followed death, had this bacillus been found out of the intestinal contents. It seemed never to invade the blood or the solid structures and viscera during life, but, like cholera, had its natural residence in the alimentary tract. The early administration of bichloride of mercury, naphthaline, and tannic acid was the line of treatment pointed to, therefore, and was, beyond all doubt, the best one known.

It might be asked, "How is it, if the intestine only contains the pathogenetic bacilli, that the liver goes so rapidly into fatty degeneration, the kidney into nephritis (often the immediate cause of death), and the tissues at large into a tendency to hæmorrhages?" He would answer that all these were adventitious results due to the absorption of a ptomaine produced in the intestine by the microbe. This ptomaine reached the liver almost at once by the portal radicles, whence the fatty degeneration. Its effects on the kidney and the tissues at large might be explained on the same hypothesis as similar lesions which occurred in typhoid without the presence of a bacillus. Various poisons were known to produce them.

Two other facts the speaker had, as he believed, established in his various researches: 1. That yellow fever was a disease belonging only to the seaboards of warm countries. 2. That an infected ship might go for a time into arctic regions, during which time the germs remained latent (hibernated), but that on return to a hot latitude they became again active and communicable.

Unusual Methods of acquiring Syphilis, with Illustrative Cases.—Dr. L. Duncan Bulkley read a paper with this title in which he called attention to the many and scarcely suspected ways in which innocent people might acquire syphilis. He hoped: 1. That his paper might do something toward putting the public more on their guard against syphilis acquired in other ways than by impure connection. 2. That it might make every physician to whose notice it came more ready to recognize symptoms of the disease when there was no history of a sexual congress from which it could have arisen. 3. That it might do something to lessen the stigma and disgrace which were attached to the disease in whomsoever it might occur. 4. That it might aid in bringing about a legislative enactment by which syphilis should be classed with the infectious diseases and come under the control of the health authorities, and so in no long time be stamped out.

Forlier had estimated that a quarter of all women having the disease acquired it innocently, and this also frequently occurred in males. Out of fifteen hundred cases of which the speaker had record on his own books, a majority had come to him for skin diseases, and long after the primary sore had passed away. Only between four and five per cent. of them had remembered having had an initial ulcer. Quite a number had been certain that they had never had an impure connection. Forty per cent. of the women he had treated had acquired the disease by kissing their husbands or lovers. The initial lesions of *syphilis innocentium* appeared, according to circumstances, on either lip, the tongue, throat, cheek, chin, eyelid, nose, ear, hand, fingers, forearm, or breast. *Syphilis innocentium* had been divided, on the basis of the means by which the disease was acquired, into three varieties: 1. *Syphilis economica.* 2. *Syphilis brephotrophia.* 3. *Syphilis technica.* Or, in other words, syphilis acquired in the contacts of social life, or in the act of nursing, or through the medium of body service of different sorts.

Among the various articles mentioned under the first order as having in recorded instances conveyed the virus of the disease were tobacco-pipes, eating and drinking utensils of all sorts which came into contact with the mouth, cigars, pens, pencils, paper-cutters, and borrowed under-clothes, sponges, towels, combs, and tooth-brushes; even an opera-glass, a cane, plaster put on bruises, and the wrapping of a stick of caustic previously used in some syphilitic throat had in known cases conveyed the disease. In one of the instances related a gentleman who had a slight anal fissure had scratched himself to allay the itching when wearing a suit of bathing clothes at a sea-side resort, and had acquired the disease in a severe form, with secondary and tertiary symptoms, skin lesions, and bone pains following in due order. In another case a policeman had struck a syphilitic man in the mouth, and received a bruise on his hand from one of the teeth, from which he developed syphilis. In a third instance a reputable young lady had acquired the disease in an aggravated form by putting into her mouth pins whose previous owners she was ignorant of. In a fourth case a man had been bitten on the ear in a fight with another. Contrary to notions widespread among the laity, there were no records showing that the disease was ever acquired through contact with paper money or with public urinals and water-closets; and very few instances could be found of its having been conveyed by public drinking-cups. Instances were numerous where physicians had acquired it by making examinations in the throat and vagina; also of their having conveyed it to these parts by unclean instruments. A surgeon about to examine a sore on the glans penis of a patient had noticed a cut on his own little finger, and, holding the latter well back, had touched with it a sore not noticed till then on the scrotum. In spite of immediate washing and antiseptic applications, he had developed syphilis with all its stages, although under antisyphilitic treatment from the first. In industrial pursuits and trades large numbers of men had often been simultaneously infected, especially when any utensil was passed from mouth to mouth; thus, glass-blower's pipe, a musical instrument such as a flute, or a thread held in the mouth and passed to another. There seemed to be scarcely any cases where the germs had been conveyed through the laundrying of clothes.

The most active means of the spread of the disease, however, next to venereal contact, was by kissing. Children were thus often either its victims or its carriers. Instances under this head were innumerable. Scratching and pinching had conveyed the disease: contacts in bed with a friend or brother; even carrying an injured person to a house had furnished cases. The lips of nursing infants frequently received or conveyed the disease. Children were also infected in any of the ways already mentioned. Cases were constantly occurring in Russia, but sometimes in this country also, where the tip of the tongue used to wipe out a foreign body from the eye conveyed the disease. Vaccination, transplantation of teeth, and cupping were among the processes by which it had been carried. Razors, Eustachian catheters, urethral sounds, and specula had also been a means to the same end. In one carefully investigated case it had been concluded that a syphilitic man (a physician whose finger had been infected, and who refrained from kissing) had conveyed the disease to his wife through the spermatic fluid.

In reply to an inquiry by Dr. S. T. Hubbard, who had seen

one case of the kind he inquired about, the speaker added that it was a disputed and quite doubtful point whether the virus was ever conveyed by the milk of a syphilitic nurse.

The President suggested that just as in any depressed condition the milk of a nursing woman became an excretion by which, for instance, drugs were thrown out of the system, so in syphilis, under like conditions, the milk might convey the virus.

NEW YORK SURGICAL SOCIETY.

Meeting of December 26, 1888.

The President, Dr. Lewis A. Stimson, in the Chair.

Complete Extirpation of Both Parotid Glands for Sarcoma; no Recurrence after the Lapse of Two Years.—Dr. J. A. Wyeth presented a female patient from whom he had removed both parotid glands two years and a half ago, ligating the external carotid artery of each side. The disease returned on one side in six months, so that a second operation was necessary, but two years had now elapsed without a second recurrence. The operation was only performed at the earnest solicitation of the patient. It was unusually difficult, both jugular veins being exposed in the course of the dissection. Double facial paralysis was present after the operation, but it had disappeared on one side, probably from a restoration of the collateral circulation. The fact of special interest from a surgical standpoint was the ligation of the external carotid artery on the right side just at the point of bifurcation.

Dr. Gerster presented patients exemplifying the following conditions:

Result of a Radical Operation for Umbilical Hernia.—The patient (a middle-aged female) entered the German Hospital with a large umbilical hernia which caused her much discomfort. The sac was opened and was found to contain free gut and adherent omentum, which was dissected up, the redundant portion being excised. The neck of the sac was folded in according to Macewen's method and was sutured to the abdominal wall. The margin of the ring (which was as large as a silver dollar) was excised by two semi-elliptical incisions, and its edges were approximated with great difficulty, on account of the tension; it was necessary to use two large shawl-pins with figure-of-8 sutures. Four or five button-sutures and several of catgut were also used. The sac was injured at one point, owing to its firm adhesion to the edge of the ring. The pins were removed on the fifth day, and the button-sutures on the tenth. The patient was discharged, cured, four weeks after the operation.

Radical Cure of Inguinal Hernia complicated with Abscess from a Foreign Body.—The patient's history had been narrated at the former meeting.

Radical Cure of Inguinal Hernia.—The patient was operated upon by Macewen's method, which the reporter had adopted in ten cases within the past nine months. He had not found the technique so simple as it had been represented, since there was great variation in the shape and size of the sac and the relation of the cord to the latter. In one case the cord projected into the sac in such a way that it was invested by peritonæum in the same manner as the colon, the two layers of the sac meeting behind it, so that it was necessary to dissect it out vertically. Macewen's plan did not always insure against recurrence of the hernia, since the sac was often so thin that it did not form a sufficient plug. The reporter always supplemented the plug and Macewen's suture by separately suturing the pillars of the ring, especially in cases where the ring was very much widened. No drainage-tube was used; only a fillet of iodoform gauze at the lower angle of the wound. Most of the wounds healed well and by primary union; in two cases there was suppuration only along the track of the sutures that served to anchor the plug. In one of these cases suppuration was due to necrosis of a portion of the plug. Serious infection might be conveyed through this channel. Silk-worm gut was better than silk or catgut, and should be removed on the third day or soon after.

Ununited Intracapsular Fracture of the Head of the Femur; Excision.—The patient (a lad, seventeen years old) had entered Bellevue Hospital nine months before, and was treated for three months by fixation of the limb, without success. He went to other hospitals, and finally entered Mt. Sinai. There was shortening of the limb and distinct crepitus. As the boy was anxious to be cured, the reporter made an incision down to the joint, exposed the neck of the femur, and found the seat of fracture after opening the capsule. There was no evidence of callus-formation, but there was a distinct layer of cartilage in the shape of two facets over a portion of the end of upper fragment, showing that there was an attempt at pseudarthrosis. The head and neck of the bone were removed. The acetabulum was found to contain a spot of granulation-tissue as large as a quarter of a dollar, showing that hip-joint disease had begun to develop. The round ligament was much injected and brittle. The end of the lower fragment was trimmed off, and the case was treated like an ordinary hip-joint resection. The patient was now wearing a cheap and convenient form of splint devised by Dr. Gibney, known as the "polyclinic" splint, and had a good deal of motion preserved in the joint, which he was not allowed, however, to use without artificial support.

Exsection of the Knee Joint for Tuberculosis.—The patient, a man, aged fifty-four, was presented in order to demonstrate the incorrectness of the generally received statement that bony union after exsections did not occur in cases of tuberculosis in patients over fifty. In this case firm union was present at the first change of dressings, on the thirty-fifth day after the operation; nor was this the only case in elderly patients in the reporter's experience. Three steel nails were left in the bones until the dressings were changed. By using long nails they could be readily removed, as they did not become imbedded. There was no fistula present at the time of operation.

In reply to a question by Dr. Lange, Dr. Gerster said that the closure of the ring in the manner suggested by Macewen was not so firm as it was when Czerny's stitches were used in addition.

Dr. Weir said that most of Macewen's patients had been exposed to a two-years' test.

Dr. Wyeth thought that infection of the wound was most apt to occur at the change of dressings on the eighth or tenth day.

The President cited a case in which he did a third operation upon a patient for the radical cure of hernia, and divided the cord in two places in making the first incision through the old cicatrix. The ends of the cord were sutured, the operation wound healed promptly, and there was no evidence subsequently of any trouble in the corresponding testicle.

Dr. Weir asked if there was any evidence that the canal of the vas deferens was continuous.

Dr. Gerster said that he had once sutured the vas deferens for the same reason, inserting a piece of stiff catgut into the two ends and then uniting them with catgut. On the third day there was a gleety discharge from the urethra accompanied by swelling of the vas, but no other symptoms were noted. He was unable to say whether the lumen of the vas was patent or not.

The President said that there was no positive evidence that the testicle would atrophy under such circumstances, as the vas might be plugged for years in cases of epididymitis without apparent injury to the testicle.

In reply to a question by Dr. Lange regarding the case of in-

tracapsular fracture, Dr. GERSTER said that three fourths of an inch of the neck of the femur remained. He could not say whether it received any support from the acetabulum or not. The patient was able to walk about the ward without his splint.

Dr. GIBNEY remarked that the plaster was not properly adjusted, so little traction being made on the limb by the plaster that the splint only acted as a perineal crutch.

The PRESIDENT asked concerning the layer of cartilage mentioned. Was there any periosteum attached to the head of the femur?

Dr. GERSTER replied that the cartilage covered part of the broken end of the upper fragment. The ligamentum teres remained, but was softened. No periosteem was attached to the head, which was imperfectly nourished.

Dr. LANGE said that he had operated upon a boy with fracture at the epiphyseal junction. Suppuration had occurred and the hip had become ankylosed at a right angle; there was found united separation of the epiphyseal junction in such a way that the head was united to a different portion of the neck. Resection was performed and a good result was obtained, but several months after the operation dislocation occurred. There was marked shortening, flexion, and adduction. The speaker thought that orthopædic apparatus should be used for a long time after operation, so as to draw the femur toward the median line. In another case there was pseudarthrosis and shortening, but the patient could dance and walk well, although she tired quickly. The speaker had several adult patients who were quite helpless. He had found that Hessing, an instrument-maker in Germany, made the best apparatus.

Amputation at the Shoulder Joint for Round-celled Sarcoma; Recurrence of the Disease and Subsequent Removal of the Scapula and Outer Three Quarters of the Clavicle.—Dr. LANGE presented a female patient, aged sixty-four, with the following history (also the specimen): Two years before she began to have numbness and formication in the fingers of the left hand. One year later a swelling appeared at the middle of the upper arm. In February her attending physician endeavored to remove the tumor, but desisted from the operation on account of the profuse hæmorrhage. A month later she consulted the reporter, who found an extensive sarcomatous swelling on the inner side of the arm. The axillary artery was first ligated, and then the arm was amputated at the shoulder; the hæmorrhage was very severe, especially from the posterior side, where half a dozen arteries as large as the radial were divided. The axillary was also cut accidentally above the point of preliminary ligation, but was at once secured. The patient made a rapid recovery. This occurred in April. At the end of October she returned with another large tumor, involving the whole axilla. There were no evidences of secondary deposits in the lungs. The subclavian artery was first ligated between the scaleni muscles, and then the entire mass was removed, included the scapula and its muscles and the outer three quarters of the clavicle, the ribs being laid bare. The incisions were necessarily somewhat irregular. The patient lost a great deal of blood, but the loss was made up by the injection of a large amount of fluid into the rectum. In order to prevent air from entering the subclavian vein, a temporary ligature was placed upon it. In another similar case the reporter found that ligation of the subclavian artery did not prevent copious bleeding. In a third case the artery was crowded backward so far that it was impossible to reach and tie it as a preliminary step, and the hæmorrhage was excessive. The patient recovered, to die in three months from a return of the sarcoma.

The patient presented was apparently in good health; the thorax protruded on the right side, which might be due to diminished pressure from removal of the arm and scapula. The percussion-rate was normal over the left lung, and the breathing was vesicular, but the patient had already begun to complain of trouble in breathing, and there was dullness at the upper part of the mediastium, which was doubtless due to enlargement of the glands. The sarcomatous growth was found to extend along the large vessels, and was removed as thoroughly as possible, but doubtless some diseased masses must have remained beyond the field of operation. The upper angle of the wound was intentionally kept open in order that any signs of recurrence might be observed.

The patient wore an artificial pad or shoulder devised by the reporter by fitting a silicate splint over a model of plaster of Paris.

What is the Best Method of Dealing with Constricted Intestine in a Hernial Sac?—Dr. A. J. MCCOSH read a paper on this subject. (It will be published hereafter.)

Dr. WEIR said that he could recall five cases of gangrenous hernia in which the opening closed spontaneously; hence it seemed wiser to give the patient this chance. If marasmus developed during the continuance of the fæcal fistula, prompt resection should be performed. He was unable to state the condition of the patients subsequent to the healing of the intestinal opening. He had never seen any obstructive symptoms produced by this cicatrization.

Dr. WYETH thought that it was important to ascertain the after-history of these cases of hernia in which there was so-called "spontaneous cure," in order to determine whether or not they succumbed to marasmus or to the stricture. In reply to a question by the president, he said that he could recall no case of this kind in which the patient had subsequently found it necessary to apply to another surgeon. He had never seen a case of so-called spontaneous cure.

Dr. LANGE said that he had seen two cases of spontaneous cure after necrosis of the gut. He had lost one patient from collapse after immediate resection, and did not feel inclined to repeat the operation, but preferred to relieve the constriction and to temporize. It was always difficult to decide what to do with a gangrenous hernia. After dilating the ring and pulling out the gut, the latter might burst and thus cause infectious peritonitis. In such a case it might be better to let the gut alone. In one instance he overlooked a gangrenous spot on the imprisoned intestine and returned the latter to the abdominal cavity. Perforation occurred, and the patient died of septic peritonitis on the second or third day after the operation. When the presence of gangrene was suspected, it might be wiser to simply divide the ring and to leave the gut *in situ*.

Dr. WEIR said that in two cases of gangrene of the hernia he had simply laid open the gangrenous bowel, and in the gut had burst spontaneously before he incised the sac; in one only had he found it necessary to relieve the strangulating parts.

Dr. LANGE believed that in these cases it was sometimes necessary to do a sort of partial laparotomy.

Dr. WEIR thought that nature generally relieved the constriction when gangrene occurred.

Dr. WYETH cited a case in which, although perforation occurred, there was no escape of the contents of the gut. With regard to the length of the operation, in Dr. McCosh's case it was certainly not long. In his own case the speaker had taken a long time, but would only be half as long at another operation. He thought that it was safer to open the gangrenous intestine and allow the escape of its contents rather than to wait for spontaneous perforation. The amount of mesentery excised depended on the length of gut removed. He preferred silk sutures, as catgut did not stand the strain. Extra sutures should be introduced at the mesenteric attachment, as the gut was apt to give way at this point. If a fæcal fistula was estab-

lished, enterorrhaphy should be done as soon as possible—within from five to fourteen days—on account of shrinkage in the intestine below the seat of perforation.

Dr. Lange said that only a few patients could stand immediate resection. Most surgeons advocated temporizing. It all depended on the amount of intestine affected.

Dr. Weir referred to the case of a woman operated upon by Cottrell, of Edinburgh. She was advanced in pregnancy and had a strangulated umbilical hernia. Fourteen inches of the transverse colon was gangrenous, and an artificial anus was established. Subsequently resection and reunion of the two ends of the colon were resorted to, and the patient, when seen by Dr. Weir, was making a good recovery.

Dr. Gerster said that it was important to distinguish two classes of cases. If strangulation had caused necrosis, but fœtid disintegration—that is, the loss of cohesion of the dead tissues—was not complete, there was some propriety in resorting to measures requiring considerable manipulation of the parts, as it was to be expected that unexpected laceration or rupture of the dead gut and escape of its contents would not occur. But when the necrosed gut had undergone actual chemical and textural disintegration to such an extent as to render a lesion of its continuity very probable by the slightest interference, excision would be a very risky measure, not only on account of the great danger of contact infection of the peritoneal cavity, but also on account of the wretched general condition of the patient from sepsis usually encountered at that stage of the malady. No prolonged operation under anæsthesia will be well borne under these circumstances by any patient.

Dr. Kammerer thought that it was important to divide the ring. He cited two cases in which it had not been divided sufficiently, and the patients died with symptoms of shock. He had performed the secondary operation, but without success. In two cases of gangrenous hernia healing occurred spontaneously after the formation of an artificial anus; there were no ill results. In one instance there was an irregular rent in the gut, which healed in the course of eight days.

Dr. Briddon cited three cases of strangulated hernia in which recovery occurred without incision of the ring. He had seen several cases in which the constriction was so tight that it was necessary to divide it even after the bowel was opened.

NEW YORK CLINICAL SOCIETY.

Meeting of December 28, 1888.

The President, Dr. J. W. Roosevelt, in the Chair.

Some Forms of Glycosuria.—Dr. G. M. Swift read a paper with this title, dealing with cases occurring in ordinary practice and also during pregnancy. In these days of urinary examinations many people were found passing some sugar, and it was important to determine if this was due to diabetes or not. Men of good physique were from time to time refused by life-insurance companies on this account. Such a man had recently been under his care. He was forty-eight years old, was subject to bilious attacks, and had chronic malarial disease. There was no history of exposure or mental strain. Just at the time he had applied for life insurance, five years before, he had been passing a large amount of urine, with ten grains of sugar to the ounce and seventy grains per diem. He had lost twenty pounds in weight. There were dryness and stickiness in the mouth. The sugar was increased by errors in diet. This condition had not altered since. The urine remained at 1·030 specific gravity, and contained uric acid and sometimes casts.

In a second case a merchant doing active daily work had been affected with constant thirst, and was found to be passing ten grains of sugar per ounce in his evening urine. A restricted diet, rest, and a few doses of calomel caused an immediate diminution of the sugar. Subsequently, however, it returned and reached twenty grains, but was immediately lessened by stopping his eating grapes and giving jambol seeds. His general health had continued good throughout.

The reader believed there were people passing saccharine urine who were not diabetics in the sense in which that term is regularly employed; they had no thirst, debility, or emaciation. It came about by a derangement of the glycosuric function of the liver. Segin, of Vienna, made two varieties of diabetes—the first due to a non-conversion of the carbohydrates in the liver, the second representing a change in the relation of the whole organism to sugar. The author thought a general understanding on this point a matter of grave importance on account of the apprehensions always created by a report from a life insurance examiner of sugar in the urine. He presented the subject for discussion, and asked the opinion of the society in regard to this question: Was such a glycosuria the first stage of diabetes?

The glycosuria of pregnancy was not generally treated of in the text-books, some of which did not even touch on it. Blot spoke of the sugar found in the urine of nursing women. Tarnier mentioned that sugar was more common in the urine of pregnancy. The author had found sugar present in the urine of a large number of pregnant women. It must have some significance. Was it a cause of pruritus vulvæ? He suggested that the kiestine found in the urine of pregnancy might be due to a conversion of sugar by the yeast fungus *Saccharomyces cerevisiæ*. The nature of the glycosuria of pregnancy he would like opinions on.

Dr. W. G. Thompson believed there was a distinct glycosuria which was brought on by transient circumstances, but which might run into true diabetes unless the general condition was made better. He thought such cases often began by a vasomotor disturbance, and instanced a case where irritation of the sympathetic nerves by a tape-worm brought on glycosuria lasting till the worm was expelled. The removal of diseased ovaries had cured it in other instances.

Dr. G. M. Tuttle thought the question of time had a strong bearing on these cases of supposed glycosuria; it was more a question of how long a man could pass sugar and not develop any other disorder or symptom. He related an instance where, after loss of sugar for fourteen years as the only symptom, a man had loss of patellar reflex, contracted pupils, and violent pains in the legs and stomach. He thought pruritus in pregnancy better explained by other causes than a saccharine urine.

Dr. G. A. Dixon and Dr. Beverley Robinson gave further instances in which obscure disorders accompanied glycosuria, and the latter related an instance where a patient suffered from intense headaches, the only suggestion as to the cause of which he had found in a red turbid appearance in the urine when treated with Fehling's solution.

The President suggested the presence of peptone as one cause of confusion in the employment of Fehling's solution; Dr. Mendelson, that coloring matters or other obscure substances might spoil the test; and Dr. Thompson, that an excess of urates, or the presence of medicinal substances which the patient had taken by the stomach, might act similarly. Upon inquiry from Dr. Tuttle as to what proof there was in any case that Fehling's solution was good and really reacted upon sugar that might be present, Dr. Mendelson suggested that it could be tested by a solution of pure grape sugar; he thought that failure of the test was often due to special ingredients in the urine which redissolved the precipitate given by the copper salt, or to the turbidity produced in other ways as already described. For very

small amounts of sugar it might then be necessary to use the solution of bismuth and Rochelle salt in caustic potash.

The PRESIDENT thought there were cases with considerable sugar where Fehling's solution was not decolorized, and suggested the solutions of rhubarb or hydroquinone as useful at these times. On the whole, the instability and trickiness of Fehling's solution caused much confusion.

Dr. MENDELSON had seen in Dr. Draper's practice many cases of glycosuria. Some of the patients undoubtedly recovered, while others went on into real diabetes and died in diabetic coma. There seemed to be a class of stout people with glycosuria the further development of which was very slow; but that an abnormal condition which persisted should receive the name of "physiological" seemed to him improper. Most of these stationary cases really tended to pass into diabetes. Especially if the patient contracted some other disease, such as bronchitis, was this disease likely to take an exceedingly severe form, the balance of health being very delicate and the reserve force being gone, while at the same time the glycosuria passed at once into diabetes. He considered glycosuria as representing a very serious state of bodily disorder.

The PRESIDENT objected to both "physiological albuminuria" and "physiological glycosuria" as being improper terms. Saeger's glycosuria limited to the liver was met with mostly in people past middle life. But it was very significant to observe that these patients were singularly apt to die of carbuncle, pneumonia, or bronchitis, and no great amount of any such disease was needed to kill them. Sometimes nervous symptoms went with such a glycosuria. He had met with cases of melancholia and hemiplegia caused in this way which ended in death by carbuncle or some septic poison.

NEW YORK NEUROLOGICAL SOCIETY.

Meeting of December 4, 1888.

The President, Dr. GEORGE W. JACOBY, in the Chair.

Tumor of the Pons Varolii.—Dr. M. P. JACOBI presented a supposed case of this affection. It was that of a child, ten years of age, the illness dating from a fright three years before. The immediate symptoms had been trembling lasting two weeks. A little later the child had begun to walk as if intoxicated and to have difficulty in using the hands. About three months after the attack headache had been complained of for a number of weeks. The child had also begun to grow fat and the head had increased in size. During the past summer the circumference of the head had increased a third of an inch. At the present time the child was very fat, the chest and abdomen being particularly large. There was no actual paralysis. All of the muscles would respond to faradism, the peroneal muscles only requiring a current particularly strong. There was, however, a progressive paresis. The child could not sit upright and the head fell to the right side. She could walk only if supported, and all of the finer movements of the hands had been lost. There was intermittent external strabismus in the right eye and choked disc in both eyes, referred to a descending degeneration. The appetite was abnormally increased. There had been no pain throughout excepting the headache referred to, and no sensory disturbances.

The case of tumor of the pons reported by Dr. Hun, of Albany, had presented strikingly similar symptoms. In this case the pons had been uniformly enlarged by a slowly infiltrating gliomatous growth.

Dr. SACHS felt especially indebted to the author of the paper for the opportunity of renewing an old acquaintance with this interesting case which he had seen and lectured upon at the Polyclinic in April. At that time the size of the head and the general condition had been about as at present, but the patient had been able to walk better. She had been able to walk across the floor with the assistance of her father, moral rather than physical support being required. The gait, however, had been uncertain, and the patient had reeled, he had thought, to the right side. He had also found the paresis greater upon the right than upon the left, and had noted an apparent paralysis of the right abducens oculi. The changes which he remarked were a progressive paresis of the arms and legs and slight increase in the size of the head. In the spring the speaker's diagnosis had been tumor of the cerebellum favored by the paralysis of the abducens, which had a long course along the ventral aspect of the cerebellum and might be affected by pressure from the growth. Such a fact would also explain the intermittent character of the symptom noted by Dr. Jacobi. He had not appreciated the objections to this diagnosis toward which the reeling and the vomiting certainly pointed. The knee-jerk was more marked upon the right. The ankle clonus had been obtained upon the left and not upon the right at all. Dr. Hun's had been a very rare case. The majority of cases of tumor of the pons had presented different symptoms. He made these remarks simply to justify his diagnosis. Dr. Jacobi had gone more fully into the case, and possibly had developed further evidence.

Dr. W. A. HAMMOND asked why a multiple lesion was excluded.

Dr. SACHS suggested that if one lesion could not be definitely located, the indications for a multiple lesion must be even more obscure.

Dr. HAMMOND inquired as to the condition of the intelligence.

Dr. JACOBI thought that the intelligence was normal. The child could relate the circumstances of the initial fright very clearly, and had made inquiries in regard to the prognosis in her case.

Dr. HAMMOND noted a tendency to staccato speech. He had seen a number of cases of tumor of the cerebellum. He referred especially to the case reported by Dr. Gibney. The distinctive symptom of tumor of the cerebellum when uncomplicated with pressure upon the pons was inco-ordination without paralysis, while that of pons lesions was a gradually increasing paresis. He had seen also a good many cases of injury to the cerebellum by arrow wounds, bullet wounds, etc.—perhaps twenty cases in all. These were more likely to furnish indications in regard to the functions of the cerebellum than cases of tumor where the effects of pressure complicated those of the destructive lesion. He had never seen a case of either tumor or injury of the cerebellum without vertigo and nystagmus.

Dr. JACOBI said that the diagnosis had been studied between an intracranial tumor and a diffuse hypertrophic sclerosis of the brain with a generalized lipomatosis. The latter was excluded by the absence of the more distinctive symptoms of pseudo-muscular hypertrophy and by the existence of the choked disc, the latter pointing positively to intracranial disease. Diffuse sclerosis was among other symptoms invariably attended by convulsions, which had been entirely absent in this case. Intracranial tumor was diagnosticated, therefore, by exclusion as well as by the positive symptoms, and by further analysis located in the pons. The speaker had not known that the case had been previously seen by Dr. Sachs or that a clinical lecture had been delivered upon it. The later stage of the affection accounted for the main differences between the symptoms reported by her and those noted by Dr. Sachs. She had not, however, referred to a paralysis of the external rectus, but to an intermittent spasm. The muscle could at

all times readily be exercised. The history of vomiting was limited to two occasions in May, and was not more marked than might have been accounted for by some digestive disturbance. There was not only inco-ordination in this case, but complete incapacity. In lesions confined to the cerebellum, standing was simply difficult. In this case standing was impossible.

Weak Heart and its Treatment. Dr. W. A. Hammond followed with a paper with this title. The paper referred simply to weakness of the muscular structure of the heart uncomplicated by dilatation or valvular disease. The affection was very common, and, while it might be fatal in its results, it might also be relieved entirely by treatment which could be resolved into medicinal, gymnastic, and dietetic. Digitalis was the main medicinal remedy. The author had never observed the so-called cumulative effect of this drug. He thought, on the contrary, that it required increasing doses. He administered the infusion in two-drachm doses for two weeks, then he increased the dose one fourth, repeating the increase at the end of the second fortnight. Convallaria he considered uncertain and unreliable. Strophanthus he thought of more value. Where there was intolerance to digitalis, this drug might be given. Strychnine was a valuable remedy in weak heart. He prescribed a grain in an ounce of dilute phosphoric acid, ten drops three times a day. Cocaine was a valuable remedy, a fifth of a grain being given three times a day. It had been his habit to add two grains to a pint of Malaga wine, a wineglassful being used at a time. Inhalations and hypodermic injections were required often in the weak heart of disease. Hypodermically he had used brandy, digitaline in one-twentieth-grain doses, and nitrite of amyl, two drops diluted with thirty drops of glycerin. Glonoin was useful in one-hundredth-grain doses. Medication was, however, only temporarily useful. Exercise was required for the permanent relief of this condition. Mounting stairs was mentioned as a convenient form of exercise. People living in the country might mount hills. The physician should, however, be in attendance, and the exercise should be suspended when the action of the heart had accelerated fifteen beats a minute, to be resumed upon its tranquilization. The author's sanitarium in Washington would contain a modified tread-mill in which such exercises could be taken.

The dietetic treatment of weak heart referred particularly to ingested liquids, the quantity of which should be limited. By lessening the amount of liquids ingested, the total amount of blood in the body was diminished and the work of the heart lightened. In some cases he had reduced the daily quantity to twelve ounces, with marked improvement within forty-eight hours. The diet was further modified so as to reduce the amount of fat if this was excessive. The author made no claim of originality in this treatment. He was aware of the work of Oertel and others. He presented the matter, however, as approved by his own experience and observation.

Dr. Leale referred to the numbers of recently enlisted soldiers who fell in the grand review in Washington, their previous occupations having been largely sedentary and predisposing to weak heart, which failed them in response to the demands of the unusual exertion of this occasion. In five hours ten ambulances had been filled, the speaker having been detailed to pick up those who thus fell by the way. The weak heart of typhoid fever and diphtheria was briefly alluded to. The weak heart of adolescence was often encountered, the child, from close school attendance or other sedentary habits, having failed to develop heart muscle sufficient to accommodate the growing frame.

Dr. Heineman had been very much interested in Dr. Hammond's paper. He was interested to know of the sanitarium referred to. He had during the past year visited a number of these institutions in Europe, and thought it to be regretted that in this country we had so generally failed to avail ourselves of the peculiar advantages which they afforded. Weak heart was one of the most common conditions met with in medicine; it was almost as common as dyspepsia. While actual disease of the heart might not be detected in connection with the condition, the sounds would be found not what they should be, and the radial artery would be found never more than half filled with blood. The causes for weak heart were often dyspepsia, lithiasis, and excesses of various kinds—alcoholism, tobacco, and excessive coitus. The treatment should be directed first toward the removal of the cause—bad hygienic surroundings, anæmia, or whatever it might be. Iron or the oxygen treatment were often efficacious. In regard to digitaline, he could say that he had seen the cumulative effect, although not perhaps the cumulative effect of the materia medicas, which he thought was exaggerated. He had seen the pulse under the influence of digitalis one day 80 or 90 and the next day 40 or 50, as strong or stronger than before. Convallaria was, he thought, useful combined with digitalis in the cases of heart failure in children and in cardiac dilatation. Cocaine was valuable in curing anæmia, as well as for its direct action upon the heart. In a recent case he had prescribed the wine of cocaine, intending to combine it with iron, but at the end of a week had found the anæmia so much improved that the iron was considered unnecessary.

In the diagnosis of the weak heart of adolescence alluded to by Dr. Leale, it was well to bear in mind the condition of congenital narrowing of the aorta to which attention had been directed by Fräntzel. This was not infrequently a cause of sudden death in young people. The speaker would not pretend to diagnosticate the condition except by exclusion. In regard to the question of exercise, he hoped that treatment would not be systematized upon the plans in vogue in Europe. In the Black Forest there were paths specially designated for pulmonary diseases, and other paths for other complaints. He had seen a sign on one of these paths reading, "This is the end of the Oertel treatment." There was a rule, too, that a sanitarium for pulmonary affections should be built at the foot of a hill, so that the patient, having taken his exercise in climbing the hill, could easily get back. There was also conflicting evidence as to the value of these "cures." The Oertel treatment was regarded unfavorably by the Brothers Schott, who substituted a system of resisted movements—a species of wrestling with the nurse under the supervision of the physician. Cardiac calisthenics was the appropriate title of these exercises.

Dr. Hammond said that he was pleased to have called out so many interesting remarks. One important point in ætiology had, however, he thought, failed to be recognized. This was that a normal heart, under ordinary circumstances, might become a weak heart by simple increase in the general body weight. He had a personal experience upon this point. His ordinary weight was two hundred and forty pounds. When it increased to two hundred and sixty pounds, which it did about twice a year, he was troubled with weak heart. He was then accustomed to apply his own prescriptions as to diet and exercise. In this way he could reduce his weight thirty pounds in thirty days. He then again ate and drank what he pleased. When he went up to Mackinaw this summer he had been suffering from weak heart. When he returned he could climb anywhere, and was perfectly comfortable.

It might not be out of place to add that an eminent surgeon recently deceased in New York had lost his life from this cause. The case had been at first reported as one of cerebral hæmorrhage, but hæmorrhage, except into the medulla, did not in-

stantly destroy life, and subsequently the conclusion of heart failure had been reached.

The PRESIDENT expressed the indebtedness of the society to Dr. Hammond for coming from Washington in order to be present at this meeting.

Book Notices.

A Manual of Ophthalmic Practice. By CHARLES HIGGENS, F. R. C. S. E., Ophthalmic Surgeon to Guy's Hospital, etc. With Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. 8–314. [Price, $1.75.]

THIS work is divided into two parts and nineteen chapters. The first three chapters are devoted to the subject of optics, errors of refraction and accommodation, and the methods of examination of the eye and its appendages, in which there is but little to criticise and much to commend. The treatment advised for ophthalmia neonatorum we believe to be insufficient, as no mention is made of the necessity of iced applications or of the use of nitrate of silver to cut short the disease. The use of an ointment of yellow oxide of mercury, atropine, and cocaine for the same disease is not a good method of treatment, and is lacking in cleanliness, which is the great desideratum in this disease. As regards membranous ophthalmia, Mr. Higgens is perfectly correct in describing it as a distinct disease, differing from diphtheritic conjunctivitis. It is probably a higher grade of purulent inflammation. It is to be regretted that the author clings to the very faulty term "corneitis" to describe inflammation of the cornea—one that has been given up by all ophthalmologists except the English. We think he is wrong in giving the name "keratitis punctata" to the form of disease which he describes as infiltration of the cornea in spots, as the term has always been applied to that condition in which an iritis is the main lesion, and the punctate deposit is upon the membrane of Descemet, the inflammation of the cornea being a secondary process. In speaking of purulent inflammation of the cornea, with formation of abscess, the author makes no mention of the modern treatment by the galvano-cautery. A rather remarkable statement is the advice given to instill eserine in cases of cyclitis, since it is a well-known fact that eserine is a direct irritant to the ciliary body. A minor fault is the substitution of the term "displacement" of the retina for the classical term "detachment." In the chapter on "Amblyopia, Amaurosis, and Functional Failures of Sight," the definition given of "blunt sight" or amblyopia in squinting eyes is misleading.

When we come to operative procedures, considerable criticism may be passed upon a number of surgical methods advised by the author. His mode of slitting up the canaliculi by means of a grooved director is extremely awkward and entirely unnecessary. In the treatment of convergent squint the author's ideas as to whether one or both eyes are to be operated upon, and, if only one, which one of the two, are very faulty and need correction. In regard to this, the most complicated subject in ophthalmology, it is absolutely necessary to have definite ideas as to what is to be done, and these ideas we possess, based upon positive facts. It is very rarely necessary to employ a strabismus-hook in performing a simple tenotomy of the ocular muscles, and its employment may cause too wide an opening in the capsule of Tenon. Some of the instruments employed in operations upon the eye, especially in iridectomy, seem unnecessarily clumsy, if correctly represented by the illustrations. This is notably the case with the bent iridectomy knife and iris forceps as pictured on page 248.

The book is provided with a very good index, and will doubtless prove useful to the class of students and practitioners for whom it is meant.

A Text-book of Physiology. By M. FOSTER, M. A., M. D., LL. D., F. R. S., etc. With Illustrations. Fifth Edition, largely revised. Part I—comprising Book I—Blood, the Tissues of Movement, the Vascular Mechanism. London and New York: Macmillan & Co., 1888. Pp. xviii–352. [Price, $2.60.]

CONSIDERABLE changes and pages of additional work render this edition more systematic and continuous from the scientific standpoint. From the consideration of the difference between dead and living tissue, both being substances of considerable potential energy, the living tissue differing in that the sources of energy are constantly renewed in and by itself, the study of physiology is divided into two sections—one dealing with the renewal of substance and the replenishment of energy, the other with the setting free of the same.

General considerations on nutrition, assimilation, and metabolism are irreproachably worked out on the basis of analogy between amœboid life and that of the specialized living mechanism, the human body.

In the description of the blood special attention is devoted to the chemistry and physiology of the leucocytes, by the life of which the process of metabolism is emphasized still further. In order to explain the transmission and distribution of the blood in the body through the vascular mechanism, which entails active movements, the study of the contractile tissues is dwelt upon at length, and the section is closed with a consideration of the vascular mechanism. The work may be read in general with the greatest satisfaction, and it remains only to welcome the parts that are still to come.

A Compend of the Diseases of the Eye, including Refraction and Surgical Operations. By L. WEBSTER FOX, M. D., Ophthalmic Surgeon to the Germantown Hospital, etc., and GEORGE M. GOULD, M. D. Second Edition, revised and enlarged, with Seventy-one Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. xiii–9 to 164. [Price, $1.]

THE first edition of this compend was published in 1886. Some new matter has been added to the letterpress, and also some new illustrations have improved the book. Among these additions are a series of tables representing the various positions of the double images in paralysis of the ocular muscles. We regret to see that the authors again confound membranous and diphtheritic conjunctivitis, and that they are entirely wrong in regard to the pathology of the latter affection. There is no membrane formed on the conjunctiva in diphtheria, and it is therefore misleading to speak of such a membrane. The illustrations are mainly good, and the descriptions of the various diseases are concise and correct. The work will probably prove as useful as the first edition, and is much better than some of the compends in the same series.

Practical Anatomy. A Manual of Dissections. By CHRISTOPHER HEATH, F. R. C. S., Holme Professor of Clinical Surgery in University College, London, etc. Seventh Edition. Revised by RICKMAN J. GODLEE, M. S. Lond., F. R. C. S., etc. With 24 Colored Plates and 278 Engravings on Wood. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. xvi–598. [Price $5.]

THERE are very few books so useful in the dissecting-room as this. It does not purport to be general or descriptive, but it introduces much surgical anatomy in the form of operations for the advanced student to perform on the cadaver previous to dis-

section of the part. Such a course of teaching is to be commended, as it accustoms the student to the observation of surgical landmarks, and makes the knowledge gained by the dissection more definite. Without this training, the student who has conscientiously dissected his parts is apt to have but a misty idea of the exact relations of the structures beneath the skin. These have escaped him, though he may be able to describe each muscle, artery, and nerve.

The necessary steps in making a dissection are described in a brief, comprehensive manner, and can easily be followed by any one with some slight experience in dissecting. But these can hardly be detailed too minutely for a beginner, and it may be a question whether they are sufficiently minute or not.

The illustrations are numerous and well cut, and serve admirably as adjuncts to the text. Twenty-four colored plates from Maclise's "Surgical Anatomy" occupy the front part of the book. Some important additions have been made to the sections on the brain and on the thorax. The work is written in a terse, vigorous style, is well got up, and is to be recommended to every student of anatomy.

A Manual of General Pathology, designed as an Introduction to the Practice of Medicine. By Joseph Frank Payne, M. D. Oxon., F. R. C. P., Physician and Joint Lecturer on Pathological Anatomy at St. Thomas's Hospital, etc. With One Hundred and Fifty-three Illustrations. Philadelphia: Lea Brothers & Co., 1888. Pp. xiv–17 to 528. [Price, $3.50.]

This book is certainly an excellent manual for students. It fairly fulfills the intentions of its author. Without attempting comprehensiveness, or expecting to make the work a book of reference for professional men, the author presents to the student a series of admirably arranged and well-written chapters. Each important department of his subject has its distinct chapter. The leading facts connected with physiology and ætiology are carefully reviewed at the beginning of each chapter. The style throughout is terse, almost epigrammatic; all that is positively known in some lines of investigation is often expressed in a single short sentence. Disputed points are stated, but conflicting evidence is not given where no conclusion is reached. Little attention is given to minute cellular pathology as compared with the gross features, appearances, and symptoms connected with the processes of disease. The chapters in the second half of the book, which is devoted to the causes of disease, are grouped about the central idea of pathogenetic micro-organisms in so far as they have a known or probable relation. The book is sure to become a reliance to all students who need to get the pith of the subjects treated of in as condensed and lucid a form as possible.

Pathogénie et traitement de la kérato-conjonctivite phlycténulaire (ophthalmie des scrofuleux). Par le Dr. V. Augagneur, Agrégé à la faculté de médecine, etc. Lyon: Vitte & Perrussel, 1888. Pp. 5–30.

This little brochure presents in a brief, clear manner the author's views in regard to the pathogeny of phlyctenular conjunctivitis and keratitis. He rejects the idea of their so-called scrofulous origin as altogether too vague. He calls attention to the frequent coincidence of phlyctenular troubles with eruptions on the face, lips, and scalp in children, and to the possibility of inoculation of the conjunctiva by the fingers of the child soiled with pus from the scalp. Moreover, the suppuration extends by successive invasion from the scalp to the temples, forehead, and lids, until it finally reaches the eye. Still this does not explain the interminable relapses of phlyctenular conjunctivitis. In twenty-six cases which he has studied there was present a chronic rhinitis. This rhinitis is of various forms, sometimes being an actual impetiginous inflammation of the internal surface of the nostrils. It should always be looked for in these cases. It is often accompanied by a swelling of the upper lip, which is a sequence of the nasal lesion. To this rhinitis he attributes the great majority of cases of phlyctenular kerato-conjunctivitis. The original cause is a mechanical irritation, infectious, caused by parasites. The nasal lesion has its microbe, which passes from the nose into the lacrymal passages, and thence to the conjunctival sac, which becomes inflamed, and subsequently the cornea is attacked. The treatment of this form of ophthalmia is singularly abbreviated by disinfection of the nasal fossæ and by the employment of antiseptic powders. The crusts in the nose are to be washed off by a warm irrigation, and for a short time the ulcerations are covered with a mixture of vaseline and boric acid. After this an antiseptic powder, composed of equal parts of pulverized camphor, boric acid, and subnitrate of bismuth, is to be insufflated or snuffed up ten or twelve times a day. Under this treatment the rhinitis is cured, and likewise the ocular inflammation.

Landmarks Medical and Surgical. By Luther Holden, ex-President of the Royal College of Surgeons of England, etc. Fourth Edition. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. 79. [Price, $1.25.]

This edition of Mr. Holden's classical work presents but few changes. Some additions have been made concerning certain nerves and arteries heretofore omitted, and about a page and a half is devoted to the "Effects of Tight Lacing," which are pointed out in the clear and succinct manner peculiar to the author. Many sentences have been remodeled to improve the literary style of the work rather than to change its substance.

Reports on the Progress of Medicine.

OTOLOGY.

By CHARLES STEDMAN BULL, M. D.

The Determination of the Acuteness of Hearing.—Barth ("Arch. of Otol.," xvii, 2) thus reviews the points which must be taken into consideration with practical tests of hearing: I. A physically exact test for hearing is excluded by the needs of practice, (*a*) because the physical principles necessary for this are as yet too imperfect; (*b*) because too little is known of the relations between physical and physiological occurrences; (*c*) because the inequality of instruments and of external circumstances does not allow us to work with absolutely definite and constant values. II. The method of expressing the acuteness of hearing in numerical values of amplitude or of physical intensity has absolutely no value for us, (*a*) because tests of hearing, complicated in themselves, would be rendered still more unintelligible by such observation and calculation; (*b*) because, on account of the difficulties mentioned above, the given values would have, at best, no more claim upon accuracy than already exists with our methods; (*c*) because we would get absolutely no idea of intensity of the perception from the resulting numbers. III. The methods now employed of recording the acuteness of hearing in simple numbers, representing the distance and the time of hearing, respectively, are, up to the present, the most useful, (*a*) because they are relatively simple; (*b*) because they are as accurate as other methods, and have a scientific foundation; (*c*) because we can obtain a very good idea of the intensity of perception from these simple numbers.

The Influence of Pilocarpine upon the Mucous Membrane of the Tympanum.—Kosegarten (*ibid.*) has drawn the following conclusions from his observations and experiments: Injections of pilocarpine seem to have a decided influence upon the mucous membrane of the middle

ear, and therefore in chronic processes of the middle ear, accompanied by affections of the labyrinth, this remedy acts not only upon the internal ear, but may also exert a favorable influence upon the middle-ear process. By means of returning hyperæmia, which may even cause exudation, there ensue pliability of the sclerosed tissue and moistening and softening of adhesions, and in this way the unyielding conducting apparatus again becomes more capable of vibrating. Where exudations become deposited, their absorption may be brought about. It should not be forgotten that in these chronic processes nothing can be accomplished except by long-continued action.

Tuning-fork Tests.—Steinbrügge (*ibid.*) calls attention to the fact that Weber's experiment originally referred to the behavior of the normal ear when the meatus was closed or covered in such a way that a space for resonance was formed. The fact that the fork is heard by bone-conduction in the closed ear better than in the other may be due to an increased reverberation. Steinbrügge thinks that hyperæsthesia of the auditory nerve may be the chief reason why the sound of the fork is prolonged by bone-conduction. If the tuning-fork is heard by bone-conduction better in the diseased ear, or in the more diseased ear of the two, one auditory nerve must be more sensitive than the other to the waves of sound that are conducted by the cranial portion of the bone-conduction. This hyperæsthesia is most distinctly observed in fresh cases, no matter whether the disease is located in the middle ear or in the labyrinth. If the disease lasts longer, the excitability of the nerve sooner or later decreases and falls below the normal. The latter is also seen in old age, and may be due to degenerative processes which, in the widest sense of the word, affect the auditory nerve. The bone-conduction is then correspondingly less intense and shorter. The frequency of morbid changes in the sound-conducting apparatus explains why the hyperæsthesia is rarely noticed by aerial conduction. Steinbrügge holds that the nervous apparatus is affected when subjective noises and vertigo are noticed, no matter whether the original affection starts from the tympanic apparatus or the labyrinth. This auditory nerve will in most of the fresh cases be hyperæsthetic, and the fork will be heard louder by bone-conduction in the affected ear, because the sound-perceiving apparatus is constantly affected at the same time. The anatomical relations support the theory that the nervous apparatus is generally hyperæsthetic during tympanic inflammation. The frequency of this condition may also be supported by various reported cases of reflex excitation of the auditory nerve from irritation of peripheral portions of the ear. It may be fairly assumed that the auditory nerve in peripheral diseases of the ear participates in the disease of the tissues which surround it. Physical causes will exert some definite action on the results of the tuning-fork experiments, together with whatever excitability of the auditory nerve may then be present. Instead, therefore, of classifying aural affections according to anatomical or physiological subdivisions, it would seem more advisable to study their various transformations and combinations.

The Graphic Representation of the Results of the Tuning-fork Test.—Hartmann (*ibid.*), by a series of observations, shows that the results obtained with different tuning-forks that are put in vibration by being struck by the hand are, if the mean of three experiments is taken, just as accurate as those obtained with tuning-forks that are made to vibrate by a mechanical striking apparatus. It is perfectly proper to express the hearing acuteness of a patient numerically by comparing his clang-time (the duration of perception of the sound of a tuning-fork from the moment it is struck until it dies out) with the "clang-time" of a normal hearing ear. This determination by tuning-forks, with the same pitch and the same initial amplitude, is independent of the logarithmic decrement of the vibrations of the forks.

Remarks on the Diagnostic Value of Rinne's Experiment.—Bezold (*ibid.*) gives the following results from his new investigations on this subject: 1. Positive and negative variations in pressure conveyed through the Eustachian tube are shown by the manometer to be four times as great as the same influences proceeding from the auditory canal with closed tympanum. 2. When the variations of pressure are allowed to act directly and exclusively upon the fenestra rotunda, the manometer registers about the same result as that obtained from the Eustachian tube. 3. If the connection between the incus and stapes be severed, and, the tympanum being closed, the experiment be repeated from the Eustachian tube, the manometer shows a still further increase of a quarter. These observations have convinced Bezold that the action of variations of atmospheric pressure, produced within the middle ear through the Eustachian tube, is concentrated almost exclusively upon the membrane of the fenestra rotunda, while influences coming from the opposite direction, and acting on the drum-membrane and base of the stapes, seem to be almost neutralized.

The Decrement of Sounding-out Tuning-forks.—Barth (*ibid.*) has become convinced from his own investigations that, under constant conditions, the decrement of sounding-out tuning-forks is constant. He devotes this paper to an enumeration of the large number of errors entering into these observations as follows: 1. The aberration of the lenses, a source of error which can not entirely be obviated. 2. The vibrations caused by pushing the plate forward, the movements of the photographer, and the street traffic, which doubtless are conveyed to the tuning-fork, and to a certain extent interfere with and tend to diminish its vibrations. 3. After a while it is possible to regulate the movement of the plate so nicely that the blow of the hammer and the stroke of the metronome are heard as a single sound; still minute variations will often occur. 4. The light-point has a definite size, and, if we fail to subtract this from the entire series of amplitudes, the smaller vibrations will be too great in proportion to the more extensive ones. This error increases instead of decreases as the amplitudes are more strongly magnified. 5. With the more extensive amplitudes an equal amount of light must be distributed over a larger area in the same time than with the smaller ones; the former are therefore proportionally less distinct, especially at the ends, as with each vibration the amplitude diminishes. Therefore with this method of measuring, the ends of the lines which represent the amplitudes of the vibrations become somewhat indistinct. 6. When the greater amplitudes are scarcely recognizable, the smaller ones show over-exposure. This results in radiation and blurred outlines, which cause the lines to appear too long upon measurement.

Remarks on Weber's Test with the Vertex Tuning-fork.—Gellé ("Rev. mens. de laryng. et d'otol.," August 1, 1888) draws the following conclusions from his investigations: The occlusion of the meatus by the finger causes a slight increase in the strength of the sound which the very deaf will not hear, but which patients who have recently become deaf still perceive. The digital pressure of the auditory meatus is confounded with the occlusion of the same, but reacts on the conducting apparatus as far as the labyrinth. It may bring out the binaural reflex symptoms, but it is not graduated; it is often unequal and difficult to execute; it is not always endured by the patients. Still, it is so simple a procedure that it may be always employed, as it is of especial value in lesions of the conducting apparatus, and often reveals the condition of the deep parts, such as their mobility, especially that of the stapes. The possibility of mobilizing or of displacing the sound of the vertex tuning-fork constitutes an excellent prognostic sign. The effect of digital pressure, though absent at first, may later become very marked, and observation shows that the reappearance of the mobilization of the cranial sound coincides with the amelioration of the pathological condition.

Auditory Reflexes; the Oto-spinal Reflex Center and its Seat in the Cervical Portion of the Spinal Cord.—Gellé ("Ann. des mal. de l'oreille et du larynx," September, 1888) comes to the following conclusions: 1. In binaural audition, the movements of accommodation, the muscular activity of the motors of the apparatus of transmission, are brought into play both simultaneously and synergetically. 2. By pressure exerted on one of the auditory organs, an effect is produced upon the other; the movement experimentally produced in one ear provokes an active reflex movement in the other ear, entirely identical. 3. If a vibrating tuning-fork is placed in front of the free ear, while pressure is made upon the air-bag fitted into the auditory canal of the opposite ear, the subject perceives a diminution in the sound of the tuning-fork, due to the tension of the apparatus which is synergetically communicated to it; this is the proof of binaural reflexes. 4. This method of exploration demonstrates the mobility of the stirrup, the activity of the motors and their changes; it is therefore an important test of auricular semeiology. 5. When the ears are healthy, the normal audition of the two sides, the synergetical effect upon the accommodation of the free ear, may be wanting; in such

a case the cause is extra-auricular; it is the reflex center itself which has ceased to unite the two organs and associate their movements. 6. Clinical observation shows that this disappearance of the auricular reflex coincides especially with lesions of the cervical portion of the spinal cord. 7. These reflexes do not seem to bear any relation to pupillary reflexes, but the cases observed seem to show that the binaural reflexes are more easily influenced by the lesions of hypertrophic cervical pachymeningitis. 8. The study of medullary lesions necessitates an investigation of binaural accommodation. 9. The center for the reflex movements of binaural accommodation is situated in the cervical portion of the spinal cord, as they disappear in the course of diseases of this region of the cord.

Meniere's Disease.—Brunner ("Arch. of Otol.," xvii, 3) thinks that, as the name "morbus Ménière" describes no special disease, but only a complex of symptoms, it would be better to speak of *vertigo Ménière*. Only such conditions should be classified under this head in which the attacks of dizziness occur suddenly, without known cause, with distinct intermissions, without fever, with more or less intense subjective noises ushering in the attack, and with a rapid or only gradually occurring deafness. Vertigo Ménière may be caused by pathological processes in the brain. There are no absolutely certain signs for differential diagnosis, but disturbances of hearing are only exceptionally present in lesions of the cerebellum or crura cerebelli, and, if present, they are only as a result of accidental pressure upon some of the adjacent fibers of the acoustic nerve. Ordinarily, vertigo Ménière has its origin in some pathological condition of the labyrinth, primary or secondary. The separation of the severe cases from the mild ones seems indicated, since the two are apparently dependent upon different anatomico-pathological bases. Some cases of the severe form may be dependent upon hæmorrhage into the labyrinth; some of the milder form on vaso-motor neurosis. A large number of cases depend upon a pathological condition of blood-pressure in the labyrinth, and a retarding or obstruction of the efferent channels for the perilymph and the endolymph is a very important factor in this affection. In favor of a vaso-motor or neuritic origin of vertigo Ménière there seems to be the "aura vertiginosa" preceding the attack, slight functional disturbances appearing only gradually; a certain regularity and frequency of the attacks; the effect of quinine in cutting short or at least moderating the attacks.

A Communication upon the Medical Duplex-Inductorium.—Wreden (*ibid.*) gives the results of his electro-otological studies as follows: 1. Excitation of the acoustic nerve by the galvanic current gives the same reaction formula as with motor nerves. 2. Excitation of the acoustic nerve by the faradaic current occurs as regularly as when produced by the galvanic current; the interrupted inductive current naturally produces interrupted auditory sensations, while the constant current causes continuous auditory impressions. 3. The manifestations of excitation of the ear by galvanic as well as by faradaic currents are not due to direct but to indirect irritation of the acoustic nerve, and are demonstrated by direct irritation of the facial nerve, through contraction of the stapedius muscle with following pressure-irritation of the end apparatus of the acoustic nerve in the labyrinth. 4. Applications of the galvanic as well as the faradaic current of not too great intensity to the Eustachian tube produce severe manifestations of irritation in the area supplied by the third branch of the trigeminus and none in that of the facial nerve, while these same currents cause severe manifestations of irritation in the parts supplied by the facial nerve (and acoustic nerve), and none in that of the third branch of the trigeminus when the electrode is applied to the tympanum. 5. The treatment of the diseased ear with the galvanic current by Brenner's method has neither diagnostic nor therapeutic value, and can not be considered as devoid of danger. Wreden has become convinced of the superiority of the faradaic current, and gives it, in a modified form, decided preference over the galvanic current. Since the painfulness of faradization is especially marked in the deeper parts of the ear, he has made many experiments in methods of application in order to obviate this evil, and he now recommends secondary induction. If an induced current of high tension and of little intensity is taken up by a second conductor, whose primary induction-coil is formed of fine wire wound in many layers, while the secondary induction-coil has but a few layers of thick wire, a current will be produced of much lower tension but of greater intensity. This secondary inductor acts in the opposite way from the primary inductor, which serves to change the low-tension current of a galvanic element into one of high tension. To render the application of statical electricity feasible for therapeutic purposes, Wreden substitutes for the usual statical machine a Rubmkorff coil attached to a Grenet battery, which gives a spark one centimetre in length; this acts either as a primary inductor in faradization or as the producer of sparks for statical electrization of the ear. This modified induced current Wreden applies in two ways: either in a dry form by employing the customary flat and spherical electrodes, or in a wet form by using a fine stream of a warm salt solution, discharged from an electric douche apparatus into the ear, nose, and throat, and which serves to obviate the pain which would otherwise prevent the electrization of the highly sensitive internal ear. The modified induced current, and especially the spark current, act in a remarkable manner as antiphlogistic agents in acute inflammatory and suppurative affections of the ear. From eight to ten sittings are usually necessary. In chronic glandular swellings in the neighborhood of the ear, in chronic periosteal swellings of the auditory canal and mastoid process, and in arthritic deposits in the auricle, Wreden has seen remarkably rapid dissipation of the swelling upon application of the spark current a number of times. In the well-known tedious cases of so-called dry middle-ear catarrh it is possible sometimes to produce marked improvement with the duplex-inductorium.

Recent Observations on the Formation of Cysts in the Auricle.—Hartmann (*ibid.*) reports four cases of cysts occurring in well-nourished individuals of middle age, with no tendency to mental disease. In none of the four cases was there any history of preceding injury. The tumors had existed an average of two weeks before incision; their contents always consisted of a perfectly clear, somewhat yellowish fluid; no reddish or black color, no masses of detritus, and no shreds of fibrin were found which might have indicated a previous hæmorrhage. In all cases the cartilage was exposed at the bottom of the cyst. In three cases healing resulted in a few days; in one case it took five weeks on account of the occurrence of suppuration.

Markedly Protracted Course of Suppurative Otitis Media in Three Cases of Tuberculosis.—Eitelberg (*ibid.*) reports three cases of this kind occurring in tuberculous individuals, who showed great emaciation, constant coughing, and hectic flush upon the cheeks. Night-sweats occurred in all, and profuse hæmoptysis had repeatedly endangered the life of one of them. After a severe hæmoptysis, the first symptoms of aural disease appeared in one of the patients. At the first examination in all the cases, Eitelberg could only diagnosticate acute catarrhal inflammation of the tympanum. The patients complained of deafness, tinnitus, and obstruction; the membrana tympani was retracted and dull, and the vessels along the handle of the malleus were slightly injected. This simple catarrh of the middle ear was transformed later into a suppurative otitis media, probably by the progress of the tuberculous auto-infection; though it is possible that the process was mildly suppurative from the start. The duration of the prodromal stage varied from two weeks to nearly two months in these cases—a remarkably long period.

What can the Human Ear hear without the Stapes?—Berthold (*ibid.*) reports some very interesting observations made upon a patient with this defect. It is the first well-authenticated case in which loss of the stapes was not followed by complete deafness, but in which a tolerable degree of hearing remained; without stapes and with coexisting perforation of the drum-membrane, loud speech was heard near by, and, upon mechanical closure of the perforation, whispered speech was understood at fifteen feet. Berthold thinks that sufficient importance has not as yet been attached to the rôle which the annulus tympanicus plays in the improvement of hearing following the use of an artificial drum-membrane. In the absence of the stapes there can be no question of the possibility of the artificial membrane acting upon loosely articulated ossicles in such a way as to bring them into a position better adapted for sound conduction.

Malformation of the Auricles; Branchial Fistulæ; Chronic Purulent Inflammation of the Middle Ear; Examination of the Labyrinth.—Steinbrügge (*ibid.*) gives a detailed report of his examination of the

right petrous bone removed from a patient, during whose life the hearing was not tested, and the auditory canals were not examined. The right auricle was small in its vertical diameter and the helix was soft. The fossa triangularis was wanting. The concha was abnormally deep. There was a large round perforation in the middle of the drum-membrane, and through this opening epithelial masses were seen in the tympanic cavity. The roof of the tympanum was abnormally thick; the atrophied head of the malleus was firmly adherent to it. The body of the incus was large and the processes were almost entirely destroyed. The stapes was absent, as was also the tensor tympani. The squamous and petrous bones were very massive, and the mastoid was sclerosed. Sections of the pyramid showed an increase of the bony substance, partial deposits on the walls of the osseous cochlea, semicircular canals, and ampullæ. The remains of the oval window showed on section as a funnel-shaped cavity, ending blind in bone. Between its blind extremity and the vestibule was a layer of bone. The membrane of the round window was thickened, partly ossified, and smaller than normal. The first turn of the cochlea was narrow, the scala tympani angular and filled with detritus. The osseous layer of the promontory was very much thickened. The organ of Corti was destroyed and converted into a granular cell-conglomerate, and in the inner angle of the cochlear canal, between Reissner's membrane and the membrana tectoria, a collection of round cells extended as far as the second turn. The membranous semicircular canals were abnormally small. The Falloppian canal contained only a few scattered nerve-fibers. Hearing on the right side must have been entirely wanting.

The "Sound-Shadow" a Cause of Error in the Measurement of the Acuity of Hearing.—Guye ("Revue mens. de laryngol. et d'otologie," Oct. 1, 1888) thinks that in the waves of sound the obstacles are, as a rule, too small to project distinct shadows. As a matter of fact, we perceive the sound-shadow only when it is projected by a large building, a street, etc., while in our house we, as a rule, perceive nothing. The "obscure spot" of Brunschwig may be easily demonstrated, not only in persons who have one ear of normally acute power while the other ear may only hear the watch at ten centimetres, but also in persons who have both ears normal, provided that they are able to hear the watch at a distance of several metres at least on one side. When these patients close the other ear, they generally continue to hear the watch on that side from four to ten centimetres. Here the "obscure spot" begins, and for a distance of fifteen to twenty-five centimetres they hear the watch with the other ear. As a rule, the patient does not know whether he hears the watch with one or the other ear, or with both ears.

Bacteriological Researches in Acute Otitis Media.—Netter ("Ann. des mal. de l'oreille et du larynx," October, 1888) draws the following conclusions from his researches: 1. Acute otitis media is not a morbid process caused always by the same parasitic agents. It may be caused by different microbes. The otitis presents different clinical features according to the microbe which has caused it. 2. The four following species of cocci have been found in the exudation of acute otitis media: the *Streptococcus pyogenes*, the pneumococcus of Fränkel, the microbe of Friedländer, and the *Staphylococcus pyogenes*. 3. The otitis caused by streptococcus is the most frequent and the most serious, and is frequently complicated by subcutaneous abscesses, suppuration of the mastoid cells, purulent meningitis, phlebitis of the sinuses, and purulent infection. 4. The otitis of pneumococcus may occur in the course of a pneumonia, or it may be primary, isolated, or appear during the period of convalescence from typhoid fever. It runs a rapid course, and usually ends in a cure, though it may be complicated by a meningitis. 5. The microbe of Friedländer has been seen by Zaufal in a case of acute otitis, and he thinks it is met with generally in the sero-sanguinolent otitis. 6. The *Staphylococcus pyogenes aureus*, *albus*, and *flaveus* have been found in the exudation of acute otitis, but as yet they present no special clinical features. 7. Several species of microbes are found together, such as the *Staphylococcus pyogenes aureus*, streptococcus, and pneumococcus. In these cases the first-mentioned plays a secondary rôle. 8. The bacteriological examination furnishes valuable points for prognosis, according to the variety of microbe present. 9. The possibility of secondary infection makes it advisable to renew the bacteriological examination at short intervals. 10. These investigations should include microscopical examinations, cultures, and inoculations on different animals. 11. All pathogenetic microbes found in otitis may be found in the nasal fossæ, the mouth, and pharynx of healthy subjects. 12. This fact, the frequent bilateral nature of otitis, and the frequent existence of affections of the throat and nose, enable us to assert that, in the great majority of the cases, the pathogenetic agents come from the bucco-pharyngeal cavity, and reach the tympanic cavity through the Eustachian tubes. 13. The same method of invasion explains the production of otitis in general diseases—typhoid fever, measles, diphtheria, scarlatina, recurrent typhus, etc. In these diseases the otitis is not due to the pathogenetic microbe, known or unknown, of these diseases, but is produced by the same agent as is primary acute otitis. These diseases are usually accompanied by pharyngeal lesions. The dryness of the mouth and difficulty of deglutition favor the multiplication of the microbes in the mouth and pharynx. 14. In certain cases the pathogenetic microbe may travel by the blood-vessels or lymphatics, but here the otitis is usually internal. 15. The most usual mode of invasion of the middle ear indicates the importance of watching the mouth and pharynx. Antisepsis must be aimed at, if not absolute, at least as far as these cavities are concerned. 16. The present antiseptic measures employed by physicians and otologists are very necessary and perfectly justifiable.

Miscellany.

The New York Academy of Medicine.—At the next meeting of the Section in Laryngology and Rhinology, on Tuesday evening, the 26th inst., Dr. Arpad G. Gerster will read a paper entitled "Removal of a Tubercular Tumor of the Larynx by Laryngo-pharyngotomy, with Remarks about Technique and the Value of the Procedure," with a demonstration of two pertinent cases. The subject will be discussed by Dr. Robert Abbe, Dr. F. H. Bosworth, Dr. O. B. Douglas, Dr. S. O. Vander Poel, and others.

At the next meeting of the Section in Obstetrics and Gynæcology, on Thursday evening, the 28th inst., Dr. W. Gill Wylie will read a paper on "The Surgical Treatment of Retroversion of the Uterus with Adhesions, with a New Method of Shortening the Round Ligaments."

At the next meeting of the Section in Public Health, Hygiene, etc., on Friday evening, March 1st, Dr. W. Edward Forest will read a paper entitled "The Cost of Yellow-fever Epidemics—the Epidemic of 1888 at Decatur, Alabama."

The Sanitary Condition of the New York Public Schools.—Dr. R. Van Santvoord, chairman of the Committee on Hygiene of the Medical Society of the County of New York, has addressed a circular to the members of the society asking for facts showing specifically the effects of the present overcrowding and other sanitary defects of the public schools on the health of the pupils.

The Health of Connecticut.—According to the State Board of Health's "Monthly Bulletin" for January, the whole number of deaths reported was 892, including 4 from measles, 3 from scarlet fever, 15 from cerebro-spinal fever, 51 from croup and diphtheria, 6 from whooping-cough, 2 from erysipelas, 19 from typhoid fever, 13 from malarial fever, 2 from typho-malarial fever, and 2 from puerperal fever. There were also 112 deaths from consumption, 90 from pneumonia, and 25 from bronchitis.

The Health of San Francisco.—According to the Health Department's "Condensed Statement of Mortality" for January, the whole number of deaths was 517, including 1 from cerebro-spinal meningitis, 2 from cholera infantum, 12 from croup and diphtheria, 3 from erysipelas, 6 from typhoid fever, 4 from malarial fever, 1 from typho-malarial fever, 4 from whooping-cough, and 2 from small-pox.

Mortality in Cities in the United States.—The following table represents the mortality in the cities named, as reported to Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, and pub-

lished in the abstract of sanitary reports received by him during the week ending February 15th:

Cities	Week ending	Estimated population	Total deaths for week	Deaths from: Typhoid fever	Typhus fever	Scarlet fever	Measles	Diphtheria	Croup	Cerebro-spinal meningitis	Whooping-cough	Erysipelas	Puerperal fever
Philadelphia, Pa	Feb. 9	1,040,245	108			1		18	11	10			5
Brooklyn, N. Y	Feb. 9	811,695	315					3	10	28	11		9
Baltimore, Md	Feb. 9	500,343	140					1		2	1		2
St. Louis, Mo	Feb. 2	440,000	154					1	1	7	1		
San Francisco, Cal	Feb. 1	320,000	117							2			1
Cincinnati, Ohio	Feb. 9.	295,169	96					1	1	3			
New Orleans, La	Feb. 2	248,000	112							3			
Pittsburgh, Pa	Feb. 9	230,000	80					2		1			2
Milwaukee, Wis	Feb. 9.	210,000	54					2	3				1
Kansas City, Mo	Feb. 8	180,000	29							2			
Newark, N. J	Feb. 5	179,000	85					2	1	7			1
Providence, R. I	Feb. 9.	125,000	45					2		2			
Richmond, Va	Feb. 11.	160,000	39					1		1			
Denver, Col	Feb. 8.	100,000	33										
Toledo, Ohio	Feb. 8.	80,000	19							2			
Camden, N. J	Jan. 24.	70,000	22					2					
Camden, N. J	Jan. 31.	70,000	24					3					
Nashville, Tenn	Jan. 9.	65,153	27					1					
Fall River, Mass	Feb. 9.	65,000	22							2		3	
Charleston, S. C.	Feb. 9.	60,145	37									1	
Lynn, Mass	Feb. 2.	50,000	9							1			
Lynn, Mass	Feb. 9.	50,000	25										
Manchester, N. H	Feb. 2.	42,000	13										1
Erie, Pa	Feb. 9.	42,000	10										
Portland, Me	Feb. 9.	40,000	13										
Davenport, Iowa	Feb. 9.	33,715	9									3	
E. Saginaw, Mich	Feb. 9.	33,000	9										
Burlington, Iowa	Feb. 9.	30,166	5							2			
Altoona, Pa	Feb. 2.	30,000	2										
Auburn, N. Y	Feb. 9.	26,000	9										
Haverhill, Mass	Feb. 9.	25,000	4					1					
Newport, R. I	Feb. 7.	22,000	9										
Newton, Mass	Feb. 9.	21,553	9								1		
Keokuk, Ia	Feb. 9.	16,000	1										
Pensacola, Fla	Feb. 2.	15,000	4										

THERAPEUTICAL NOTES.

Injections of Balsam of Peru in Localized Tuberculosis.—Landerer ("Wiener med. Presse"; "Rev. gén. de clinique et de thérap.") has employed this treatment in the following manner: He uses an emulsion of one part of balsam of Peru with one part of gum arabic dissolved in oil of sweet almonds, with the addition of a hundred parts of a 70-to-1,000 solution of chloride of sodium. The mixture is injected into the substance of tuberculous glands, and at the same time a plaster containing balsam of Peru is applied to the surface. Injections into the bladder are used in cases of tuberculosis of that organ. He injects an ethereal solution of the balsam into fistulæ and abscesses. In cases of pulmonary tuberculosis he injects about a cubic centimetre into a vein by means of a fine cannula.

The Removal of Cerumen and the Prevention of Consequent Furuncles.—Lowenberg ("Praticien"; "Gaz. hebd. des sci. méd.") thinks that, in view of the liability to the formation of a furuncle after the removal of a plug of cerumen from the ear by simple syringing, the mass should be treated previously for a day or two by instillations of an antiseptic solution made after the following formula:

Boric acid		7 parts;
Glycerin, Distilled water,	each	100 "

The solution should be warmed and dropped in from a test-tube. It is to be applied twice a day, the liquid being allowed to remain in the ear for fifteen minutes. The patient should be informed that this may increase his deafness for the time being, on account of an augmentation of the plug by imbibition, but it softens the mass and facilitates its expulsion.

Cotton Impregnated with Biniodide of Mercury.—The following formula ("Pharm. Ztg."; "Progr. méd.") is given for the preparation of this variety of antiseptic cotton:

Biniodide of mercury	8 parts;
Iodide of potassium	3 "
Glycerin	120 "
Distilled water	to 2,400 "

Absorbent cotton is to be soaked in the solution and then dried.

Acetic Acid in the Treatment of Chronic Pharyngitis.—Weil ("Therap. Monat."; "Gaz. hebd. de méd. et de chir.") recommends the application of pure acetic acid to the mucous membrane of the pharynx two or three times a week, and states that by this means he has produced rapid subsidence of the disease in cases of long standing. The burning sensation caused is transitory, but the acid may be diluted if the patient is timid or the sensibility of the pharynx exalted.

Acetic Acid as a Disinfectant in Midwifery.—F. Engelmann, of Kreuznach ("Disch. Med. Ztg."), recommends a three-per-cent. solution of acetic acid as a safe and efficient substitute for corrosive-sublimate solutions for intra-uterine injections.

ANSWERS TO CORRESPONDENTS.

No. 252.—1. The law forbids it only when practiced for fee or reward. 2. The dispensatories are not published at regular intervals of ten years, but the pharmacopœia is. The last edition of the "United States Dispensatory" was published in 1888, and that of the "National Dispensatory" in 1886. There is nothing to choose between the two works; both are excellent.

No. 253.—1. At Vienna. 2 None that we consider very good.

No. 254.—We know of nothing on the subject better than what is to be found in Bartholow's and Brunton's works on materia medica.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

ANTISEPTIC NASAL SURGERY.*

BY CLARENCE C. RICE, M. D.,
PROFESSOR OF DISEASES OF THE NOSE AND THROAT AT THE POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.

THE only reason why antiseptic methods have been employed so little in nasal surgery is because surgical operations in the nose have become frequent only within the last few years. It requires a few years for any line of surgery to develop antiseptic methods. In a very short time it is safe to predict that the rhinologist will be as particular in his methods of operating as is the abdominal surgeon of to day. It would seem that either the general surgeon is over-careful in his attempts to secure perfect cleanliness, and in the employment of aseptic and antiseptic solutions, or nasal surgeons, so far as my knowledge extends, have paid far too little attention to this matter of antisepsis in their operative work. Either the germ theory of infection or of putrefactive fermentation of Pasteur, Koch, Lister, and Watson Cheyne —a theory which is firmly believed in by nine tenths of the leading American surgeons to-day—either this germ theory is still unproved or the nasal surgeons have not apparently been particular enough in their methods of operating. There are obvious reasons, however, why we have heard so little of antiseptic methods in nasal surgery; and, first, because nasal surgery is comparatively a new field. When I first thought of preparing a paper on the use of antiseptics in nasal surgery I was so unfamiliar with the surgical methods employed by the members of this association, and their opinion as to the necessity and value of antiseptics in nasal surgery, that I wrote a number of them asking for their views on this subject. Several of the gentlemen said they did but little nasal surgery, because in their opinion, there were but few cases that required surgical interference. A small number employed only the galvano-cautery in removing tissue, and were not favorably disposed toward cutting and drilling operations upon the bony and cartilaginous structure of the nose, so that, aside from the observance of strict cleanliness in treating nasal disease, they had had but little occasion to employ antiseptic solutions. I would like to add in parenthesis here a point which I shall refer to again—that the application of the galvano- (that is, the actual) cautery to open wounds affords one of the most effective means of preventing the absorption of septic material. Gerster † says: "The actual cautery is the most effective sterilizer." It may be true, therefore, that the gentlemen of this association who employ only the galvano-cautery in removing nasal obstructions have little need to use other antiseptic precautions. Strict cleanliness before operations and application of the actual cautery to the wound would perhaps satisfy most antiseptic operators. While it is true, however, that the majority of rhinologists do make use of the saw, drill, knife, and trephine, these instruments have been perfected so short a time that nasal surgery, as we employ the term to-day, is, if not a new field, one which has assumed large proportion only during the last few years.

A second reason for the lack of attention paid to the use of antiseptics in nasal surgery is that the wounds inflicted by operations are very small as compared with those which the general surgeon has to treat; but the advantage the nasal operator possesses in the loss of a smaller extent of surface tissue is fully neutralized by the peculiar conditions and surroundings of nasal wounds, and these conditions furnish the *third* reason why antiseptics have been held at so low a value by nasal surgeons. It is far more difficult to employ antiseptic methods effectively in the nasal cavities than upon the surface of the body or in the joints or in the abdominal or pelvic cavities. Not only is it well-nigh impossible to obtain an aseptic surface in the nasal cavities before operations, as can be done on the surface of the body, by shaving, thoroughly scrubbing with soap and water, and finally sponging with a solution of carbolic acid or bichloride of mercury, but the nasal wound is subjected to all the exact conditions which are deemed most favorable to the generation and propagation of micro-organisms—viz., heat and an abundance of moisture and oxygen.

Watson Cheyne * says: "The ideal result of wound treatment is seen in the repair of subcutaneous injuries." He might have cited nasal wounds as the most unfavorable illustration of wound healing. The decomposing nasal secretions add to the fertility of the soil which is most favorable to the development of pathogenetic microbes. The swelling of the soft tissues within the bony nasal walls prevents effective drainage, one of the safeguards against septic absorption, and the pent-up secretions furnish ample septic material until the absorbents are satisfied. We find, therefore, in nasal wounds caused by operation, both varieties of the "obstacles to repair" which are recognized by writers —the mechanical and the chemical. The mechanical are present in the particles of bone, cartilage, or soft tissue, or in the atoms of dirt which remain in the nasal cavities unless great care is taken to wash them out, while all the usual conditions of nasal wounds favor putrefactive fermentation, which is the basis of the chemical obstacle to healing.

In endeavoring to mention all the difficulties lying in the way of the practice of antiseptic nasal surgery, we must not forget that the peculiar anatomical structure of the nasal tissues and the peculiar physiological function it performs furnish hindrances to the proper treatment of wounds. If an attempt is made to exclude air from an ulceration on the septum by covering it with a protective and sealing the nasal orifice with antiseptic gauze, we have the evil results which are caused by the irritation of these packings in the nostril. The erectile tissues will not bear the contact of a foreign body with impunity and the dressings quickly disturb the vaso-motor reflexes, and the nostrils are flooded with a constant outpouring of serum, which wets the dressings and makes them useless.

In view of these difficulties, this question naturally presents itself: Is there the same necessity for antiseptic meth-

* Read before the American Laryngological Association at its tenth annual congress.

† Gerster, "Aseptic and Antiseptic Surgery," p. 3.

* Cheyne, "Antiseptic Treatment of Wounds," p. 7.

ods in the treatment of nasal wounds that there is in the treatment of wounds in other portions of the body? Are we depriving our patients of any degree of safety or comfort by treating nasal wounds as the general surgeons treated all wounds twenty years ago? To make the question still more tangible: Do we see symptoms of septic poisoning follow operations in the nose where no antiseptic precautions are employed? I shall not at this time discuss the point whether there is more surgical work performed in the nose than is requisite or judicious. I believe it is safe to say that the amount of nasal surgery will be larger in the future rather than less, and whether it *should* be performed will always be a fair matter for discussion; but there should be no debatable ground as to *how* it should be performed.

And just here it may be of interest and of value to our paper to give a brief outline of the history of wound treatment, and to note the various stages which have led up to the present antiseptic methods. The very early idea was that nature unaided could do far more toward the successful repair of wounds than could be accomplished by the meddling of the surgeon. Paracelsus, in the latter part of the fifteenth century, asserted that nature alone could repair wounds, and he deprecated any surgical interference. He, with Paré, believed that air was beneficial to wounds. They had already, however, begun to talk of the miasms in the air, and as early as 1500 had begun to use alcohol and ethereal oils as antiseptic agents. That the air contained infectious qualities was satisfactorily proved at an early date, and an earnest effort was made to exclude air from wounds, and surgical dressings were changed less and less frequently. In 1706 a method of evacuating abscesses without admitting air was discovered, and in 1753 surgeons began using dressings to prevent putrefaction. In 1768 Percival Pott worked on the antiseptic plan by sealing all his wounds. And a further step in the right direction was accomplished by the writings of John Hunter, which appeared some twenty years later, in which he advised that it was best to leave the task of repair to nature alone, and so advocated healing beneath a scab. It was Dupuytren and Dieffenbach who, recognizing the rapid and satisfactory healing of subcutaneous wounds, instituted the so-called "subcutaneous method," which stands as an epoch in the progress of surgical methods. Their work was based on the belief that the air contained organisms which were capable of infecting wounds. It became the general practice to endeavor to convert all open wounds into subcutaneous wounds. In 1856 Bartsher described a new method of treating wounds —the "open method"—and this was held in considerable favor for some years. Bad as it seems now because of the free access of air, it was correct in that it laid particular stress upon effective drainage. Langenbeck's method was also based on antiseptic principles, and he advocated either constant irrigation or immersion of wounds, to keep the surface free from the contamination of micro-organisms.

Lemaire, in 1863, published a valuable paper on the value of carbolic acid as a disinfectant and antiseptic. He was a teacher of the germ theory of disease, and the value he ascribed to carbolic acid was based upon this principle. This brings us to Lister, who first gave the results of his experimental studies in 1863, and began to treat his cases antiseptically in 1865. By 1867 he had elaborated his methods. Catgut ligatures were introduced in 1869, and in 1871 carbolized gauze. With his views of the causes of surgical diseases, and with his detailed method of treating wounds, every one is familiar.

Do patients after operations upon the nasal septum or turbinated tissues exhibit symptoms which may be properly attributed to absorption of septic material? I find that it is almost the universal testimony of those who use the galvano-cautery, the knife, the saw, and the trephine, that constitutional disturbance, more or less marked in character according to the amount of tissue removed or the extent of surface denuded, follows a certain percentage of these operations. These symptoms may be stated as commencing with slight chilly feelings, occasionally with a chill, and followed in twelve or forty-eight hours by a rise of temperature ranging from 99·5° F. in mild cases to 103° in severe ones, headache, pains through the eyes, nose, and forehead, and in the back and limbs. The patient feels generally too ill to engage in any business. Men of nervous temperament remain at home for two days, and women may stay in bed. These patients seem to be extremely nervous and irritable, and they do not thoroughly regain their equilibrium for a week or more. Some of the above symptoms occur in a mild degree after perhaps twenty per cent. of the cutting, sawing, or drilling operations of the nose. Of the severe cases, I have seen but one in my practice, and that was not in any sense grave. I may describe it:

In the spring of 1887 a young man came to me with his left nostril almost entirely stopped with cartilaginous deflection. I remember him as one of the most nervous patients I ever saw. I used the trephine driven by the electric motor. The operation lasted but a few moments, causing slight pain and no shock. Hæmorrhage was not severe, but it was persistent, and I was compelled to do what I then felt to be bad surgical practice, and which I never do at present—place an ordinary cotton tampon against the wound. The patient came to the office the next day. I removed the plug and washed out the nostril with a carbolized solution, but, as the bleeding continued, I put in a second tampon. I saw the patient at his house the next day. The tissues over the left nostril and cheek were swollen and somewhat reddened; the left eye was almost closed—more, however, by œdema of the lids than by inflammatory swelling. The patient had had chilly feelings the night before, and I found his temperature 102·5°. He exhibited the nervous irritability spoken of. I removed the plug and washed the nasal cavities with carbolized solutions. He began to improve the next day and was about in four days. In another case operated on two years ago, after the use of the galvano-cautery on the septum the patient suffered from constitutional symptoms; temperature 101·5°; and on the second day after the operation an erysipelatous blush showed itself on the nose and for a short distance on the cheeks. This lasted only twenty-four hours and the patient quickly recovered.

I have seen a number of cases where the patient felt uncomfortable the second day after an operation on the septum. There is probably some slight rise of temperature in all these cases. It is common enough in dispensary practice to have patients return a few days after a cautery or drilling operation on the nasal septum, and say that they

felt quite sick for some time after the operation. It is difficult to keep any record of such constitutional disturbance, as the patient is not seen for some days after the operation. My attention was most forcibly called to the serious results which may follow nasal operations by the uncomfortable experience of a friend of mine, a surgeon of New York.

He was operated on by a physician of experience in nasal work. A cartilaginous and bony convexity was removed by a revolving drill. The work was done skillfully under chloroform. I believe that ordinary care was used in cleansing the nostrils. I examined the nose some weeks later, but did not discover that much tissue had been removed. Tampons were used for styptic purposes. The second day after the operation the nostril was closed by inflammatory swelling. The patient had a chill on the evening of the second day, and for seven days afterward the temperature ranged from 103° to 104° F.; slight chills were frequent, perspiration abundant, albumin in urine. The nose, eyes, and face were considerably swollen. The patient lost flesh so rapidly and was so depressed mentally that fears were entertained at one time that he would not recover. He convalesced slowly and was unfit for work for six weeks. In conversation with me about his case, he criticised in strong language the lack of antiseptic methods employed by some surgeons. He himself, a strong advocate of all antiseptic precautions and most particular in his practice as a general surgeon, styled the old-time methods by the more expressive than elegant term of "rotten surgery." There was no doubt but that he had suffered from a severe attack of blood-poisoning, the "septic intoxication" of Cheyne, the "traumatic infectious" disease of Koch. Absorption of putrid matter had taken place through the denuded cartilage and bone of the nose, and, as a consequence, he had almost lost his life.

I have heard of other serious cases, but have no authentic history of them.

The constitutional symptoms which follow operations in the nasal cavities, even where no antiseptic precautions are resorted to, are neither severe nor long continued. The patient's life is rarely endangered, but his comfort may be seriously interfered with. There are a number of rhinologists who do not perform cutting or drilling operations upon the nose because they fear the constitutional disturbance that follows such operation. As one physician expresses himself in regard to these operations, he "prefers to be on the safe side." Is it not possible to operate freely in any nasal case where good judgment advises, and, by employing strict antiseptic precautions, always be on the safe side? General surgeons do not hesitate to do many operations to-day which they feared to perform ten years ago. This same feeling may get abroad in regard to nasal surgery when it is done as scientifically as abdominal sections.

General symptoms which appear during the first twenty-four hours after a nasal operation may properly be attributed to shock and the reaction after shock. The amount of shock will depend upon the temperament and general health of the patient. Sex seems to have little significance. Shock will be in proportion to the amount of tissue removed, the extent of surface laid bare, the amount of pain inflicted, the quantity of blood lost. The degree of shock is also in direct ratio with the length of time consumed in operating. Shock seems to be greater when the nasal septum is wounded than when the soft tissues are injured, but this perhaps is because knives, saws, and drills are rarely used on soft tissues. All the symptoms which may be fairly attributable to shock following the small operations upon the nose should be over in twenty-four hours. For example, the nasal trephine is used upon the septum, and in a few hours the patient feels generally shaken up—with headache, neuralgic pains about the eyes, nose, ears, and teeth; he feels weak and perhaps faint; reaction declares itself in a slight rise of temperature, not more than 99·5° F., which subsides in twenty-four hours. We should not confound such constitutional disturbance with symptoms which begin later, last longer, and are more pronounced—symptoms which surgical writers formerly grouped under the names of traumatic fever or surgical fever.

The transitory disturbance which is called shock is undoubtedly due to direct and reflex periphero-central nervous causes; but it subsides as soon as the nervous system has had time to recover its equilibrium. But neither shock to the nervous reflexes nor mechanical disturbance to the nasal circulation is considered any longer to be competent to explain the systemic disturbance which was called "surgical fever" by the operators twenty years ago. The pathology and ætiology of this disease rest upon a different and more satisfactory basis to-day than they did then. Thanks to the investigations of Pasteur and Koch and to the surgical procedures elaborated by Lister, traumatic fever is no longer a legitimate disease which follows all surgical operations. The presence of marked constitutional disturbance, chills, and high temperature after the severest operation now rather reflects upon the methods employed by the operator, and the old "laudable" pus, teeming with germs of suppuration, has been proved to act as a foreign body and its presence to be an evidence of wound infection.

The belief that symptoms such as we have described were caused by the action of micro-organisms, and were not, as Billroth* has it, "the general accidental diseases which may accompany wounds," had been suggested at the beginning of this century, but in 1831 Braconnet stated the opinion that micro-organisms produced virulent principles which acted as ferments. In 1836 Donné discovered microscopic organisms in the pus of chancres. In 1848 Fuchs spoke of the presence of bacteria in some of the septic diseases of animals, and Pollender in 1850 discovered bacteria in the blood of cattle dying of charbon.

In 1861 Pasteur began his remarkable demonstrations, proving first that butyric fermentation was effected by an organism, and in the next year that there existed in the air countless organized corpuscles which were the germs of fermentation. In 1863 he stated that putrefaction was determined by ferments of the vibrio species. Pasteur soon stated the belief that putrefaction was the result of fermentation, by reason of which the chemical composition of bodies was changed, complex compounds being reduced to simple ones. This theory of the relation of putrefaction to fermentation was quickly and naturally applied to pathological condi-

* Billroth's "Surgical Pathology," p. 396.

tions, and the germ origin of splenic fever was soon demonstrated.

Pasteur was first to maintain that septicæmia was of germ origin. Koch has demonstrated, by inoculation in animals, a number of diseases which are similar to those of men, each disease being caused by a specific microbe which, after a number of cultivations, produces the same disease. Pathogenetic microbes have been demonstrated in erysipelas, gonorrhœa, anthrax, empyema, tuberculosis, osteomyelitis, etc. Rosenbach,* of Göttingen, after painstaking experimentation, denies the possibility of the formation of pus by mechanical, physical, or chemical means if microbes are excluded, and Ogston† has also quite clearly shown that all suppurative processes are caused by micro-organisms. Göttstein,‡ of Berlin, says that the microbes found in pus probably exist in a latent way on the skin in the mouth and nose, and become active only when a wound is produced which gives them access to the blood-tissues, or rather furnish an opportunity for the absorption of the *products* of the micro-organisms—the so-called ptomaines, or the sepsin of Bergmann, or the "putrefactive alkaloids" of other writers—or possibly, as some suggest, the *excrementitious products* of the microbes. Göttstein further says that this absorption continues until an aggregation of leucocytes which precede the advance of the micro-organisms furnish a barrier which prevents their further progress. This dam of leucocytes is the granulation tissue which is present in old ulcerations and which explains why we have no symptoms of blood-poisoning in ulcerous coryza and other long-continued ulcerations of the nose. Göttstein goes the whole distance and asserts that these micro-organisms are the cause of traumatic infective diseases. Rosenbach discovered four varieties of microbes capable of producing "putrid intoxication," one of which was in the white cheesy mass removed from the lacuna of a tonsil. Cheyne # remarks: "The antiseptic method is based on the germ theory of fermentation and putrefaction, and not necessarily of infectious disease." Roswell Park ‖ says: "The lowest forms of vegetable life are the cause of all forms of fermentation, only a certain number of which are putrefactive."

This latter fact granted, antiseptic surgery has given its reason without discussing in detail the origin of surgical diseases.

Antiseptic methods should be used because they exclude bacteria from wounds and so prevent putrefaction. Cheyne, however, brings the matter closer home when he asserts a little later that the evils of septicæmia-pyæmia are almost entirely due to the growth of minute vegetable organisms in the discharge of wounds. Some one has said that "antiseptics should be used to supplement cleanliness." Gerster△ says in his text-book that "modern wound treatment is based entirely on the old and well-known principles of the preservation of organic substances." I can not do better than to quote once more from Cheyne, whose very intelligent writings make the subject of antiseptics a very attractive one. He says:* "When a wound is large and no antiseptics are used, absorption takes place and we have in a few days *traumatic fever;* and that the symptoms of septic intoxication are due to the absorption from the wound is proved in that the symptoms subside when granulation takes place."

Were we ever so indifferent as to the importance of treating nasal wounds antiseptically, we can not ignore the greatly improved results which surgeons have been able to obtain since they have employed antiseptic methods. The largest operations are so scientifically performed in our hospitals to-day that we have ceased to wonder when we observe that there is less constitutional disturbance after an exsection of the knee, an amputation of the thigh, or an abdominal section, than formerly followed the loss of a finger or toe. It can not be argued that operations in the nasal cavities are subject to any different laws. A most interesting paper was read at the New York Academy last winter which brought out an earnest discussion. The writer advocated external operation for deep urethral stricture on the ground that in performing internal urethrotomy proper drainage was obtained with great difficulty, and that urethral fever, the great bugbear of operators, was due to sepsis and not to nervous causes. The discussion was as to the causation of urethral fever. I believe only one surgeon who discussed the paper indorsed the older theory, that urethral fever was due to reflex nervous causes. In extirpation of the tongue, it is found that there is much less danger of septicæmia where preliminary tracheotomy is done, and it is thus rendered more feasible to employ antiseptic solutions by excluding air from the mouth. Such arguments in favor of antiseptics could be cited indefinitely did this method require any bolstering up.

In concluding my paper I would say that I believe it to be desirable when operating upon the nasal cavities to follow some *routine method* in our attempts to secure an antiseptic or aseptic condition of the nostrils and wound. *The success of all antiseptic methods depends upon methodical and perhaps tedious detail; but let it be believed that of far more importance than the operation itself are the preparations for the operation* and the methodical employment of all means to secure cleanliness, and asepsis will be willingly undertaken. Thoroughly cleansing the nostrils is of major importance, the method of operating of minor importance. It is doubtful whether it will ever be possible to render the nostrils strictly aseptic, so difficult is it to cleanse the upper nasal passages and the accessory sinuses: but the conscientious employment of antiseptic solutions will place nasal surgery on as scientific a basis as general surgery rests upon to-day. The methods which I have endeavored to follow before operating upon the nasal septum are in no sense new, but I state them because, as I have said, it is well to have a detailed routine. Something may be accomplished in the

* Rosenbach, "Mikroorganismen bei den Wund-Infection."

† Ogston, "Report upon Micro-organisms in Surgical Disease," "Brit. Med. Journal," March 12, 1881.

‡ Göttstein, "Die Verwerthung der Bacteriologie in der klinischen Diagnostik."

Cheyne, "Antiseptic Surgery," p. 359.

‖ Park, "Antiseptics in Surgery," Wood's "Reference Hand-book," etc., vol. i, pp. 257, 258.

△ Gerster, "Aseptic and Antiseptic Surgery," p. 5.

* Cheyne, "Antiseptic Treatment of Wounds," pp. 15, 16.

right direction if the patient is instructed to wash out his nostrils twice daily for some days before the operation—a saline or alkaline tepid douche first, to be followed with an antiseptic solution applied with an atomizer. I like a prescription of peroxide of hydrogen containing two per cent. of cocaine hydrochloride in solution. The peroxide of hydrogen cleanses to better advantage after the swellings have been partially effaced by the cocaine. There are many antiseptic solutions. Even a solution of salt and water, generously and carefully used, does more than cleanse—it acts as an antiseptic. A solution of mercuric chloride, however, is considered preferable to all others. In strong solution (1 to 4,000) it can be sprayed into the nostrils both anteriorly and posteriorly; but it is irritating, and if used in considerable quantity there is danger of salivation by absorption through the nasal tissues, or from the small quantity which may be swallowed. As it is necessary to use cleansing solutions in large quantities—one or two quarts—to thoroughly wash the nostrils, a quart of a saline solution may first be used from a fountain syringe and then followed by a small quantity of a solution of bichloride (1 to 4,000), to be used with an atomizer. A better plan still is to employ so weak a solution of bichloride (1 to 10,000) that it can be used in large quantities—a pint. It is best to introduce it posteriorly, so that it will not run down into the pharynx and be swallowed, and also to lessen any chance of causing middle-ear inflammation. I employ a post-nasal irrigating tube which I have had constructed for the purpose. To prevent the solution running backward, a small piece of antiseptic sponge is placed near the tip of the tube, which is held in place by a hard-rubber shoulder. The size of the sponge must be adapted to the size of each posterior nasal orifice. The hole in the sponge is quickly made with a circular punch; a number of these sponges may be prepared in advance and be kept in a carbolized solution (1 to 30). Before operating, the sponges can be squeezed out and placed in a solution of bichloride (1 to 3,000). Before introducing the irrigating tube a four-per-cent. solution of cocaine should be thrown up behind the palate to allay irritability and to open the nostrils. After the 1-to-10,000 solution of bichloride has been passed through the nostrils they should be thoroughly dried with absorbent bichloride-of-mercury cotton. I think it is more convenient to sterilize the small instruments we employ in nasal operations by boiling them in a small dish over a Bunsen burner conveniently placed on the operating-table, the instruments to be removed as they are to be used and replaced in the hot water after use, than to employ the usual 1-to-30 solution of carbolic acid. I need not say that the hands must be thoroughly scrubbed with soap and brush and then placed in a bichloride solution before the operation is commenced and as often afterward as anything is touched which has not been rendered antiseptic. The dental hand-piece which is used with the trephine or drill may be wound with bichloride gauze where it is grasped by the hand.

In many of the cases where severe constitutional disturbance has followed operations upon the septum we find that the nostrils have been temporarily plugged to prevent hæmorrhage, and these tampons have been allowed to remain twelve to forty-eight hours. This is, I believe, an unsafe practice, even though antiseptic cotton is used. The cases are rare where it is necessary to place the tampon upon the wounded surface. It can be introduced just inside the orifice, and if the patient is instructed to keep the head inclined forward the blood coagulum will be dammed back upon the wound and the bleeding stopped. The patient can remove the tampon in a few hours (four to six), and need not replace it unless the bleeding recommences. I prefer not to introduce any plug, for it is my experience that bleeding will cease of itself in a few moments in the vast majority of cases. The galvano-cautery is so good a sterilizer that it may be applied not only to stop hæmorrhage, but to sear over the denuded surface which has been made by knife or trephine. After the operation I much prefer to have the patient use a solution of peroxide of hydrogen or of boric and salicylic acids for cleansing purposes than to attempt to keep the wound covered with any of the powders, iodoform, boric acid, etc. Nor do I believe that antiseptic tampons can be successfully employed after the operation with a view to excluding the air. They are irritating, they prevent drainage, and soon lose their antiseptic qualities. It is better to keep the nostril free, and to keep it as nearly antiseptic as possible by cleansing and antiseptic washes.

VIEWS ON THE PREVENTION AND TREATMENT OF TYPHOID FEVER.*

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During the last three months of the year just passed there were 413 cases of enteric fever reported in the city of New York, including 122 deaths; and in Providence, R. I., there were 329 cases and 70 deaths recorded within the same period.

In recounting these statistics I do not so much seek to point a moral in regard to the percentage of deaths as to draw your attention to the many instances of this fever that have been noted in the short space of three months in two of our large Eastern cities, where the intelligence of the inhabitants is certainly not below the average of such places.

From our knowledge of human nature we are justified in concluding that all the cases that occurred during this period were not reported, while, at the same time, it is reasonable to suppose that most of the fatal results were ultimately put on record. And, if these inferences be true, we can easily see how there would be considerable room for error in calculating the ratio of deaths from such reports. But, on the other hand, it is fair to presume, after due allowance for mistakes in diagnosis, that the actual number of cases was in excess of what appears in the statistics.

Now, this evident persistence of typhoid fever in enlightened communities where it should not prevail, to say

* Read before the Medical Society of the State of New York, February 5, 1889.

nothing of the apparently high rate of mortality, which is possibly somewhat fallacious, has led me to consider the facts in regard to the spread, prevention, and treatment of this affection.

Although the topic that I have selected is certainly of great general interest, yet my treatment of it may seem rather trite to many of you because of a contingent lack of novelty. Still, I hold that a thing is but half known which is not generally acted upon, and if we would learn what men believe we must observe what they do.

Typhoid or enteric fever is a preventable disease and quite a needless affliction to the human race. Nevertheless, each year we are called upon to grapple with this malady, and the idea of its extinction is regarded by many as fanciful instead of reasonably feasible. The fault must lie partly with ourselves and not wholly with the rest of the community. Moreover, it is not so much ignorance that we have to plead as a lack of sufficient will to live up to what we know.

If the germ theory of disease is a correct one, and it would seem to be, we ought to follow the example of the surgeons and endeavor to keep out the bacteria. Our task, to be sure, is a much more difficult one than theirs, for these little enemies of the human race come clothed in the garb of peace, and steal into our citadels by the natural paths. The brain of man, however, nurtured by experience, each day finds itself better able to solve this problem.

Enteric fever is not contagious in the strict sense of the word, but rather infectious, if such a distinction is allowable. That is to say, it is indirectly conveyed by means of excrementitious matter, but not communicated directly from person to person. A rod-shaped vegetable parasite, discoverable only by the microscope, of the genus bacterium and species bacillus, is the disease germ of this malady. From the evacuations of a patient, after a few hours, these germs multiply, spread, and, what is more, retain their virulent activity for a great length of time and under the most varying circumstances. Yet because of a considerable interval between the passing of a stool and its final putrefaction, at which time the poisonous ptomaine is evolved, immediate contact with the patient is rarely if ever a means of infection.

In such a number of instances of careful search by painstaking and trusty observers has an eruption of typhoid fever been traced to a source that plainly owed its infection to a previous outbreak of the same disease, that this deduction regarding its origin has been verified and the sequence of cause and effect established. Unpolluted by man, the earth is free from the germs of enteric fever; but, criminally careless or ignorantly neglectful, he scatters the seeds that generate misery and entail suffering upon his fellows.

So far as contagious and infectious diseases are concerned, the public weal might be fitly compared to the strength of a chain, which is no greater than that of its weakest link. Hence the importance of boards of health, of inspection, and of quarantine, to enforce the law upon the few for the safety of the many. But short of flagrant disobedience to sanitary rules, there are many minor infringements that work no little injury, for, after all known precautions have been observed, one may be subjected to the mercy of a thoughtless or selfish neighbor. Consequently, until it is not only granted, but, furthermore, acted upon, that the welfare of our fellow-men is also our own, unnecessary disease and premature death will be the lot of mankind.

The poison of enteric fever is undoubtedly due to living germs that are voided by the patient, which multiply with great facility under favorable circumstances, and which are preserved, it is believed, for years in a congenial atmosphere. Thus, wherever these germs are scattered they form colonies of great potency for evil. Little fine particles, too small to be seen by the naked eye, they are born by the wind, diffused by gases, or conveyed by means of fluids in various directions. And the victim of their noxious power, predisposed in some way not well understood, takes them into his system through the air he breathes, the fluid he drinks, or the food he eats.

In certain portions of the world the struggle for existence between man and vegetable and animal parasites is so great as to render these regions almost uninhabitable. Indeed, at all times and in all places the price of life is continual watchfulness. And the person who relaxes his vigilance is daily in danger of being carried off by the enemy that lurks among us in microscopic tenuity.

It is pretty well established that the gaseous emanations from sewers, or the water that may be polluted by human excrement, however pernicious, will not produce enteric fever when taken into the system unless they contain the germs or toxic principle peculiar to this malady.

Perhaps of all means of propagating enteric fever our drinking-water is the most common, because the most likely to reach large numbers of persons. Bright, sparkling, and clear, it may still be the vehicle of endless infection. Ice, too, harbors the bacilli characteristic of this affection. These same germs of disease when cast into a public sewer find suitable pabulum for growth and multiplication, whence they spread to the houses by means of the constant diffusion of gases. By the overflow of vaults or the leakage of pipes they saturate the earth and ebb and flow in the tide-water of the subsoil, from which they find their way into adjacent wells and poison the water, or into neighboring cellars and vitiate the atmosphere. Even the milk we drink is liable to pollution from its strong affinity for water in the laboratory of unscrupulous purveyors. Therefore, while the surgeon, armed with antiseptic weapons of defense, stands guard over his wound, we have literally to scour the country in search of the foe.

As a means of stamping out this infectious disease, first of all comes the absolute need of destroying in every instance the excreta, or the germs therein, as they are expelled from the patient. This is not only a moral obligation, but it should be made a legal necessity. Then, when as much attention is given to the plumbing, draining, and ventilation of a home as, in many instances, is bestowed upon decoration, the dreadful scourge ought gradually to disappear.

In the selection of a house in town or country the water-supply and the drainage should be made the objects

of the most careful investigation, for these are the two sources most liable to become vehicles of infection. Stationary basins should be excluded from all sleeping-rooms, and the waste-pipes in every case should be exposed to view and not buried in the walls or floors. It would be better if the bath-rooms and closets were in a detached portion of the house. Filtered rain-water is the safest for drinking purposes, and the ice employed to cool it should not come into immediate contact with the fluid. Wherever there is the slightest danger of pollution the only safe means for the prevention of infection is to boil the water. Simple filtration will not destroy disease germs, but, if raised to the boiling point, water is freed from all bacteria, however tenacious of life. In like manner meats and food in general should not be kept in direct contact with ice, nor even in the same compartment. And the outlet of a refrigerator must not communicate with a sewer. All this we know, you say, but do we act upon our knowledge? Do we take pains to see that our patients are as well informed, and that they make proper use of their information? The periodical outbreaks of enteric fever would seem to answer this pertinent question.

Unless these simple precautions are taken in every instance, we have to thank ourselves for the weeks of illness, and perhaps years of sorrow and regret, that we bring upon ourselves by our own negligence.

Finally, after all has been done that our present knowledge enables us to perform in the way of prevention, there may come a lapse of caution, a blind, foolish trust that things will take care of themselves, or some stupid member of the community, far removed from our supervision, may subject us unknown to the poison of enteric fever, and we fall victims to the malady. Hence, in the present state of imperfection in which we exist, we are obliged to consider the treatment of this disease, which, as I have already ventured to claim, ought not to prevail and would not be the scourge it is but for our own improvidence.

It would be hazardous to predict, in view of the apparent revolution in medicine that the germ theory seems destined to bring about, that some material may not be discoved which, introduced into the system, will counteract the poisonous effects of these germs. But at present the indications point to the much more natural, not to say rational, method of exclusion; and, although this involves an amount of care and watchfulness that is often irksome, nevertheless it would appear to be the course that is generally required in life, for without labor nothing is given to man.

I am wholly in accord with those who believe that the pyrexia of typhoid fever is, in a degree, a conservative process.

Fever may be defined as an exaggeration of the normal physiological heat production and heat dissipation, but with the heat-regulating mechanism thrown out of gear. The neurotic hypothesis of pyrexia seems to have been verified by the demonstration that heat production is controlled by the nervous system. Chemical changes that take place in the glands and muscles, which give rise to heat, are directly dependent upon innervation. An injury to certain limited portions of the brain, known as heat centers, will produce fever; and in like manner the injection of pyrogenic substances into the circulation is supposed to have a similar influence upon the central nervous system. Thus the typhoid poison taken into the blood provokes an elevation of temperature by its effect upon the heat areas, unless the central nervous system should be so overwhelmed by the toxic products of the bacilli as to become paralyzed.

When fever is produced it slowly causes oxidation of the foreign substance, but, like many another energy, it is potent for evil as well as good, and must be kept within bounds. On the other hand, without fever the malady may still be a malignant case of typhoid poisoning. Hence pyrexia is not all of enteric fever. It is rather the combination of pyrexia with the poisonous element than the elevation of temperature alone that is harmful; for it has been demonstrated that a gradual rise of bodily heat not septic in origin can progress to a very considerable height without much permanent damage to the tissues. Consequently the question occurs whether too much attention is not being given to the dangers of what is supposed to be hyperpyrexia, and not enough to the other factors of the malady.

This fever is undoubtedly one of the manifestations of Nature's struggle to rid the system of the unwelcome poison, and in the milder cases of infection the human economy proves itself equal to the occasion, yet in many instances the toxæmia is so profound that the patient sinks under its baneful influence. But between these extremes there lie many stricken with this affection whose fate hangs upon threads that may be rudely torn by blundering hands or gently gathered up by the spirit of enlightenment.

We have no specific with which to combat this disease, and the indications for treatment are to supplement Nature in her endeavor to accomplish this end. I do not wish to appear as an advocate of expectancy to the exclusion of all else; nevertheless, it is very desirable to have the moral courage not to produce an unwarrantable disturbance in the system, with the vain hope of hastening a process about which Nature requires her own time. Therefore, I would earnestly testify in favor of the simpler therapeutic measures, and simplicity, after all, is an evidence of the highest evolution of our art. The peculiar intestinal lesions of this malady demand absolute recumbency, even though the general prostration is not sufficient to enforce it. Fresh air in abundance, without draughts, is a prime factor in its management. It is my conviction, however, that, except for the most urgent and dangerous complications, any medicine that disturbs the stomach had better never be administered. Pure milk is the best food. Solid material should not find entrance into the body until the fever has subsided, and, what is more, until the intestinal ulcers have healed, which is further on. This should be impressed upon the attendants and the reasons given, and, furthermore, the warning should be repeated in those dangerous days of convalescence. Predigested milk is the most suitable form in which to feed the patient, but it is important to remember that milk is food and not adequate to quench thirst.

Alcohol is one of our powerful allies in the treatment

of almost all diseases upon occasion, yet it may in many instances be withheld with benefit. It is the condition of each individual and not the disease that must determine its employment. The rapidity of the pulse in enteric fever is supposed to be directly due to the pyrexia; still, with low tension, and possibly dicrotism, we are feeling the effects of the typhoid poison. Auscultation of the heart, to learn the quality of the first sound, should be daily practiced, as herein lies our best guide for the use of stimulation. Weakness of the first sound calls for aid.

As an instance of deference to the indications of nature I would cite the employment of opium in cases of intestinal hæmorrhage, which insures absolute quietude of the intestines while coagula have time to form in the bleeding vessels.

The importance of guarding against bed-sores by the early use of a water-mattress is great, for it is easier to prevent these ulcers than to heal them. Moreover, a frequent change of decubitus to avoid hypostatic congestion of the lungs should not be overlooked.

In the choice of means to reduce the temperature of the body a very difficult and delicate problem is presented to the thoughtful observer. I would strongly recommend the medical attendant to weigh well the question whether it is not better to allow the fever considerable latitude than to reduce it at the risk of destroying the patient's inherent power of resisting the chemical poison, which is at the bottom of the whole matter.

If quinine has an antipyretic effect in typhoid fever, it seems to me the amount required to accomplish this end is often harmful.

Antipyrine, while it may reduce the temperature, is productive of so much cardiac weakness that it is a serious problem whether it had better ever be administered in enteric fever.

The application of cold water in the form of a tub-bath, even when carried out with the utmost caution, by the gradual lowering of the temperature of the water, is very liable to induce prostration if not collapse; and the final return, in some instances, of the same or a higher bodily heat would seem to show that, although the surface is cooled, and even more than the surface, heat-dissipation is checked for some time afterward, while heat-production continues undisturbed in the deeper structures. At all events, whether this supposition be true or not, my experience with tubbing in typhoid fever leads me to exercise a great deal of caution in the selection of cases for its employment. But, on the other hand, the milder expedient of sponging with tepid water appears to be almost always followed by an improvement in the general condition of the patient, and never by any of the ill effects that are so prone to succeed a tub-bath.

Before closing I would like to mention the 307 cases of enteric fever of Dr. Cotting, of Boston, spoken of in Flint's "Practice of Medicine," that were treated without drugs of any kind, wherein there was a mortality of but 10 per cent.; and likewise the celebrated exploit of Alonzo Clark, in the treatment of 250 cases of typhus fever, at Bellevue Hospital, with a moderate amount of stimulation, and naught else but food and drink and fresh air in great abundance. They all ended in recovery.

Such facts as these ought always to be remembered when, in the enthusiasm of the moment, we are quick to ascribe some special virtue to our latest therapeutical venture.

Finally, the main points that I would emphasize in this necessarily brief survey of my subject are that, as a race, we are responsible for the existence of enteric fever, that its extinction lies in our own hands, and that in the treatment of the disease we should be ever mindful of our limitations.

LACERATED CERVIX UTERI
AS TREATED AT THE UNIVERSITY HOSPITAL BY PROFESSOR WILLIAM GOODELL.

By LEWIS H. ADLER, Jr., M. D.,
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In Professor Goodell's "Lessons in Gynæcology" mention is made of lacerations of the neck of the womb in the following terms: "The cervix uteri often gives way during labor, far more frequently than it ought—far more frequently, indeed, than it would were nature oftener allowed to take the lead. In these busy days there is, unfortunately, a tendency to urge on labor—more, it is feared, for the sake of the physician than for that of his patient." The truth of this statement, I take it, is undeniable.

Injudicious hurry upon the part of the attending physician is manifested in a number of ways—for instance, the early rupture of the membranes, the resort to instruments before the os uteri is dilatable, the exhibition of ergot, or, finally, the pushing back of the thinned-out cervix over the presenting part. It may be well to state here that, as a matter of course, I do not mean to imply that a laceration seldom, if ever, follows a carefully managed labor, for it often does, as skillful practitioners can testify; but at the same time I wish to emphasize the fact as laid down by Dr. Goodell that, far more frequently than it should, interference upon the part of the obstetrician is the cause of these cases.

When this lesion exists, what are the symptoms? If it should be a rent which, owing to position or extent, heals by immediate union, the only evidence of its possible existence will be that of bleeding, even when the womb is found to be firmly contracted and the perinæum uninjured. This sign is, of course, only presumptive proof of its presence, and not positively diagnostic.

When the tear is a deep one and fails to heal by primary union, the symptoms are on the third or fourth day—as described by Dr. Goodell—pain in the broad ligament which corresponds to the torn side of the cervix. If the rent is a double one, the inflammation, after subsiding upon one side, may take a fresh start on the other. This pain is often ushered in by a chill. The pulse is rapid and the temperature high. Pain may be absent and the inflammatory symptoms latent, yet the convalescence will be slow—unaccountably so unless firm pressure be made in each iliac fossa, when the woman will flinch.

The diagnosis of these cases to be positive must be made *per vaginam*. This is best done by placing the woman on her side and introducing a duck-bill speculum which is held in place by an assistant. Then, with a uterine tenaculum held in each hand, the fore lip of the cervix is first hooked and then the hind lip, by which means, if a rent exists, the two lips can be drawn forward and will come in contact, with a noticeable fissure between them, running across the neck of the womb.

Before alluding to the mode of treatment in cases of lacerated cervix uteri, I would briefly mention a few of the possible results attending a case left to the healing art of nature. First, however, I wish to say that Dr. Goodell does not think that every woman who has a tear of the cervix is doomed to a life of invalidism, nor does he think that surgical interference is always called for.

On the other hand, he is decidedly opposed to such views as were expressed in an article in a recent medical journal, by a prominent physician of this State, condemning the use of the knife in all these cases. This gentleman stated that in a very extensive obstetrical practice he had never yet found it necessary to resort to surgical means, and was decidedly opposed to such treatment. With due respect to his opinion and standing in the profession, it must be stated that many women are annually relieved from endless suffering by the method about to be described, who otherwise would have remained invalids for life.

In reference to the results of a case left to nature, unattended by medical or surgical treatment, one of two things happens: the rent heals or else remains ununited; in either event the process of involution is retarded; the inflammation which naturally ensues keeps the womb congested as well as causes an excessive lochial discharge, and these combined circumstances retard convalescence. If the wound unites, the woman's health will in time be re-established; but should no union occur, she will, as a rule, be more or less subject to a sense of weight in the pelvic regions, of backache, of a constant tired feeling, of loss of sexual desire, of pain during coition or of a show following it. The menses will usually be profuse and the intervals between them shorter. Likewise subinvolution of the womb or hypertrophic elongation of the cervix are apt to be developed as secondary lesions. Sterility is not an uncommon result. Miscarriages often follow it, and not infrequently epithelial cancer occurs. With regard to malignant disease, Dr. Goodell, whose experience in these cases has been very large, says that in the immense majority of cases of cancer of the cervix the trouble starts from a laceration of that portion of the womb.

Now, as to the treatment of these cases, which, for convenience' sake, I shall divide into *palliative* and *operative*.

The palliative measures are best subdivided into *local*, as applied to the womb itself; and *general*, as directed to the patient's physical condition.

Under the head of *general palliative treatment* comes rest, combined with a nutritious but easily digested diet, and supplemented with medicines of a tonic nature. A favorite prescription of Dr. Goodell's is one known in the house as lemonade iron, the formula of which is:

℞ Strychninæ sulph..... gr. ss.;
Tr. ferri chlor..... f ʒ iv;
Acid. phosphor. dil..... f ʒ vj;
Syr. limonis.....q. s. ad f ℥ vj.
M. Dose, f ʒ ij, t. d.

In nervous cases he is fond of the following:

℞ Ammonii chloridi..... ʒ ij;
Ammonii bromidi..... ʒ iv;
Tinct. gentianæ comp.,
Aquæ.....āā f ℥ iij.
M. Dose, f ʒ ij, t. d.

If anæmia is added to the nervous element of the case, a favorite pill, known as pil. sumbuli comp., is called for:

℞ Ext. sumbuli,
Ferri sulph. exsic.....āā gr. j;
Asafœtidæ..... gr. ij;
Acid. arseniosi..... gr. $\frac{1}{40}$.
M. et ft. pil. No. j. Dose, one pill after meals, to be increased to six pills a day.

The *local palliative treatment* consists, first, in thorough cleanliness of the genitals. The vagina should be washed out at least twice daily with weak solutions of bichloride of mercury or of carbolic acid. Permanganate of potassium is also a useful drug. Profuse hæmorrhage immediately after the accident is controlled with ice placed in contact with the cervix. Should it fail, vaginal injections of hot water, of tannin, or of alum may be tried, but none of the preparations of iron, since these interfere with immediate union of the parts.

The rent failing to heal by primary union, the treatment should be directed to relieving the local congestion and to protect as far as possible the exposed raw surface of the womb. This is best done by vaginal injections of water as hot as can be borne, by the puncture of the cysts which are formed from the stoppage up of the enlarged Nabothian glands, by painting the eroded surface about once a week with a saturated tincture of iodine, followed before it dries with a weak solution of silver nitrate, which Dr. Goodell says forms not only a protective but also an alterative crust of silver iodide, or by using a solution of a couple of drachms of iodoform in an ounce of collodion, etc.

On account of the cicatricial tissue which the solid stick of lunar caustic causes, Dr. Goodell objects to its use in this class of cases. *Palliative measures* failing to accomplish a cure, we have left but one resort—operation. By the use of the milder treatment we have prepared the patient for the more serious or *operative procedure*, and it is to this treatment that I now wish to direct attention.

The patient is placed in Sims's posture, which allows the abdomen to sag down, and when the duck-bill speculum is introduced the air rushes in, expanding the vagina.

Before beginning the operation the cervix and surrounding parts are cleansed with a 1-to-2,000 solution of bichloride of mercury. The position of the internal os is now ascertained, so as to locate the site for the new cervical canal. Through this point a piece of strong thread is passed upon a needle, which latter is removed, leaving the cord *in situ* (Fig. 1, A). The ends of this are now tied, and by means of a tenaculum that portion between the two lips

of the womb is caught and drawn forward. This doubles the loop into two small ones, each of which steadies one lip of the cervix.

The process of denudation is now begun; first, however, two straight, parallel incisions are made upon each lip, on either side of the thread, about a quarter of an inch apart and not very deep, in order to mark out the mucous membrane which is to remain undenuded to serve as the lining for the future cervical canal; after which, to prevent blood from above obscuring what is being done, Dr. Goodell begins at the lower angle of the fissure and denudes up to the two lower incisions. This is repeated above as far as the two upper cuts, care being taken to remove all of the cicatricial tissues. It is usually necessary to remove a wedge-shaped mass of this tissue at each angle of the wound. Often in this operation small Nabothian glands will be seen filled with a gelatinous material. Whenever it is possible to do so, these should be dissected out.

The next thing is the introduction of the stitches. As those on the lowest side are the most difficult to pass, they are inserted first. The wire used should be as fine as is compatible with safety, No. 31 being Dr. Goodell's favorite size.

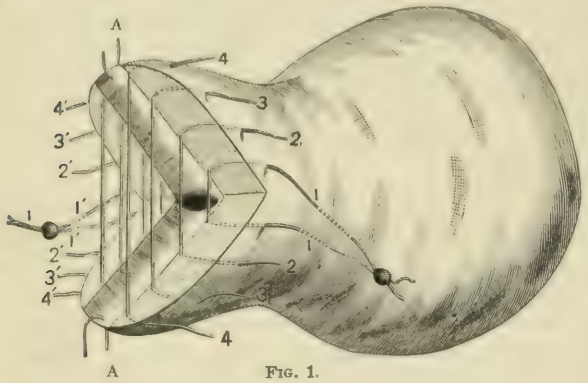


Fig. 1.

The sutures being all passed (as shown in Fig. 1), the next thing to do is to secure them. Before doing this the wound is syringed with some antiseptic solution so as to be rid of all clots and foreign matter that may be present. The shot is then slipped down over a suture and clamped. The same procedure of syringing and of shotting is repeated in placing the remaining sutures. When all are done in this manner, the womb presents the appearance as depicted in

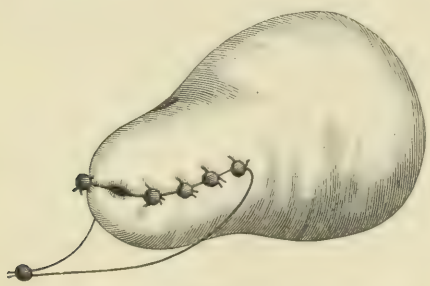


Fig. 2.

Fig. 2. Mention should be made of the fact that, to facilitate the removal of the stitches, Professor Goodell leaves the upper suture on each side several inches longer than the rest, which are cut on a level with the shot. These long sutures have an additional shot clamped over their ends, to prevent injury to the mucous membrane of the vagina. When the time arrives for the removal of the sutures, all that is necessary is to introduce Dr. Goodell's bivalve speculum, and, by means of traction on these two long wires, the cervix is readily brought well into view. The stitches are then easily removed, first on one side and then on the other. The operation is completed by again syringing out the vagina with a bichloride solution, sprinkling the cervix with iodoform, and packing the vagina loosely with gauze containing the same drug.

In the majority of these cases the surfaces of the wound are so closely and accurately adjusted that not a drop of blood is flowing at the time of the completion of the operation. Sometimes, however, Dr. Goodell has seen a secondary hæmorrhage result. The means previously recommended to stop an excessive flow immediately after the tear has occurred will usually suffice here. Should these fail and superficial stitches not check it, tamponing must be tried as a last resort. The cervix is gently pulled down by means of the two long sutures, and the vagina is packed with three sponges—one on each side of the cervix to compress the surfaces of the wound together, and the third sponge in front of the cervix to keep the others in place. Should this tampon not succeed in checking the hæmorrhage, a suture should be passed deeply behind the bleeding point.

The subsequent treatment of the patient consists in keeping her in bed for at least two weeks. The urine ordinarily should be drawn for forty-eight hours. After the second day the iodoform gauze is removed and the vagina washed out twice daily with a weak antiseptic solution; on the fourth day the bowels are opened, and on the tenth the stitches are removed.

That this operation is successful is shown by the experience of Dr. Goodell in a large number of consecutive cases, mounting up in the hundreds, without a single failure.

A point of importance that should be remembered is to count the number of stitches inserted before the patient leaves the room, for they often become buried, together with the shot, so as not to be readily seen. In illustration of this fact, Dr. Goodell cites a case of a patient of his in the country, upon whom he performed this operation many years ago. In the course of a month or so she came to his office and said that coition was very painful to the husband, who thought there was something in the vagina which ought not to be there. He says an examination revealed, much to his mortification, an overlooked wire suture with sharp points. It had interfered with the marital relation, but it had given the woman no pain or inconvenience.

The proper time for the performance of this operation is about a week after the menstrual flux. If it is performed earlier or later than this, it will be likely either to renew the last period, or to bring on prematurely the next one. Dr. Goodell says, however, that the appearance of the menses while the stitches are in has never in his hands interfered with union.

In conclusion, I wish to express my obligation and thanks to Dr. Herman H. Birney for the figures with which this article is illustrated.

41 North Twelfth Street.

THE QUESTION OF INTERFERING WITH THE ABSCESSES OF HIP DISEASE.*

By A. B. JUDSON, M. D.,
ORTHOPÆDIC SURGEON TO THE OUT-PATIENT DEPARTMENT OF THE NEW YORK HOSPITAL.

(Two cases of hip disease were shown in which abscesses had been absorbed. In one patient, a girl five years of age, the disappearance of a fluctuating tumor of long standing was followed by a dimple in front of and below the great trochanter caused by the contraction of the fascial tissue lying between the integument and the bone. At one time the redness of the skin and the proximity of the pus to the surface led to the belief that the abscess was about to open, but these indications were of short duration. The depression and limited mobility, the latter revealed by palpation and active and passive motion, of a small area was exactly what is found in a scar depressed and attached to fascia, such a scar as follows a discharging sinus, except that the depression was covered by normal skin instead of cicatricial integument. The patient was convalescent, still wearing the hip-crutch without traction, and had been free from symptoms for more than a year. The other patient, a girl eight years of age, came under treatment when three years old. There were nocturnal pain and the usual signs of hip disease. One year later a fluctuating tumor appeared below and in front of the great trochanter, and persisted for a year, the fluctuation extending two inches and a half in a line parallel with the axis of the shaft of the femur. From the beginning the thigh had been enlarged by infiltration of the cellular tissue. About the time the fluctuation appeared the pain ceased and the thigh lessened in circumference, and eight months after its appearance the thighs were equal. Four months later, when it had disappeared, leaving no trace, the thigh was three fourths of an inch smaller than that of the sound side. It is now an inch and a fourth smaller. The coincidence of the cessation of pain and reduction of swelling with the appearance of the fluctuating tumor is explained by the supposition that the pain and inflammation attended the confinement of the pus and ceased when it escaped into the cellular structures. The patient had been free from symptoms for the past three years and a half. Treatment was suspended last spring. These were typical cases of hip disease and exhibited to a moderate degree the asymmetry and disability which generally attend recovery.)

These cases are instructive. They are examples of the favorable result which sometimes follows breaking the time-honored rule that abscesses call for the use of the knife. They may be considered as an offset to two cases which were shown to the Section last May* as examples of the good results of antiseptic incision and scraping.

I regret that I was not present when those cases were shown, because a paper† in which I had presented the advantages of non-interference with the abscesses in question was made the subject of adverse criticism. One of the speakers on that occasion, my good friend Dr. Sayre, referred to my views in terms which may have been useful as lending animation to the debate of the evening, but which are of doubtful utility in a scientific discussion. I refer especially to the following words: "It was a disgrace to the orthopædic surgery of America to allow such statements to go abroad uncontradicted." Eloquent invective, such as this, has legitimate and praiseworthy applications in some fields of human effort, but it is quite devoid of meaning in a meeting of medical men gathered to consider questions of theory and practice.

The views which I expressed in 1885 were the result of a number of years of experience and studious observation of cases in dispensary and private practice, and they have been but confirmed by the added experience of the past four years. Such cases as those which I have shown this evening are illustrations of the advantages which sometimes attend withholding the knife. Although, as a rule, the fluctuating tumors of hip disease are followed by purulent eruption, I have seen a number of cases of hip disease and Pott's disease of the spine in which abscesses have disappeared with most favorable results. Observations of this kind are by no means rare in orthopædic practice, as many of us well know. It may be supposed that the water which makes up the bulk of these gatherings is absorbed without difficulty while the residuum coalesces with the cellular tissue, leaving in some cases, like one of those shown to-night, subcutaneous bands of cicatricial tissue, which derange the orderly relations of the normal connective structures. It is not clear why some abscesses are thus absorbed while others approach the surface, perforate the skin, and are evacuated, any more than it is clear why some cases of joint disease are attended with while others are free from abscesses. It is not improbable that many cases which are said to be free from abscesses have collections of pus limited in quantity and deep in situation which remain quiet and finally disappear without impeding the progress of the case toward recovery. We may, perhaps, look for the reason of this diversity in the individual diathesis rather than in the local peculiarities or accidents of a given case.

Very few, however, of the abscesses of hip disease will thus conveniently disappear, and the question of what to do with them is one of every-day orthopædic practice, and very properly a question for consideration by the members of this section. Although each case as it occurs must be judged by itself, it will be well to recall a few considerations applicable to all cases of the kind. It will, for instance, be generally admitted that in a purulent case of hip disease the abscesses and sinuses are secondary in importance to the condition of the diseased bone from which they spring.

* Read before the Orthopædic Section of the New York Academy of Medicine, January 18, 1889.

* "New York Medical Journal," June 16, 1888, pp. 664, 665.

† *Ibid.*, January 31, 1885, pp. 116–120.

They can hardly be considered as adding to the gravity of the case, because destruction of the soft tissues is less serious from every point of view than destruction of the osseous tissue. It is difficult also to see how a purulent sinus can prolong the duration of a case, because its natural tendency is toward cicatrization, an event which is delayed only by the obstinacy of the bone disease. It is also very doubtful, in my opinion, whether abscesses and sinuses hold the relation of cause and effect to visceral degeneration. In the cases of visceral complication which I have seen I have had no reason to question that the disease of the abdominal and thoracic organs has been an expression of a morbid constitution of which the pernicious course of the joint disease is but another expression. Neither will it do to say that the presence of pus forbids the repair of carious bone when cases occur in which recovery is accompanied by the disappearance of abscesses by absorption, and many others in which recovery from the local affection and the restoration of the patient to perfect health are marked by the opening, discharge, and cicatrization of one or more abscesses.

To the general surgeon or to the beginner in orthopædic practice it is difficult to refrain from operating on the abscesses that appear in the progress of a case of hip disease. The traditions of surgery and the expectation of the friends of the patient suggest radical measures and prompt action. There is, however, a notable class of cases in which it is comparatively easy to postpone interference. I refer to those cases in which a single accumulation of pus takes place with a large fluctuating tumor and without pain. The general health of the patient in such cases continues good and he pursues, with the help of the hip splint, the ordinary mode of life. There is an entire absence of symptoms connected with the tumor. There is no urgent call, local or general, for interference. The size of the tumor, which is sometimes enormous, and the thinness of its walls, and nothing else, suggest the use of the bistoury and the evacuation of the fluid. The result in such cases of practicing the purest expectation so far as the abscess is concerned is that the integument becomes gradually exceedingly thin at one point and at length ruptures with collapse of the tumor and a slight purulent discharge for a longer or shorter time, with finally an unimportant scar more or less deeply attached to the fascia and perhaps, also, to the bone beneath. As a rule, the sac opens unexpectedly while the child is at play. In two of my cases the opening occurred during sleep, and the child supposed in the morning that he had wet the bed. The entire history of such an abscess after the fluctuating tumor is recognized is free from pain. It does not impair the patient's health in the slightest degree, and it has no appreciable bad effect on the progress of the bone disease toward recovery or on the condition in which recovery leaves the patient. There is nothing to suggest operative interference except adherence to the old rule.

There are, however, cases in which abscesses follow a widely different course. Instead of a painless we have a painful tumor, hot and red. The limb may be greatly swollen, but by an infiltration rather than a collection of fluid. The skin is tense and brawny. The patient is kept awake by pain, has no appetite, and wastes away. He keeps his bed, insisting on the maintenance of traction. After a while the tumor points and opens with diminution of pain and improvement for a time in the general condition. But pus gathers again and opens at another point with a repetition of the pain and prostration, and this occurs again and again, until there may be a number of sinuses on all sides of the thigh and hip. It is difficult to conceive of a surgical case more sure to give the medical attendant anxiety and more suggestive of the necessity of resorting to heroic measures. It is not strange that a similar condition in the knee made amputation a few years ago, and later excision, the routine treatment. I have treated, as doubtless others of us have, a number of such cases, both in the hip and the knee, as well as in the ankle, without interfering with the natural course of the abscesses, but with unremitting attention to the mechanical and hygienic requirements of the case, and have had no reason to regret the result, except so far as I have thus put myself out of harmony with prevailing surgical opinion—I mean the opinion prevailing among general surgeons—which still commends rapid and strenuous procedures in these cases. I have no desire to willfully oppose accepted views, but am impelled by the favorable results of experience to state that my practice in these difficult cases is: (1) to give the bone and joint the most absolute mechanical rest possible; (2) to insist on the most liberal and varied diet, of which, as a rule, milk in unlimited quantities is the staple; and (3) to permit the use of opium, which, if used, is to be given in potent doses.

I should not omit to give my reasons for failing to see the importance of incision, scraping, and antiseptic closure of the abscesses in question. Incision is a tardy and fruitless procedure. The most painful stage in the history of the abscess is long past. It was present when the pus was collecting under the periosteum and in the cells of bone. If we could interfere early with the bistoury and knew where to direct its point, we might relieve the pain, and perhaps, in favorable circumstances, shorten the case and save bony tissue by dividing the thickened periosteum or breaking the shell of compact bone. But when the pus is in the cellular structures or the cavity of the joint, I do not see that the progress of the case can be materially affected by interference. If the abscess is cold, there is no painful tension to be relieved. If it is phlegmonous, tension is the result of inflammatory infiltration and can be relieved only by extensive and multiple incisions. If we operate in either case we substitute artificial for natural closure, and with the best antisepsis we gain nothing by operating unless we reach and scrape out the purulent depot or the interior of the joint, and then nothing unless we remove the eroded cartilage and exfoliating bone and excavate the focus, and then nothing in many cases unless we remove large quantities of bone or excise the joint. And if we operate in the manner described we do not avoid the necessity of bringing to bear the best mechanical treatment and hygienic control, which, if they are supplied, will bring about a recovery, whether we operate or not, by the slow but sure process of natural repair, with the better result the less we interfere with the soft parts, as a general rule.

I would not be understood to assign no value to the use of the knife in exceptional cases, but simply to hold the opinion that in the management of the majority of the abscesses of hip disease operative interference is useless.

It is not agreeable to make distinctions and to divide one's fellow-practitioners into classes, but, as was pointed out by Dr. Ketch in the discussion of last May, above referred to, it does not take much observation of the way in which the abscesses of hip disease are treated at the present time to see that the general surgeon, whose reliance is chiefly on operative procedures, resorts to the knife with the hope of promoting a rapid recovery, while the orthopædic surgeon, whose reliance is chiefly on mechanical means, seeing that the case, no matter how treated, will be long and tedious, devotes himself to the proper management of the bone disease, and thinks but lightly of the incidental abscesses.

The Madison, 4 East Twenty-fifth Street.

EXPERIMENTAL DEMONSTRATION OF THE TOXICITY OF THE "LOCO-WEED"

(ASTRAGALUS MOLLISSIMUS AND OXYTROPIS LAMBERTI).

By MARY GAGE DAY, M. D.,
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During the last year and a half careful experiments have been made upon healthy cats to test the toxic qualities of "loco-weed." After trying several methods and preparations, a decoction of roots, leaves, and stems of plants gathered in September was finally settled upon and used in the following experiments:

Sixty to seventy cubic centimetres of the decoction were given daily to a half-grown, vigorous kitten. Plenty of milk and other food was also supplied. Symptoms of disturbance began to appear within two days, and in the following order: The kitten became less active, the coat grew rough, appetite for ordinary food diminished and fondness for the "loco" increased, diarrhœa came on, and retching and vomiting occasionally occurred. The expression became peculiar and characteristic. Emaciation and the above symptoms progressively increased until the eighteenth day, when periods of convulsive excitement supervened. At times the convulsions were tetanic in character; frothing at the mouth and throwing the head backward as in opisthotonus were marked. At other times the kitten would stand on its hind legs and strike the air with its fore paws, then fall backward and throw itself from side to side. These periods of excitement were followed by perfect quiet, the only apparent sign of life being the respiratory movements. After a short interval of quiet the convulsive movements would recur. These alternate periods of excitement and quiet lasted thirty-six hours, when the posterior extremities became paralyzed, and the kitten died about two hours afterward. There was no apparent loss of consciousness before death.

The post-mortem examination revealed the presence of ulcers in the stomach and duodenum. Some of the ulcers had nearly perforated the wall of the stomach and duodenum. The heart was in diastole; brain and myel appeared normal. As might be expected from the emaciated condition, the entire body was anæmic.

In a second case, sixty to seventy cubic centimetres of a more concentrated decoction were fed daily, with other food as before, to a vigorous adult cat. The symptoms of inactivity, loss of appetite, rough coat, diarrhœa, and the peculiar expression of countenance were as in the first case. By the twelfth day the cat was wasted almost to a skeleton, and was correspondingly weak. Paralysis of the hind limbs came on, and the cat died on the thirteenth day. There were no periods of excitement in this case. Perhaps it was due to the amount of the poison given.

As a test experiment, two strong young cats were confined in the same place, fed from the same dish, and treated in every way the same, except that to one was fed daily a decoction of the "loco." The one fed "loco" acquired the "loco disease" with the characteristic symptoms described above, while the other, eating ordinary food only, remained healthy.

Some experiments were also made at the Michigan Laboratory of Hygiene, under the direction of Dr. Victor C. Vaughan. Subcutaneous injections of the concentrated decoction caused nervous twitchings in frogs and kittens, and, if large amounts were used, death followed in from one to two hours from paralysis of the heart. The same symptoms were produced in frogs by the injection of an alcoholic extract of the residue left after the evaporation to dryness of the decoction.

The loss of appetite, acquired liking for the "loco-weed," rough coat, emaciation, peculiar expression, rearing, plunging, and a staggering, uncertain gait are among the symptoms given in the earliest published observations on the "loco disease" ("Report of the Department of Agriculture," 1874, p. 169), and agree with the statements universally made by ranchmen. An ulcerated condition of the intestines was also pointed out by Professor Sayre in a "locoed" cow upon which he made an autopsy ("Dodge City Times," July, 1887); but the diarrhœa, which was so marked a symptom in the cats experimented upon, is not mentioned as a characteristic symptom in horses and cattle.

From the close agreement of the symptoms in the cats with those universally recognized in "locoed" horses and cattle, I conclude that the cases described above were genuine cases of the "loco disease," and are, so far as can be ascertained, the first that were ever experimentally produced.*

As stated in describing the experiments on the cats, a craving for the "loco" decoction is soon acquired. The kittens would beg for it as an ordinary kitten does for milk,

* The results of experiments detailed by others are mostly negative. Dr. Carhart, of Lampasas, Texas, drank some decoction of loco without injury, and says that when given to a "locoed" pony it had a beneficial effect ("N. Y. Med. Record," January, 1887). Dr. Kennedy, also of Texas, fed decoction of "loco" to a dog without ill effects ("St. Louis Med. Surg. Jour.," July, 1888). The disparity of these statements and my own are probably due to the small amount given or to lack of persistence.

and when supplied would lie down contented. To determine whether a herbivorous animal would easily acquire the "loco habit," a young "jack" rabbit (an animal indigenous to Kansas) was captured and fed a few days on milk and grass; then fresh loco was substituted for the grass.

At first the "loco" was refused, but after two or three days the "loco" was eaten with as much relish as the grass had been. After ten days of the milk and "loco" diet the rabbit was found dead, with the head thrown back and the stomach ruptured.

With reference to the character of the plants at different seasons of the year, I am convinced, by numerous experiments on material gathered in different months, that the greatest amount of poison is present in the autumn and winter, after the seeds have ripened; and that the explanation of the ranchmen that the "loco" disease is more prevalent in the autumn and winter because the animals eat more of the weed from the scarcity of other food, is only a partial explanation. The greater toxicity of the plants at that season I believe to be a very important element.

In conclusion, it seems justifiable, from the facts and experiments detailed above, to draw the following conclusions:

1. There is some poison in "loco-weed" which may cause the illness and, if sufficient quantity is taken, the death of an animal.

2. This poison is contained in the decoction obtained from the plants, and by systematically feeding it to healthy cats cases of "loco" disease may be produced.

3. Taste for the green "loco-weed" may be experimentally produced in the "jack" rabbit.

4. From the large quantity of the plant or the decoction required to produce the disease, the poison must be weak, or, if strong, it must be in very small amount.

CLINICAL NOTES ON SULPHONAL.

By S. GROVER BURNETT, M. D.,
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Literature on sulphonal principally advocates its indiscriminate use without fear of evil results, which seems erroneous in a few instances.

Having suffered from insomnia due to worry and undue taxation, I first used it on myself, with the following results: Took thirty grains, and in thirty minutes experienced a perfect desire for repose, being succeeded in a few minutes by wakefulness, but I fell asleep in an hour and slept for eleven hours. I awoke with dizziness, which passed away on rising, but suffered from muscular weakness to the extent that I walked with difficulty. Volition was unaffected, but my co-ordinating powers were defective, which lasted pretty much all day. The second dose was twenty grains; good sleep with the above-named symptoms in less degree.* Third dose, fifteen grains; refreshing sleep, but I experienced slight muscular weakness on exertion.

I then gave it a thorough trial in sixteen cases of the insomnia of mental diseases ranging from a slight psychosis to that with violence and destructiveness, with good results in seventy-five per cent. of the number experimented on, which included chronic mania, periodical or recurrent mania, maniacal phases of paresis, and delusional insanity.

In all the cases of melancholia and one case of epileptic insanity the results were less flattering. In melancholia the dose had to be repeated during the night, and then obtained only from two to four hours' sleep. To a patient* with melancholia with great mental disturbance was given a dose of thirty grains at bed-time; the patient did not sleep, and the dose was repeated at 2 A. M. Patient then slept till 1 P. M. On waking, refused food and complained of nausea. Became restless at bed-time and the dose was repeated; slept all night, and was aroused with difficulty at 9 A. M. Was cyanotic, pulse 60, weak and compressible, respiration 16 and laborious, temperature 98° F. Remained cyanotic and semi-comatose for twelve hours, taking no food. On the following day the temperature was normal, respiration 20, pulse 80, taken in same attitude. Patient is fifty-nine years old, suffers from arteriosclerosis with compensatory cardiac hypertrophy, to which condition I attribute the severity of the symptoms, and quite agree with Dr. Schmey,† notwithstanding Dr. Müller's‡ contradiction of the same.

I am convinced that the patient would not have survived another dose within twenty-four hours. After the last dose was given she remained demented for five or six days, and muscular inco-ordination was so marked that she walked with great difficulty. Was this of central origin? Locomotion had never been defective before or since. To a lady,# forty-two years old, suffering from insomnia due to worry and that condition of the system at the approach of the menopause, were given thirty grains of sulphonal at bed-time for a week. It produced good sleep, but was invariably followed each morning by anorexia, slight headache, and, on the fifth day, muscular inco-ordination. These symptoms gradually increased, becoming so severe on the seventh day that the medicine had to be discontinued. When she attempted to walk on the seventh day she fell to the floor; said she was conscious that she was going to fall, but was unable to help herself.

In three cases it produced extreme thirst, dry and parched condition of the mucous membrane of the mouth, partial suppression of the salivary secretions, anorexia, and, in two cases, pronounced emesis.

Summary.—Sulphonal is a reliable hypnotic in the various psychoses void of depressive states—mania, the maniacal stage of paresis,‖ delusional insanity, etc. Less favorable in melancholia with pronounced depression. Is contraindicated in arteriosclerosis concomitant to a psychosis.

* The dose was repeated each successive evening, the effect of previous dose having not entirely passed off.

* This was an exception, where the patient slept long after repeating the dose.

† "Therapeutische Monatshefte," July, 1888.

‡ Same journal for August, 1888.

This patient was not insane; neither would twenty grains produce sleep in her case.

‖ I have been unable to discover any change in the locomotion of paretics due to sulphonal during the time that I have used it.

Is seemingly accumulative, producing more profound effect after the third dose, six to twenty-four hours apart, and in a small number of cases disorders the digestive secretions, causing emesis, thirst, anorexia, etc. Are the latter symptoms of central origin?

Since writing the foregoing my attention has been called to an article by Dr. Bornemann * regarding the effect of sulphonal on the co-ordinating powers. I have also used it in a number of other cases in which I saw no contra-indications and obtained good results. In fact, I think it superior as a hypnotic to any I have used when given with the same care.

Correspondence.

LETTER FROM PARIS.

The Presence of Klebs's Bacillus in Diphtheria.—Ventro-fixation of the Uterus.—The Danger of using Pessaries.—The Microbe as a Factor in Disease.

PARIS, *January 23, 1889.*

DR. JULES SIMON defined diphtheria as an affection of a pseudo-membranous order that invaded by preference the superior respiratory passages. Its false membranes always contained Klebs's bacillus. Assuming that this was a correct definition of the term, we could now say that all membranes in which this variety of micro-organism was present were diphtheritic. According to the investigations of MM. Roux and Versin, not only were Klebs's bacilli found in true diphtheritic membranes, but inoculations of cultivations would produce a disease which was unquestionably diphtheritic. A point brought out clearly by these investigators was that the cultivations had not produced any local lesion when applied upon a healthy mucous membrane, but that when applied upon a mucous membrane that had been excoriated and had lost its epithelium, diphtheria had followed. This would seem to explain satisfactorily the fact that this disease so often followed measles, scarlatina, and other affections in which the mucous membranes had been more or less altered. The experimental disease produced in M. Pasteur's laboratory from the membrane of diphtheria seemed to be as severe when the membrane had been taken from a mild case of the disease as when it had been obtained from a very violent one. The bacillus was always the same, and the intensity of the disease produced by it appeared to depend upon the resisting power of the subject into which it had been introduced. Clinical experience had long taught this fact, but no rational explanation had been possible until the experiments had been made.

The question of ventro-fixation of the uterus, or hysteropexia, has been a subject of discussion by the *Société de chirurgie* for some little time. M. Ferrier introduced three cases. He asserted that he had been the first French surgeon to fix the anterior surface of the uterus to the abdominal parietes. He admitted, however, that Dr. T. Gaillard Thomas had told him that he advised the operation and had performed it several times. Professor Trélat stated that in his experience he had found that in retroflexions the indications for operations differed according to the case. In several of his cases where the immobility of the uterus had not been great, its mobilization and fixation had been easy and Alexander's operation had been performed with good results; but where the fixation had been great, and the reduction difficult, this operation had failed. In such cases he would not now advise an operation so long as there was no pain, but when there was considerable pain, even though there might be extensive adhesions in the rectal or sacral region, he would perform hysteropexia. Dr. Després next spoke. He said that he would like to know what was going to become of the bladder all this time. After these operations it should be compressed. Over fifty years ago Aran, Récamier, and others had shown that certain affections of the uterus were painful because the organ was inflamed. Modern surgeons found this to be true after they made an opening into the abdomen. In cases of simple retroflexion it was absurd to perform such operations as Alexander's and hysteropexia. He was opposed to them. In their stead he preferred to use the perineal belt for the reduction of the organ. That laparotomy should be performed for tumors and cysts was right, but to do it for uterine deviations did not seem to him to be wise or true surgery. Dr. Després is a surgeon to the Charity Hospital and is almost the last of any prominence who refuses to practice Listerism. His wards are a sight to horrify modern surgeons, and yet his success is equal to that of any of his colleagues. He opens all abscesses, etc., with the same knife, which he cleanses by simply wiping it on his apron as he passes from one patient to another. He has often been seen to open a swelling, wipe away the pus, and apply nothing but a linseed poultice. He uses the same piece of lunar caustic upon a fistula of the anus in a man and a sinus in the face of a young girl. During his clinics and lectures he indulges in caustic remarks upon clean surgeons and upon local politics.

The question of pessaries having come up, nearly all present agreed with Professor Trélat, who said that they were not only useless, but dangerous. They might be replaced by any solid body, yet the result would be the same. They were apt to cause complications.

The prevailing opinion now seems to be that the microbe is not the all-important factor in disease, but that the substances elaborated by it do the harm. It is certain that in some cultivations the bodies evolved cause a cessation of the growth of the microbe, and this fact is now taken as a starting point for a new theory of inoculation against disease. Professor Bouchard has said in his lectures that there ought to be a careful separation of the soluble matters secreted by the micro-organism from the toxic substances which might exist in connection with them. The former only were suitable for inoculation. It is possible, he thought, that they might come into use for internal medication to arrest the progress of a disease which had already begun, rather than for inoculation. Thus it might be that the substances that arrest the development of micro-organisms in cultivations could be used to combat their growth in the body, and thus to put an end to the disease the micro-organism had caused. Professor Peter said that he never had believed that the microbes themselves did any harm, but that their presence gave rise to the formation of poisonous alkaloids. Professor Bouchard was of the opinion that inoculated matter was not retained within the tissues to act as certain substances did which were put into cultivation to prevent the growth of micro-organisms, but that it modified cell-nutrition to such an extent that the cells became permanently, or at least for a long period, incapable of being again affected by the substance which had modified them originally. The inoculations practiced by him of the urine of animals suffering from various diseases had appeared to confer immunity from the disease affecting the animal from which the urine had been taken. This would seem to indicate that a modification of the virus, similar to the attenuation produced artificially, as in the case of anthrax, had occurred spontaneously in the system.

* "Deutsche Medizinal-Zeitung."

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NEW YORK, SATURDAY, MARCH 2, 1889.

THE PROPER MANAGEMENT OF CANCER.

In the palmy days when the study of carcinoma and other morbid growths was pursued by unimaginative and plodding microscopists and clinical observers alone—in that shadowy age when the Archimedean lever was still forlorn of its sought-for fulcrum and a properly located power, and its analogue of to-day, the great engine of the press, was content with simply feeling the pulses of the world without further procedure of diagnosis and treatment—we were all satisfied that cancer was but an "atypical epithelial neoplasm," and thought none the less of it because of its poverty in the matter of intercellular substance. But, since the every-day journalist has turned the light of his intellect upon the matter, we begin to suspect that we have been deceived in our cancer; that our mere neoplastic friend is rather a vegetable growth, for we hear of "the long, tangled, matted roots" which are seen pendent from the lower surface of a cancer that has been removed; or that it is an ambulatory animal that can travel with great rapidity from Jericho to June, as Robert Shurland, Baron Shappy, would say, or, more properly, as we are writing for the benefit of the medical profession, from diastole to systole, whenever it feels at all inclined to change its habitation on account of a leaky roof or defective plumbing. But now a new Daniel has come to judgment in the person of a correspondent of our contemporary, the "Evening World," who asserts that cancer is of reasonable mind and willing to make concessions. The Eastern cancer has roots, the Southern species ambles, but the Wisconsin scirrhus feeds on raw beef in preference to the senile tenderloin of its chosen companion. Mrs. ——, of Black River Falls, Wisconsin, having been the involuntary host of one of these cancer epicures for more than a year, has, in addition to clothing and shelter, provided her guest with a daily ration of seven pounds of raw beef, from which "it absorbs all the moisture, leaving the beef as porous as a sponge," and, while no worse than at the time of beginning this hospitable course, is merely "failing from old age."

This well-authenticated history opens a new field of practice to the physician. He may now console his patient who has consulted him as to how or when a personal cancer may be evicted or persuaded to throw up its lease. He will not brandish a sharp scalpel, a scoop, or a caustic plaster before his patient's eyes, but tell him to have an understanding with his cancer; to talk to it as man to man; to draw up articles of agreement in regard to how much beef shall be paid daily by the party of the first part, etc. The cancer has the nine points of possession, and denies its identity when one attempts to serve a writ of habeas corpus upon it. It argues that it knows that fact without being told of it in complicated legal verbiage, and, moreover, that it proposes to keep possession. It believes in the survival of the fittest, and it is rather inclined to the belief that in the end it will emerge from the bell end of the bugle. "I must live," it says, "but I am amenable to honorable propositions of compromise. Give me a *quantum sufficit* of raw beef, and I will let your tissues alone." The cancer means to do right, but, if forced to the wall, it will fight for its hearthstone and for its roof-tree, even if they are consumed in the struggle. But, while as yet we have no evidence that any legal papers or witnessed agreement between Mrs. —— and her cancer were executed in the case cited, it is certainly fair to assume that some understanding existed, and that the cancer carried out its part of the bargain faithfully. We know the nature of cancer to be progressive; that it is that of a rising, pushing character; that it pursues its steadfast course with untiring energy and unconquerable will. We know, moreover, that it sends up its card as soon as it has reached the age at which custom permits a youth to have such a thing, and we believe that its word would be as valuable as its affidavit. Again, we should trust it, for the obvious reason that we can not help ourselves, and it is the wise son who knows his own father's accessible points of character when he has been laid across his parent's knee for disciplinary purposes. Therefore the proper conclusions at which we should arrive are to be frank, conciliatory, and non-exacting with our cancer; to be willing to meet it half-way in settling upon the price. We shall pray for immunity from its attacks, and to fail not in providing for it its daily bread.

It is said that man's nature is mainly dependent on his environment, and the same rule that applies to the mammary cancer of Wisconsin may not be valid in the case of its congener of New York; and there may be some rare degree of moisture in Wisconsin beef that is unknown to the beef of other States. We know that New York beef does not become "as porous as a sponge" when it has been deprived of its moisture by being kept in the oven for a season when we have been late for breakfast. But for this fact, many a New Yorker would gladly ingraft a scion from this Wisconsin cancer on his gastric mucous membrane, and revel in the common boarding-house steak, if only for the satisfaction of feeling that, even if he could not feed himself, he could at least provide for his cancer.

We hope that more definite details will be furnished by the authority who reports the facts in this case, for it touches us in a most sensitive spot when our institutions are assailed even by negative insinuation; we are as jealous of the character of our cancers as of the magnitude of our business transactions and of our financial prosperity. We shall await with anxiety a more extended report of this case, and who knows but that further experiment may show that sarcoma may be bribed with pie, lupus with ice-cream, and tuberculosis with Welsh rarebits to regard the organs of their possessors as furnished lodgings and not as boarding-houses? Repugnant as it is to any man possessed of self-respect to pay blackmail, it is still more disagreeable for him to see his physical structure gradually absorbed by a tormentor that is beyond the jurisdiction of the

court, and that never can be bullied into subjection by threats or indictments; and it seems that he who submits to the inevitable with the greatest resignation is the least in danger of a professional visit from the Lord High Stulticide, for his special deputy, the cancer, will act perfectly according to orders if that overworked functionary is unable to officiate in person. All that is needed is what was so earnestly demanded by the dying Goethe—more light.

TUBERCULAR INFECTION FROM THE LOWER ANIMALS.

The question as to whether tuberculosis can be contracted by the use of the flesh or products of tuberculous animals can not be regarded as being definitely settled, but enough collateral facts have been observed to render the transmissibility of the disease probable rather than possible. Fowls have become infected by the sputa of tubercular patients, and hogs by the milk of cows in which there was tubercular disease of the udder or teats. The transmission of pulmonary tuberculosis in man from one individual to another is undoubted, and, unless the *Bacillus tuberculosis* is greatly modified in its passage through the lower animals, the danger of the infection traveling from animals to man would seem to be very great. If the bacillary origin of tuberculosis is admitted, there must be some agent or agents actively engaged in conveying the bacillus from one point to another. As tuberculosis is the most common of all human diseases, except the acute infectious disorders, the sources or vehicles of the infection must be correspondingly common. That the atmosphere plays any important part in this must be doubted, except where there has been a very close intimacy between persons primarily and others secondarily attacked, and even then the other opportunities for the transmission of the bacillus are great. If the domesticated animals, particularly those whose flesh or products are used for food, are to be regarded as possible centers of infection, we should have a reasonable explanation of the commonness of tuberculosis. There seems to be an agreement among all who have investigated animal tuberculosis that it is much more common in cows than in any other animals, and that it is much oftener observed at the present time than ever before. Whether this latter fact is due to any actual increase in the disease or to better means of observation can not as yet be stated. It is certain, however, that the conditions to which cows are now subjected are those which render them liable to the attacks of any diseases to which they are susceptible. They are regarded as machines, and everything is subordinated to the production of as large a quantity of milk as possible with the expenditure of as small an amount of money as possible. They are kept in improperly ventilated stables, the belief being that the warmer a stable is kept the greater will be the quantity of milk given, and crowded with brewer's grains, distillery swill, or any form of nastiness reputed to be galactagogue. Often they remain in these places for years, and their hoofs grow to such an extent that locomotion becomes impossible. That these conditions can of themselves excite tuberculosis is not asserted, but the teachings of human pathology are too clear to leave any doubt that they must render the animals extremely liable to be affected with any disease to which they are susceptible. The brisk competition among the breeders of "fancy" stock to produce heavy yielders of milk and butter has led to very close in-breeding, and it is well known that among their herds a large number of tuberculous animals is found. That beeves are not so liable to become tuberculous is probably because they are slaughtered at an earlier age and are never, except those which are fattened at distilleries, subjected to such unfavorable conditions as cows. It is also possible that their less intimate association with man may have a good deal to do with this immunity.

There is as yet no evidence that the milk from tuberculous cows, unless where there were lesions of the udders, has caused the disease in man, but the possibility of this is regarded as being great, and as a result the use of such milk has been prohibited by several boards of health. If such milk is condemned, the prohibition should be extended to other dairy products. The possibility of oleomargarine being a vehicle of the infection has been suggested. If it ever becomes established that the flesh of tuberculous animals is unfit for food, this product would certainly be shown to be highly dangerous, as it is made largely from the peritoneal fat, a tissue in which tubercular lesions are commoner than in any other part of the body except the lungs. It is well known that Hebrews are very free from tuberculosis; may not this be due to the fact that great care is exercised by them in the inspection of meat? This examination is confined to the inspection of the lungs, and in all cases where they can not be fully inflated or where there are adhesions of the pleura to the chest-walls the animal is rejected. A question as to the tuberculosis of fowls which would be of interest to investigators is that of whether a tubercular hen would lay eggs containing the *Bacillus tuberculosis*. That this is possible is shown by the fact that fœtal tuberculosis is not unknown.

Many other means of infection might be suggested, but we think that enough has been advanced to show the necessity of active interference by the proper authorities. The sanitary conditions and surroundings of cow stables should be improved, the use of grains, swill, etc., prohibited, and a pure water supply insisted upon. All tuberculous animals should be killed and all portions of them destroyed, preferably by fire. These latter measures have resulted in preventing the spread of pleuro-pneumonia, a highly contagious disease, and will probably at no distant day suppress it entirely. Local legislation would probably be of little use, as the laws, if they could be enacted in the different States, would vary so greatly as to prevent any active co-operation. The Federal Government should take hold of this matter, as was done in the case of pleuro-pneumonia.

MINOR PARAGRAPHS.

THE NEW YORK OPHTHALMIC AND AURAL INSTITUTE.

In the "Nineteenth Annual Report," for the year ending September 30, 1888, the surgeon, Dr. Herman Knapp, states

that in many respects the institute's present facilities are unexcelled—for example, in its in-door department, its operating room, and its laboratory—but that the capacity of the building has long been inadequate to the accommodation of the number of patients who apply for treatment. He adds that, when a new hospital is built, the eye hospitals of Manchester and Birmingham and the eye clinic of the University of Heidelberg may serve as models. In view of the amount of teaching done at the institute and its excellence as to quality, we hope that before long a suitable building will be provided for it. Besides the regular clinics in the out-patient department, the wards, and the operating-room, courses in operations are given by Dr. R. O. Born in the physical diagnosis of eye diseases by Dr. F. E. D'Oench and Dr. J. H. Shorter, in refraction, accommodation, and motility by Dr. J. E. Weeks, and in diseases of the ear, nose, and throat by Dr. M. Toeplitz. In addition, advanced students can pursue histological, bacteriological, and physiological investigations on the eye and ear in the laboratory under the guidance of Dr. Knapp and Dr. J. E. Weeks.

STATE CARE FOR THE INSANE.

The State Charities Aid Association is deserving of the utmost praise for its efforts to rescue the indigent insane of the State of New York from the horrors incident to their confinement and alleged care in the county poor-houses. It is gratifying to be able to say also that the association's bill having this purpose in view is meeting with hearty advocacy on the part of the medical profession not only in the shape of individual physicians' signatures to petitions addressed to the Legislature, but also in formal resolutions passed by such representative bodies as the Association of Medical Superintendents of American Institutions for the Insane, the Medical Society of the State of New York, the New York Academy of Medicine, the Medical Society of the County of New York, and the New York Neurological Society. It is difficult to see how any legislator who is not wholly given over to the crooked ways of so-called politics can view the commission of the insane poor into the hands of county officials as anything short of inhuman and disgraceful. So obvious is this that there is indeed no opposition to the bill save such as springs from utterly unworthy motives. That this opposition may speedily be overcome is the wish of everybody acquainted with the neglect, to say nothing of the abuses, prevalent in the county poor-houses.

A JOURNAL FOR NURSES.

With its January issue the "Trained Nurse," a journal "consecrated to those who minister to the sick and suffering in hospital and home," began its second volume. It is a neatly printed monthly of forty-six pages, edited by Margaret Elliot Francis, and published in Buffalo. As it has already absorbed the "Journal of Practical Nursing," and gives a monthly "Hospital Supplement," we infer that its prosperity is reasonably well assured. We are glad that there is ground for this inference, for its contents are of a sort to exercise a most favorable influence upon nurses and upon all who are concerned in the care of invalids and children.

THE MARINE-HOSPITAL SERVICE.

The "Annual Report of the Supervising Surgeon-General of the Marine-Hospital Service of the United States" for the year 1888 is a fresh reminder of the importance of that service and of the excellence of its administration. The annual reports of the surgeon-generals of the various public services have of late years been made more and more valuable by the increased space given to matters which, although not strictly required to be reported upon by those officers, yet have a vital bearing upon the conduct of their departments. In none of these reports has this feature been more manifest than in the one now under consideration. Within its 406 pages we find an account of the satisfactory progress of the work done in the laboratory of hygiene; a history of the Florida epidemic of yellow fever, illustrated by several reproductions of photographs and a map of Jacksonville; an excellent essay, by Passed Assistant Surgeon John Guitéras, entitled "Some Observations on the Natural History of Epidemics of Yellow Fever, based on a Study of the Mortality Statistics of the City of Key West; also a Plea in Favor of a Continued Investigation of this Disease by the Government of the United States"; and numerous short clinical reports and articles on special subjects—all of value and creditable to the medical corps.

JAUNDICE FOLLOWING A STROKE OF LIGHTNING.

In the "Charité-Annalen" Dr. C. Gerhardt gives an account of the case of a person who had been struck with lightning, an abstract of which is contained in the "Centralblatt für klinische Medicin." The patient came under treatment a few hours after the accident, having regained consciousness, but having no remembrance of what had occurred. The course of the current was shown by burning of the hair and by the characteristic arborescent figures, especially on the back. There was hæmatogenous jaundice, apparently due to the action of the electric current on the coloring matter of the blood, and the nerves and muscles were over-sensitive to both the faradaic and the galvanic current.

THE ADULTERATION OF WINE.

What we have often said as to the eligibility of our native wines, especially from the point of view of purity, meets with pointed exemplification in an account lately given by the "Lancet's" Paris correspondent as showing the extent to which wine is adulterated or falsified in France. It seems that 1,500 casks supposed to contain wine were recently seized by the police authorities on suspicion, and samples from different casks were analyzed at the municipal laboratory of Paris. They were found to consist of a mixture in which there was not a single drop of wine, but the greater part was water with some alcohol of inferior quality, a little glycerin, a Chilian coloring matter known as "maqui," a considerable proportion of plaster of Paris, and common salt.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending February 26, 1889:

DISEASES.	Week ending Feb. 19.		Week ending Feb. 26.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	12	4	6	1
Scarlet fever	351	53	323	36
Cerebro-spinal meningitis	0	0	4	3
Measles	292	26	264	9
Diphtheria	202	72	160	41
Small-pox	0	0	0	1

The Annual Prize of the Medical Society of the County of New York.—A prize consisting of a gold medal of the value of one hundred dollars is offered by the Medical Society of the County of New York for the best essay upon any medical or surgical subject submitted to the Prize Essay Committee on

or before October 1, 1889, by any member of the society. The essay must present sufficient original experimental or clinical observation to make it a useful contribution to medical knowledge. Essays in competition must be designated by a motto and accompanied by a sealed envelope inscribed with the motto and containing the name and address of the author. The prize will be awarded at the annual meeting of the society in October, and the name of the successful competitor will then be ascertained by opening the envelope marked with the motto corresponding to that upon the successful essay.

All essays in competition must be sent to one of the members of the committee before October 1, 1889.

[Signed.] E. H. Grandin, W. G. Thompson, M. A. Starr, } *Committee.*

A Proposed New Laboratory and Gymnasium for the Harvard Medical School.—At a special meeting of the faculty of the Medical Department of Harvard University, held on February 23d, it was announced that Dr. Henry F. Sears had offered to present the school with $40,000 for the purpose of erecting a pathological and a bacteriological laboratory. The matter was referred to a special committee. The plan proposed is to build a two-story annex to the present building, one story to be devoted to pathology and the other to bacteriology, and to fit up a gymnasium for the students in the basement.

The late Dr. Dalton.—Dr. W. H. Thayer, of Brooklyn, informs us that we were in error in stating, in our obituary notice of Dr. Dalton, that he was at one time connected with the Medical Department of the University of Vermont, at Burlington, and states that he was a member of the faculty of the Vermont Medical College, at Woodstock, which was formerly a flourishing school, including in its faculty, at various times, Willard Parker, Alonzo Clark, Robert Watts, Elisha Bartlett, and other eminent men.

The Alumni Association of the Woman's Hospital held its annual meeting at the New York Academy of Medicine on Wednesday, February 27th. The attendance and the character of the proceedings demonstrated the continued usefulness of the society. Dr. Bache McE. Emmet was chosen president for the ensuing year, and Dr. S. Van Ness secretary.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the four weeks ending February 23, 1889:*

Austin, H. W., Surgeon. To proceed to Green Bay, Wis., as inspector. February 9, 1889.

Guitéras, John, Passed Assistant Surgeon. Granted leave of absence for sixty days, with permission to go abroad. February 13, 1889.

Wheeler, W. A., Passed Assistant Surgeon. Orders to proceed to Cleveland, Ohio, revoked. February 9, 1889.

Devan, S. C., Passed Assistant Surgeon. To proceed to Charleston, S. C., Savannah, Ga., and South Atlantic Quarantine Station, as inspector. February 9, 1889.

Wasdin, Eugene, Passed Assistant Surgeon. To proceed to Charleston, S. C., and assume charge of the service. February 23, 1889.

Death.

Urquhart, F. M., Passed Assistant Surgeon, died at Evansville, Ind., February 14, 1889.

Society Meetings for the Coming Week:

Monday, *March 4th:* New York Academy of Sciences (Section in Biology); Medico-chirurgical Society of German Physicians; Morrisania Medical Society (private); Brooklyn Anatomical and Surgical Society (private); Utica, N. Y., Medical Library Association; Boston Society for Medical Observation; St. Albans, Vt., Medical Association; Providence, R. I., Medical Association (annual); Hartford, Conn., City Medical Association; Chicago Medical Society.

Tuesday, *March 5th:* New York Obstetrical Society (private); New York Neurological Society; Elmira Academy of Medicine; Buffalo Medical and Surgical Association; Ogdensburgh Medical Association; Hudson, N. J., County Medical Society (Jersey City); Androscoggin, Me., County Medical Association (Lewiston); Essex, Mass., South District Medical Society (annual—Salem); Baltimore Academy of Medicine.

Wednesday, *March 6th:* Society of the Alumni of Bellevue Hospital; Harlem Medical Association of the City of New York; Medical Microscopical Society of Brooklyn; Medical Society of the County of Richmond (Stapleton), N. Y.; Penobscot, Me., County Medical Society (Bangor); Bridgeport, Conn., Medical Association.

Thursday, *March 7th:* New York Academy of Medicine; Brooklyn Surgical Society; Society of Physicians of the Village of Canandaigua, N. Y.; Boston Medico-psychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington).

Friday, *March 8th:* New York Academy of Medicine (Section in Neurology); Yorkville Medical Association (private); Medical Society of the Town of Saugerties, N. Y.

Saturday, *March 9th:* Obstetrical Society of Boston (private).

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN SURGERY.

Meeting of January 14, 1889.

Dr. R. F. Weir in the Chair.

Exstrophy of the Bladder; Wood's Operation.—Dr. W. T. Bull presented a boy ten years old upon whom he had done a plastic operation by which he had covered the exposed mucous membrane with flaps of skin, three in number, lifted up from the front of the abdomen and brought together over the raw surface of the bladder. He had made no attempt to insert the ureters into the penis as on two occasions he had attempted but unsuccessfully to do. The urine still dripped from the lower exposed portion of the bladder just below the rudimentary penis, but the boy's clothing gave him much less discomfort. The speaker was about to make him an artificial bladder which he should suspend so as to catch the drip. He had used silk sutures, lest catgut should form a nucleus for calculi.

The Chairman spoke of the expedients which had been attempted for the relief of this condition, such as turning the ureters into the rectum, and resecting a portion of bowel with the hope of making it do service as a bladder. Many surgeons were satisfied with making a close-fitting rubber covering for the exposed parts.

Dr. W. B. De Garmo showed photographs of the condition which he had found in a woman, thirty-three years old, who, although having an extensive exstrophy of the bladder, had married and borne a child at full term, and also of the same patient wearing an apparatus which he had arranged for her re-

lief. The pubes had been open at the symphysis and the labia widely separated. After the birth of her child the uterus had undergone extreme prolapse. It hung between her legs, and this, together with the dripping urine, made her condition a very miserable one. He had had made a large rubber plate curved to cover the exposed bladder, and passing between her legs. A hard rubber cup was attached which entered the vagina and supported the uterus. A portion of the plate was made into a hollow into which the urine collected. The whole was supported by a suitably padded spring passing around the body at the hips.

Congenital Deformity of Both Knees.—Dr. J. P. Bissell presented a child in each of whose knees there was a subluxation forward of the tibia with relaxed ligaments and a tonic contraction of the quadriceps extensor cruris muscle. It had presented by the breech, but no force had been used to bring on delivery. The patella was very slightly developed.

Dr. L. H. Sayre recalled a similar case in which there had also been abduction. It had been partly cured by splints.

Dr. V. P. Gibney described a case in which a boy having a subluxation at the knee, resulting, it was said, from force used in a breech presentation, was continuing at twelve years of age to go about on all-fours like a brute. The legs were fully extended on the thighs and no flexion was possible. The patella was in place, but very small, and the muscles of the leg were atrophied in some groups and hypertrophied in others.

Dr. R. G. Wiener mentioned a case in which two girls in the same family had a dislocation of the tibia forward. They had both been born by the breech with the two lower extremities flexed so that the feet touched the face, and just after birth the legs had been superextended on the thighs nearly to right angles.

Dr. S. Ketch referred to a case in which the deformity had not been noticed till the child began to walk, and had then been taken for knock-knee.

Dr. A. Jacobi suggested that a scarcity of liquor amnii might hamper the movements of a child *in utero* so as to cause the class of deformities under consideration. Usually in time children recovered from them to a greater or less extent. The loss of reflex movement in the right leg in the case presented suggested a nervous complication affecting the muscles, perhaps of spinal origin. The right leg had the greater deformity. A case had been reported in France of entire absence of the patella.

Cervico-thoracic Fistula.—Dr. F. Hüber presented a patient in whom a phlegmonous erysipelas of the neck had burrowed its way into the pleural cavity and the posterior mediastinum. Ribs had been resected, and both these regions as well as the neck had been drained. Recovery was nearly complete.

Dr. Hüber also reported a case in which he had resected ribs expecting to find a localized pyæmia, but had come upon an abscess in the lung tissue, half an inch in depth, which he had drained. Full recovery had followed. The patient, a child of four years, had suffered from an attack of what was called pleuro-pneumonia.

The Chairman mentioned a case in which the autopsy had shown a pulmonary abscess in the part of lung adjoining the heart.

Dr. R. Abbe spoke of an instance in which he had removed an accumulation of pus from between the lobes of the lung, with the subsequent recovery of the patient.

Amputation for Charcot's Joint Disease.—Dr. Hüber then presented a patient upon whom Dr. McBurney had performed amputation above the knee. The history was that the man, after having suffered many years from "chronic rheumatism," had become weak on his legs, walked badly, felt a tingling in his feet, and noticed an enlargement of the joint. There had been incontinence of urine preceded by retention. The day before his admission he had taken cold from a severe wetting and had lost the use of the limb entirely. The joint had been large and swollen; a week later there had been a grating sound when it was moved, and the ligaments had disappeared. A thick, turbid serum had collected in the joint and been repeatedly removed. Amputation was then performed to prevent suppuration.

The Chairman remarked that mild types of this disease had been benefited by opening and washing out the joint and applying a protective splint. Dr. Willy Meyer had done resection of the knee.

Spasmodic Urethral Stricture from Anal Fissure.—Dr. L. B. Bangs read the history of a case in which a man suffered a number of years from spasmodic stricture of the urethra, which gave him intense pain before and after every stool. He had become addicted to opium. Finally three old fissures had been found at the margin of the anus, and with their cure the stricture had entirely disappeared. The fissures had resulted from severe constipation due to lead-poisoning.

The Chairman related an incident occurring in private practice where the husband of a lady had consulted him about an intense pain from which his wife suffered whenever he attempted intercourse. Investigation had revealed that an anal fissure had given rise to vaginismus through some reflex connection between the parts. It had disappeared with the cure of the former affection.

Thyreoid Tumors.—The Chairman presented a number of hard tumors, varying in size from that of a pea to that of a horse-chestnut, which he had removed from the thyreoid gland of a patient suffering from myxœdema. The necessity of not removing the whole of the gland was now so well understood that one German surgeon had even resorted to transplanting a fragment of sound gland tissue to the peritonæum in certain cases. The tumors and two cysts had been enucleated in the present case with the greatest ease.

Dr. B. F. Curtis spoke of having enucleated a cyst of the thyreoid, as large as an orange, without hæmorrhage. It had lain imbedded almost on the surface of the gland.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN OBSTETRICS AND GYNÆCOLOGY.

Meeting of December 27, 1888.

Dr. J. E. Janvrin in the Chair.

A New Perineal Retractor.—Dr. A. H. Goelet presented a new form of speculum designed to facilitate electrical and other intravaginal applications; also a new form of electrode by which stronger currents were made safe. He read a description of each, with directions for use. (See page 205.)

Dr. E. H. Grandin questioned whether it was necessary to employ any speculum when we applied electricity to the cervix or uterus, or to have the aid of a nurse. He insulated a ball electrode with chamois leather. Dr. Goelet's device seemed ingenious, but not simple and not necessary. A Sims speculum enabled one to make the parts aseptic, if that was desired.

The Chairman remarked that he had never cauterized the vagina. He had used currents of from 40 to 75 milliampères, and had never needed to use stronger ones. As to making the vagina aseptic previous to electrical applications, he did not deem it necessary unless there was excessive leucorrhœa. He hoped that electricity would be used more and more by country practitioners in the future.

Dr. H. T. Hanks thought the instrument ingenious for its purpose, and that it might also be found very convenient for

other purposes than electrical applications. Thus in hospital or dispensary work, where it was necessary to attend to a number of patients in rapid succession, all of whom took the dorsal position unasked, the instrument might be of great service. He had used all sorts of electrodes without a speculum. The fewer the instruments which specialists in electricity put forward as necessary for practical work, the sooner general practitioners would learn to employ that valuable agent in many very common ailments.

Dr. GOELET said that he had never been able to use more than 40 milliampères without cauterizing the vagina, while with the applicator shown a current of 120 milliampères was entirely safe. The retractor allowed of much more thorough cleansing than a douche could effect. In his opinion, every worker in gynæcology should have a nurse, if only for his own protection. While it was true that a multiplication of the instruments called necessary tended to limit the employment of any therapeutic agent, it was also evident that a certain amount of skill, and a knowledge of existing means and of their proper applications, must be had by every practitioner to prevent his doing positive mischief in his efforts to alleviate suffering.

Expulsion of an Extra-uterine Fœtus through the Rectum.—Dr. J. P. TUTTLE read a report of such a case which illustrated the difficulty often encountered in making a diagnosis of abdominal gestation. The patient, aged forty-five, had been in delicate health for many years; her stomach had always been sensitive and liable to attacks of nausea. She had had what she called "falling of the womb." She had at times missed a period. Considering the antecedent history, suspension of menstruation, followed by a persistent discharge, nausea, and a feeling of heat in the vagina, had not been taken as having special significance. When extreme constipation and paroxysms of pain referred to the rectum had developed, it had been thought due to what seemed a gravid and retroflexed uterus bearing backward upon the rectum. The patient had refused to be examined under ether, and had put herself in the hands of an electrician, who, after many applications of various currents, had left her with a very weak pulse and stomach and still flowing. From the woman's husband it had been learned that at one of these electrical séances there had been a severe hæmorrhage, with the discharge of a mass of clots. As the patient had become considerably better for a time, the condition had then been thought to be fibroid tumor or hæmatoma between the uterus and the rectum. She had insisted on going about again, although the flow had persisted in spite of internal medication and external applications. The tumor in the pelvis had meanwhile grown steadily, sagged lower and lower in the pelvis, and become softer. Later on the hæmorrhage had gradually been checked by applications of the persulphate of iron. Shortly after and quite suddenly, during an effort at stool, a fœtus had come away through a rent into the rectum, from which latter it was expelled, dead, but not altered beyond a slight maceration. The woman had then been put under ether and an attempt made to remove the placenta through the rent; but the shock produced and the hæmorrhage had been so violent that it had been necessary to desist. No other operative interference, least of all laparotomy, could have been endured at that time. The patient had slowly sunk, and died in collapse. Impregnation had probably occurred at the left ovary or in the left tube, the fœtus escaping afterward into the broad ligament, and from there, by pressure on the rectum in efforts at stool, breaking through the thinned rectal wall into the rectum itself.

Hæmatoma of both Ovaries.—Dr. R. A. MURRAY presented the tubes and ovaries of a woman upon whom, in view of a series of quite obscure symptoms, he had operated, expecting to find extra-uterine pregnancy, but being immediately impelled to surgical interference by the constant pain and loss of flesh which the patient had suffered from. Both ovaries had been found tightly bound down by extensive adhesions, in which both ureters had been badly involved, and from which they had been dissected free with great caution, and in spite of much hæmorrhage. A fold of the broad ligament had had to be sewed together on itself before the hæmorrhage was checked. The patient had recovered; all her symptoms, both local and reflex, had ceased; and her face had no longer the painful expression it had once worn. The case was significant in view of the symptoms simulating pregnancy which had deceived several expert men during five months previous to operation. It had turned out to be hæmatocele, pyosalpinx, and abscess of the ovary on both sides.

Dr. H. C. COE opened the discussion on these two cases of real and simulated extra uterine gestation presented by Dr. Tuttle and Dr. Murray. He cited an instance in which a fœtus of about four months had been discharged from the rectum after an attack of localized peritonitis. In this case the woman had been married nineteen years, had not missed a period to her knowledge, and when the sac came away it had been supposed to be a fibroid of the uterus. The fœtus had evidently been dead a long time.

Dr. A. F. CURRIER spoke of the uncertainty of electricity used in suspected cases of extra-uterine gestation. It might do great harm if some other conditions were present, such as pyosalpinx. It did not lead to diagnosis, and, moreover, was advised by its advocates to be used in the first three months of the gestation, when the likelihood of a successful result by laparotomy was greatest, but would be lessened if electricity had been used previously.

Dr. A. P. DUDLEY remarked that we were still far from being able to recognize extra-uterine pregnancy in all cases. One prolific source of error arose from the fact that adhesions between the intestines in the pelvis often caused nausea and other symptoms like those of pregnancy.

The Immediate Application of Forceps to the After-coming Head when the Cervix is Imperfectly Dilated.—Dr. H. C. COE read a paper with this title, giving an account of a series of cases where children had been born dead owing to delay in the escape of the head from a rigid and tightly contracting cervix. The grip of the head by the cervix had been such that traction on the body of the child had only resulted in pulling the uterus down to the vaginal outlet. He believed that all these children could have been saved by a prompt application of the forceps, although the chances of laceration would have been increased. He thought that, in the case of multiparæ who had borne several dead children, or of old primiparæ desirous of having a living child, a prompt use of the forceps would be justified where delay was caused in the manner described. The difference between the five or six minutes needed for manual extraction and the two or three minutes required for removal by the forceps might in particular cases mean the life or death of the child.

Dr. W. R. GILLETTE remarked that since one in every three children born by the breech died, the subject was very important. If we came to every case with a forceps in our hands, and put it on the moment the cord ceased to pulsate, the results to the children would certainly be better. He had himself, however, never been compelled to use the forceps in releasing the head, but had always found pressure from above sufficient.

Dr. MALCOLM MCLEAN favored the old method of pressure from above. In a recent case he had succeeded in this way after failing in attempts to apply the forceps. He thought more children died from the effects on the spinal cord of traction made to extract them than from suffocation from compression

of the funis. Children who died shortly after birth often breathed for some time, showing that it was the roughness of their extraction which had killed them, caused by too much anxiety on the part of the operator to hasten labor.

Dr. R. A. Murray thought most after-coming heads could be extracted without the forceps, but that cases might occur where the cervix contracted strongly and would not dilate, and where the forceps might be used to cause dilatation. In very stout women, unless under anæsthesia sufficient to give muscular relaxation, it was not possible to make efficient pressure from above, and here the forceps was in order. However, many bad rents in the cervix could be avoided if we reserved the forceps for a decidedly exceptional class of cases.

Dr. Charles Jewett favored the use of the forceps in releasing the after-coming head. He kept the body of the child held well up on the body of its mother, especially when the cervix was indurated. As to the time a child could live after the placental circulation had ceased, an incident in his own experience might afford some clew; he had extracted a child alive (by Cæsarean section) five minutes after the death of the mother.

Dr. Coe closed the discussion by reminding the Section that he had only given an account of cases in which the standard methods had failed to save the life of the child. The manipulation of the child's body and the pressure on the fundus from above which he regularly employed were such as he had seen used in Vienna, where training in such matters was kept at the highest attainable point. He only maintained that in certain cases, after manual efforts had failed, and solely in the interests of the child, the forceps could probably be made to determine whether the child would be born alive or dead.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN THEORY AND PRACTICE OF MEDICINE.

Meeting of December 17, 1888.

Dr. R. C. M. Page in the Chair.

The Treatment of the Acute Stage of Tetanus.—Dr. J. C. Minor read a paper with this title. He observed that the whole question was a study in toxicology, a matter of poisons and antidotes, the disease being the direct result of alkaloidal poisons thrown out by the germs which were the acting causes of tetanus. Three or four of them had been isolated, one of which gave rise to tetanus, a second to tremors, paralysis, and convulsions, and a third to tonic and clonic spasms. The nervous centers in health had two forces which more or less balanced each other—the power to act when called into play, and the power of remaining at rest. The latter of these was lost in tetanus. The discharge of force was either incessant or with remissions due to simple exhaustion. Now, the production of toxic material seemed to be limited in time to three or four weeks, and, although 90 per cent. died before the production had ceased, there was always a chance—if life could be supported during the first two weeks, when the production was greatest—of the patients emerging from the toxic state and recovering. Most of those who died did so in the first week, and recovery mainly depended on treatment during that time. No means were known of expelling or neutralizing the poison of tetanus, but, as its action was expended on the cord and medulla, if we could so benumb these as to render them insensible to that action, the utmost was then done to prevent its otherwise fatal effect. The muscular spasms, which were clinically the important element in the disease, grew rapidly more intense and frequent, and death usually occurred in a spasm of extreme violence, which produced tonic contraction of the muscles of respiration and death by asphyxia. In some cases death came by cardiac failure or general exhaustion, but here, too, the spasms were the active cause. If their violence could be modified at the critical moments by having the nervous system previously under some other drug influence, the nerve-storm could pass safely over. Possession was here nine points of the law. Nothing short of toxic doses of eserine, chloral, or the bromides could displace the action of tetanine when it once had the nervous centers under its influence; but, on the other hand, it, too, was comparatively inert if those centers were already under an impression of an opposite sort.

Of the various drugs which depressed the action of the spinal cord, the reader himself preferred Calabar bean, chloral, and the bromides, with an occasional resort to chloroform in cases of very rapid development of the tetanine toxæmia, or in the culminating spasms of the crisis, where the treatment had previously been neglected or ineffectual. It then gave a temporary stay of proceedings, during which time chloral or Calabar bean could be given by the rectum or the hypodermic needle, so as to regain control.

For lessening muscular tension and preventing the spasms from the first, the salicylate of eserine was the best form in which to give Calabar bean. Just enough was to be given from time to time to prevent the rigidity from increasing to the point of spasm, increasing the doses and frequency with the progress of the disease toward its climax. The patient would then indeed be "between the devil and the deep sea," because both remedy and disease were cumulative in action. It was often well here to substitute chloral rapidly.

The symptoms of poisoning by Calabar bean under these circumstances were painless diarrhœa (easily checked by morphine), sudden extreme contraction of the pupils, profuse sweating, irregular tumultuous heart action, and dyspnœa. They could be relieved by about a fortieth of a grain of atropine or a quarter of a grain of morphine.

Throughout the disease quiet was absolutely essential to recovery, and proper nourishment second only to the medicinal treatment, if not equal in importance.

Cerebral Syphilis.—Dr. E. D. Fisher read a paper with this title. He remarked that of the three varieties of cerebral syphilis made by Monk—affecting respectively the bone, the membranes, and the cerebral blood-vessels—he should consider the last only. It was more usual in the third stage of the acquired form of the disease. Both large and small arteries were affected, and were narrowed in caliber by the growth extending inward. This growth was the result of an increased cell proliferation due to irritation by syphilitic virus, but it came in patches and not continuously. The cortex was often softened. While disease of the dura was rarely recovered from, that of the vessels was more easily treated. In case a terminal artery was affected, the result was apt to be permanent and not so easily treated. Unless the dura was involved there would be no headache. The symptoms were of a general sort. There was loss of mental power and of the ethical sense, resulting in brutality, selfishness, and improper actions. Insomnia was often complained of, and a sense of incapability was always present. The cranial nerves were always affected, especially the third, fifth, sixth, and seventh pairs. Chorioiditis and retinitis were almost characteristic of disease in the vessels. Any interference with vision should make us suspect the presence of such a disease. Weakness of mind, with paralysis in widely separated parts, was strongly significant. Sometimes insomnia, irritability, and dullness, numbness and tingling in the limbs, and perhaps headache, followed by hemiplegia, were all there was to judge from. The treatment consisted in the administration of the iodides, calomel, and the bichlorides, together with quiet and hygienic conditions.

Dr. W. H. Thomson thought the subject one of great importance and great obscurity. The diagnosis was often very difficult, and nervous symptoms alone insufficient. In all suspected cases he would have a very careful examination made of the body for minute traces of the disease. One of the most persistent and significant of these was tenderness and pain when pressure was made at the junction of the ensiform cartilage with the sternum. The great point to bear in mind when confronted with a suspected syphilitic affection—as of the brain, the skin, or the throat—was its inconsistency with all regular types of disease proper to these parts of the body.

Dr. L. C. Gray believed that a proliferation of round cells was the essential lesion in syphilis whenever it gave rise to structural changes. When one had to rely for diagnosis on nervous symptoms alone, headache relieved by iodide of mercury and often quinine, but not relieved by opium, and insomnia not relieved by hypnotics, were very significant symptoms. Irritability of temper occurring at night or in the afternoon every day, and hemiplegia in a patient less than forty years old, should be taken as *prima facie* evidence, especially if a cephalalgia ceased with the occurrence of the hemiplegia. Irregular convulsions without other explanation, with or without cephalalgia, and symptoms showing meningitis of the base of the brain, especially with implication of the third nerve, were noteworthy symptoms on which to base a diagnosis. Also an unexplained prolonged coma.

Dr. C. L. Dana remarked that little could be added to the symptomatology of cerebral syphilis which had not been considered in the writings of Miller, Gray, and Anderson. Its pathology was still largely to be discovered and worked out. He did not consider the small round cells as at the bottom of syphilitic lesions, nor of aid in explaining them when they did occur in such lesions. In brain syphilis the pathology seemed to him to include chiefly: 1. A local hyperæmia or asphyxia. 2. Localized areas of gummata and meningitis. 3. Inflammation of the cranial nerves. 4. Degenerative changes in peripheral elements.

Dr. Fisher remarked that the specific connection of the round cell with syphilis was to him doubtful, and that a bacillus was the only basis which he looked to for the pathogeny of the disease.

NEW YORK NEUROLOGICAL SOCIETY.

Meeting of January 8, 1889.

The President, Dr. George W. Jacoby, in the Chair.

Traumatic Hysteria.—Dr. Græme M. Hammond exhibited a male patient with this affection. He had been injured July 11, 1885, by falling upon a sharp-pointed iron rod an inch in diameter, which penetrated into the right submaxillary region about an inch and a third from the median line. It passed in about four inches in a direction upward, backward, and inward. Dr. Philip Zenner, of Cincinnati, had seen the patient half an hour subsequent to the accident and had described his symptoms in the "Medical Record." He was then suffering from paralysis of the right arm and leg, right side of the face, tongue, and palate. There had been complete anæsthesia of the left side of the face, and loss of taste on the left side of the tongue, and of smell in the left nostril. There had been intense pain in the region supplied by the middle division of the fifth nerve. He had consulted Dr. Hammond for the relief of this pain, and his advice had been that the middle division of the nerve should be excised. The patient had been sent by him to St. Luke's Hospital, where Dr. Robert Abbe had operated on November 16th. The nerve had been excised almost to Meckel's ganglion. The next day the patient had been again examined. The intense facial pain had disappeared, and the anæsthesia of the two other divisions of the fifth had also disappeared. The senses of smell and taste had been restored and the hemiplegia had been markedly improved. At the present time, seven weeks after the operation, there had been no relapse. The speaker's conclusion was that, although a certain amount of organic lesion was undoubtedly present, yet the fact that so many symptoms were relieved by an operation which would not have affected them at all if they had been produced by a central lesion, showed conclusively that hysteria must be regarded as the sole cause of their production.

Dr. C. L. Dana asked if the whole of the side of the tongue had been affected, and was answered in the affirmative. He stated that he had seen the patient previously, and that the gain in motor power since the operation was little; that there was still considerable loss of power and rigidity. There was no doubt that he had had a genuine trauma at the base of the brain, and that he now had an organic lesion upon which some hysteria was superimposed.

Dr. Frederick Peterson did not think that a true ankle clonus, such as was obtained in this case, could be obtained in simple and pure hysteria. He had not met with true clonus in hysteria, but had frequently observed what Gowers described as a spurious clonus, due to a half-voluntary contraction of calf muscles, and which Gowers considered characteristic of hysteria.

Dr. B. Sachs believed that an actual clonus was observed in pure functional neuroses at times, and stated that such cases were cited by Oppenheim. He thought the marked hysterical element in this case and the rapid improvement made it possibly one of hysteria. He asked if there had been any hysterical symptoms in the previous history of the case, and was answered in the negative.

Dr. Hammond thought there was a real organic lesion also in the case, but that the anæsthesia, part of the hemiplegia, and the loss of taste and smell were hysterical.

The Thermo-polypnœic Center and Thermotaxis.—Dr. Isaac Ott, of Easton, Pa., then read a paper upon this subject, the following being his conclusions from sixty experiments:

1. The thermo-polypnœic center is situated in the gray matter about the third ventricle at its anterior part.

2. This center acts reflexly, so that when heat is thrown on the body the sensory impulses excited by the heat are conveyed to the polypnœic center, which excites the respiratory center to throw off heat. It stands between heat production on one side and heat dissipation on the other.

3. The fall of the number of respirations caused by the heat after the removal of the polypnœic center is due to an excitation of fibers running in the vagi which inhibit the respiratory center.

4. The normal temperature of the body is not necessarily dependent upon the amount of heat produced or dissipated, for human calorimetry shows that the heat production varies, but the temperature remains nearly the same. The relation of heat production to heat dissipation decides the temperature.

5. The cortical centers, the cruciate and Sylvian, are thermotaxic.

6. The four basal thermotaxic centers are situated as follows: One in the caudate nucleus, one in the gray matter beneath the caudate nucleus, another in the gray matter about the most anterior part of the third ventricle, and still another in the anterior inner end of the optic thalamus in the gray matter about the third ventricle.

7. These six thermotaxic centers are more circumscribed than Gerard, of Geneva, believes.

8. These six thermotaxic centers are neither thermo-inhibitory nor thermo-excitor, but thermotaxic; that is, they main-

tain the balance between heat production and heat dissipation, so that the temperature is kept normal.

9. In fever neither increased production nor increased dissipation nor high temperature is necessary, but fever is mainly a disease of thermotaxis, a disorder of the four basal thermotaxic centers. It is true that in septic fever, in its initial stage, heat production usually runs temporarily ahead of heat dissipation, but exceptionally both are immediately diminished.

10. Antipyretics do not necessarily inhibit or excite heat production or heat dissipation, but act upon the thermotaxic centers disordered by fever as agents to restore order or normal thermotaxis. Professor Chittenden's careful researches prove that in healthy hungry rabbits moderate doses of quinine exercise at most only a very slight depressing influence on the temperature and have but a minimum effect upon the production of carbonic acid.

11. D'Arsonval's calorimeter for animals and man as modified by the writer is less liable to error than any other, as the agitator can be worked without opening the instrument or with hardly disturbing the sawdust covering.

12. Human calorimetry shows that an adult after a full meal produces between 300 and 400 heat units an hour, and not 110 calories, as Helmholtz theoretically obtained.

Dr. Dana did not question the truth of the author's statements. But what interpretation should be made of the six thermotaxic centers he had described? Could the bodily temperature be regulated without them at all? He referred to a case of his that he had recently reported in which, although there was no cerebrum, basal ganglia, or cerebellum, and only part of the pons, yet the temperature was normal. The facts of human pathology should be brought into harmony with these physiological experiments.

Dr. Ott said it was difficult to understand the regulation of temperature in Dr. Dana's monster. Injuries to the corpus striatum disturbed the temperature, but the other thermotaxic centers served to regulate it.

Eclampsia Infantum in its Relation to Fever.—Dr. H. W. Berg read a paper on this subject, in which he took the ground that febrile eclampsia called into activity two sets of nerve-centers, the thermogenic and the convulsive. An alteration or lesion was produced in the thermogenic center by excessive hyperæmia, anæmia, or some minute structural change, causing a rise of temperature; secondarily it affected the unstable convulsive center in the medulla, especially in infants, whose medullæ were in an exalted state of irritation. He thought it probable that the motor and thermic nerves were intermingled in the medulla, and thus an irritation of one resulted in irritation of the other. Thus fever produced convulsions in children, while the process might at times be reversed, as in the status epilepticus, where after a period of convulsion the temperature began to rise, and, as Bourneville had pointed out, might reach an enormous height. He would treat febrile eclampsia, not with antispasmodics, but with antipyretic remedies—in other words, treat the cause of the convulsions. In this he had had gratifying success from the use of antipyrine and acetanilide, together with cold or tepid sponging with equal parts of water and alcohol.

Dr. Ott said that children no doubt had feeble thermogenic centers.

Dr. William Leszynsky referred to a report of his some years ago of twenty or more cases of status epilepticus in which the rise in temperature had not accorded with the statements of Bourneville. As to treatment, he thought simple sponging with alcohol and water sufficient, and that the use of the wet pack or of antipyretics was objectionable.

Dr. Weber would ask Dr. Ott if antipyrine and phenacetine acted by assisting the system in the dissipation of heat.

Dr. Ott stated that antipyrine probably decreased heat production and increased heat dissipation. The same would be true of phenacetine.

Dr. Weber thought that dependence must not be placed upon antipyretics in severe cases of infantile eclampsia. Chloroform should be administered by inhalation, or chloral injected *per rectum*. He had seen cold water injected with success.

Dr. Sachs did not believe the relation of eclampsia and fever exactly that of effect and cause. Were convulsion due to high fever, it would be curious that in a fever preceded at its onset by convulsion, although the temperature continued high or increased, yet there were no subsequent convulsions. The fever in epilepsy was not due to excessive muscular exercise. A patient of his with hystero-epilepsy had recently had as many as two hundred convulsions in twenty-four hours, but without any elevation of temperature.

Dr. Harwood had treated eclampsia with chloroform and with the wet pack, and could heartily indorse the conclusions of Dr. Berg as to hydrotherapeusis.

Dr. Berg thought that the instance cited by Dr. Sachs of a fever ushered in by convulsion yet without further eclamptic seizures, in spite of the continuance of the fever, did not carry so much weight with it as would at first appear, for Hughlings Jackson had pointed out that the convulsive centers might become so exhausted that the fits would not be repeated. He preferred the wet pack now to sponging, because refrigeration by the latter method was more rapid and more dangerous. He had seen pneumonia produced by sponging. The pack was less harmful.

Book Notices.

A Treatise on Hysteria and Epilepsy, with some Concluding Observations on Epileptic Insomnia. By J. Leonard Corning, M. A., M. D., Consultant in Nervous Diseases to St. Francis's Hospital, etc. Detroit: George S. Davis, 1888. Pp. 175.

This book, by an author who is well and favorably known in connection with his experimental and practical investigations concerning the uses of cocaine, is a very readable one. Of the author's style nothing need be said, unless it be that it is fluent and convincing, and carries with it the evidences of the refined scholar. The text gives evidence of familiarity with the literature of these all too common but nevertheless somewhat obscure diseases, and does not purport to solve the pathological questions concerning them, which continue to be a puzzle to all who have thus far attempted their solution. Not that there is any lack of theories concerning the pathology of these diseases, but the theories do not harmonize, nor can it be said that we have yet reached a theory which accords with all the conditions in the case. Aside from the author's theory as to carotid compression for the treatment of epilepsy, nothing especially original is offered in the way of therapeutic measures. In other respects the treatment recommended is that which has found favor with the generality of neurologists during the present generation. The book should form a portion of a treatise upon diseases of the nervous system which, we trust, will one day be given us by Dr. Corning.

GENERAL LITERARY NOTES.

Among recent foreign publications we note the following:

Asselin & Houzeau, Paris.—C. Mauriac, "Syphilose du larynx, de la trachée et des bronches."

O. Doin, Paris.—J. Renou, "La diphthérie, son traitement antiseptique." (6*fr.*) —— F. La Torre, "Des conditions qui favorisent ou entravent le développement du fœtus." (5*fr.*) —— A. Deschamps, "Le caractère et la maladie."

Lecrosnier & Babé, Paris.—Thermes, "Traité élémentaire d'hygiène et de thérapeutique de l'hystérie."

Lecrosnier & Coulet, Paris.—Grasset, "Leçons sur l'hystéro-traumatisme."

G. Masson, Paris.—Ledé, "Quelques réflexions sur l'application de la loi Roussel."

H. Bruhn, Brunswick.—P. Baumgarten, "Lehrbuch der pathologishen Mykologie," ii, 1. (4*M.* 60.)

Gnevkow & von Gellhorn, Kiel.—J. Hahn, "Ueber Transplantation ungestielter Hautlappen nach Wolfe, mit Berücksichtigung der übrigen Methoden." (2*M.*) —— J. Kühl, "Ueber tuberkulöse Magengeschwüre." (0*M.* 60.)

Huber & Co., Bern.—O. Bernhard, "Ein Beitrag zur Lehre von der künstlichen Unterbrechung der Schwangerschaft." (0*M.* 60.) —— C. Bruhin, "Ueber die von den äussern Genitalien gesetzten aussergewöhnlichen Geburtshindernisse." (0*M.* 45.) —— W. Eissen, "Hornhautkrümmung bei erhöhtem intraokularen Druck." (1*M.*) —— J. Erni, "Beitrag zur Kenntniss der Blasentuberkulose." (1*M.* 20.) —— J. Kunz, "Bacteriologisch-chemische Untersuchungen einiger Spaltpilzarten." (0*M.* 70.) —— P. Niehaus, "Ueber traumatische Luxationen beider Hüftgelenke." (0*M.* 50.) —— J. Schwendter, "Die Beeinflussung der Blutconcentration durch den Flüssigkeitsgehalt der Kost." (1*M.* 70.) —— B. Streit, "Beiträge zur Kenntniss der Resectio pylori." (2*M.*) —— A. Voegtle, "Das Pilocarpin mit Rücksicht auf seine gegenwärtige therapeutische Bedeutung." (0*M.* 80.) —— W. Wolska, "Ueber die von Ruge beschriebene fötale Vascularisation der Serotina." (0*M.* 30.)

E. J. Karow, Dorpat.—E. Mehnert, "Ueber die topographische Verbreitung der Angeiosclerose nebst Beiträgen zur Kenntniss des normalen Baues der Aeste des Aortenbogens und einiger Venenstämme." (1*M.* 50.) —— T. Pecht, "Untersuchungen über das Verhalten der Fette zu Zuckerresolution." (1*M.*)

Lipsius & Tischer, Kiel.—T. Tetens, "Ein Beitrag zur Lehre von den Oesophagus-Divertikeln." (1*M.* 20.)

Moser, Tübingen.—G. Elwert, "Ueber den Aderlass, besonders bei Apoplexia cerebri." (0*M.* 70.) —— G. Vogt, "Ueber Meningitis spinalis." (0*M.* 60.)

Stahel, Würzburg.—A. Alzheimer, "Ueber die Ohrenschmalzdrüsen." (2*M.*) —— A. Jansen, "Systematische Charakteristik der medicinisch wichtigen Pflanzenfamilien, nebst Angabe der Abstammung der wichtigeren Arzneistoffe des Pflanzenreichs." New ed. (1*M.*)

Veit & Co., Leipsic.—W. Braune, "Das Venensystem des menschlichen Körpers," ii. (0*M.* 30.)

C. Winter, Heidelberg.—J. Arnold, "Ueber den Kampf des menschlichen Körpers mit Bacterien." (2*M.*)

BOOKS AND PAMPHLETS RECEIVED.

A Reference Hand-book of the Medical Sciences, embracing the Entire Range of Scientific and Practical Medicine and Allied Science. By Various Writers. Illustrated by Chromo-lithographs and Fine Wood Engravings. Edited by Albert H. Buck, M. D., New York city. Volume VII. New York: William Wood & Company, 1889. Pp. v–795.

The Operations of Surgery. A Systematic Hand-book for Practitioners, Students, and Hospital Surgeons. By W. H. A. Jacobson, F. R. C. S., Assistant Surgeon, Guy's Hospital, etc. With One Hundred and Ninety-nine Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1889. Pp. 14–17 to 1006. [Price, $5.]

Transactions of the Royal Academy of Medicine in Ireland. Vol. VI. Edited by William Thomson, M. A., F. R. C. S., General Secretary, etc. Dublin: Fannin and Company, 1888. Pp. xxxv–482.

The Pathology, Clinical History, and Diagnosis of Affections of the Mediastinum other than those of the Heart and Aorta. With Tables giving the Clinical History of Five Hundred and Twenty Cases. Being an Essay to which was awarded the Fothergillian Medal of the Medical Society of London, March, 1888. By Hobart Amory Hare, B. Sc., M. D., etc. Philadelphia: P. Blakiston, Son, & Co., 1889. Pp. 9 to 150.

The Year-book of Treatment for 1889. Being a Critical Review of the Practice of Medicine and Surgery during 1888. Philadelphia: Lea Brothers & Co., 1889. Pp. viii–344. [Price, $1.25.]

Exploration of the Chest in Health and Disease. By Stephen Smith Burt, M. D., Professor of Clinical Medicine and Physical Diagnosis in the New York Post-graduate Medical School and Hospital, etc. New York: D. Appleton and Company, 1889. Pp. xiii–7 to 206. [Price, $1.50.]

Contributions to the History of the Development of the Teeth. By Carl Heitzmann, M. D., and C. F. W. Bödecker, D. D. S., M. D. S. [Reprinted from the "Independent Practitioner."]

International Pocket Medical Formulary. With an Appendix containing Posological Tables, Formulæ for Inhalations, Suppositories, Nasal Douches, Eye Washes, and Gargles; Hypodermic Formulæ; Table of Hypodermic Medication; Use of Thermometers in Disease; Poisons and their Antidotes; Post-mortem and Medico-legal Examinations; Artificial Respiration; Ligation of Arteries; Obstetrical Table; Urinalysis; Differential Diagnosis of Eruptive, Typhoid, and Typhus Fevers; Tables of Pulse, Temperature, Respiration; Motor Points, etc. By C. Sumner Witherstine, M. S., M. D., etc. Philadelphia and London: F. A. Davis, 1888. Pp. 269. [Price, $2.]

Gonorrhœal Infection in Women. By William Jap Sinclair, M. A., M. D. On Giddiness. By Thomas Grainger Stewart, M. D. Albuminuria in Bright's Disease. By Dr. Pierre Jeanton, Paris, France. [Wood's Medical and Surgical Monographs.]

The Anatomie of the Bodie of Man. By Thomas Vicary, Serjeant of the Surgeons to Henry VIII, Queen Mary, Edward VI, and Queen Elizabeth, etc. The Edition of 1548, as reissued by the Surgeons of St. Bartholomew's in 1577. With a Life of Vicary, Notes on Surgeons in England, Bartholomew's Hospital, and London, in Tudor Times, an Appendix of Documents and Illustrations. Edited by Frederick J. Furnivall, M. A., Hon. Dr. Phil, and Percy Furnivall, a Student of St. Bartholomew's. Part I. London: N. Trübner & Co., 1888. Pp. viii–336. [Early English Text Society, Extra Series, L. iii.]

A Dialogue against the Fever Pestilence. By William Bullein. From the Edition of 1578, collated with the Earlier Editions of 1564 and 1573. Edited by Mark W. Bullein and A. H. Bullein. Part I. The Text. London: N. Trübner & Co., 1888. Pp. vi–145. [Early English Text Society, Extra Series, L. ii.]

Prevention and Restriction of Small-pox. Document issued by the Michigan State Board of Health. [Reprinted from the "Annual Report" of the Board for 1888.]

The Morton Lecture on Cancer and Cancerous Diseases. Delivered at the Royal College of Surgeons of England, on Thursday, November 29, 1888. By Sir Spencer Wells, Bart., F. R. C. S. London: J. and A. Churchill, 1889. Pp. 5 to 47.

The Wrong of Craniotomy upon the Living Fœtus. Sixth Annual Address of the President, delivered before the Washington Obstetrical and Gynæcological Society, October 19, 1888. By Samuel C. Busey, M. D., Washington, D. C. [Reprinted from the "American Journal of Obstetrics and Diseases of Women and Children."]

Report of the Committee on the Pollution of Water Supplies, appointed by the American Public Health Association. [Reprinted from the Report of the "Proceedings of the American Public Health Association."]

Second Annual Report of the Ophthalmological Department of the State Hospital at Norristown, Pa., for the Year 1887. [Reprinted from the "Eighth Annual Report."]

On Corpulence, especially its Treatment by a Pure Milk Diet. By George H. Rohé, M. D., of Baltimore. [Reprinted from the "Maryland Medical Journal."]

had under observation. The disease has its seat in the vest... labia minora with the frenulum and præputium clitoridis, the inner surfaces of the labia majora up to the posterior commissure, and the contiguous skin of the perinæum. It gives rise to the appearance of a defect in the development of the normal folds of the vulva. At times the labia minora are apparently wanting, and frequently there is no præputium clitoridis to be found. One result of the disease is a stenosis

Report of the Section on Microscopy, Microchemistry, and Spectral Analysis. On the Microscopical Examination of Urinary Sediment. By William B. Canfield, A. M., M. D., etc. [Reprinted from the "Transactions of the Medical and Chirurgical Faculty of the State of Maryland."]

A New Adjustable Lamp Bracket. By Seth S. Bishop, M. D., of Chicago, Ill. [Reprinted from the "Journal of the American Medical Association."]

Report of the Committee on Ophthalmology and Otology. By Seth S. Bishop, M. D., of Chicago. [Reprinted from the "Transactions of the Thirty-seventh Annual Meeting of the Illinois State Medical Society."]

A Defense of Electrolysis in Urethral Strictures, with Documentary Evidence. By Robert Newman, M. D., New York. [Reprinted from the "Medical Register."]

Diabetic Gangrene. By William Hunt, M. D., Senior Surgeon to the Pennsylvania Hospital. [Reprinted from the "Transactions of the Philadelphia County Medical Society."]

The New York Society for the Prevention of Cruelty to Children. Fourteenth Annual Report, December 31, 1888.

Food *versus* Bacilli in Consumption. An Open Letter from Ephraim Cutter, M. D., LL. D., etc., to his Son, John Ashburton Cutter, M. D., B. Sc. With Answer. [Reprinted from the "Virginia Medical Monthly."]

Poisoning by Chrome Yellow used as a Cake Dye. The Subsequent Clinical History of the Cases, including a Case of Paralysis Agitans and of Chronic Endocarditis. By David Denison Stewart, M. D., etc. [Reprinted from the "Medical News."]

Reports on the Progress of Medicine.

CUTANEOUS AND VENEREAL DISEASES.

By GEORGE THOMAS JACKSON, M. D.

Pastes is the short title Gruendler gives to a paper in the "Monatsheft f. prakt. Dermat.," 1888, vii, 1029, which treats of the proper composition of these articles for use in dermatological practice. Pastes, he says, have two advantages over salves: First, they absorb the secretions and excretions from the diseased skin; and, secondly, they leave upon the skin a solid powdery substance after they are well rubbed on, which is more agreeable than a greasy surface, and a certain part of the medicament of the paste remains fixed on the skin. For a fatty base for all pastes the benzoated oxide-of-zinc ointment is now used in Unna's clinic, to which infusorial earth is added. This earth makes the best addition to the ointment in order to form a paste, because it absorbs water readily, and because it has sufficient body to form a good paste. Carbonate of magnesium will absorb more water, but has not sufficient body to form anything but a sticky putty or cement. It is excellent to add to some other paste in order to increase its absorptive quality, when it can be used to 10 to 20 per cent. of the volume of the mass; and alone or with zinc oxide as a dusting powder. The addition of 10 per cent. of infusorial earth to all salves changes them into good pastes. It takes from 30 to 50 per cent. of white bole, starch, or zinc oxide to make as good a paste. If absorption of the medicament is desired, we must use an animal fat, such as lard, tallow, or lanolin. The next most useful forms of fat are the vegetable ones, such as olive-oil, linseed-oil, cacao butter, and the like; and the least useful are vaseline and glycerin.

The Treatment of Acne.—The "Gazette des hôp." gives (1888, No. 112, 1039) the following formula for acne, as proposed by Isaak, of Berlin:

℞ Cold cream ..... 3 ijss.;
Resorcin ..... gr. iij. M.

Apply three to four times a day, avoiding the application of water to the lids.

The Prevention of Dermatitis due to Horse-back Riding or to Walking.—Unna ("Monatsheft f. prakt. Dermat.," 1888, No. 21) recommends washing the parts about to be exposed with over-fatty ichthyol soap, or smearing them with a weak resorcin or ichthyol ointment.

Syphilis and Eczema Seborrhoicum.—Unna is the apostle of eczema seborrhoicum, and his enthusiasm for his latest dermatological designation is great. He now ("Monatsheft f. prakt. Dermat.," 1888, No. 21) introduces it to us as an active agent in determining certain forms and locations of syphilis. Already it has robbed us of much of our fondly imagined knowledge of eczema, and now it invades the precincts of syphilis. We are told that just as the pustular syphilide is the product of a mixed infection, the result of the entrance of a pus coccus into a small papular follicular syphilide, so there are a number of syphilides which are the product of a mixed infection—a syphilide plus a seborrhœal eczema. His attention was first called to the possibility of this occurrence by observing how closely a corona Veneris kept within the bounds of a seborrhœal eczema of the forehead. Subsequent study convinced him that where secondary syphilis manifested itself it adhered closely, both in its extent and in the intensity of the inflammation, to the seborrhœal process. There are three varieties of eczema seborrhoicum: 1. The scaly form, with scarcely any inflammation, which shows itself as spots or patches of circular form, pale or slightly reddened, and scaly (pityriasis capitis, pityriasis barbæ, etc.); or as slightly raised, irregularly defined and confluent, yellowish-red, and scaly papules (eczema seborrhoicum papulosum corporis; rosacea seborrhoica faciei); or as regular-shaped, yellowish red, papular discs and rings which enlarge in a serpiginous manner, with an eroded periphery and yellow depressed center (eczema seborrhoicum annulatum and certain forms of eczema marginatum nuchæ). From this first or mild variety the process intensifies itself in two directions and assumes variety No. 2, where the amount of scales and fat increases, leading to the crusted form (many cases of so-called psoriasis gyrata and annulata and many dry eczemas); or 3. This is the moist form, where there is great increase of the catarrhal process (eczema seborrhoicum madidans). The higher grades of the disease may appear in the same three forms that were described under the first grade, but the scaly form most often takes the form of discs and rings, while the moist form assumes, preferably, the shape of plaques. Wherever any one form of seborrhœal eczema exists it may become the ground for the development of the papular syphilide or may determine the site of the eruption. The papulo-crustaceous syphilide without ulceration is characteristic of a seborrhœal origin, and is merely a lenticular syphilide upon a crusted seborrhœal eczema. It occupies quite constantly the favorite sites of seborrhœal eczema, especially the scalp and face; it leads to most if not all cases of corona Veneris, when it will be noted that the yellow seborrhœal border stretches beyond the borders of the papules. The inflammatory, yellowish-red, flat seborrhœal papules change under the influence of syphilis into large, raised, hard, flesh-colored to copper-colored, dark, pigmented specific papules or papular infiltration of the border. They also affect the naso-labial furrow, a favorite location for seborrhœal eczema, the eyebrows being at the same time affected, and also the lips, occurring in the form of a row of warty, hard, pea-sized papules. This arrangement is determined by the seborrhœal eczema and not by the syphilis. On other parts of the body, especially on the thighs and legs, this form of syphilis takes the serpiginous form, and, contrary to the general opinion, this arrangement also is not due to the syphilis, but to the seborrhœa. So also in psoriasis-like syphilis of the palms the seborrhœal eczema is the determining factor. Many forms of so-called syphilitic alopecia; the flat, papular, nummular syphilide of the face; the so-called syphilitic vegetations of the vagina, vulva, etc.; even some of the tertiary lesions of syphilis, such as the serpiginous ulcerating or non-ulcerating tubercular syphilide of the scalp, neck, breast, and axillæ—all these are mixed infections, syphilis *plus* eczema seborrhoicum.

of twenty or more cases of status epilepticus in which the rise in temperature had not accorded with the statements of Bourneville. As to treatment, he thought simple sponging with alcohol and water sufficient, and that the use of the wet pack or of antipyretics was objectionable.

Dr. Weber would ask Dr. Ott if antipyrine and phenacetine acted by assisting the system in the dissipation of heat.

Both the secondary syphilide and eczema seborrhoicum are principally diseases of the flexor surfaces of the extremities, the head, and the genitals. It, therefore, is quite in character for the seborrhœal eczema to keep up a constant slight grade of irritation of the cutaneous blood-vessels, which at any moment may increase into inflammation. A patient may for years have a very slight unobserved scaly spot of seborrhœa which at once, under any damaging influence, may become the starting-point of an intense eczema. Such a one contracting syphilis, the latent point becomes the seat of the syphilide. The diagnosis between a papular syphilide and a papular eczema is as follows: The syphilitic papule has always an inclination to roundness, is mostly only as large as a pea or a lentil, and tends, in a considerable outbreak, to conform to an average size. It is never very scaly, frequently quite smooth, surrounded by a ragged collar of epidermis, and is hard and elastic to the touch. The seborrhœal papule is round only in certain places (on the sternum, axilla, and forehead), mostly irregular in shape, with outrunners. It varies much in size, being polymorphous. It is never fully smooth, but always scaly and sometimes covered with thick crusts. It is never hard and elastic to the touch. The syphilitic papule participates more or less in that dark-brown color which is characteristic of syphilis, and in and about it there is more or less pigmentation proportional to the age of the syphilide. The seborrhœal papule has a yellowish-red, fresh color, and the surrounding parts have a yellowish tint. It is never pigmented, excepting when chloasma is present. The syphilitic papules may become confluent but not serpiginous, while the seborrhœal papules are always serpiginous. Syphilis never itches or causes pain; seborrhœa often does. Besides the head, genitals, and flexor sides of the extremities, syphilis affects the lower part of the trunk anteriorly and laterally; the seborrhœal papule, the sternum, the space between the shoulder-blades, and the small of the back. Syphilis explodes almost simultaneously on all parts; seborrhœa hardly ever hastens its slow course from the head to the feet, and very often remains confined to the upper half of the body. Syphilis responds promptly to mercurial treatment; seborrhœa does not. Sulphur, resorcin, and oxide of zinc have no curative effect upon syphilis, while they promptly cure seborrhœa. We have a right to suspect the action of a seborrhœa upon a syphilide where the efflorescences of an exanthem are polymorphous, sharply defined, and confluent; where the papules are partly specific in color and partly fresh, yellowish-red; where quite smooth papules are wanting, while most of them are covered with scales or crusts; where they are arranged serpiginously in circles or rings; where around the papules, or especially in the centers of the rings, the yellow color of seborrhœa is present; where eczematous symptoms, moisture, heat, tension, are present; where there is more or less itching; where the syphilides appear on the hair-line of the forehead, in the naso-labial fold, on the sternum, between the shoulder-blades, and on the small of the back; where they are situated mostly or alone on the scalp, in the axillæ, or on the mons Veneris, the genitals, and anal region; and where the lesions do not yield readily to general treatment, but at once improve under a local treatment fitted to the seborrhœa. This combination of eczema seborrhoicum and syphilis is particularly obstinate to treatment when that is directed against the syphilis alone, but yields readily to resorcin, sulphur, and the like remedies without a continuance of the antisyphilitic treatment.

Is Alopecia Areata Contagious?—This question still remains unanswered, or at least in doubt. Eichhoff appears ("Monatsheft f. prakt. Dermat.," 1888, vii, 1025) as a witness on the side of those who maintain that the disease is contagious in a certain number of cases, and cites the occurrence of several cases of the disease in an epidemic manner. He has found antiparasitic remedies of greatest service in the treatment of the malady. He proposes to drop the name of alopecia areata and to substitute a name more suggestive of the ætiology, such as alopecia areata trophoneurotica, or alopecia areata parasitaria.

Alopecia Areata.—Leloir ("Gaz. des hôp.," June 30, 1888) divides the cases of alopecia areata into three classes. In the first class (trophoneurotic) he places those cases in which he has been unable to find the least trace of contagion, but in which, on the other hand, there have been nervous phenomena sufficiently characteristic and closely related to the appearance of the hair-fall to constitute a probability of cause and effect. A little more than one third of his cases belonged to this class. In them the disease was preceded by pain in the head or neuralgia of the side from which the hair fell. Neuralgia, hyperæsthesia, anæsthesia, or other nervous sensations were felt in the site of the bald spots. Moral shock or blows upon the head were noted in some cases, and in a case of general alopecia areata the patient was ataxic. Syphilis was present in some cases, in one of which severe cerebral syphilis preceded the onset. In one case of trophoneurotic alopecia the cutaneous nerves presented all the signs of parenchymatous degeneration. In his second class of cases neither nervous phenomena nor contagion can be established as a cause. These also formed a little more than one third of his cases. In the third class contagion could be established, but the most careful examination failed to reveal any particular parasite as the cause. In one case he found the little granulations which Robinson considered as micrococci, but he is convinced that they were the mast-cells of Ehrlich or granulations of precipitated coloring-matter. These cases formed a little more than one fifth of his whole number.

The "Atrophic Hair-fall" of Joseph is called in question by Dr. D. Samuel (Virchow's "Archiv," vol. cxiv, part ii, p. 378), who says that it is very remarkable that the pronounced fall of the hair after section of the second nerve of the neck had never been noticed before by older experimenters than Joseph. Samuel has experimented for many years on birds, and has never seen the feathers fall even after excision of the entire axillary plexus. Of late he has been repeating Joseph's experiments upon cats, and has, like him, seen the hair fall out after two weeks. There was then an infiltration of the tissues about the wound, followed by the formation of abscesses. As soon as the inflammatory infiltration subsided, the hair began once more to grow, and was soon as vigorous as before. This same accident of abscess formation also occurred in Joseph's experiments. Some of Joseph's cats died of pyæmia or tuberculosis. This leads Samuel to regard the alopecia in all these cases as simply inflammatory defluvium capillorum. This sets aside the influence of the nerves in the production of the hair-fall, and their action is further militated against by the fact of the rapid regeneration of the hair in animals that survive the operation long enough and recover from its effects.

Some Atypical Varieties of Lupus Vulgaris.—In "La France médicale" for August 4, 1888, Leloir describes certain atypical varieties of lupus vulgaris which he has met with. The *first* variety is one in which the tubercles have a somewhat glassy, semi-opaque appearance. Microscopical sections show that colloid degeneration of the tubercles has taken place, and that the nodules are entirely deprived of blood-vessels. In them the *Bacillus tuberculosis* is infrequently found. This form he regards as a variety of cutaneous tuberculosis and proposes for it the name of "lupus vulgaris, variety colloid." A *second* variety presents tubercles which are transparent, flabby, and slightly gelatinous; blood-vessels, sometimes arborescent in form, course over them; at times little transparent points are seen at their summits, which are little cysts inclosing a mucoid substance; they rarely ulcerate. In this variety the lupus infiltration is diffused irregularly and not very densely in the derma. The connective tissue of the skin has lost its fibrillar appearance and has become softened, a little granular, and gelatinous, and its elastic fibers have entirely disappeared. The embryonal cells of the infiltrate tend to group about the blood-vessels. But few giant-cells are found, and the few bacilli present are located in or about the giant-cells. The blood-supply is abundant, the vessels being often dilated, and hæmorrhages are not infrequent. This form is also a variety of cutaneous tuberculosis, and the name mucoid or myxomatous variety of lupus vulgaris is proposed for it. The *third* variety has already been described by Leloir and Vidal in 1882 under the name of *lupus scléreux*. All the varieties are but forms of tuberculosis of the skin.

Kraurosis Vulvæ is the name proposed by Breisky for a form of atrophy of the skin of the pudendum muliebre. Janovsky ("Monatsheft f. prakt. Dermat.," 1888, vii, 951) now reports six cases which he has had under observation. The disease has its seat in the vestibule, the labia minora with the frenulum and præputium clitoridis, the inner surfaces of the labia majora up to the posterior commissure, and the contiguous skin of the perinæum. It gives rise to the appearance of a defect in the development of the normal folds of the vulva. At times the labia minora are apparently wanting, and frequently there is no præputium clitoridis to be found. One result of the disease is a stenosis

of the vulvar entrance which offers obstruction both to coitus and to parturition. The affected skin is white and dry, with its epidermis often thickened, and telangeiectatic vessels are visible. The cause of the disease is obscure; possibly a long-continued blennorrhœa might cause it, possibly it is a congenital defect; possibly there may take place in the vulva a process analogous to leucoplakia buccalis. Treatment is of no effect.

An Injection for Gonorrhœa, both acute and chronic, as recommended by Audhouin, is ("Gaz. des hôp.," 1888, No. 112, 1039):

℞ Rose water,
Cherry-laurel water ..... āā 100 parts;
Antipyrine ..... 5 "
Zinc sulphate ..... 50 "

M. To be used several times a day.

Blennorrhœa in Women.—During the period of six years Horand has had under his care 5,090 women and 764 little girls suffering with blennorrhœa, and it is upon this large number of observations that he gives us ("Lyon méd.," 1888, lix, 251) the present study. He is a firm believer in the gonococcus as the cause of blennorrhœa, and teaches that where the gonococcus is not found there is no blennorrhœa. In the women the parts affected are, in order of frequency, the urethra, vagina, glands of Bartholin, uterus, and anus. In little girls the order is vagina, urethra, vulva, and anus. Urethral blennorrhœa in women causes little disturbance; it may give rise to slight itching or more frequent urination; cystitis is rare. It may continue a long time, months or years, and is apt to remain limited to the urethra. Inflammation of the vulva is rare in women, more frequent in girls. It is generally consequent upon mechanical irritation, want of care, direct contagion, attempts at rape, or accidental from contact with objects soiled with blennorrhagic pus. It may exist alone or associated with elytritis or urethritis. The epithelium of the vestibule seems to offer a good deal of resistance to infection. Elytritis is more frequent—rather more in girls than in women. Uterine blennorrhœa is very rare—it was found only six times in four hundred and eighty-three examinations. It is the result of transmission from the vagina. Bartholin's glands are affected only secondarily. Anal blennorrhœa is more frequent in women than in men. It is the result both of mediate and of immediate contagion. Gonorrhœal rheumatism is very rare in women, as is gonorrhœal ophthalmia. For the treatment of urethritis the best means is nitrate of silver, a grain and a half to the ounce. For elytritis in a child, irrigations with a warm boric-acid solution of one-per-cent. strength should be used; in adults, the silver nitrate in stick applied directly every four or five days. The same treatment is also best for the disease when it affects the uterus, the anus, or the conjunctiva.

Miscellany.

The New York Academy of Medicine.—Dr. Laurence Johnson has been elected a trustee of the Academy.

The New York Clinical Society.—At the recent annual meeting Dr. L. Bolton Bangs was elected president for the ensuing year.

The Philadelphia Polyclinic.—The faculty and the hospital facilities have recently been strengthened by the appointment of S. Weir Mitchell M. D., LL. D., physician to the Orthopædic Hospital and Infirmary for Nervous Diseases, to the new chair of diseases of the mind and nervous system; B. Alexander Randall, M. D., ophthalmic and aural surgeon to the Episcopal and Children's Hospitals, to the chair of diseases of the ear, vice Dr. Burnett, resigned; and Edward P. Davis, M. D., obstetrician to the Philadelphia Hospital, to the new chair of obstetrics and diseases of children.

The Jenks Prize.—The trustees of the William F. Jenks Prize Fund announce that the first triennial prize of $250 has been awarded to Dr. John Strahan, of Belfast, Ireland, for an essay on "The Diagnosis and Treatment of Extra-uterine Pregnancy." Arrangements have been made with Messrs. P. Blakiston, Son, & Co., of Philadelphia, for the publication of the essay, and it will appear also in the "Transactions of the College of Physicians of Philadelphia." It is added that the authors of unsuccessful essays can secure their return to any address they may name by sending it and the motto which distinguished the essay to Dr. Ellwood Wilson, College of Physicians, Philadelphia.

ANSWERS TO CORRESPONDENTS.

No. 255.—There is nothing that can properly be called affiliation between any New York medical college and any European licensing body, but the diploma of an American college is recognized in Great Britain as evidence of three years' study, and its possessor may become a licentiate of the Royal College of Physicians of London, Edinburgh, or Dublin, by passing a satisfactory examination, without previous residence in Great Britain. For further information on the subject, see our issue for September 15, 1883, page 310.

No. 256.—Our information is to the effect that the office does not necessarily become vacant with a change in the national administration, but only by the death, resignation, or removal of the incumbent.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

ATELECTASIS.*

BY JOSEPH O'DWYER, M. D.

THE first question that I propose for discussion this evening—viz., Is atelectasis uncomplicated with inflammatory changes in the air-cells ever found in fatal cases of croup?—was suggested by our experience for many years at the New York Foundling Asylum. I believe Dr. Northrup will bear me out in the statement that since his connection with the asylum as pathologist not a single case of atelectasis where croup was the cause of death has been found which did not show evidence of beginning infiltration when submitted to the microscopical test.

I refer only to cases that presented the usual gross appearances of simple collapse, because well-developed pneumonia is readily detected without the aid of the microscope.

The point that I wish to make is this. Inflammatory products similar to if not identical with those found in pneumonia are present in the bronchial tubes in almost every fatal case of croup—excluding those, of course, in which death results from the laryngeal stenosis. There is no doubt that some of the fibrin, pus, etc., is forced into the vesicles by the suction power of inspiration when air can not enter freely to equalize the pressure, and also by gravitation.

How is such extraneous matter distinguished from the exudation originating in the pulmonary vesicles, or are there sufficiently characteristic changes in the alveolar walls, epithelial lining, etc., to detect incipient pneumonia independently of the contents of the air-cells?

If the latter, we must accept the evidence furnished by the microscope as conclusive. Otherwise it is of little value in the class of cases referred to.

In discussing the mechanism of acquired atelectasis it is only necessary to consider the atmospheric pressure brought into play by the inspiratory expansion of the chest and the opposing contractile power of the lungs.

The network of elastic fibers that surrounds the pulmonary vesicles is never in a state of rest except during fœtal life, and when the lungs subsequently return to the same condition.

This tissue is placed on the stretch with the first inspiration after birth, and possesses the remarkable property of remaining in this state of tension during life without losing its power of contraction.

The resistance offered to the entrance of air by this elastic power of the lungs has been variously estimated by different authorities, but the average is equivalent to a pressure of about half a pound to the square inch.

According to Draper, forcible inspiration produces only sufficient rarefaction of the residual air to give an inward pressure of one pound to the square inch.

If these estimates are correct, the maximum force available for keeping the air-cells inflated is only twice as great as the power that is constantly working to empty them. Collapse must therefore begin as soon as the inspiratory power is reduced a little more than half, provided there is no other force than atmospheric pressure to keep the lungs distended. It is immaterial whether the impediment to the ingress of air be due to mechanical obstruction in the air-passages or to feebleness of the respiratory muscles, the result being the same in either case.

That there is some other force at work is demonstrated by the fact that the lungs do not always collapse when exposed to the direct pressure of the atmosphere through an opening in the pleural cavity.

Examples of this kind are numerous. At the last meeting of the British Medical Association, Mr. Jessop, of Leeds, reported two cases in which he accidentally opened the pleural cavity in operations involving the walls of the chest. In one of these the opening was quite large and the lung could be distinctly seen holding its position, notwithstanding such free communication with the external air.

Still more common are the cases of subcutaneous or surgical emphysema resulting from perforation of the lung by broken ribs. Here we should naturally expect the air to meet with less resistance and enter the pleural cavity rather than force its way into the cellular tissue, yet pneumothorax is as rare a complication of this injury as surgical emphysema is common.

In the former class of cases, in which the surface of the lung is directly exposed to the pressure of the air with the same pressure on the inside, it is self-evident that some other force sufficient at least to resist the contractility of the lung must exist.

Dr. Samuel West,* of London, by a series of ingenious experiments, has clearly demonstrated that this force is the normal adhesion or cohesion existing between the opposing surfaces of the pleura, and that it is not only sufficient to counteract the elastic power of the lungs, but considerably exceeds it.

In other words, atmospheric pressure operating through the air-passages, together with this adhesive force, is greater than the same pressure on the outside added to the contractility of the lung. With normal inspiratory power, therefore, collapse will not occur when the cavity of the pleura is opened, but if this power be considerably reduced by shock resulting from the injury, the reverse will occur, which explains the fact that the lung does not always retain its position under the circumstances named.

It is easy to understand the mechanism by which atelectasis, whether due to the inherent contractility of the lung or to compression from fluid or air in the pleural cavity, is re-expanded as long as the chest-walls remain intact. In either case atmospheric pressure alone is sufficient to accomplish it when the cause is removed. But with an opening in the pleural cavity it appears to me, after a good deal of thought on this subject, that some undiscovered source of power is necessary to explain it.

Let us take, for example, a case of empyema in which

* Read before the Section in Pædiatrics of the New York Academy of Medicine, February 14, 1889.

* "Bradshawe Lecture," "British Medical Journal," Aug. 20, 1887.

the chest is distended with pus, the lung compressed against the spinal column to a small fraction of its normal size and bound down with a thick coating of fibrin. An opening is made, possibly a piece of rib excised, which permits of the free entrance and exit of air, and, by the same arguments heretofore used, it would be easy to demonstrate that the lung under these circumstances should remain firmly contracted, but impossible to assign any known cause for its re-expansion. Yet we know from actual experience that such a lung does gradually return to its original dimensions, or nearly so, if not permanently injured by too long a continuance of the compression.

Atmospheric pressure on the inside, as before stated, can do no more than balance the same pressure on the surface of the lung. The opposing surfaces of the pleura are widely separated and the force of normal adhesion is lost. There is, therefore, nothing left to overcome the elastic power of the lungs, which in the adult has been estimated as equal to lifting a weight of one hundred and fifty pounds with every ordinary inspiration. To this must be added the resistance offered to inflation by the coating of fibrin on the visceral layer of the pleura, and the condensation of the lung and consequent interference with its nutrition resulting from the compression, which do not exist in ordinary atelectasis.

It is certain that all these obstacles to the re-expansion of the lung are finally overcome, but to explain the process by which it is accomplished theories only are available and none of them satisfactory.

The theory that the lung is drawn toward the ribs by the contraction of cicatricial adhesions is untenable, because adhesions do not always exist in the beginning, and before they can form the visceral and parietal pleura must be brought in contact, which requires considerable expansion of the lung to fill the intervening space. It may also be claimed that the opening in the pleural cavity is smaller than that of the larynx, and that the pressure on the surface of the lung is therefore less than in the interior, because air can not enter as rapidly to fill the partial vacuum produced by inspiration.

The objection to this theory is found in the fact that a free opening gives better results than a small one; and also that air entering through the natural passages has a much greater distance to travel, and the time and increased friction give the advantage to the short direct passage between the ribs, even though it be the smaller.

The same arguments are applicable to the valvular form of the opening, whether it be produced by the dressing or otherwise, provided it admit any air at all.

Any considerable distension of the lung from congestion which occurs in ordinary atelectasis is prevented by the pressure of the air on its surface.

The recoil of the condensed air from the sound lung during the act of coughing while the glottis is still closed appears to me to be the only force connected with the mechanics of respiration that is left. It is quite probable that this accomplishes something in starting the process of dilatation, but the effect is too transitory and too infrequently repeated to do more than this.

Turning now to the vital functions of respiration for a possible solution of this problem, we naturally think of the energy developed by the diffusion of gases, but this is probably not very great, and, even if so, would not aid inspiration any more than expiration, while it is an exclusively inspiratory force that is required.

The only other theory that has occurred to me, and apparently the only one left, is the assumption of an attraction between the hæmoglobin of the blood and the oxygen sufficiently powerful to operate at a considerable distance, similar to the attraction of the magnet for its keeper; otherwise it would accomplish very little, as the smallest bronchial tubes are also surrounded with elastic fibers, and, being devoid of cartilaginous support, collapse with the rest of the lung, thus keeping the air at some distance from the alveoli. There are several physiological facts that tend to sustain this theory which I will present at some future meeting of the Section if nothing better is offered this evening.

When a renewal of the air in the pulmonary vesicles is prevented, either from mechanical obstruction or from feebleness of the inspiratory muscles, the residual air is removed principally by absorption. This fact has been demonstrated by plugging one bronchus in the lower animals, when the air has been found to disappear as completely as in atelectasis from other causes. All that is necessary for this purpose is a continuance of the circulation for some time after the supply of air is cut off. These conditions are often present in premature or otherwise delicate new-born infants in which the heart sometimes continues to beat for many hours after all respiratory movements have ceased. I have seen at least two cases of this kind—in one of which the child lived for eleven hours and for a time respiration was carried on to all appearances perfectly, yet at the autopsy not a trace of air could be found, or other evidence that any inflation of the lungs had ever occurred.

The oxygen under these circumstances is rapidly absorbed because of its affinity for the blood, the nitrogen and carbonic acid because of the continuous elastic pressure to which they are subjected and in obedience to the law governing the solution of gases in liquids.

Next to the interference with the interchange of gases the most serious result of collapse of the lungs is the impediment it offers to the circulation. Every collapsed lung is of necessity a congested lung on the following grounds: 1. The capillary vessels are crowded into a smaller space than they occupied in the normal condition. 2. The aid afforded by the suction power of inspiration and the elastic compression of expiration is lost. 3. The blood entering collapsed portions of the lung which contain no air can not part with its carbonic acid or receive its supply of oxygen, and therefore remains venous. If Draper's theory of the capillary circulation is the correct one, this alone is sufficient to arrest its flow.

It has been estimated that a lung contracted and devoid of air is reduced to one eighth of the volume of the normally inflated organ, yet when we examine collapsed lungs after death very little reduction in the size is found, because the space formerly occupied by air is now filled with distended blood-vessels. The proof of this, if any were needed,

is found in the great increase in weight of collapsed as compared with normal lung, which can not be due to anything else than blood, or some of its constituents.

The same interference with the circulation does not occur during fœtal life, for the reason that very little of the blood driven into the pulmonary artery escapes beyond the ductus arteriosus.

In the treatment of atelectasis it is important to remember that the power to inflate the lungs exists in the majority of cases, but is not used.

In young children this latent power can be called into play by exciting some of the forcible expiratory efforts—such as crying, coughing, or sneezing. Crying is particularly efficacious, because the approximation of the vocal cords, by obstructing expiration, condenses the air and at the same time prolongs the effort.

In older children and adults the same end can be attained by directing them to inspire deeply and then hold the breath, or to practice forcible expiration with the mouth closed and the nostrils almost occluded.

A good example of the dilating effect of obstructed expiration is found in the extensive emphysema so rapidly developed in every attack of spasmodic asthma.

The inflation of a collapsed lung when removed from the body, unless of very recent origin, requires continuous pressure maintained for some time. A single puff accomplishes nothing. Prolonged pressure is necessary to overcome the adhesion of the opposing alveolar walls, as well as the natural contractility of the lung.

The act of coughing is performed in such a brief space of time that it does very little in the way of dilatation, except by the deep inspiration that precedes it.

Momentarily stopping the mouth and nose, as suggested by Dr. Jacobi, particularly if done at the end of inspiration, will naturally tend to drive the imprisoned air downward into the collapsed portions of lung during the struggles of the child and its forcible efforts to expire.

The so-called hypostatic congestion of typhoid fever is probably always atelectasis to begin with; otherwise there is no reason that blood should settle in the most dependent portion of the lungs from weak heart any more than in the back or nates, which are still more dependent. Here particularly the power to keep the lungs inflated is almost always present, but is not used unless the patient's attention be repeatedly called to it, and the importance of this precaution can scarcely be overestimated.

In the asphyxia of the new-born, mouth to mouth inflation is easily performed, if the infant's nostrils are closed, and a moderate degree of pressure used at first in order to prevent forcing the epiglottis down over the larynx. I have never yet failed to expand the lungs by this method, and have often succeeded in establishing normal respiration after continuing this process for upward of half an hour. Inflation by means of a catheter passed through the larynx is less effectual, because most of the air returns by the side of it. To inflate a collapsed lung after removal from the body it is necessary to compress the trachea or bronchus around the blow-pipe in order to accomplish anything.

The instrument I here show you was designed to remedy this defect by tamponing the larynx and preventing the return of any of the air passed through it. With it inflation can be practiced either by the mouth or by means of a rubber-bulb attachment. I have used it with the latter only, having first learned by experiments on the cadaver how much air could be forced in with safety.

TWO CASES OF ENTERECTOMY.*

By CHARLES K. BRIDDON, M. D.

The following cases were reported by Dr. Grant Madill:

Case I. *Gunshot Wound of the Intestine; Fifteen Perforations; Resection of the Intestine.*—John F., aged twenty, single, a native of the United States; occupation, driver; was brought to the Presbyterian Hospital, in the city of New York, in an ambulance, October 21, 1888, at 10.25 P. M. On arrival at the hospital he was suffering from a moderate degree of shock; pulse 120, respiration 20, and the general circulation was otherwise good. He was perfectly conscious, and gave the history of being shot by a policeman, at very short range, about forty-five minutes previous to his admission. He was unable to tell in what direction the weapon had been aimed. He was well nourished, and had enjoyed good health all his life.

Examination revealed a round wound in the abdominal wall an inch and a half from the median line and two inches above the crest of the pubes on the left side. There was also a similar wound on the posterior aspect of the right hip, about two inches above the gluteal fold. There was no tympanitic distension of the abdomen, normal intestinal resonance being obtained. Liver dullness was made out distinctly. One drachm of camphorated ether was administered hypodermatically, the wounds were dusted with iodoform, and a light antiseptic dressing was applied. No exploration of the wounds was made with the probe.

Dr. Briddon, the attending surgeon, was communicated with at once, and arrived at the hospital shortly before twelve o'clock, midnight. It was decided to perform an exploratory laparotomy at once. The patient's pulse at this time was 115 in a minute, temperature 98° F., and his general condition fairly good. Anæsthesia was produced by administration of chloroform, and he was placed on the operating-table. The abdomen was thoroughly scrubbed with soap and water, and the pubes shaved, and irrigated with a solution of bichloride of mercury (1 to 2,000). A soft-rubber catheter was introduced into the bladder, and eight ounces of dark, bloody urine were withdrawn. An incision four inches long was made in the median line, beginning just below the umbilicus and extending downward to the pubes. When the peritoneal cavity was opened, there was an escape of about eight ounces of bright-red blood. When the incision had been completed it was found to be too short to permit a thorough inspection of the peritoneal cavity, and it was extended upward four inches, thus making an incision eight inches long in the median line, extending upward from the pubes.

A good view could now be obtained of all the viscera. On examining the small intestine, there were found to be nine perforations within a length of about eight inches, thirty inches from the caput coli. One of these perforations was just at the edge of the mesentery. There was but slight eversion of the mucous lining of the bowel, and in each opening there was a small, dark-colored blood-clot. Each one of the perforations

* Read before the New York Surgical Society, January 23, 1889.

was closed separately by Lembert's suture of catgut with a fine cambric-needle. Large, flat sponges, wrung out in hot water, were kept over the intestines while suturing. Further examination showed a length of small intestine, an inch and a half long, eighteen inches from the caput coli, with four perforations. It was impossible to suture each opening separately, and a portion of the intestine, an inch and a half long, was resected. The contents of the intestine were prevented from escaping by being held firmly between the thumbs and index fingers of an assistant. Previous to removing the portion of intestine the mesentery was sutured close to its border with a row of cobbler's sutures of fine catgut, and the hæmorrhage completely controlled after the intestine had been removed. The divided ends of intestine were united by a single row of Lembert's sutures of catgut. The mucous membrane was not sutured, and there was some difficulty in keeping it turned in while suturing the muscular and peritoneal layers.

Further examination showed two perforations in the small intestine, an inch apart, five feet and a half from the caput coli. The larger was about half an inch in diameter, and there was considerable eversion of the mucous membrane. Each was closed separately by Lembert's sutures of catgut. The whole length of the small intestine was turned out of the abdominal cavity, surrounded by hot towels, and examined carefully, but there were no more perforations. The ascending and descending colon were looked over, but no wounds could be found. The transverse colon could not be examined so thoroughly.

The ureters were examined as thoroughly as possible, but no wounds could be found. The bladder contained a small amount of fluid. The walls of the bladder were examined, but no wounds were found. The abdominal cavity was now thoroughly irrigated with hot water and sponged out dry, the small intestines were douched with hot water and returned to the peritoneal cavity, the omentum carefully drawn down, and the pelvis sponged out until perfectly dry. A glass drainage-tube was passed down to the bottom of the pelvis, projecting from the lower end of the incision. The incision was now closed, the peritonæum being sutured separately with fine catgut, the skin and muscles being united by deep sutures of carbolized silk and the integument more closely united with a row of intermediate superficial catgut sutures. The operation lasted three hours and a half. The wound was dressed antiseptically. A very large amount of absorbent gauze and a firm abdominal binder were applied. A simple antiseptic dressing was applied to the wound of the hip. No exploration was made with the probe.

The patient's pulse at the close of the operation was 140 in a minute, but quite full and strong. The patient was now (4·15 A. M., October 22d) placed in bed, surrounded with hot blankets and bottles filled with hot water, and thirty minims of camphorated ether were administered hypodermatically. He recovered from the anæsthesia quite rapidly and became restless and noisy.

5 A. M.—Pulse still 140 in a minute but of a much better quality. Administered morphinæ sulph., gr. $\frac{1}{8}$, hypodermatically.

9 A. M.—Patient quiet and feeling very comfortable; temperature, 100·8° F.; pulse, 140; respiration, 25. He was catheterized and six ounces of dark, bloody urine withdrawn. Was very thirsty and was allowed to hold small pieces of ice in his mouth.

12 M.—Is very comfortable; temperature, 100·4° F.; pulse, 138; respiration, 20. Has no nausea or vomiting and no tympanites or tenderness over the abdomen.

3 P. M.—Patient is very quiet and entirely free from pain. After being interviewed by a coroner, temperature, 101·8° F.; pulse, 150; respiration, 28. Catheterized and six ounces of bloody urine withdrawn.

6 P. M.—Is somewhat restless but has no pain. Temperature, 101° F.; pulse, 144; respiration, 25. Administered morphinæ sulph., gr. $\frac{1}{4}$, hypodermatically.

9 P. M.—Sleeping quietly.

12 Midnight.—Patient is somewhat restless but complains of no pain. Morphinæ sulph., gr. $\frac{1}{4}$, administered hypodermatically. Temperature, 102·4° F.; pulse, 150; respiration, 30. Whisky, ♏xl, tr. digitalis, ♏xv, administered hypodermatically.

3 A. M., October 23d.—Condition about the same. Repeated stimulation hypodermatically.

6 A. M.—Temperature, 102·5° F.; pulse, 150; respiration, 30. Stimulated hypodermatically.

6 A. M.—Failing rapidly.

11.30 A. M.—thirty-six hours after admission—died.

Autopsy, October 24, 1888.—Rigor mortis is fairly well marked. Examination shows a circular wound in the abdominal wall about one fourth of an inch in diameter, one inch and a half to the left of the median line, and two inches above the crest of the pubes. There is also a similar wound on the posterior aspect of the right hip about two inches above the gluteal fold. On opening the peritoneal cavity, there is found to be a slight exudation of lymph on the visceral layer of the peritonæum at two or three spots, and the peritonæum is slightly congested in a few places. There is a circumscribed line of catgut sutures in the small intestine eighteen inches from the caput coli, at a point where a portion of intestine has been resected. Twelve inches from this line of sutures and within a length of about eight inches there are eight points of suturing. About five feet and a half from this point there are two points of suturing. All the points of suturing are firmly closed and there has been no escape of the contents of the intestine into the peritoneal cavity. On tracing the course of the wound from the abdominal wall, it is found to pass downward, backward, and to the right through the abdominal wall. There is a circular wound in the wall of the bladder at the fundus a little posteriorly. On opening the bladder, it is found to contain about two ounces of dark, bloody fluid, and the wound of the fundus is found to perforate. There is also a wound of about the same size and shape on the right side of the bladder just above the neck. On introducing a finger into the wound, it is found to lead downward and to the right through the pelvis. A probe, on being introduced through the wound of the hip, passes easily through into the cavity of the bladder. The liver is considerably hypertrophied and is very anæmic. Spleen slightly enlarged. Heart slightly hypertrophied, valves normal. Lungs and kidneys normal.

Remarks.—The operation in this case occupied three hours and a half, with the aid of a good artificial light, with skilled assistants, and with all other requirements at hand. Not a moment was lost in consideration or discussion, and, when it is remembered by those familiar with the technique in such cases that over a hundred delicate sutures were made with the care and precision that are necessary to insure success, it will not be thought that the operation was unnecessarily prolonged, and yet it is not unlikely that the time occupied was a principal factor in the result.

The wound in the bladder was a complication to be taken into account. The autopsy proved that there had been no appreciable escape of urine into the abdominal cavity after the operation. The urine drawn off immediately before the operation led us to believe that there was a wound of the ureters or bladder, and, knowing from previous experience how easily such wounds are overlooked, I made

a very diligent search with a good light and in a cavity thoroughly cleansed, but without avail. Impressed with the conviction that there must be such a wound, I made a second search with no better result, and yet the same gentleman who aided me in the search found it at the autopsy without difficulty.

Case II. *Strangulated Femoral Hernia; Gangrene; Resection of the Intestine; Death.*—Mary S., aged forty-eight, married; nativity, Ireland; occupation, housewife; was admitted to the Presbyterian Hospital, October 19, 1888, at 9 A. M. She stated that she had always enjoyed good health until the onset of the present trouble. She gave a history of having had a reducible hernia for several years. It had always been a source of discomfort, but she had never worn a truss, and it had always reduced very easily. Six days previous to admission she began to suffer pain in the hernial tumor, and since that time the hernia had been irreducible; there had been no movement of the bowels, although cathartics had been freely administered. The day following the onset of the pain she began to vomit, and was unable to retain anything. The integument became red and the tumor exceedingly tender three days after the beginning of the pain. On admission, the patient was found to be fairly well nourished; pulse, 108; respiration, 22; temperature, 99·5° F. She was suffering severe pain in the right inguinal region, and had stercoraceous vomiting. Examination showed a tumor in the right inguinal region, the integument over it being red, having the appearance of an abscess. There was extreme tenderness, with an obscure sense of fluctuation on palpation. Moderate degree of tympanitic distension of abdomen was also present. A diagnosis of strangulated hernia was made, and Dr. Briddon, attending surgeon, reported to at once. He arrived at the hospital at 11.30, and preparations were made for operation.

The pubes was shaved, and the inguinal region thoroughly scrubbed and irrigated with a solution of bichloride of mercury (1 to 1,000). Ether was administered, and the patient placed on the operating-table. An incision was made almost vertically over the tumor, and, on dividing the integument, there was an escape of about an ounce and a half of pus, mingled with fæcal matter and having a very decided fæcal odor. The incision, when completed, showed an abscess cavity about and within the hernial sac. Before disturbing the contents of the sac, the abscess cavity was thoroughly scraped with a sharp spoon and irrigated with a solution of bichloride of mercury (1 to 2,000). After the hernial sac and abscess cavity had been made aseptic, the contents of the sac were found to be a knuckle of small intestine. There was a perforating ulcer in the wall of the intestine of about the size of a nickel five-cent piece, and the whole loop was gangrenous.

The index finger was then passed up to the neck of the sac and the constriction found to be at the point of junction of the falciform fascia with Gimbernat's ligament. The stricture was divided with a hernia-knife, and the loop of intestine drawn down. Constant irrigation with Thiersch's solution was employed. There were decided constrictions of intestine where it had been caught at the point of stricture. The portion of gangrenous intestine—three inches and a half—was resected. The contents of the intestine were prevented from escaping by being held between the thumbs and index fingers of an assistant.

After the portion of intestine had been removed, a row of cobbler's sutures was introduced along the edge of the divided mesentery to arrest the hæmorrhage. Then the divided ends of intestine were brought in apposition and the mucous membrane was sutured around with fine catgut. Then the peritoneal and muscular layers were united by two rows of Lembert's sutures of fine catgut with a fine cambric-needle. The intestine was then thoroughly irrigated with hot water and returned to the peritoneal cavity. The wound was packed with iodoform gauze and an antiseptic dressing firmly applied.

The operation lasted an hour and a half. The patient stood the operation very well and recovered from the effects of ether without nausea or vomiting. Pulse 120.

Inasmuch as large doses of saline cathartics had been administered the day previous to admission, morphinæ sulph., gr. ¼, was administered hypodermatically to arrest peristaltic action of the bowels.

2 P. M.—Pulse 125, and not so good in quality. The surface of the body was covered with cold perspiration. Hot bottles were placed to the extremities, the patient was stimulated with whisky, and camphorated ether was administered hypodermatically.

6 P. M.—Pulse is still 125, but stronger, and there is a slight degree of reaction from the shock. She has no pain and no nausea or vomiting.

9 P. M.—Temperature 104·4° F., pulse 120, respiration 25. Is allowed to sip small quantities of hot water.

6 A. M.—During the night the patient was very quiet, but the pulse was rapid and feeble. She is now in a condition of collapse and sinking rapidly. There has been no movement of the bowels. Urine has been withdrawn twice with catheter, and when examined found to be negative. Stimulation continued hypodermatically. Temperature 104° F.

Patient gradually failed and died, 10 A. M., October 20th.

The post-mortem examination showed no signs of peritonitis, and there was quite firm union of intestine at the point of suturing.

Remarks.—At a late meeting of this society, at which time the subject of making primary resections in cases of gangrene in hernia was discussed, the opinion of the majority of the members was, I think, against such procedure, and I myself referred to two cases reported years ago in which the patients had entirely recovered, even without fæcal fistula, in which cases I had simply divided the stricture and incised the intestine. The condition of the patient in this instance I thought appeared to warrant resection. Special care was taken to thoroughly remove all septic material from the interior and in the walls of the sac itself before drawing down the gut, and yet the patient succumbed to the influence of shock in less than twenty-four hours. Both of these cases illustrate the influence of time in determining the result, and I think the profession are indebted to the enthusiasm and skill with which Senn, of Milwaukee, has pursued his investigations to find a method of doing these and kindred operations in a more speedy manner, and I trust he will continue his observations until he can furnish us with juxtaposition plates that will not be so difficult to procure as those he has especially prepared for him, and which his less fortunate brethren can not have. It may be that the rings composed of strands of heavy gut exhibited at the last meeting of this society by Dr. Abbe may supply this want, but, of course, there is much yet to be done in that direction, and we shall have to wait until researches in the laboratory have determined which is best.

The Value of a Tooth.—In a recent suit against a dentist for extracting a sound instead of an unsound tooth, the jury awarded a Boston man $150 damages.

CARE OF THE FEMALE BREAST DURING LACTATION.*

By JAMES P. MARSH, M. D.,
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This is one of the hackneyed subjects of medical literature, and a writer upon it almost feels called upon to offer an excuse for his theme. Still, when we remember the number of cases of mastitis which occur and the diametrically opposite methods of treatment advocated by the best authorities and followed by the most skilled of practitioners, we are forcibly reminded of the fact that this subject is still open to dispute. This difference of opinion has been waged mainly over the question of ætiology; for, as we look upon the causation of any disease, so is our treatment influenced.

It is customary with medical writers to give a learned and abstruse classification of their subject, widely based upon histology and pathology, but, not being of Teutonic origin myself, I shall simply deal with the utilitarian side of the subject—namely, what is the cause of the disease, how shall it be prevented, and, once present, how shall it be treated? Nor shall these remarks be supplemented by numerous references to German and French books and journals. At the present time there seems to be a perfect mania among writers and abstracters to refer every statement to some foreign authority. Productions which in this country would be considered mediocre, if published in foreign archives by some professor or other, are seized upon and reviewed and abstracted as if they were remarkable. Still, as it is very proper in British medical literature to give the other fellow "down the banks," I shall put down as the first and prime factor in the causation of many a case of suppurative mastitis—a doctor. Many physicians are in the habit of resigning to the monthly nurses the entire care of the breasts of parturient women, and, should anything happen amiss, they are not slow to abuse the said nurse. I can not too earnestly urge upon the profession that the time has arrived when they are to be held individually responsible for every case of suppurative mastitis, as they are now admitted to be for every case of "puerperal fever." The emancipation of the monthly nurse is promulgated.

It is impossible to give intelligent care to the breasts during lactation without a due comprehension of the causes which enter as factors into the production of the three several forms of mastitis. Billroth asserts that mastitis is more frequent in the right breast, and that the greatest liability to the inception of the disease is within the first four weeks after labor. Anything which in any way presses upon or misplaces either the breast or nipple antecedent to lactation, unfits the gland for a performance of its function; hence, once more, we condemn that opprobrium of female attire—the corset. Nor shall we forget that the upright posture of mankind may have much to do with placing the mammæ at a disadvantage. It is true that the breasts are placed in a good position as regards their protection from external injury, but I have often thought that their flaccidity and weight, and consequent dragging downward, placed the ducts coming from the lower part of the gland at a disadvantage, having to raise their product against gravity. Herein, I think, we find the explanation of Winckel's table of 130 cases in which the lower part of the gland was affected 86 times against 44 times in the upper part. Could the human female perambulate on all-fours, I think that mastitis would be a rare disease. Still, for obvious reasons, I could not recommend a postural treatment based upon this theory.

I think that I have seen cases of mastitis which, so far as I could discover, were derived through so-called sympathy from existing ovarian inflammation. Just what the relation between the parotid gland, the mammæ, and the ovaries may be I can not say; but I can assure you that frequently one of the triumvirate takes on a vicarious disturbance in behalf of some one of the others. This phenomenon was very forcibly impressed upon me in a recent case where I removed the uterine appendages for inflammatory disorganization of the tubes and ovaries. On the second day after the operation the left parotid gland became very painful and swollen, and continued so for nearly ten days, when the disturbance subsided, the patient making a good recovery. Is it not reasonable to suppose that we may have similar phenomena in connection with the parturient condition? Wyeth has called attention to the fact that mumps occurring in females has occasionally caused disturbances in the mammary glands; and in one case where I delivered a woman suffering at the time from this disease, a metastasis to the ovaries occurred on the fifth day, and for two weeks her condition was very critical, although eventually she made a complete recovery. During the time she suffered from oophoritis she also had much discomfort from irritable breasts, and several times it seemed as if mastitis must supervene. Again, it is possible that the early and unmanifest presence of cancerous deposits may cause mastitis. This statement is made guardedly, but is rendered plausible by the history of a patient from whom I removed the entire breast for scirrhus. In this case the patient dated her first discomfort in the gland from a mastitis which occurred in her last confinement. It appeared to have no assignable cause and did not proceed to suppuration, although the gland was left permanently larger than the one opposite.

The elder writers were accustomed to attribute certain cases of mastitis to what they were pleased to call "a scrofulous diathesis." This phrase when interpreted means the presence either of attenuated syphilitic or tubercular virus. Are we, then, to find that the tubercle bacillus is at the bottom of certain cases of mastitis? I have been unable to find any researches upon this point, but it seems to me to be worthy the attention of bacteriologists.

Foremost among the debatable questions relating to the production of mastitis is that of the exact relation which "the caking of the milk" in the lactiferous ducts may have to the origin of the disease. Personally, I doubt that milk stasis can occur without the direct or indirect agency of

* Read before the Medical Association of Troy and Vicinity, December 4, 1888, as the opening paper in a discussion on diseases of the breasts of women.

micro-organisms or their products, and still more do I doubt that milk is converted into pus without bacterial presence. It may be objected that we frequently have milk stasis without suppuration, but this does not prove that the said organisms were not present, the individual being refractory to their influence. When the flow of milk through a certain set of lactiferous ducts is interrupted, there arises a pressure upon the lymph-channels and the capillaries. If this pressure is sufficiently long in duration, a liquefaction of the contiguous tissue occurs, thus furnishing a suitable nidus for bacterial life. Supposing, however, that this process is reversed—bacteria traveling down the lymphatics would give origin to lymphatic thrombosis; this, in turn, by pressure on the milk ducts, would bring about milk stasis. In this later hypothesis the bacteria are separated from a most fitting pabulum by thin glandular structures. If in either one of these hypotheses we have the *modus operandi* of the causation of mastitis, how irrational the treatment by strapping! for by this measure we only confine and drive into the deeper parts of the gland these mischief-producing agents.

As ætiological factors in the causation of mastitis we may remember colds, injuries, malformations, and malpositions of both or either the nipple or the mammary gland; still the great, the direct cause is excoriation or fissure of the nipple. I can not agree with those authors who claim that fissure of the nipple is as common in multiparæ as in primiparæ. My observation has led me to look upon first lactation as a very great factor in the causation of this disease. It is seldom that I have trouble with the breasts of multiparæ, unless they have had mastitis during some previous lactation.

The most frequent cause of abrasion of the nipple is too frequent nursing. When will mothers cease to nurse a child simply because it cries? Some mothers are so domineered over by this habit that the teat is almost constantly in the mouth of the infant. Thus the sensitive surface of the nipple is in a constant state of moisture, in this way softening and removing the protective layers of epithelium; moreover, the constant drawing can and frequently does bring about ecchymosis. Unless carefully treated, these abrasions rapidly lead to deep fissures, which are at times very rebellious to treatment, and constitute the basis of operations for micro-organisms. Truly does Parvin say: "An abrasion, ulceration, or fissure of the nipple is a door opened for the entrance of septic germs." Need it be said that the entrance of septic germs is nearly equivalent to making a diagnosis of mastitis? Ask you where these germs come from? The mouth of every nursing infant contains myriads of them. What more simple and elegant means of transportation could be devised? In the mouth of the child will be found the cause of many an obstinate case of fissured nipple.

Practically, the question of the prevention of mastitis resolves itself into the means to be adopted in order to prevent fissure of the nipple. Regarding, as I do, fissures of the nipple as of so grave a nature, it has been my custom to advise all who engage me to attend them during confinement to bathe their breasts, and especially the nipples, three times a day for at least two weeks before the expected labor in a mixture of alcohol, one third, and water, two thirds.

When the child has been born, there is nothing so important as to warn the young mother against the danger of too frequent nursing. The child's mouth ought to be frequently inspected, and suitable treatment adopted upon the slightest appearance of thrush. If the nipple or breast is hopelessly malformed or misplaced, we should at once firmly discourage all attempts on the part of the mother to nurse the child. In one case a neglect of this duty nearly involved a patient of mine in an extensive mastitis.

When fissures have become established, I have found nothing so soothing to the mother as an ointment composed of cocaine, ten grains, and lanolin,* one ounce. Nor is this application to be used merely as a sedative. In my hands it has almost always brought about a prompt healing of incipient fissures.† Nearly all authors upon this subject recommend carbolic acid, nitrate of silver, etc. I never have employed these agents; I consider them harmful, and the theory upon which their use rests as fallacious. When cocaine fails and the fissures become deeper, there is but one remedy, and that is the withdrawal of the child, followed by a resort to stroking and the judicious use of the English breast-pump. It is true that an unskillful use of the breast-pump may produce traumatism of the breast, which, as we know, is a very menacing condition. Still this can not justify those who, following the lead of McClintock, never resort to this useful instrument. Nor can I agree with Professor Lusk when he places the mouth of the nurse on a footing with the pump; and still more do I object to the use of young puppies for a like purpose, because I think that these procedures are attended with great danger of septic infection. However, my experience has been that of Lusk, who writes that he is unable to speak with enthusiasm as regards the use of the various nipple-shields. As for the infants whom I have attended, I can not remember one who took kindly to a nipple-shield. When fissures have become established, and the child in nursing draws unmixed blood, it should be a positive indication to withhold the child from the breast. If, now, the trouble increases and mastitis becomes established, we must not be slow to relinquish that treatment which to this stage has been followed, and adopt measures which will bring about resolution or suppuration as speedily as possible.

It is to be remembered that the key-note as regards treatment is rest and cleanliness, which may be readily carried out, provided that only one gland is affected, but, unfortunately, this is the exception and not the rule. Moreover, the treatment should be viewed from two distinct points of view: First, as local, which is mainly mechanical; second, as constitutional, which is mainly medicinal.

When mastitis has established itself, the child should be

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* At one time I used vaseline, but it is not to be compared with lanolin.

† In one case of tetanus which appeared on the sixth day after birth the parents attributed the disease to this ointment. In reality, however, I have used it many times and never experienced any trouble when my instructions to thoroughly wash the ointment off the breast before nursing have been strictly followed.

taken from the breast and the suffering gland or glands placed in a sling, strong doses of calomel and quinine being administered. Still, when we have placed the affected breast in a sling, do not let us imagine that we have placed the gland at rest. There is no rest for a gland the ducts of which are engorged with milk removed but by one degree from pus. I also condemn rough rubbing of a breast suffering from mastitis, but there is no more beneficial treatment than a gentle stroking of the gland, always from the periphery toward the nipple—*i. e.*, in the direction of the milk-flow in the lactiferous ducts.

Many are the methods of treatment which have been advocated for this stage of the disease. Of Kurtz's ice method and Squire's catheterization of the ducts I have not had any experience; on general principles, I should be afraid to adopt them.

While in this stage of uncertainty, in which the disease seems to vacillate between resolution and suppuration, there is no better local application than the lead-and-opium wash. If suppuration is inevitable, the lead and opium must give place to poultices. Anodynes should be administered to allay pain, and the abscess opened as soon as it has made an unmistakable point. In opening these abscesses, be they either of the parenchymatous or submammary type, an anæsthetic ought to be administered and an incision made sufficient to admit the finger and a good-sized drainage-tube. This is not a place for small incisions.

The great point in the treatment of large mammary abscess is thorough drainage; nor should the surgeon be overzealous in the use of antiseptic injections. Perhaps antiseptics had better be excluded from the treatment of these abscess cavities, and, where irrigation is required, simple boiled water be used. If, as sometimes occurs, extensive fistulæ result from these abscesses, there is but one thing to do, and that is to follow them up in all their ramifications and to thoroughly lay them open, however extensive they may have become. This procedure in certain bad cases seems to be a terrible mutilation, but it is, nevertheless, preferable to excision of the entire gland.

When suppuration has become established we are not to act entirely as surgeons, but, after the evacuation of the pus, we should prescribe cod-liver oil, iron, and a nourishing diet. The course of suppurative mastitis is very exhausting to the entire system, and, if the financial condition of the patient will permit, she will derive great benefit from a prolonged stay at the sea-shore or in the mountains.

Intestinal Occlusion in Pernicious Fever.—"Dr. A. W. Reyes, of Sagua la Grande, Cuba, in an instructive paper on 'Rare Forms of Pernicious Fevers,'" says the "Lancet," "directs attention to the occasional sudden occurrence of intestinal occlusion due to violent tonic spasm of the intestinal muscular fibers, which is sometimes associated with spasm of voluntary muscles also. In these cases there is great difficulty in arriving at a correct diagnosis, for the temperature is usually only slightly above the normal, the extremely prostrate, sometimes cyanotic, condition of the patient coming on very suddenly, and there being nothing to point to the malarial origin of the affection. Nevertheless, the rapid and powerful effect of quinine, especially if administered hypodermically, together with the exhibition of some alcoholic stimulant by the mouth, is, he considers, a pretty sure indication of the true nature of these cases."

CANCER OF THE LARYNX;

TRACHEOTOMY.

BUCCAL PERFORATION OPENING INTO THE MAXILLARY ANTRUM.*

By A. GOUGUENHEIM, M. D.,

PARIS, FRANCE.

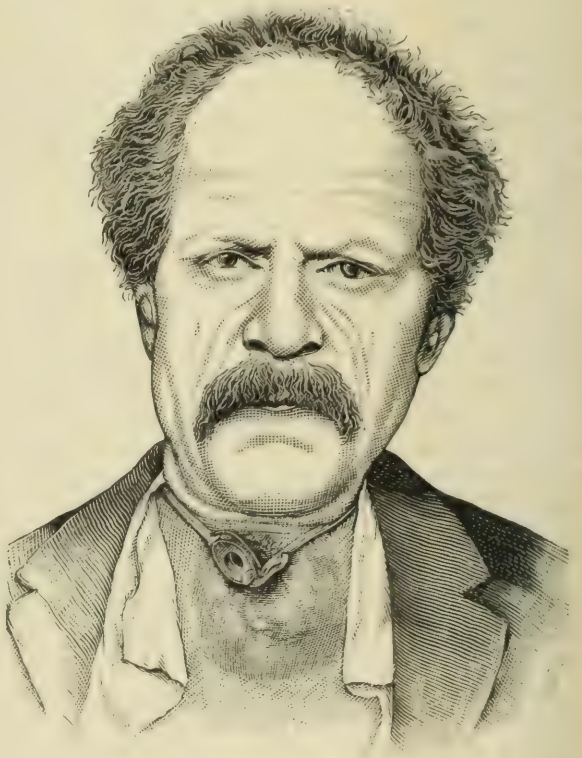
I have the honor to present to you two cases of interest observed in my clinic of laryngology at the Lariboisière Hospital.

The first case is that of cancer of the larynx in a male patient, a workman, fifty-six years of age; but it is not for the disease itself that I present the case, but for a special point of therapeutical interest.

Tracheotomy was performed under urgent circumstances in November, 1887.

When the patient first came under observation the disease was limited to the left cord, but later, after the operation of tracheotomy, the right cord also became involved, and for two or three weeks during this period many hæmorrhages occurred. Hæmorrhages now also occur from time to time.

A thrill is felt in the course of the right carotid artery.



About three months ago there appeared around the wound a tumor, very hard in consistence and red in color. The size of the tumor increased until it became as large as an orange. An ulceration then appeared on its apex, and it presented the characteristic appearances of carcinoma in the ulcerating stage.

The cannula now was insufficiently long, was frequently

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* Presented at the tenth annual congress of the American Laryngological Association.

getting out of place, and the patient suffered from a continual dyspnœa. None of the cannulæ available to me were sufficiently long.

I therefore, in consequence of the continuous and distressing dyspnœa, presented the patient to Dr. Berger, the surgeon of the hospital, requesting resection of the tumor to be made; but this operation, however, was declined.

I had now to resort to some expediency to obtain a cannula of sufficient length, which could be easily introduced. Such an instrument could not be entirely rigid, as then its introduction would be impossible.

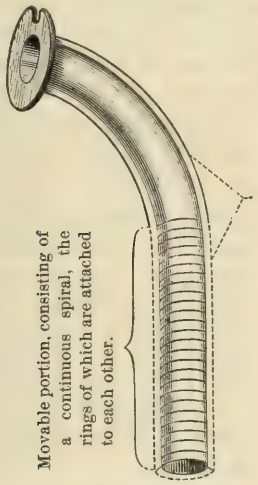
M. Mathieu, of Paris, by my instructions, succeeded, after many attempts, in making for me a cannula the first part of which is rigid, while the lower two thirds are movable. The movable part consists of a continuous spiral, the rings of which are attached to each other. The inner cannula resembles the outer one in this respect.

For introducing the outer cannula I made use of a rubber bougie as a guide, the bougie projecting slightly beyond the end of the cannula. In spite of the irregularities of the passage, the introduction of the cannula was easy.

The inner cannula is extracted with facility for purposes of cleaning.

The patient has been wearing the cannula now for six weeks, and is able to breathe quite freely. A point of great interest also in this instrument is that it always remains *in situ* when the strings which fasten it around the neck are unloosened, thus differing from the ordinary cannulæ. The cannula is made of silver.

I present to you a photograph of the patient and a drawing of the cannula.



Tracheal cannula (half size).

Buccal Perforation opening into the Maxillary Antrum.—The other case is that of a workwoman about thirty years of age. This patient came to my clinic in consequence of a large perforation situated at the left side of the hard palate in a position corresponding to several of the molar teeth. Here three or four teeth have disappeared, leaving a large sinus, the borders of which are rounded and smooth, and show no signs of any ulceration. This sinus, into which I can introduce the end of my little finger, opens into the cavity of the maxillary antrum, which is of about the size of a small nut, with irregular walls covered with white mucus. The cavity was easily illuminated by the Drummond light for the purpose of inspection. A probe was easily passed through it into the corresponding side of the nose and could be seen in the middle meatus. The patient complains of fluid passing into the nose when she is drinking.

This condition, which is very curious, is probably the consequence of a localized necrosis in this situation, coincident probably with syphilis; but no trace of this disease was found on this first examination.

If indicated, a specific treatment will be given, but the condition above alluded to is certainly irremediable. As a local measure, however, I propose the use of a movable apparatus to prevent the entrance of food into the cavity during meals.

I am very glad to have observed these two very interesting cases. The first one is very remarkable in that it necessitated the construction of a difficult apparatus indispensable for the preservation of life. The second case is a very rare one indeed, and I believe that it is almost unique.

PUERPERAL PYÆMIA.

By CHARLES H. RICHMOND, M. D.,
LIVONIA, N. Y.

My experience in puerperal pyæmia comprises three cases, briefly described as follows:

The first occurred about twelve or thirteen years ago in a woman, about forty years old, following the third confinement, which was normal in every way. The second occurred eight or nine years ago, after an abortion at about three months, in a woman about thirty years old. She had had four children previously. The third followed a difficult second labor (October, 1887) in a woman aged thirty, of stout build. Her first labor was exceedingly difficult. The children in both labors were very large and were extracted by the employment of considerable force; both are living. No injury to the mother was apparent beyond slight laceration of the perinæum at the first labor. Antiseptic precautions were followed.

Leucocythæmia was apparent in all before confinement, but it was more especially marked in the two cases confined at full term. The first unfavorable symptom in either of the cases was a chill from two to four days after delivery, attended with a high temperature followed by sweating. A chill varying in intensity recurred at irregular intervals, varying from one to five days, seldom shorter than two and longer than four days. The temperature at the close of or soon after the chill would vary from 102° to 105° F. or higher. During the interval it would usually range between 100° and 101°, but a normal temperature was not uncommon at times. No pelvic or abdominal inflammation could be detected in either of the cases, the discharges were normal, involution seemed to progress normally, and no source of septic infection was found. Among the concomitant conditions which developed during the progress of the cases were circumscribed pneumonia, occasional attacks of

difficult respiration, and, later, evidences of cerebral embolism, in two of the cases attended with hemiplegia. There was in all the cases slight swelling of the lower extremities, and the patients became very anæmic. The intervals between the chills were sometimes so long, and the patient seemed so comfortable, as to almost create a hope that there would be no return. One patient (the first) died from exhaustion after about four weeks' illness, the second from cerebral symptoms with exhaustion in seven weeks, and the third died in about six weeks suddenly, as if by cardiac embolus.

I was unable to obtain an autopsy except in the last case, and was allowed to examine only the abdominal and pelvic cavities, as I wished especially to examine the inferior vena cava. There were no evidences of abdominal or pelvic disease. The uterus had undergone involution; its cavity was healthy, as also were the tubes and ovaries. The inferior vena cava contained a degenerated blood-clot.

It would seem that thrombosis of the inferior vena cava is identical in nature with phlegmasia dolens, differing only in location and size of the clots. The greater frequency of thrombosis of the veins of the extremities may be due to the natural impediment to the circulation through those parts and in the pelvis, and impediments due to certain inflammatory conditions in cases in which the condition of the blood is favorable to clotting. It sometimes follows peritonitis in both males and females. When, however, there is an unusual development of white corpuscles in the blood during pregnancy, the tendency to thrombosis may be so great as to occur in the larger vessels. The size of the clot, when occurring in the vena cava, repeatedly furnishes fresh supplies of poison in such quantity as to preclude the possibility of recovery.

INTUBATION OF THE LARYNX
IN DIPHTHERITIC CROUP;
ANALYSIS OF TWO HUNDRED CASES OPERATED UPON.*

By DILLON BROWN, M. D.

In determining the value of any operation in the treatment of diphtheritic or membranous laryngitis it is necessary to give not only the number of operations and their result, but also the whole number of such cases seen, whether operated upon or not. This is what I shall aim to do in presenting the following report of my own cases treated by intubation of the larynx.

Again, to compare the value of any two operations in the treatment of this disease, it is not sufficient to state simply the number of recoveries following each operation. It is essential to form some idea of the character of each case and compare the result only in similar cases. You must take into consideration the age, the duration, and the amount of laryngeal obstruction, the presence or absence of pharyngeal or post-nasal diphtheria and its duration, the condition of the kidneys, and the presence or absence of sepsis or other complications, as pneumonia, measles, scarlet fever, whooping-cough, etc.

* Read before the Section in Pædiatrics of the New York Academy of Medicine, October 24, 1888.

It will be my endeavor in the following report to state the facts correctly and to omit nothing. All my cases except one were seen in consultation with one or more physicians, and I have placed opposite each case the date of the operation and the name of the physician by whose courtesy I was enabled to operate. Nearly one half of the patients were either absolutely hopeless or under three years of age. I have not refused to operate in a single case of advanced laryngeal obstruction, however hopeless it might seem; and, again, I have never operated until the stenosis was extreme. Not a single patient died during the operation. On the primary introduction of the tube, membrane was pushed down in several instances, but every time it was either coughed out through the tube or it followed the tube on its withdrawal. In no case was membrane pushed down in sufficient quantity to produce fatal obstruction during the operation.

If those physicians who oppose intubation in favor of tracheotomy and who have operated sufficiently often to make their opinion of any value, will give us a *complete* report of their cases—including all the cases seen, whether operated upon or not—it would be of the greatest value in comparing these operations, and would quickly consign tracheotomy to the background, for use only in special cases.

I have operated upon two hundred patients with diphtheritic or membranous laryngitis, of which fifty-four, or twenty-seven per cent., recovered:

Males, 87; females, 113. Average age, 3 years 5 months; of those that died, 3 years 2 months; of those that recovered, 4 years 5 months.

Urine contained albumin in 116 cases, no albumin in 15 cases, and was not examined in 69 cases.

In fatal cases, average length of life after intubation was 2 days 23 hours; in cases of recovery, average time of tube in larynx was 5 days 10 hours.

In addition to the following cases, given in detail, I have seen or been consulted in regard to twenty-three cases of laryngeal diphtheria, in all of which the patients recovered without operation—four at the New York Foundling Asylum, one at the Vanderbilt Clinic, two in my own practice, and one with each of the following physicians: Dr. O'Dwyer, Dr. Reid and Dr. Burke; Dr. O'Dwyer, Dr. O'Connell and Dr. Flynn; Dr. G. V. Hann, Dr. H. D. Chapin, Dr. J. H. Seymour, Dr. Daniel Cook, Dr. R. B. Talbot, Dr. B. C. McIntyre, Dr. J. Lewengood, Dr. J. A. Roth, Dr. Charles Roth, Dr. E. J. Ware, Dr. J. Lewis Smith, Dr. A. H. Smith, and Dr. Louis Feigenblatt.

Four patients refused operation—one seen with Dr. J. Lewis Smith, one with Dr. R. M. McAdoo, one with Dr. D. L. Hubbard, and one with Dr. Thomas Kelly. All died. The refusal in two of these cases was due to previous unskillful and unsuccessful attempts being made by other operators (not the attending physicians, whose names I give).

In nine cases the patient had died before my arrival, one with each of the following physicians: Dr. F. A. Manning, Dr. J. L. Smith, Dr. F. C. Fuller, Dr. G. V. Hann, Dr. J. A. Roth, Dr. D. E. O'Neil, Dr. A. E. M. Purdy, Dr. Wooster Beach, and Dr. G. D. Hays.

Date.	No.	By courtesy of	Sex.	Age.	Duration before intubation of: Croup.	Duration before intubation of: Pharyngeal diphtheria.	Urine.	Cause of death.	Complications before intubation.	Result.
1885.										
July.	1	At the New York Foundling Asylum, and by courtesy of the visiting physicians, Dr. Joseph O'Dwyer, Dr. J. Lewis Smith, Dr. C. C. Lee, and Dr. J. J. Reid. These cases are included in Dr. O'Dwyer's hospital cases.	M.	3 yr. 3 mo.	2 d.	5 d.	Albumin.	.....	.....	Recovered; wore tube 14 d.
Oct.	2		M.	16 mo.	1 d.	4 d.	"	Extension to bronchi.	.....	Died 1 d. after intubation.
Nov.	3		M.	1 yr. 11 mo.	1 d.	8 d.	"	Double broncho-pneumonia.	Rickets.	Died 6 d. 16 hrs. after intubation.
"	4		F.	3 yr.	6 hrs.	....	"	Double broncho-pneumonia.	.....	Died 2½ d. after intubation.
"	5		M.	3 yr. 4 mo.	Sev. d.	4 wks.	"	Tuberculosis.	Tuberculosis.	Died 8 d. " "
Dec.	6		F.	3 yr. 4 mo.	1 d.	Present.	.....	Extension to bronchi.	.....	Died 2½ d. " "
"	7		F.	3 yr. 6 mo.	3 d.	2 d.	Albumin.	" "	Pertussis; pneumonia.	Died 38 hrs. " "
"	8		F.	3 yr. 7 mo.	1 d.	3 d.	"	.....	.....	Recovered; wore tube 3 d. 15 hrs.
"	9		F.	11 mo.	½ d.	1 d.	"	Swelling over top of tube.	.....	Died 14½ hrs. after intubation.
"	10		F.	3 yr. 3 mo.	1 d.	None.	"	Extension to bronchi.	.....	Died 3 d. " "
1886.										
Jan.	11		F.	4 yr. 8 mo.	2 d.	2 d.	"	.....	Pertussis.	Recovered; wore tube 2½ d.
"	12		F.	1 yr.	1 d.	None.	Not exam.	Extension to bronchi.	Varicella.	Died 18 h. after intubation.
"	13		F.	3 yr. 9 mo.	1 d.	11 d.	.....	.....	Pertussis.	Recovered; wore tube 39 hrs.
"	14		F.	3 yr. 5 mo.	1 d.	1 d.	None.	Extension to bronchi.	.....	Died 21½ hrs. after intubation.
"	15		F.	5 mo.	2 d.	2 d.	.....	" "	.....	Died 21½ hrs. " "
"	16		F.	4 yr. 6 mo.	½ d.	None.	Not exam.	Exhaustion.	Congen. syphil.	Died 12 hrs. " "
"	17		F.	3 yr. 4 mo.	1 d.	6 d.	"	Extension to bronchi.	Pertussis.	Died 2 d. " "
Feb.	18		F.	2 yr. 2 mo.	1 d.	1 d.	Albumin.	.....	.....	Recovered; wore tube 12 d.
"	19		M.	5½ mo.	1 d.	1 d.	"	Double pneumonia.	.....	Died 1 d. after intubation.
March.	20		F.	7 mo.	6 hrs.	.....	Not exam.	Extension to bronchi.	Varicella.	Died 2 d. " "
"	21		M.	3 yr. 6 mo.	4 d.	5 d.	Albumin.	.....	.....	Recovered; wore tube 4 d. 2 hrs.
"	22		M.	3 yr.	2 d.	2 d.	"	Extension to bronchi.	.....	Died 2 d. 14 hrs. after intubation.
April.	23		F.	3 yr.	1 d.	1 d.	Not exam.	" "	Varicella.	Died 2 d. " "
"	24		M.	8 mo.	1 d.	2 d.	"	Pneumonia.	.....	Died 9 hrs. " "
May.	25		M.	2 yr.	1 d.	1 d.	"	Extension to bronchi.	.....	Died 24 hrs. " "
March.	26	Dr. C. C. Lee.	F.	18 mo.	10 hrs.	None.	"	" "	.....	Died 7 hrs. " "
"	27	Dr. Cocks and Dr. Van Fleet.	F.	8 yr.	18 hrs.	4 d.	Albumin.	Exhaustion.	.....	Died 4 d. " "
May.	28	Dr. M. M. Dunton.	M.	13 mo.	4 d.	Sev. days.	"	Nephritis.	.....	Died 16 d. " "
June.	29	Dr. J. Lewis Smith.	F.	2 yr. 8 mo.	2 d.	9 d.	"	Extension to bronchi.	.....	Died 2 d. " "
"	30	Dr. J. J. Griffiths.	M.	2 yr. 4 mo.	1 d.	None.	"	Broncho-pneumonia.	.....	Died 2 d. 21 h. " "
"	31	Dr. F. A. Manning.	M.	6 yr.	3 d.	4 d.	"	Suppression of urine.	.....	Died 5 d. " "
"	32	Dr. S. J. McNutt.	F.	2 yr. 6 mo.	1 d.	Sev. days.	Not exam.	Extension to bronchi.	.....	Died 1½ d. " "
July.	33	Dr. J. J. Griffiths.	M.	4 yr.	36 hrs.	None.	Albumin.	" "	.....	Died 1 d. 12½ hrs. " "
"	34	Dr. Sprague.	M.	4 yr.	2 d.	Sev. days.	"	.....	.....	Recovered; wore tube 5½ d.
"	35	Dr. L. L. Bradshaw.	M.	3 yr.	1 d.	None.	Not exam.	Exhaustion.	.....	Died 1 d. 6½ hrs. after intubation.
Aug.	36	Dr. J. A. McLoughlin.	F.	2 yr. 9 mo.	1 d.	7 d.	Albumin.	Extension to bronchi.	.....	Died 3 d. " "
"	37	Dr. J. W. Flynn and Dr. L. L. Bradshaw.	F.	4 yr. 6 mo.	32 hrs.	4 d.	"	" "	.....	Died 4 d. " "
Sept.	38	Dr. J. Lewis Smith.	M.	21 mo.	2 d.	4 d.	"	" "	.....	Died 1 d. 4½ hrs. " "
"	39	Dr. J. L. Smith and Dr. W. E. Forest.	M.	4 yr. 6 mo.	9 d.	6 d.	"	.....	.....	Recovered; wore tube 4 d.
"	40	Dr. W. E. Forest.	M.	8 yr. 1 mo.	3 d.	2 d.	"	Extension to bronchi.	.....	Died 7 d. after intubation.
Oct.	41	Dr. W. K. Simpson and Dr. R. M. McAdoo.	F.	7 yr.	....	Present.	.....	" "	.....	Died 6 d. " "
"	42	Dr. J. B. Cosby.	F.	2 yr. 6 mo.	5 d.	7 d.	Albumin.	Uræmic convulsions.	.....	Died 1 d. 9 hrs. after intubation.
"	43	Dr. Charles Roth and Dr. J. A. Roth.	F.	6 yr.	4 d.	6 d.	"	Suppression of urine.	.....	Died 2 d. 1 hr. " "
"	44	Dr. J. A. Moore.	M.	2 yr. 2 mo.	1 d.	10 d.	None.	Extension to bronchi.	.....	Died 7 d. " "
"	45	Dr. Beyea.	F.	4 yr. 2 mo.	1 d.	3 d.	Albumin.	" "	.....	Died 2 d. 10 hrs. " "
Nov.	46	Dr. Bradshaw and Dr. Simpson.	F.	3 yr.	4 d.	7 d.	"	" "	.....	Died 4 d. " "
"	47	Dr. Bradshaw and Dr. Simpson.	M.	1 yr.	5 d.	7 d.	Not exam.	" "	.....	Died 5 d. " "
"	48	Dr. J. L. Smith and Dr. H. Cheeseman.	M.	2 yr. 7 mo.	7 d.	1 d.	Albumin.	Convulsions.	....	Died 1 d. 17 hrs. " "
Dec.	49	Dr. C. L. Lindley.	M.	5 yr.	½ d.	14 d.	None.	Exhaustion.	.....	Died 26 hrs. " "
"	50	Dr. W. A. Hawes.	M.	3 yr. 2 mo.	5 d.	7 d.	Albumin.	.....	.....	Recovered; wore tube 4 d. 5 hrs.
"	51	Dr. R. B. Burton.	F.	2 yr. 1 mo.	27 hrs.	4 d.	"	Convulsions.	.....	Died 19 hrs. after intubation.
"	52	Dr. J. Lewis Smith.	M.	13 mo.	4 d.	None.	"	"	Measles.	Died 2 d. 2½ hrs. after intubation.
"	53	Dr. M. M. Dunton.	F.	2 yr.	3 d.	Sev. days.	"	Pushing down membrane.	.....	Died 18 d. " "
"	54	Dr. A. Hodgeman.	F.	3 yr. 6 mo.	18 hrs.	4 d.	"	Sepsis.	Sepsis.	Died 12 hrs. " "
"	55	Dr. W. K. Simpson and Dr. W. R. Birdsell.	F.	5 yr.	3 d.	None.	"	Exhaustion.	.....	Died 3 d. " "
1887.										
Jan.	56	Dr. Daniel Cook.	F.	2 yr.	2 d.	1 d.	No albu'n.	.....	.....	Recovered; wore tube 3 d.
"	57	Drs. F. and H. B. Sprague.	F.	4 yr.	3 d.	7 d.	"	Extension to bronchi.	Measles.	Died 5 d. 17 hrs. after intubation.
"	58	Dr. Wooster Beach.	M.	2 yr.	½ d.	.....	"	" "	"	Died 2 d. " "
"	59	Dr. W. A. Hawes.	F.	17 mo.	1 d.	Sev. days.	Albumin.	Convulsions.	"	Died 1 d. 6 hrs. " "
"	60	Dr. W. B. Wallace.	F.	5 yr.	1 d.	None.	Not exam.	Extension to bronchi.	"	Died 19 hrs. " "
"	61	Dr. Alexander Hadden.	M.	5 yr. 4 mo.	8 d.	2 d.	Albumin.	Pneumonia.	"	Died 1 d. 19 hrs. " "
"	62	Dr. Fred. Sprague.	M.	13 mo.	2 d.	Sev. days.	Not exam.	Extension to bronchi.	"	Died 1 d. 1 hr. " "
"	63	Dr. N. S. Wescott.	M.	19 mo.	8 d.	.....	Albumin.	.....	"	Recovered; wore tube 4 d.
"	64	Dr. J. Lewis Smith.	F.	20 mo.	1 d.	1 d.	Not exam.	Extension to bronchi.	.....	Died 2 d. 1 hr. after intubation.
"	65	Dr. J. A. McCreery.	M.	19 mo.	1 d.	7 d.	"	" "	.....	Died 8 hrs. " "
Feb.	66	Dr. Daniel Lewis.	M.	3 yr. 2 mo.	16 hrs.	Convales't.	Albumin.	.....	.....	Recovered; wore tube 6½ d.
"	67	Dr. Hobart Cheesman.	F.	23 mo.	1 d.	4 d.	"	Sepsis.	Sepsis.	Died 1 d. after intubation.
"	68	Dr. J. L. Smith and Dr. J. A. Roth.	F.	22 mo.	2 d.	Sev. days.	"	Extension to bronchi.	.....	Died 1 d. 4 hrs. after intubation.
"	69	Dr. G. V. Hann.	M.	14 mo.	36 hrs.	Sev. days.	"	General paralysis.	.....	Died 28 d. " "
"	70	Dr. J. A. Roth.	M.	2 yr. 9 mo.	1½ d.	10 d.	Not exam.	Extension to bronchi.	Measles.	Died 1 d. 6 hrs. " "
"	71	Dr. J. A. Roth.	M.	4 yr.	2 d.	6 d.	"	" "	.....	Died 1½ d. " "
March.	72	Dr. Warren Schoonover.	M.	2 yr. 9 mo.	2 d.	Sev. days.	Albumin.	.....	.....	Recovered; wore tube 6 d.
"	73	Dr. J. A. McCreery.	M.	5 yr.	36 hrs.	4 d.	Not exam.	Extension to bronchi.	.....	Died 1 d. after intubation.
"	74	Dr. Charles Roth.	M.	5 yr.	3 d.	Sev. days.	No albu'n.	.....	.....	Recovered; wore tube 4 d.
"	75	Dr. W. P. Langworthy.	M.	2 yr. 5 mo.	4 d.	None.	Not exam.	Extension to bronchi.	.....	Died 1 d. after intubation.
"	76		M.	3 yr.	4 d.	7 d.	Albumin.	.....	.....	Recovered; wore tube 2 d.
"	77	Dr. W. A. Hawes.	M.	4 yr.	2½ d.	8 d.	"	Pneumonia.	.....	Died 10 d. after intubation.
"	78	Dr. J. Lewis Smith.	F.	3 yr. 9 mo.	2 d.	7 d.	"	Sepsis.	.....	Died 2 d. " "
April.	79	Dr. J. A. Roth.	F.	20 mo.	2 d.	2 d.	Not exam.	Pneumonia.	.....	Died 2 d. 6 hrs. after intubation.
"	80	Dr. J. L. Smith and Dr. F. I. Drisbrow.	M.	5 yr.	2 d.	4 d.	Albumin.	Sepsis.	.....	Died 7 d. 18 hrs. " "
"	81	Dr. J. L. Smith.	M.	6 yr.	4 d.	7 d.	"	.....	.....	Recovered; wore tube 5 d.
"	82	Dr. C. E. Nammack.	F.	16 mo.	1 d.	3½ d.	Not exam.	Sepsis.	.....	Died 19 hrs. after intubation.
"	83	Dr. J. A. Roth.	F.	4 yr. 6 mo.	2 d.	.....	"	Extension to bronchi.	Sepsis.	Died 1 d. " "
May.	84	Dr. Hugart.	F.	3 yr. 6 mo.	2 d.	7 d.	Albumin.	.....	.....	Recovered; wore tube 6 d.
"	85	Dr. J. L. Smith and Dr. A. Rowe.	M.	6 yr.	4 d.	7 d.	"	.....	.....	Recovered; wore tube 5 d.
"	86	Dr. George V. Hann.	F.	10 mo.	5 d.	Sev. days.	Not exam.	Sepsis.	Sepsis.	Died 2½ hrs. after intubation.
"	87	Dr. B. G. Cooke.	F.	2 yr.	2 d.	Sev. days.	"	Extension to bronchi.	Pertussis.	Died 2 d. 5 hrs. after intubation.
"	88	Dr. Alvah Rowe.	F.	3½ yr.	2 d.	Present.	Albumin.	.....	.....	Recovered; tube removed in 6 d.

Date.	No.	By courtesy of	Sex.	Age.	Duration before intubation of: Croup.	Duration before intubation of: Pharyngeal diphtheria.	Urine.	Cause of death.	Complications before intubation.	Result.
1887.										
June	89	Dr. Freudenthal and Dr. Rottenberg	F	3 yr. 3 mo.	4 d.	6 d.	Not exam.	Extension to bronchi	....	Died 2 d. 21 hrs. after intubation.
"	90	Dr. J. J. Cosgrove and Dr. C. F. Bruce	M	2 yr. 1 mo.	4 d.	Sev. days.	Albumin.	" "	....	Died 1 d. 9 hrs. " "
"	91	Dr. M. M. Dunton	M	5½ yr.	4 d.	5 d.	"	Exhaustion	....	Died 5 d. 20 hrs. " "
"	92	Dr. G. V. Hann.	F	4 yr.	3 d.	Sev. days.	"	Extension to bronchi.	....	Died 2 d. 13 hrs. " "
July.	93	Dr. Warren Schoonover.	F	1½ yr.	1 d.	7 d.	"	Exhaustion	....	Died 2 d. 14 hrs. " "
"	94	Dr. J. H. Brandth.	F	2½ yr.	2 d.	7 d.	Not exam.	Extension to bronchi.	....	Died 1 d. 11 hrs. " "
"	95	Dr. J. Lewis Smith	M.	7 yr.	2 d.	Present	Albumin	.....	Pertussis	Recovered; tube removed in 4 d.
"	96	Dr. J. A. Roth and Dr. Zabriskie	F.	4 yr.	2 d.	7 d.	"	.....	.....	Recovered; tube removed in 6 d.
"	97	Dr. George D. Spor.	M.	2½ yr.	1 d.	Sev. days	"	Diphtheritic bronchitis and pneumonia	.....	Died 1 d. 17 hrs. after intubation.
"	98	Dr. George D. Spor	M.	17½ mo	2 d.	Sev. days.	"	.....	.....	Recovered; wore tube 14 d.
"	99	Dr. G. V. Hann	F.	3½ yr.	1 d.	7 d.	"	Sudden heart paralysis.	....	Died 1½ d. after intubation.
Aug.	100	Dr. Warren Schoonover	F.	7 yr.	5 d.	7 d	"	Exhaustion.	....	Died 7 d. 12 hrs. after intubation.
"	101	Dr. J. Lewis Smith.	F.	3 yr.	3 d.	None.	Not exam	Extension to bronchi.	Sepsis.	Died 1 d. " "
"	102	Dr. G. V. Hann	F.	3 yr.	12 hrs.	Present.	"	Sepsis	Sepsis.	Died 1½ d. " "
Sept.	103	Dr. Warren Schoonover	F.	17 mo.	7 d.	Present.	Albumin.	Extension to bronchi and pneumonia.	.....	Died 3 d. 9 hrs. " "
"	104	Dr. Alexander Hugart.	F.	18 mo	4 d.	None.	"	Extension to bronchi.	.....	Died 4 d. 14 hrs. " "
"	105	Dr. J. Lewis Smith.	M.	23 mo.	3 d.	Present.	"	" "	.....	Died 3 d. " "
"	106	Dr. J. Lewis Smith.	F.	6 yr.	7 d.	Present.	Not exam.	.....	.....	Recovered; tube removed in 2½ d.
"	107	Dr. Bernard Hughes.	M.	2½ yr.	1 d.	Present.	"	Pneumonia.	.....	Died 2 d. 5 hrs. after intubation.
"	108	Dr. George D. Spor.	F.	2½ yr.	2 d.	3 d.	Albumin.	Sepsis.	Sepsis.	Died 2 d. " "
"	109	Dr. Bernard Hughes.	F	5 yr.	1 d.	5 d.	"	.....	.....	Recovered; tube removed in 6 d.
"	110	Dr. G. E. Hubbard.	M.	3½ yr.	1½ d.	Sev. days.	"	.....	.....	Recovered; tube removed in 2½ d.
"	111	Dr. Joseph McLoughlin.	F.	23 mo.	4 d.	.....	Not exam.	Extension and sepsis.	Sepsis.	Died 1 d. 2 hrs. after intubation.
"	112	Dr. J. L. Smith and Dr. S. D. Hubbard.	M.	13 yr.	2 d.	5 d.	Albumin.	Sepsis; exhaustion.	Sepsis.	Died 2 d. 19 hrs. " "
Oct.	113	Dr. G. V. Hann	F	3 yr. 6 mo.	12 hrs.	9 d.	"	Sudden heart paralysis.	Sepsis.	Died 4 hrs. " "
"	114	Dr. W. J. Gaudineer.	F.	5 yr.	4 d.	None.	Not exam.	Convulsions.	.....	Died 1 d. 7 hrs. " "
"	115	Dr. G. V. Hann.	F.	3 yr. 3 mo.	2 d.	4 d.	Albumin.	Sepsis.	....	Died 1 d. 14 hrs. " "
"	116	Dr. Welch and Dr. Cossart.	F.	3 yr.	2 d.	2 d.	Not exam.	Extension to bronchi.	.....	Died 4 d. 16 hrs. " "
"	117	Dr. G. V. Hann.	F.	4 yr. 2 mo.	2 d.	7 d.	Albumin.	Sepsis.	.....	Died 3 d. " "
"	118	Dr. G. M. Stoeckel.	M.	6 yr.	1 d.	None.	"	.....	.....	Recovered; wore tube 4 d.
"	119	Dr. G. V. Hann.	M.	2 yr. 10 mo.	3 d.	2 d.	"	Pneumonia.	.....	Died 2½ d. after intubation.
Nov.	120	Dr. E. M. Moffett.	M.	2 yr.	1 d.	1 d.	Not exam.	Extension to bronchi.	....	Died 9 hrs. " "
"	121	Dr. C. J. Musgrave.	F.	14 mo.	1 d.	1 d.	"	Broncho-pneumonia.	Broncho-pneumonia.	Died 5 hrs. " "
"	122	Dr. Musgrave and Dr. Vandegrift.	F.	3 yr. 3 mo.	7 d.	Present.	"	Extension to bronchi.	.....	Died 20 hrs. " "
"	123	Dr. J. A. McLoughlin.	F.	3 yr. 4 mo.	13 hrs.	None.	No albu'n.	Pneumonia.	.....	Died 2 d. 14 hrs. after intubation.
"	124	Dr. Daniel Lewis.	F.	3 yr.	2½ d.	None.	Not exam.	Exhaustion.	Sepsis.	Died 14 hrs. " "
"	125	Dr. J. Lewis Smith.	F.	5 yr.	3 d.	7 d.	Albumin.	Exhaustion and sepsis.	.....	Died 7 d. " "
"	126	Dr. Lassar Stern.	M.	4 yr.	2½ d.	Present.	"	Extension to bronchi.	.....	Died 2 d. " "
Dec.	127	Dr. J. L. Smith and Dr. T. B. Columbia.	F.	4 yr.	1 d.	Present.	Not exam.	Extension to bronchi.	.....	Died 18 hrs. " "
"	128	Dr. G. A. Hayunga.	F.	1 yr. 8 mo.	2 d.	2 d.	"	Extens'n and pneumon.	.....	Died 12 hrs. " "
"	129	Dr. J. A. Roth.	M.	6 yr.	2 d.	7 d.	Albumin.	.....	.....	Recovered; tube removed in 5½ d.
"	130	Dr. T. B. Columbia.	F.	2 yr.	2 d.	7 d.	Not exam.	Exhaust'n and nephritis.	.....	Died 12 hrs. after intubation.
"	131	Dr. G. E. Hubbard.	M.	7 yr.	1 d.	3 d.	Albumin.	Sepsis.	Sepsis.	Died 5 hrs. " "
"	132	Dr. W. A. Hawes.	F.	2 yr.	2 d.	3 d.	.....	Extension to bronchi.	.....	Died 2½ d. " "
"	133	Dr. Alexander Hadden.	M.	4 yr. 6 mo.	3 d.	None.	.....	.....	.....	Recovered; tube removed in 5 d.
"	134	Dr. E. Winternitz.	F.	4 yr.	3 d.	4 d.	Not exam.	Extension to bronchi.	.....	Died 2 d. after intubation.
"	135	Dr. J. Lewis Smith, Jr.	M.	11 mo.	2 d.	Present.	"	Sepsis.	Sepsis.	Died 1 d. " "
"	136	Dr. B. G. Cooke.	F.	2 yr.	2 d.	6 d.	"	Extens'n and pneumon.	.....	Died 2 d. " "
1888.										
Jan.	137	Dr. Daniel Cook.	M.	6 yr. 8 mo.	3 d.	5 d.	Albumin.	.....	.....	Recovered; tube removed in 2½ d.
"	138	Dr. Daniel Cook.	F.	2 yr. 1 mo.	2 d.	None.	Not exam.	Convulsions.	Convulsions (uræmic).	Died 3 hrs. after intubation.
"	139	Dr. J. A. McLoughlin.	F.	3 yr. 2 mo.	2 d.	Present.	No albu'n.	Asphyxia.	.....	Died 4 d. after removal of tube and 10 d. after intubation.
"	140	Dr. G. D. Spor.	F.	10 yr. 6 mo.	2½ d.	Present.	Albumin.	.....	.....	Recovered; wore tube 3 d.
"	141	Dr. G. D. Hays.	F.	16 mo.	2 d.	8 d.	"	Extension to bronchi.	.....	Died 7 d. after intubation.
"	142	Dr. J. Lewis Smith.	F.	5 yr. 10 mo.	1½ d.	7 d.	"	.....	.....	Recovered; tube removed in 6 d. 15 hrs.
"	143	Dr. T. B. Columbia.	F.	3 yr.	7 d.	None.	Not exam.	Extens'n and pneumon.	.....	Died 2½ d. after intubation.
"	144	Dr. J. Lewis Smith.	F.	3 yr. 3 mo.	2 d.	Present.	Albumin.	.....	Sepsis.	Recovered; tube removed in 6 d.
Feb.	145	Dr. J. R. Cypert.	M.	6 yr.	1 d.	3 d.	No albu'n.	Sudden heart failure.	.....	Died 1 d. 10 hrs. after intubation.
"	146	Dr. W. G. Robinson.	F.	2 yr. 1 mo.	1½ d.	Present.	"	.....	.....	Recovered; tube removed in 6 d. 11 hrs.
"	147	Dr. J. A. McLoughlin.	M.	4 yr.	7 d.	5 d.	Albumin.	Exhaustion.	.....	Died 16 h. after intubation.
"	148	Dr. G. D. Spor.	M.	2 yr. 2 mo.	5 d.	Present.	"	.....	.....	Recovered; tube removed in 6 d. 22 hrs.
"	149	Dr. G. V. Hann.	F.	16 mo.	1½ d.	None.	"	Extension to bronchi.	.....	Died 2 d. after intubation.
March.	150	Dr. M. J. Fleming.	M.	2 yr. 8 mo.	3 d.	None.	"	.....	.....	Recovered; wore tube 6 d. 5 hrs.
"	151	Dr. C. E. Simmons and Dr. W. A. Hawes.	M.	6 yr.	4 d.	1 d.	"	Sudden heart failure.	Sepsis.	Died 2½ d. after removal of tube and 11 d. 5 h. after intubation.
"	152	Dr. W. A. Ewing and Dr. Thomas Kelly.	M.	7 yr.	4 d.	4 d.	"	.....	.....	Recovered; wore tube 2 d.
"	153	Dr. M. T. Bissell.	M.	3 yr.	....	.....	.....	Double pneumonia.	Pneumonia; rickets.	Died 4 hrs. after intubation.
"	154	Dr. J. R. Cypert.	F.	3 yr. 3 mo.	20 hrs.	7 d.	No albu'n.	.....	.....	Recovered; tube removed in 4 d. 20 hrs.
"	155	Dr. T. B. Columbia.	F.	3 yr.	1 d.	4 d.	Not exam.	Sepsis and extension.	Sepsis.	Died 12 hrs. after intubation.
April.	156	Dr. J. H. Brandth.	M.	5 yr.	2 d.	Sev. days.	Albumin.	.....	Pneumonia.	Recovered; tube removed in 6 d.
"	157	Dr. G. M. Stoeckel.	F.	7 yr.	5 d.	Present.	"	.....	.....	Recovered; tube removed in 5 d. 22 hrs.
"	158	Dr. J. Lewis Smith, Jr.	F.	2 yr. 5 mo.	4 d.	Sev. days.	No albu'n.	.....	.....	Recovered; tube removed in 5 d.
"	159	Dr. J. A. Roth.	F.	3 yr.	2 d.	Present.	Albumin.	.....	Pneumonia.	Recovered; tube removed in 5½ d.
"	160	Dr. Bernard Hughes.	F.	3 yr.	2 d.	Present.	Not exam.	Extension to bronchi.	.....	Died 36 hrs. after intubation.
"	161	Dr. J. Watson Stronach.	F.	6 yr.	4 d.	Sev. days.	Albumin.	.....	.....	Recovered; tube removed in 8 d. 17 hrs.
May.	162	Dr. J. R. Cypert.	F.	2 yr. 6 mo.	2 d.	None.	"	.....	.....	Recovered; tube removed in 8 d. 18 hrs.
"	163	Dr. G. C. H. Meier.	F.	19 mo.	2 d.	3 d.	"	Pneumonia.	Sepsis.	Died 8½ d. after intubation.
"	164	Dr. A. Jacobi and Dr. David Froehlich.	M.	6 yr.	3 d.	7 d.	"	.....	.....	Recovered; wore tube 6 d.
"	165	Dr. G. F. Morris.	M.	4 yr. 4 mo.	2 d.	Sev. days.	Not exam.	Sudden heart paralysis.	.....	Died 1 d. 17 hrs. after intubation.
"	166	Dr. A. Hodgman and Dr. C. H. Greenough.	M.	12 mo.	1½ d.	Present.	"	Sepsis and extension.	Sepsis.	Died 12 hrs. " "
"	167	Dr. J. Lewis Smith.	F.	3 yr. 9 mo.	2 d.	Sev. days.	Albumin.	Nephritis and sepsis.	Sepsis.	Died 10 d. " "
"	168	Dr. L. Bolton Bangs.	M.	12 mo.	1 d.	None.	Not exam.	Extens'n and pneumon.	Rickets; pertussis.	Died 19 hrs. " "
"	169	Dr. Thomas Kelly.	F.	5 yr.	4 d.	4 d.	Albumin.	Sepsis.	.....	Died 4 d. " "
"	170	Dr. Daniel Cook.	F.	17 mo.	1½ d.	4 d.	Not exam.	Extens'n and pneumon.	Pneumonia.	Died 1½ d. " "
"	171	Dr. A. H. Goelet.	F.	3 yr. 11 mo.	2 d.	4 d.	Albumin.	Extension to bronchi.	.....	Died 1 d. " "
"	172	Dr. J. W. Warner and Dr. P. C. Hoag.	M.	3 yr. 6 mo.	4 d.	2 d.	Not exam.	.....	.....	Recovered; wore tube 5 d. 22 hrs.
"	173	Dr. A. B. Pope and Dr. G. V. Hann.	F.	3 yr.	4 d.	3 d.	"	Extension to bronchi.	.....	Died 1 d. 20 hrs. after intubation.

Date.	No.	By courtesy of	Sex.	Age.	Duration before intubation of Croup.	Duration before intubation of Pharyngeal diphtheria.	Urine.	Cause of death.	Complications before intubation.	Result.
1888.										
May.	174	Dr. C. E. Simmons and Dr. W. A. Hawes.	F.	3 yr.	2 d.	None.	Not exam.	.....	.....	Recovered; wore tube 9½ d.
June.	175	Dr. Daniel Cook.	F.	18 mo.	1 d.	Present.	Albumin.	Extension to bronchi.	.....	Died 4 d. 9 hrs. after intubation.
"	176	Dr. E. S. Warner.	M.	5 yr.	2 d.	7 d.	"	.....	.....	Recovered; wore tube 5 d. 21 hrs.
"	177	Dr. J. Lewis Smith.	F.	7 yr.	6 d.	6 d.	"	.....	Following pneumonia and scarlet fever.	Recovered; wore tube 4½ d.
"	178	Dr. G. P. Shirmer.	F.	3 yr.	2 d.	None.	Not exam.	Pneumonia.	.....	Died 1 d. 20 hrs. after intubation.
"	179	Dr. Daniel Cook.	F.	8 yr. 6 mo.	4 d.	4 d.	Albumin.	Asphyxia (from neglect). (See note.)	.....	Died 1 d. " "
"	180	Dr. S. J. Lahey.	M.	3 yr. 9 mo.	3 d.	None.	"	.....	.....	Recovered; wore tube 4 d.
"	181	Dr. J. L. Smith and Dr. C. A. Kinch.	M.	2 yr. 3 mo.	2 d.	4 d.	"	Extension and sepsis.	Sepsis.	Died 1 d. 5 hrs. after intubation.
"	182	Dr. R. B. Burton.	M.	3 yr. 2 mo.	7 d.	4 d.	No albu'n.	Extension to bronchi.	.....	Died 1 d. " "
"	183	Dispensary.	M.	20 mo.	4 d.	6 d.	"	.....	Measles.	Recovered; wore tube 7 d.
"	184	Dr. G. D. Spor.	M.	2 yr. 7 mo.	2 d.	6 d.	Albumin.	Sepsis.	Sepsis.	Died 2 hrs. after intubation.
"	185	Drs. R. B. and A. I. Burton.	M.	6 yr.	5 d.	7 d.	Not exam.	Sudden heart paralysis.	Measles.	Died 4 d. " "
"	186	Dr. J. L. Beyea.	F.	9 yr.	3 d.	7 d.	"	Extension to bronchi.	Extension.	Died 7 hrs. " "
"	187	Drs. R. B. and A. I. Burton.	M.	21 mo.	3 d.	None.	Albumin.	Extension to bronchi.	.....	Died 7½ d. " "
July.	188	Dr. R. B. Burton.	M.	2½ yr.	1 d.	5 d.	Not exam.	Extension to bronchi.	.....	Died 2½ d. " "
"	189	Dr. J. A. McLoughlin.	M.	½ yr.	Sev. d.	Present.	Albumin.	Sudden heart paralysis.	.....	Died 16 d. " "
"	190	Dr. J. Lewis Smith.	F.	7 yr.	2 d.	7 d.	"	Sepsis; exhaustion.	Sepsis.	Died 3 d. " "
Aug.	191	Dr. R. B. Burton.	F.	3 yr.	1½ d.	3 d.	"	Sepsis.	Sepsis and scarlet fever.	Died 1 d. " "
Sept.	192	Dr. J. P. Nolan.	M.	4 yr.	1 d.	None.	"	Extension to bronchi.	.....	Died 1½ d. " "
"	193	Dr. G. D. Spor.	. .	4 yr.	4 d.	Present.	Not exam.	Sudden heart paralysis.	.....	Died 2 d. " "
"	194	Dr. G. C. H. Meier.	M.	6 mo.	2 d.	None.	"	Exhaustion.	Measles.	Died 1 d. " "
"	195	Dr. C. A. Kinch.	F.	3 yr.	1 d.	.....	Albumin.	.....	.....	Recovered; wore tube 7 d.
Oct.	196	Dr. M. L. Healey.	M.	7½ yr.	3 d.	Present.	Not exam.	Sepsis; scarlet fever.	Sepsis; scarlet fever.	Died 16 hrs. after intubation.
"	197	Dr. H. G. Lyttle.	F.	6½ yr.	2 d.	None.	No albu'n.	.. ..	.....	Recovered; tube removed in 7 d. 5 hrs.
"	198	Dr. G. C. H. Meier.	F.	1 yr. 3 mo.	2 d.	1½ d.	Not exam.	Sepsis.	Pneumonia.	Died 11 d. 18 hrs. after intubation.
"	199	Dr. J. R. Cypert and Dr. C. C. Bradley.	F.	6 yr. 4 mo.	7 d.	4 d.	Albumin.	.....	.....	Recovered; tube out in 2 d. 10 hrs.
"	200	Dr. A. Jacobi and Dr. R. L. Hoelger.	M.	3 yr. 8 mo.	4 d.	4 d.	"	.....	.....	Recovered; tube out in 2 d. 3 hrs.

NOTE.—Two patients died from asphyxia, due to neglect on part of parents. In Case 139 the patient was apparently well three days after the removal of the tube, which was worn six days. There was a recurrence of the dyspnœa, and the mother refused permission to reinsert tube. The child died from laryngeal obstruction four days after removal of tube. In Case 179 there was membrane pushed down before the tube, but not sufficient to cause serious obstruction. However, several hours later the obstruction became more severe, and I withdrew the tube. With it came a cast of the larynx and trachea, and all laryngeal dyspnœa disappeared. The obstruction began to return ten hours later, and the father, who was sent to notify me, spent the evening in a corner rumshop, and did not come to me until after the death of the child.

In only one of my cases was the tube coughed up and swallowed. This was passed *per rectum* without difficulty. It is with the unexperienced operators that the tube finds its way to the stomach oftenest.

	Extension to bronchi.	Sepsis.	Pneumonia.	Exhaustion.	Nephritis and convulsions.	Sudden heart failure.	Extension and pneumonia.	Asphyxia.	Tuberculosis.	General paralysis.	Scarlet fever and sepsis.	Total.
No. of cases.	63	24	15	11	11	8	7	2	1	1	1	144
Per ct. of whole No.	43·7	16·6	10·4	7·6	7·6	5·5	4·8	1·3	0·6	0·6	0·6	

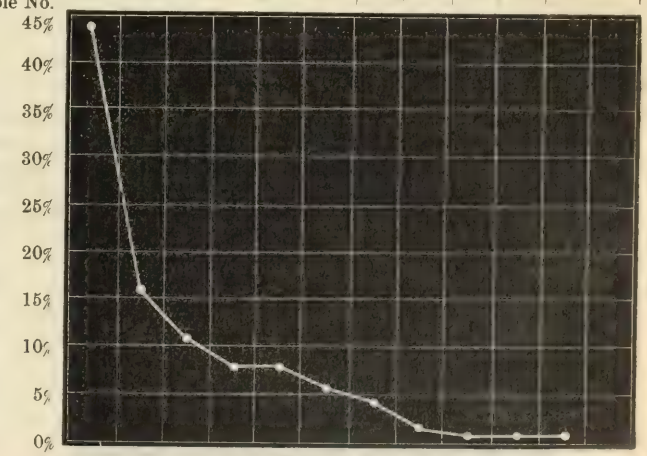


TABLE I.

Table I shows the relative number of deaths from each cause.

Table II shows the percentage of recoveries according to the duration of laryngeal symptoms before operation became necessary. This table would seem to indicate that those cases of laryngeal diphtheria are the most favorable in which the progress of the stenosis is slow; the more rapid the case, the more fatal.

Table III shows the percentage of recoveries according to duration of pharyngeal or post-nasal diphtheria before operation became necessary. Those cases in which membrane is absent from the pharynx or posterior nares are rather more fatal than those cases in which membrane is present.

Table IV shows the percentage of recoveries according to age. The high death-rate after eight years of age is explained on the ground that, in a larynx so large, it requires an unusually severe type of diphtheria to cause sufficient stenosis to need operative interference. This accounts for the rarity of laryngeal diphtheria in adults and its extremely fatal character.

Table V shows the percentage of recoveries for each month in 1885, 1886, 1887, and 1888. From July, 1885, to November, 1886, there were forty-five operations, with eight recoveries, or 17·7 per cent. From November, 1886, to November, 1887, there were seventy-four operations, with eighteen recoveries, or 24·3 per cent. From Novem-

	Under 1 day.	1 to 2 days.	2 to 3 days.	3 to 4 days.	4 to 5 days.	5 to 6 days.	6 days and over.	Total.
No. of cases.	14	54	59	21	28	9	12	197
Per ct. of recoveries.	14·2	16·6	32·2	28·5	35·7	33·3	41·6	27

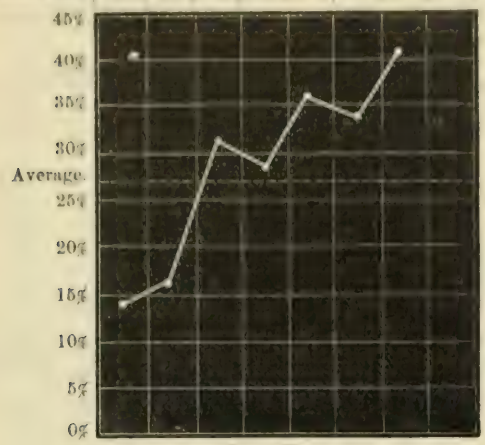


TABLE II.

ber, 1887, to November, 1888, there were eighty-one operations, with twenty-eight recoveries, or 34·5 per cent. I believe that this marked improvement in the results is partly due to our increased experience in the management of these cases, but that the most important element is the different type of diphtheria we see during different winters.

	Under 1 day.	1 to 2 days.	2 to 3 days.	3 to 4 days.	4 to 5 days.	Several days.	5 to 6 days.	6 days and over.	None.	Total.
No. of cases.	0	13	12	10	22	22	9	47	31	166
Per ct. of recoveries.	0	15·3	16·6	10	13·6	36·3	55·5	31·9	22·5	25·9

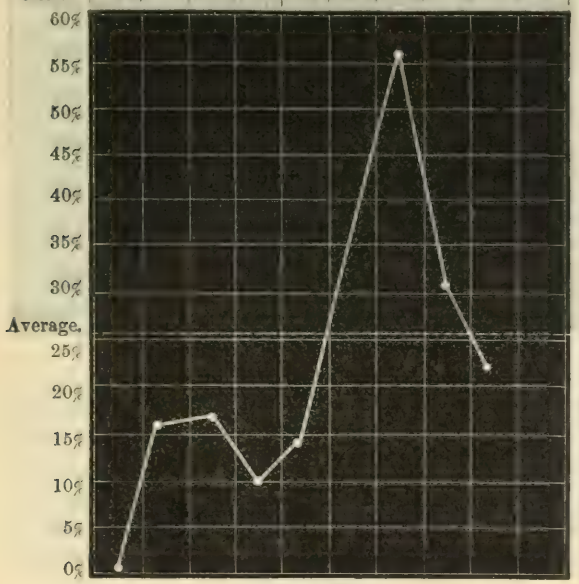


TABLE III.

	Under 1 year.	1 to 2 years.	2 to 3 years.	3 to 4 years.	4 to 5 years.	5 to 6 years.	6 to 7 years.	7 to 8 years.	8 years and over.	Total.
No. of cases.	8	35	35	54	23	15	15	9	6	200
Per ct. of recoveries.	0	8·5	22·8	33·3	21·7	33·3	66·6	44·4	16·6	27

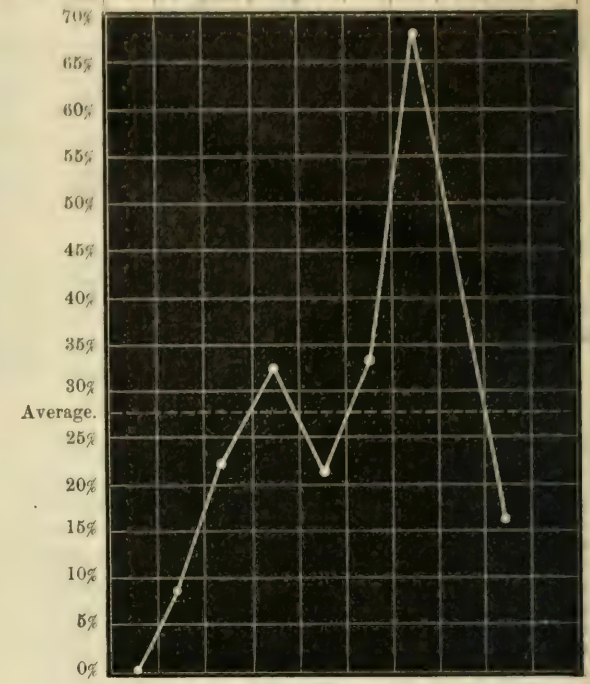


TABLE IV.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
No. of cases.	25	13	18	13	20	21	14	6	17	18	13	22	200
Per ct. of recoveries.	32	30·7	38·8	46·1	35	19	35·7	0	29·4	22·2	0	18·1	27

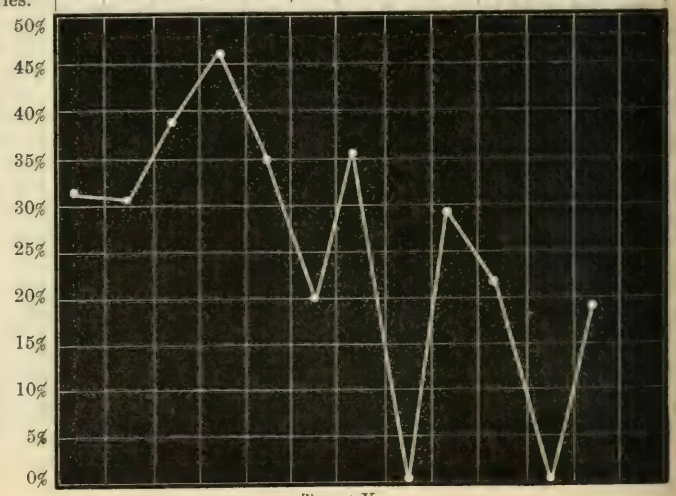


TABLE V.

Since my last report in June, 1887, I have operated in one hundred and fifteen cases. Of these cases, fifty were treated without the use of bichloride of mercury, in most cases with some iron preparation; and twelve recovered, or 24 per cent. The other sixty-five cases were treated with bichloride of mercury in large doses (gr. $\frac{1}{40}$ to $\frac{1}{60}$ every hour), frequently with iron in addition to the mercury. Of these patients, twenty-four recovered, or 36·9 per cent. I am firmly convinced that the use of bichloride of mercury in the treatment of diphtheria and croup, as recommended by Professor A. Jacobi, of New York, offers us the best means of fighting this disease.

	Cases.	Recoveries.
Joseph O'Dwyer,* New York { Consultation	145	40
Joseph O'Dwyer,* New York { Hospital	65	6
Dillon Brown, New York	212	61
F. E. Waxham, Chicago, Ill.	158	42
J. R. Richardson, Chicago, Ill.	98	26
F. Huber, New York	94	37
David O'Shea, Chicago, Ill.	72	27
F. K. Priest, New York	50	14
George McNaughton, Brooklyn	49	6
W. P. Northrup, New York	45	10
A. B. Strong, Chicago	42	6
E. E. Montgomery, Philadelphia	41	15
J. A. Anderson, San Francisco, Cal.	39	9
William Hailes, Jr., Albany, N. Y.	35	11
Thiersch,† Germany	32	3
Carl Beck, New York	31	9
Aug. Caillé, New York	30	9
Joseph Eichberg, Cincinnati, O.	28	9
E. F. Ingalls, Chicago, Ill.	25	6
A. E. Hoadley, Chicago, Ill.	24	5
W. Cheatham, Louisville, Ky.	24	5
C. E. Denhardt, New York	24	10
John Tascher, Chicago	23	11
J. D. Griffith, Kansas City, Mo.	23	6
D. C. Cocks, New York	22	6
Roswell Park, Buffalo, N. Y.	22	5
T. H. Myers, New York	22	4
F. Van Fleet, New York	22	7
W. E. Shaw, Cincinnati, O.	21	8
C. G. Jennings, Detroit, Mich.	20	2
E. F. Brush, Mount Vernon, N. Y.	20	1
W. K. Simpson, New York	20	2
R. J. Stanton, New York	19	9
Dr. Rehn, Frankfort, Germany	18	6
F. Henrotin, Chicago, Ill.	18	4
B. T. Shimwell, Philadelphia	17	7
H. W. Berg, New York	17	4
W. H. Prescott, Boston City Hospital	17	2
E. D. Ferguson, Troy, N. Y.	16	0
L. L. Palmer, Toronto, Canada	16	4
H. O. Bates, Chicago	16	9
J. W. Pinkham, Montclair, N. J.	15	3
George W. Gay, Boston City Hospital	15	4
L. H. Dunning, South Bend, Ind.	14	4
J. B. Walker, Boston City Hospital	14	3
A. G. Case, Pittsburgh, Pa.	14	4
Sota y Lastra, Seville, Spain	14	4
G. H. Cocks, New York	14	4
John P. Nolan, New York	13	2
Julius Salinger, Philadelphia, Pa.	13	6
J. W. Niles, Chicago	13	1
James McManus, Brooklyn, N. Y.	13	5
G. N. Jones, Boston City Hospital	13	4
Charles Denison, Denver, Col.	13	4
J. L. Cleveland, Cincinnati, O.	13	3
Paul Thorndike, Boston City Hospital	12	4
D'Heilly, Paris, France	11	2
J. Scheider, New York	11	5
C. M. Thomas, Philadelphia, Pa	11	0
Dudley P. Allen, Cleveland, O.	11	2
John B. Harvie, Troy, N. Y.	11	2
W. G. Stark, Hamilton, Ontario, Can.	11	2
H. A. C. Anderson, New York	11	4
J. W. Chambers, Baltimore, Md.	10	2
Malcolm Leale, New York	10	3
L. E. Holt, New York	10	2
H. D. Ingraham, Buffalo, N. Y.	10	2
J. H. Seymour, New York	10	3
E. S. Cocks, New York	10	3
J. J. Reid, New York	10	4
F. W. Merriam, New York	9	4
J. B. Wheeler, Burlington, Vt.	9	3
M. P. Hatfield, Chicago, Ill.	8	0
H. J. Boldt, New York	8	5
J. W. Flynn, New York	8	0
H. F. Ivins, Philadelphia	8	0
W. P. Bolles, Boston City Hospital	8	4
W. Barnes, Boston City Hospital	8	2
N. S. Hunting, Boston City Hospital	8	0
W. E. Casselberry, Chicago, Ill.	8	1
W. W. Seymour, Troy, N. Y.	8	0
Major, Montreal, Canada	7	3
F. S. Bunker, Boston City Hospital	7	3
A. Volkenberg, New York	7	2
George Thilo, Chicago	7	4
J. Block, Kansas City, Mo.	7	1
H. H. Mudd, St. Louis, Mo.	6	2
J. E. Winters, New York	6	0
Hopkins (Stern)	6	6
E. C. Morgan, Washington, D. C.	6	0
E. G. Rehfuss, Philadelphia, Pa.	6	3
A. Brothers, New York	6	2
Max J. Stern, Philadelphia, Pa.	6	3
P. H. Pyne, Yonkers, N. Y.	6	1
C. P. Caldwell, Chicago, Ill.	6	1
J. F. Holmes, New York	6	4
G. W. Mason, Bloomington, Ill.	6	3
W. L. Carr, New York	5	1
I. H. Hance, New York	5	1
H. L. Burrell, Boston City Hospital	5	0
C. M. Whitney, Boston City Hospital	5	0
Marcell Hartwig, Buffalo, N. Y.	5	3
P. D. Hughes, Kansas City, Kan.	5	2
F. Forchheimer, Cincinnati, O.	5	2
A. F. Brugmann, New York	5	2
A. Seibert, New York	4	1
E. W. Mitchell, Cincinnati, O.	4	2
J. A. White, Richmond, Va.	4	0
O. H. Presby, New York	4	1
F. C. Schaefer, Chicago	4	0
J. C. Schminke, New York	4	0
S. G. Miner, Detroit, Mich.	3	2
S. A. McWilliams, Chicago, Ill.	3	0
O. H. Hund, San Francisco, Cal.	3	1
W. B. Van Lennep, Philadelphia	3	0
A. S. Hunter, New York	3	0
H. Boenning, Philadelphia	3	1
Waldo and Smith, England	3	2
N. S. Roberts, New York	3	1
S. E. Fuller, Brooklyn	3	0
S. Solis-Cohen, Philadelphia	3	1
David Prince, Jacksonville, Ill.	3	2
J. V. Hennessy, Albany, N. Y.	3	0
J. H. Letcher, Henderson, Ky.	3	1
O. J. Price, Chicago, Ill.	3	1
J. L. Millfinger	2	1
G. C. Skinner, Hamilton, O.	2	0
F. Le Moyne, Pittsburgh, Pa.	2	0
J. W. Humrichouse, Hagerstown, Md.	2	0
J. M. Schley, New York	2	0
S. S. Jones, New York	2	1
T. G. Morton, Philadelphia	2	0
D. W. Cheever, Boston City Hospital	2	0
H. L. Smith, Boston City Hospital	2	1
W. H. De Witt, Cincinnati, O.	2	2
C. H. Knight, New York	2	0
F. S. Sellew, New York	2	0
M. S. Kakeles, New York	1	1
J. P. McGowan, New York	1	0

* Dr. O'Dwyer's hospital cases cover a period of six years. It was experimental work with his early and imperfect instruments, and I have therefore omitted them in the summary.

† Thiersch says that he saw during this time a very malignant type of diphtheria, and of the eighteen patients tracheotomized every one died.

	Cases.	Recoveries.
D. C. Hawley, Burlington, Vt.	1	0
G. E. Brewer, New York	1	0
B. G. Clark, New York	1	0
W. H. Carmalt, New Haven, Conn.	1	0
F. W. Hinkle, Buffalo, N. Y.	1	0
T. K. Perry, Albany, N. Y.	1	0
S. A. Mahoney, Boston City Hospital.	1	0
H. L. Plumme, Boston City Hospital.	1	0
J. M. Fox, Philadelphia	1	1
F. Tipton, Selma, Ala.	1	1
L. P. Furniss, Selma, Ala.	1	1
James Stenhouse, Denver, Col.	1	0
James Collins, Philadelphia.	1	0
W. S. Lindsay, Topeka, Kan.	1	1
John Chambers, Indianapolis, Ind.	1	0
N. A. Drake, Kansas City, Mo.	1	0
W. H. Nammack, New York.	1	0
J. F. Russell, New York.	1	0
O. S. Runnells, Indianapolis, Ind.	1	1
J. G. Curtis, Louth.	1	1
G. Laugmann, New York.	1	1
F. E. Miller, New York.	1	0
J. O. D. Cullen, Richmond, Va.	1	0
L. Haupt, New York.	1	1
C. M. Shields, Richmond, Va.	1	0
W. H. Knap, Bloomington, Ill.	1	1
F. Donaldson, Jr., Baltimore, Md.	1	0
J. A. Robinson, Chicago.	1	0
Grand total.	2,368	647

Summary.—The foregoing list gives 2,368 cases with 647 recoveries, or 27·3 per cent. It is the record of 166 operators, practicing in Germany, France, England, Spain, Canada, and nearly every State in this country. The results of each operator, with twenty-six exceptions, were personally communicated to me since October 25th of this year.

"The Kensington," 102 East Fifty-seventh Street.

THE OPERATIVE TREATMENT OF A CASE OF HYPEROSTOSES OF THE EXTERNAL AUDITORY CANAL.*

By THOMAS R. POOLEY, M. D.

The object of this paper being mainly to describe the operative treatment of an osseous tumor, or rather tumors, of the auditory canal, very little time will be given to the consideration of their causation or pathology except so far as may be necessary to a differential diagnosis of the case before us.

The terms exostoses or hyperostoses are quite generally used interchangeably. Cassell ("Transactions of the International Medical Congress," London, 1881) accepts two kinds of osseous formations—hyperostoses and exostoses—varying in regard to origin, size, form, and structure. Hyperostoses are hyperplasiæ. They occur only in the inner portion of the osseous meatus, and never before complete ossification of the latter. They are of the consistence of ivory, have no pedicle, and are immovable, of conical form, and stand in no relation to other affections of the ear. The seat of exostoses proper is the boundary between the osseous and cartilaginous meatus. They are always pedunculated, slightly movable, and of very diverse form. Unlike the hyperostosis, several exostoses are never found at the same time. Yet the two forms may occur together. According to von Troltsch, however, no sharply defined line separates the exostoses from the hyperostoses; but he applies the latter term to those diffuse growths occupying the whole length of the meatus, and "exostoses" to circumscribed, tumor-like, osseous new formations. If we, then, prefer the term hyperostoses, it is, after all, to be considered as a more or less arbitrary distinction.

The surgical treatment of these growths has hitherto been very unsatisfactory; and this is not to be wondered at when we consider the ivory-like density of the tumor and its situation.

Nor is the danger all surmounted even when we have succeeded in the removal of the bony tumor, for the subsequent inflammation of the walls of the auditory canal is very likely to result in atresia, or even complete closure. Or an acute inflammation of the middle ear may result through wounding the membrana tympani, or an extension of the inflammation to the parts by continuity. It can not, therefore, be wondered at that all sorts of compromises in the way of treatment are recommended and resorted to before any surgical procedure is tried, such as local painting with a tincture of iodine and caustic solutions, the internal administration of mercury and iodine when the disease is supposed to have a syphilitic basis, and, when the growth has reached such a size as to interfere with hearing, attempts at dilatation.

Such procedures, however, seem to be tedious, of very doubtful use, and to the last degree unsurgical. So long as the growths produce no unfavorable symptoms, it is far better to let them alone; but, when they have reached such a size as to cause contractions of the meatus, so that cerumen and epidermic masses accumulate behind the stricture, to interfere with the hearing, and to produce a feeling of distension in the ear and pain and weight in the affected side of the head, we are justified in attempting the operation for their removal, difficult and even dangerous though it may be, especially as the improvements in the instruments which can be adapted to this purpose have made the operation far less formidable than it formerly was.

The methods recommended are: (1) Removal by means of a gouge; (2) perforations of the exostoses by means of files, drills, and the dental engine; (3) removal by gouge and mallet; (4) destruction of the exostoses by the galvanocautery; (5) removal by means of a fine chain-saw or écraseur, which can only be performed in a few cases.

By far the best of these methods, it seems to me, is the use of the dental engine, or some similar motor power for either drilling out or removing these growths. Such was the method employed by Matthewson in a case which he reported to the International Otological Society in September, 1876. The machine used was that known as Elliot's suspension dental engine. The burrs employed were ground to the form best adapted to this purpose, the smallest of the drills being about 1½ mm. in diameter, and the larger ones 2½ and 3 mm. in diameter. The plan of operation followed by him was to first perforate with the

* Read before the Medical Society of the State of New York at its eighty-third annual meeting.

mallest drills the bony growth near its center, then to use uccessively the larger ones to enlarge the perforations and un them together, and, by a lateral pressure, to ream out he meatus. When the case now to be described came be- ore me, I remembered this one of Matthewson's, and, after evolving the matter over, determined to operate somewhat fter the same method, but with a different instrument—the lectro-osteotome invented by Dr. Milton Josiah Roberts, f New York. This instrument is provided with four inter- hangeable tool-bearing head-pieces—viz., a chuck, circular- aw, sectional-saw, and straight-saw head-pieces. Of these, he chuck, designed to hold and operate trephines, drills, nd burrs, was obviously the only tool-bearing head-piece equired for the operation under consideration. The bone- utting tool selected for the removal of the growths was a ollow trephine. It consists of a shank adapted to be held y the screw clamping jaws of the chuck. It is provided ith a cylindrical gauge or protruding hood, clamped hrough by a screw, by the adjustment of which the depth f the cut is determined. The sides of this trephine are traight, which facilitates its passage through the bone. The trephine used in the operation was three sixteenths of n inch in diameter, its circular form enabling the opera- or to place its cutting edge in a plane corresponding with he projecting bony growth. In operating the electro- steotome, the whole weight of the instrument is sustained y a coil-spring or rubber connected to the arm of an ad- ustable crane, which can be attached to any table. The lasticity of a suspension cord permits of the free move- ents of the motor over a wide range of territory, so that t can be brought into any desirable relationship with the ody of the patient operated upon.

The patient, a gentleman of thirty-five years of age, came to onsult me about an obstruction in his right ear on September 12, 888. He experienced but little inconvenience except some dimi- ution in hearing, and, upon introducing his finger in the meatus, ound some hard obstruction, which he took for impacted wax. Upon examination, the meatus was found nearly occluded by a ony growth, or rather growths, one of which sprang from the osterior, the other from the upper wall and coalesced, leaving nly a narrow aperture below an anteriorly, through which I ould get a glimpse of the healthy membrana tympani. The in- egument covering the growth was somewhat red and sensitive. Both tumors had their origin from the osseous structure near the artilaginous wall; that arising from the posterior wall measured t its base about 4 mm., that from the upper wall 2½ mm. The hape of both was conical. The watch was heard at about an nch and the voice at thirty feet. In the left ear a much smaller, erfectly symmetrical growth as to position sprang from the pos- erior wall of the osseous canal and extended by a conical point nto the meatus, but not enough to obstruct the canal or affect he hearing. The patient was not aware how long the growths ad been in developing, as they had caused neither pain nor in- onvenience, until he accidentally discovered the obstruction in he right ear, as already mentioned. He, however, recalled to ny mind that only a year or two before he had consulted me on ccount of slight impairment of hearing, which was found to be lue to impacted cerumen, and was cured by syringing. Iodide f potassium in gradually increasing doses was given, until he ook about a drachm a day, and continued for some time with- ut any effect in reducing the size of the growth. On October d the tumors had evidently increased in size, and the medicine was discontinued. On November 2d an operation was proposed and accepted by the patient. The deafness had increased, and there was a feeling of weight and pain in the ear and side of the face, which even made him desirous to have something done for his relief as soon as possible. The operation was performed on November 14, 1888, at 3.30 P. M., with the instrument already described, and with the assistance of Dr. Milton Josiah Roberts, Dr. J. R. Latham, Dr. Charles S. Ward, and Dr. J. Hasbrouck, Dr. Roberts having the control of his own instrument, with which his daily practice had made him familiar, the patient being placed in a suitable light upon a high table under ether. The operation was at first conducted by direct light, but later, as the daylight waned, the meatus was illuminated by mirror on the forehead of the operator and artificial light employed. The first step was to remove as far as possible the integument covering the growth, that it might not retard the action of the trephine. This was done by means of a small periosteal knife, the skin being circumscribed and scraped off. The bony growths, first the larger one, were attacked with the small trephines already described. The cutting edge of the trephine was set in a plane corresponding with the projecting growth. The trephine was replaced by a small-sized burr, and with this the cut surface representing the place of the attachment of the growth was smoothed down so that it was not quite flush with the surface of the external auditory canal. In a similar way the smaller growth was also removed. There was so much hæmorrhage that it was necessary to stop frequently to swab out the canal and to cleanse the meatus by syringing, so as to remove the blood and *débris* of soft and bony tissue. The operation, which lasted nearly two hours, was thus rendered very lengthy and tedious. A probe could now be carried the whole length of the auditory canal, which was about of its normal width. There was so much oozing of blood that it was difficult to determine whether any damage to the membrana tympani had been done, but, so far as could be ascertained, it was uninjured. Antiseptic precautions were observed so far as possible. The canal was plugged with antiseptic hydronaphthol gauze and a bandage applied to keep it in place. Upon recovering from the influence of ether, the patient complained of no pain, and slept well the first night after the operation. The dressing was allowed to remain for four days, and was then removed. During all this time he complained but little of pain, and slept well every night. When the dressing was removed, however, there was considerable purulent discharge, so that it was thought best to leave the canal free for the purpose of cleansing. The walls of the canal were so swollen, especially in its posterior part, that the condition of the membrana tympani could not be made out. Up to this time he had suffered little or no pain. But on the evening of the sixth day after the operation he sent for me on account of very severe pain, and had all the symptoms of acute inflammation of the middle ear. The pain, which was relieved by the application of leeches and instillations of hot water, was soon followed by a profuse purulent discharge, and by carefully cleansing the canal I was able to detect a small perforation of the membrana tympani in its anterior lower quadrant. The ear was carefully cleansed by syringing with hot water several times a day, hot water frequently instilled, and instillations of Magendie's solution of morphine also used to allay the pain, which soon became much less. Coincident with this attack of pain the hearing, which had been quite good, became very much impaired. The meatus and auditory canal were swollen, but not so much so that I could not watch the progress of the disease of the middle ear. The wound in the membrana tympani closed in about three weeks, and hearing again improved, so that the voice could be heard from twenty to thirty feet.

The swelling of the auditory canal now, however, became very much more pronounced, causing very much contraction, especially in its posterior portion near the membrana tympani, so that not even the smallest speculum could be introduced for the purpose of examination. There was no longer any purulent discharge. This swelling of the walls of the canal (there were no granulations) threatened to entirely close the canal, especially in its posterior part, and was accompanied by a good deal of pain, but quite different in character from that of the acute inflammation of the middle ear. A variety of measures were resorted to to prevent closure of the canal, at first by dilatation with sponge tents, which did but little in the way of widening it, but they caused no little inconvenience and pain. I then tried the use of elastic rubber tubing, using for the purpose pieces of flexible soft catheter recommended by Dr. Emerson, but these were still more painful than the tents, and had to be discontinued. Occasional applications of nitrate of silver were also made, but all of these plans seemed only to aggravate the swelling and to increase the difficulty. They were therefore all abandoned, and the case treated as one of acute inflammation by the frequent instillations of hot water only. Improvement now at once took place, as shown by the subsidence of the swelling and widening of the canal, and the meatus has now reached its normal size. There is still a considerable degree of contraction of the posterior part of the canal, but a glimpse of the membrana tympani can be had. All symptoms of pain and irritation have subsided, and the hearing is nearly normal for the voice. A watch, however, is only heard on contact. This was the condition of the patient when last seen, about three weeks ago. Careful examination does not reveal any remnants of the exostoses.

If we compare the results obtained in this case and that reported by Matthewson with those published cases operated on by other methods, it must be acknowledged that they give very much better results and are far less tedious and dangerous and more effective than any methods hitherto employed. Dr. Matthewson in his paper gives a brief *résumé* of the history of the cases which had been operated upon up to that time. We may best sum up the advantages of such instruments in Matthewson's conclusions, "that it is less tedious. A few tests of this and any hand drills in perforating dense bone will demonstrate that it is less dangerous, for the reason that with rapidly revolving drills perforations can be made with so slight a pressure that there is little danger of injuring the deeper parts of the ear or walls of the meatus by the slipping so likely to occur with hand drills or with hammer and chisel. The instrument is also held between the thumb and fingers in such a way as to interfere to a less degree with illumination and inspection of the meatus. During the operation the drills and burrs can also be used, not only to perforate with their points, but also to enlarge openings already made to any extent or direction by lateral pressure with their sides." All of the above-enumerated advantages which Matthewson alleges for the dental engine seem to be applicable to the electro-osteotome. The control of the instrument, while it may be more difficult to acquire, seems to be more certain than that of the dental engine; for, if we only give the matter a moment's thought, it must be apparent that, there being no weight sustained by the hand of the operator and no muscular power required to keep the cutting tool in contact with the bone, the tactile sense of the operator is unimpaired by muscular exertion, which is not the case when using bone-cutting instruments dependent for their power upon manual labor. The use of the trephine by setting the instrument close to the base of the tumor, thus cutting it off close to its attachment, would seem to be preferable to the method recommended by Matthewson, and less likely to leave a ragged and uneven surface. In conclusion, I wish to dissent from what seems to be the generally adopted plan of treating the contraction of the canal from swelling of the soft tissues by dilatation and the inserting of tubes. So far as one case goes to prove anything, the one just reported proves that such a plan is not only of no use, but even pernicious. The threatened entire closure of the canal was, I believe, only averted by the abandonment of all such measures, which only aggravated the irritation and inflammation. Whether the inflammation of the middle ear was the direct result of injury to the membrana tympani during the operation it is difficult to say. I am, however, of the opinion that it was not, but that it was caused by the extension of the inflammation by contiguity.

Note.—Since this paper was read I have seen the patient again. The canal through its entire length has almost its normal size. The membrana tympani is almost of normal appearance, the perforation having entirely closed. Hearing for the voice is normal, and the watch can be heard at two inches. There only remains a slight tinnitus, which is daily diminishing.

Normal Parturition after Extra-uterine Pregnancy.—Dr. Tüppert, of Wunsiedel, reports the case of a healthy woman, aged thirty-four, who had borne two children, the youngest ten years previously. She became pregnant in March, 1885. In July, severe pains occurred in the left side of the abdomen, with dysuria. On examination, a roundish body was felt just above the left pubic bone, and smaller parts on the opposite side of the abdomen. The enlarged breasts secreted milk. The cervix (which was not deviated laterally) was thick, short, and soft; the orifices "as in the non-pregnant condition." No mass could be felt through the uterine walls; the uterus was not enlarged and was freely movable. The placental *bruit* was heard just above the symphysis. The diagnosis made was abdominal pregnancy with transverse position of the fœtus. Fœtal movements were perceived at the end of July. In the middle of September severe pains for one day were felt, with a rigor, and after this the movement ceased. The abdomen remained "not very much smaller," though free from pain, and for two years the woman was apparently healthy. In November, 1887, she again became pregnant, and fœtal movements were perceived in April, 1888. The remains of the previous pregnancy were still to be felt as a hard mass, "as thick as an arm," just behind the symphysis; but bimanual examination showed that the pelvis was not obstructed. An easy labor took place in August. On December 12, 1888, Dr. Tüppert made another examination, and the remains of the previous fœtus were found to have shifted their position; the head, which previously lay on the left pubic bone, now rested against the symphysis; the trunk and the feet were about four fingerbreadths from the right pubic bone. The latter were somewhat movable, the head less so. Since the last labor the fœtal remains had undergone no diminution in size, and were of stony hardness.—*British Medical Journal.*

The Influence of Position on Fractures of the Lower Extremities.—Colles ("Dub. Jour. of Med. Sci.," September, 1888) explains the fact that a change from the horizontal to the sitting posture is injurious to patients with fractures of any of the bones of the lower extremities by showing that, as the patient rises into a sitting posture, the extremity of the ischium is used as a fulcrum, and, as the head of the femur is at least three inches above that point when the patient is in the horizontal position, it must be pushed downward two or three inches. This must influence the point of weakest resistance, the seat of fracture.

THE

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A Weekly Review of Medicine.

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Edited by FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, MARCH 9, 1889.

ILIAC ABSCESS.

OUR readers are aware that the subject of the treatment of abscesses arising from disease of the vermiform appendix or of the cæcum has been much discussed during the past year, and that the discussion has turned largely upon the question of the relative frequency of intraperitoneal and extraperitoneal (subperitoneal) suppuration. It will be remembered that, in the discussion that took place in the New York Surgical Society last year, diverse views were put forward by the late Dr. Sands on the one hand and by Dr. Weir and others on the other hand. The substance of Dr. Sands's contention was that most abscesses of the right iliac fossa were subperitoneal, and that it was better to wait until some time from the eighth to the tenth day before opening them, in order to avoid the danger of penetrating a layer of peritonæum not yet adherent, and so setting up general peritonitis by infection. Dr. Weir took the view that such abscesses were most commonly examples of localized intraperitoneal suppuration, that their rupture into the general peritoneal cavity was the chief thing to be dreaded, and that interference should not be put off beyond the third day at the latest, when sufficient adhesion would be found to guard against infection of the peritonæum as a whole.

In a very satisfactory review of the whole subject, published in the "Gazette hebdomadaire de médecine et de chirurgie," Dr. A. Broca remarks that each line of argument applies to particular cases; the problem lies in the diagnosis, and is not always an easy one to solve. It is well enough to say, with Monneret and Fleury, that an intraperitoneal abscess differs from one that is subperitoneal in being more movable, more superficial, and susceptible of palpation by the rectum or the vagina; that peritonitic symptoms predominate, chills occurring more commonly and the fever being more intense and the pain more acute; and that the tumor-like mass is softer and more fluctuating from the first—but all this is for the most part theoretical, not much attention having thus far been bestowed upon the study of encysted peritonitis. New facts are wanted and a greater number of minute observations. Normal anatomy has thrown some light on the difficulties of the subject, especially Treves's demonstration of the entire peritoneal investment of the cæcum (although that was long ago recognized by Bardeleben, Luschka, Krause, and Tuffier); and post-mortem examinations have contributed not a little to the same purpose. Clinical observation, however, must have the last word. In the mean time, it may be said that, in case of doubt, there is less danger in interference than in too great delay.

MINOR PARAGRAPHS.

THE NEW YORK ACADEMY OF MEDICINE.

THE Academy is to be congratulated upon having at length secured a good site for the new building that it intends to erect. It consists of three lots, a piece of land measuring 75 by 100 feet, on the north side of West Forty-third Street, between Fifth and Sixth Avenues. This situation is likely to remain easy of access to all the physicians of New York for many years to come, and, although the adjacent property is not now occupied with buildings of a sort that one likes to look upon, it is altogether probable that it will soon be built upon in quite a different style. The Academy has worked hard to get the means with which to buy such a piece of property, with a fair prospect of success in the end, but in all probability the present generation would not have been destined to look upon its new building had it not been for the efforts put forth by three successive presidents, Dr. Barker, Dr. Jacobi, and Dr. Loomis. These gentlemen will always be held in grateful remembrance by the Academy. It is understood that the new building is to be fire-proof. That is a necessity, for the Academy's library has now become too valuable to be left much longer in peril by fire; moreover, it is undoubtedly a fact that men who would willingly have contributed to its increase have been restrained from doing so by the danger of its destruction. It is to be hoped that the Academy will not be over-lavish in the matter of ornament, but will content itself with such a plain but substantial structure as befits a sober and unpretentious body of men.

MEDICINE AND LIFE INSURANCE.

ALTHOUGH almost every practitioner of medicine thinks himself quite capable of performing the duties of a life insurance company's medical examiner, it must be evident on reflection that the judicious selection of "risks" is quite as important to the company's success as the actuary's work. The solid prosperity that has been achieved by several of the larger companies in the United States is therefore a proof of the good work that has been done by their medical officers. So prosperous, indeed, have some of them become that for a number of years they have been doing business on a large scale abroad. The New York Life Insurance Company, for example, if we are correctly informed, has a great number of members in France. That it has been able to build up such a business among a people so cautious as the French bears testimony to the ability with which its affairs have been managed, not the least among which, we repeat, are those of its medical department.

THE LOMB PRIZE ESSAY OF THE AMERICAN PUBLIC HEALTH ASSOCIATION.

THE association's secretary, Dr. Irving A. Watson, of Concord, New Hampshire, has issued a circular setting forth its dissatisfaction with the way in which the "New York Herald" has dealt with it in the matter of the publication of the prize essay on "Practical Sanitary and Economic Cooking for Persons of Moderate and Small Means." It seems that the exclusive right of publication was given to the "Herald," and that the association's representatives understood that the essay was to be published entire. It now complains, not only that the "Herald" published only parts of the essay, with transpositions and violations of sequence that rendered the printed version comparatively worthless, but that it interpolated vulgar headlines. We do not wonder that Dr. Watson and Mr. Lomb are indignant. Perhaps there is no redress for them in this instance, but their misfortune may serve the good purpose of im-

pressing more and more upon those who have literary wares to purvey that there should be some conformity between the character of matter to be published and that of the proposed vehicle of its publication.

THE POST-GRADUATE MEDICAL SCHOOL OF CHICAGO.

We are glad to notice such an evidence of the prosperity of this school as is shown in the publication of a monthly journal, the "North American Practitioner," two numbers of which have now appeared. It is edited by Dr. Bayard Holmes and Dr. Junius C. Hoag. The contents of the "Practitioner," contributed largely by members of the faculty, are highly valuable and well presented.

CRUDE DRUGS AS COMPARED WITH ALKALOIDS.

There is now much discussion, says our Paris correspondent, as to whether cardiac medicines should be given in the form of an alkaloid, or whether the preparations of the crude drug should be used. Huchard, Dujardin-Beaumetz, and many others believe that they have obtained better results by the use of the drug itself, while G. Sée and his followers prefer the alkaloids. The latter hold that an alkaloid is always the same, while the virtues of the drug are very uncertain and depend upon the age, etc., of the plant when gathered, and upon the time it has been kept before being used. This discussion has arisen in connection with the use of strophanthine. Many have found it to be uncertain in its effects, and have therefore resorted to the plant itself.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending March 5, 1889:

DISEASES	Week ending Feb. 26.		Week ending Mar. 5.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	6	1	6	1
Scarlet fever	323	36	361	47
Cerebro-spinal meningitis	4	3	4	2
Measles	264	9	313	18
Diphtheria	160	41	194	51
Small-pox	0	1	0	0

The Philadelphia Polyclinic.—The present hospital accommodations, at Broad and Lombard Streets, having proved inadequate to the demands for admission, the trustees have secured a large lot, 96 by 143 feet, on Lombard Street, above Eighteenth Street, four squares from the present location, and during the spring will erect a commodious building with ample room for the various clinics and a convenient amphitheatre for lectures and demonstrations, in addition to enlarged hospital wards. As the foundations and part of the walls of the structure now situated on the land can be made use of, the new building is expected to be ready for occupation in September or October, when several additional departments of instruction will be established. We understand that the Polyclinic was never in such a flourishing condition as now.

The New York State Medical Association.—The fifth annual meeting of the Fifth District Branch will be held in Brooklyn on Tuesday, May 28th.

The Alumni Association of Bellevue Hospital Medical College will hold its annual dinner this (Saturday) evening, at the Hotel Marlborough.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from February 17 to March 2, 1889:*

Lauderdale, J. V., Major and Surgeon, is granted leave of absence for one month, to take effect between March 1st and 15th next. Par. 2, S. O. 9, Headquarters Department of Texas, San Antonio, February 15, 1889.

Pilcher, James E., Captain and Assistant Surgeon, will, by direction of the Secretary of War, repair from Fort Wood, New York Harbor, to Philadelphia, Pa., on or about February 23, 1889, for the purpose of giving instruction to the hospital corps of the First Brigade, National Guard of Pennsylvania. On completion of this duty he will return to his proper station. Par. 1, S. O. 4, A. G. O., February 18, 1889.

Shufeldt, Robert W., Captain and Assistant Surgeon, will, by direction of the President, proceed to Fort Leavenworth, Kansas, and report in person to Brigadier-General Wesley Merritt, President of the Army Retiring Board of that place, for re-examination by the Board, and on the conclusion of his examination will return to this city. Par. 13, S. O. 40, A. G. O., Washington, D. C., February 16, 1889.

Harris, Henry S. T., First Lieutenant and Assistant Surgeon, will proceed to Fort Davis, Texas, so as to arrive there on or before February 25th, and report to the commanding officer thereof for temporary duty. Upon return of Surgeon Lauderdale from leave of absence, Assistant Surgeon Harris will return to the Post of San Antonio. Par. 3, S. O. 9, Headquarters Department of Texas, San Antonio, February 15, 1889.

McKee, James C., Lieutenant-Colonel and Surgeon, is granted leave of absence for two months by direction of the Secretary of War. Par. 13, S. O. 44, A. G. O., Washington, February 24, 1889.

Greenleaf, Charles R., Major and Surgeon, will proceed from this city as early as practicable to Newport Barracks, Kentucky, to examine and report upon a proposed change in the location of the post hospital at the new barracks now in process of construction near that post; thence to Columbus Barracks, Ohio, to examine and report upon the necessity for an addition to the hospital at that post. Par. 16, S. O. 43, A. G. O., Washington, February 20, 1889.

Byrne, Charles B., Captain and Assistant Surgeon, is granted leave of absence for twenty-one days. S. O. 44, Headquarters Division of the Atlantic, Governor's Island, New York city, February 21, 1889.

Owen, William O., Jr., Captain and Assistant Surgeon, is relieved from duty at Fort Leavenworth, Kansas, by direction of the Secretary of War, and will report in person to the commanding officer Fort Gibson, Indian Territory, for duty at that post, relieving Captain C. N. B. Macauley, Assistant Surgeon, who, on being so relieved, will report in person to the commanding officer, Fort Leavenworth, Kansas, for duty at that post. Par. 3, S. O. 48, A. G. O., February 27, 1889.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the two weeks ending February 23, 1889:*

Bertolette, D. N., Surgeon. Detached from the Thetis and to wait orders.

Henneberge, L. G., Passed Assistant Surgeon. Detached from the Minnesota and ordered to the Thetis.

Marmion, R. A., Surgeon. Detached from the Juniata and to wait orders.

Percy, H. T., Passed Assistant Surgeon. Detached from the Naval Hospital, Washington, and ordered to the Coast Survey Steamer Patterson.

Ogden, F. N., Assistant Surgeon. Detached from the Juniata and to wait orders.

Stokes, Charles F., Assistant Surgeon. Ordered to the Minnesota.

Wilson, George B., Assistant Surgeon. Ordered to the Navy-yard, Mare Island, Cal.

Rixey, P. M., Passed Assistant Surgeon. Promoted to Surgeon, November 27, 1888.

Bradley, George P., Surgeon. Ordered to hold himself in readiness for duty about March 1st to Mohican.

Lung, George A., Assistant Surgeon. Ordered to hold himself in readiness for duty about March 1st to Mohican.

Whiting, Robert, Passed Assistant Surgeon. Detached from the Coast Survey Steamer Patterson, and to proceed home and wait orders.

Society Meetings for the Coming Week:

Monday, *March 11th:* New York Academy of Medicine (Section in Surgery); New York Ophthalmological Society (private); New York Medico-historical Society (private); New York Academy of Sciences (Section in Chemistry and Technology); Lenox Medical and Surgical Society (private); Boston Society for Medical Improvement; Gynæcological Society of Boston; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private); Baltimore Medical Association.

Tuesday, *March 12th:* New York Medical Union (private); Medical Societies of the Counties of Chemung (quarterly—Elmira), Rensselaer, and Ulster, N. Y. (quarterly); Newark, N. J., and Trenton (private), N. J., Medical Associations; Baltimore Gynæcological and Obstetrical Society.

Wednesday, *March 13th:* New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medico-legal Society; Medical Societies of the Counties of Albany and Montgomery (quarterly), N. Y.; Worcester, Mass., District Medical Society (Worcester); Pittsfield, Mass., Medical Association (private); Philadelphia County Medical Society.

Thursday, *March 14th:* Society of Medical Jurisprudence and State Medicine; Brooklyn Pathological Society; Medical Society of the County of Cayuga, N. Y.; South Boston, Mass., Medical Club (private); Pathological Society of Philadelphia.

Friday, *March 15th:* Chicago Gynæcological Society; Baltimore Clinical Society.

Saturday, *March 16th:* Clinical Society of the New York Post-graduate Medical School and Hospital.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN THEORY AND PRACTICE OF MEDICINE.

Meeting of January 15, 1889.

Dr. R. C. M. Page in the Chair.

The Influence of Carlsbad Water on the Secretion of Uric Acid.—Dr. S. LeClercq, of Carlsbad, Germany, read a paper with this title. He remarked that while for many years the value of these waters had been recognized in the treatment of gout, no definite statement had been put forward as to what cases they were likely to be of benefit in and in what not. He had made careful experiments on himself to determine whether, as had been supposed, the secretion of uric acid was lessened by drinking freely of the water. With a uniform diet and taking increasing doses of the water, he had found the amount of uric acid unaltered, as compared with the amount noted in the five weeks previous to taking the Carlsbad water. He had found that on a fixed diet the daily amount of uric acid, nevertheless, varied. Niemeyer had stated that this variation depended on unknown changes of action in the internal economy. He believed that in the future the influence of any drug on the production of uric acid would be found to have no special relation to its value in the treatment of gout. Also our theories as to the nature of gout and the action of Carlsbad salts must both change. He had found Carlsbad water acting in several ways, some of which were: 1. The condition of the patient was improved through its causing the production of better blood (without any solution or dissipation of the tophi). The taking of warm water of itself acted favorably by diluting the fluids and washing out the channels of the body. 2. In certain cases the gouty diathesis was not perceptibly modified. 3. In other cases the water did seem to lessen the synthetic formamation of uric acid. 4. It often acted on other anomalies of function, and improved the general health. The digestion was in some cases improved, or deleterious by-products were taken up and excreted more rapidly. Perhaps the topical effect of the water on the stomach explained much of the benefit obtained. The exercise, bathing, pure air, and change of surroundings also must exert considerable influence on the peristalsis and circulation, and thus increase the general tone of the body.

Dr. F. N. Otis said that he could speak from his own impressions derived from a recent prolonged stay at Carlsbad, and from the results obtained by sending patients there. He had found that very gratifying results could be expected where the function of the liver was impaired, or where there was undue accumulation of fat. Especially where there was difficulty in the circulation of the bile, or the formation of gall-stones gave constant annoyance, the benefit was often prompt and permanent, even in cases in which phosphate of sodium and rigid diet in this country had failed to give improvement. It was better, if possible, to spend two or three consecutive seasons there. He remembered one case in particular in which the difficulty had been quite obscure. The patient had suffered from jaundice, inflammation over the liver, and progressive wasting of flesh. As summer came on, all other remedies having failed, he had been carried to the steamer in an ambulance and sent to Carlsbad, going all the way on his bed. He was then sixty-three years old. Improvement had begun at once, and he had returned to America in apparently perfect health, and was now, at the age of seventy, one of the most vigorous men in the city for his years. In all his earlier life, up to the time of his sickness, this patient had indulged himself freely at table, and since his return had resumed these habits without seeming detriment. The speaker had gone to Carlsbad himself to obtain relief from what was either a gouty or a nervous dyspepsia, with mental depression and inaptitude for work. His diet while there had contained little sugar or starch, but an abundance of meat, with a little bread and claret. Although he had taken but little exercise, he had lost a pound in weight every day for a month. A feeling of debility had been noticeable during his stay at the springs, and had continued for about a month after his departure. It had then slowly disappeared; he had regained flesh, and had had no return of digestive troubles. He thought the class of patients who could expect benefit at Carlsbad were those whose sickness was due to free living and too little exercise. When a patient could not be sent to Carlsbad, he would advise the giving

of remedies which acted on the skin and liver; also abundant exercise. Mercury was a most valuable remedy, and had relieved the condition when a visit to Carlsbad had failed to do so. He gave one, two, or even three grains of calomel a day, and did not find the system deteriorated by it. He had found that when there was Bright's disease, with abundant albumin, the Carlsbad waters depressed the vitality, and were the reverse of beneficial.

Auto-infection from Gastro-intestinal Infection.—Dr. W. H. Thomson read a paper thus entitled, in which he related a series of instances in which nervous diseases had been found due to nothing else than poisoning from depraved intestinal fluids that had resulted from incomplete digestion. These disorders in the central nervous system had promptly disappeared with a complete revolution in diet. The food on which several of these patients had recovered was simply the Arabic fermented milk, with powders of bismuth and pepsin. The conditions in which he had thus produced relief included Graves's disease; hypochondriasis; slow and excessively rapid heart action; diarrhœa, with each passage followed by cerebral distress; persistent insomnia; periodical convulsions, followed by unconsciousness and coma and preceded by very bad breath; epilepsy; and migraine. Minor disturbances of health could be traced in innumerable instances to the generation of poisons in the bowel. It was useless to study the organ which happened to be affected by a poison so produced, or to treat one or more of the train of symptoms given rise to. Organic nervous diseases were constant. Where they were secondary, they would appear at intervals corresponding to the presence of the special conditions which gave rise to them. Among the various internal remedies which the speaker had used were benzoate of sodium, naphthaline, resorcin, creolin, salol, picrate of ammonium, bismuth, charcoal, nitrate of silver, and colomba. The natural antiputrefactive agents were the healthy digestive juices. One investigator had found dilatation of the stomach (an index to the condition treated of in the paper) in three tenths of all hospital patients. Intestinal putrefaction was, in the speaker's opinion, a prominent cause of phthisis, chlorosis, skin diseases, Bright's disease, rheumatism, and especially all sick headaches.

Dr. Van Valzah spoke of a lady who had been treated for a variety of brain affections. She had been subject, among other things, to attacks of epilepsy, lasting from three minutes to three hours, which were followed by the vomiting of the food she had taken during the twelve hours previous. She had been entirely cured by a better diet. He wished to know from Dr. Thomson what means he had of determining the particular drug to use—what symptoms, that is, indicated the employment of remedies other than the milk diet?

Dr. Thomson replied that for symptoms of gastric fermentation he gave a five-grain dose of resorcin at meal-time, and repeated it an hour after eating and at night. Where he found dilatation he washed out the stomach. In cases of intestinal fermentation, with morning occipital headaches and a tendency to early morning waking, he gave, when the patient went to bed, a capsule containing from two to four grains of salol and ten grains each of sodium benzoate and charcoal. In cases of fermentative diarrhœa he gave the same prescription, and ordered three or four doses a day; in cases of chronic dysentery he added to the foregoing two grains of naphthaline and a suitable dose of bismuth. Where there was peptic insomnia he ordered four drops of creolin with charcoal in capsules at bed-time. In vaso-motor paralyses with rapid heart action he recommended the greatest possible limitation of meat in the diet, and made fermented milk the staple, adding, three times a day, ten grains each of powdered colomba and bismuth carbonate. Small doses of ergot were notably efficacious in relieving sick headache.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN OBSTETRICS AND GYNÆCOLOGY.

Meeting of January 24, 1889.

Dr. J. E. Janvrin in the Chair.

Removal of a Submucous Fibroid.—Dr. R. G. Wiener reported a case of this sort. There had been considerable pain and hæmorrhage, and the appearance of a large mass at the os uteri. He had attempted removal with the écraseur, but had broken the wire in trying to sever the broad base by which it was attached. He had finally used the spoon-saw. With this and some manipulation he had removed the tumor, and the patient was doing well.

Dr. J. R. Goffe, who had assisted in the operation, remarked on the slight hæmorrhage which followed division of the stump. Submucous fibroids caused great discomfort to the patient, yet were easily removed; and their removal was followed by full relief, making it perhaps the most satisfactory simple operation in gynæcology. He had operated only where the tumors were pedunculated.

Dr. W. G. Wylie remarked that not all uterine fibroids were so easily removed as when attached by pedicles. Where they were deeply seated and not encapsulated, even if the os was widely dilated, it was easy to penetrate the uterine wall in attempting to free them by the spoon saw, as had happened several times. Here twisting and snipping with the scissors was a better method. When the capsule was distinct they came out completely. But otherwise there was much danger that a portion remaining after partial removal should suppurate, its vitality being just enough lowered to allow of this. Many patients had been lost thus. In reply to a question from the president as to what he did with the capsule, when there was one, Dr. Wylie added that after the tumor had been removed he pulled down the capsule and tied off all he could of it. He douched the cavity with very hot water, and allowed the remainder to stay. He had been compelled to use forceps to extract two or three very large fibroids, and once had been obliged to cut the perinæum.

Some Unusual Complications in opening Pelvic Abscesses through the Vagina.—Dr. J. R. Nilsen read a paper with this title, the discussion of which was postponed till after the reading of the following paper.

The Treatment of Suppurative Disease of the Uterine Appendages.—Dr. H. J. Boldt read a paper thus entitled, in which he endeavored to show that operative interference was positively indicated in certain cases of pyosalpinx about which there was apt to be too much difference of professional opinion as to the treatment called for. He remarked that, while many women had been deprived of their tubes and ovaries without the least benefit, and had had reason to regret having consented to being operated on, there was also a tendency to go to an extreme in the other direction. Cases were not selected with proper care which deserved general instead of operative treatment. Diseases of the uterine annexa might be roughly divided into three groups: 1. Those in which an operation was altogether unjustifiable. 2. Those where the effect of general treatment was to be watched for a time before an operation was considered. 3. Those where delay was not only inadvisable but dangerous. He wished to present several cases that had occurred in his own practice which had undoubtedly belonged to the third group.

1. A long-standing case of metritis and local peritonitis following confinement, with radiating pains, headache, cardiac palpitation, and dyspnœa; also, within five years previous, syphilitic infection had been superadded. Micturition had been fre-

quent, menstruation very profuse, pains very severe before the flow began, and some leucorrhœa after it had stopped. Examination had shown an indurated cervix tender to the touch, the uterus somewhat enlarged and sensitive, both tubes and ovaries much enlarged and prolapsed, and the surrounding structures very sensitive. A diagnosis of double salpingo-oophoritis syphilitica with endometritis had been made and an operation advised, unless treatment was soon followed by improvement. A little later physical exertion had been followed after a few hours by violent pain in the epigastrium, accompanied by a fresh attack of pelvic peritonitis. Five days later general peritonitis had developed, the tubes had lost their full contour, and, instead, a fullness with excessive painfulness had been found on either side of the uterus. Although rupture of the tubes had evidently occurred, he had, unfortunately, not made up his mind to operate till the evening of the next day. The patient had survived the laparotomy only sixty hours; it had been deferred too long.

2. A case of catarrhal salpingitis of long standing in a woman of twenty-nine years, a sequel to scarlet fever at the thirteenth year. Severe pain had been suddenly developed in the lower part of the abdomen, had increased for a time, then subsided for several days, only to return accompanied by a temperature of 104° F., and a general peritonitis with chills and emaciation. Examination had been exceedingly painful, but had shown fullness and fluctuation to the right of the uterus. Rupture of a tube distended by pus being evident, laparotomy had been performed on the next day, the abdominal cavity had been washed, and dense adhesions removed. The hæmorrhage from the latter proving uncontrollable, and the author being forced to cut short the operation owing to the state of the patient, he had tamponed the pelvis with iodoform gauze. This had acted as both a drain and a hæmostatic. Thirty-six hours later he had unwisely replaced the gauze by a double-current rubber drainage-tube, and had washed out the abdominal cavity again through it. If he had closed it at once the patient would probably have recovered. There had been no odor. After some hours the pulse had become very feeble, but had been restored by raising the foot of the bed and irrigating the abdominal cavity with a warm solution of chloride of sodium (1 per cent.). On the third day the wound had begun to show an odor, and from that time on became increasingly fœtid, although irrigation had been continued without intermission. The patient had died on the fifth day. The only pathological change found at the autopsy had been diffuse nephritis; the abdomen had been clean and odorless, and the peritonitis decidedly diminished in extent. The foul odor of the washings was inexplicable to him. It was clear, however, that the operation had not been done early enough.

3. In this case a double pyosalpinx and endometritis of puerperal origin had followed a tedious labor eighteen months previously. The distended tube had been ruptured in sexual intercourse. Some vomiting and slight evidences of shock had presented on his arrival at the house. There had been marked tenderness over the entire abdomen, but no evidences of intense general peritonitis. Within two hours he had opened and cleaned the abdomen, removed both tubes, and closed the abdomen without drainage, although peritonitis had begun. Immediate and uninterrupted recovery had followed.

4. In this case, otherwise similar to No. 3, the operation had been done about five hours after the rupture of the greatly distended tubes, and a similar excellent recovery had followed.

5. In this instance, having found double pyosalpinx, he had advised an operation, but another physician had called such a procedure rash, and had assured the patient of improvement without it. Rupture had occurred three months later, an immediate operation had been declined, and death from general purulent peritonitis had quickly followed.

6. In this case he had used massage of the tubes after the method of Brandt, and had obtained marked improvement at once in the symptoms of the pyosalpingitis, which had followed a recent abortion. Nevertheless, six days later, without apparent cause, there had been a severe chill followed by general peritonitis, which, however, had almost subsided four days later. He had been apprehensive of the final result from the first, especially as the tubes had enlarged rapidly as soon as massage had been suspended (on account of the acute pain caused by it). He had brought an aspirator to the house, intending the next day to take the risk of emptying the tubes *per vaginam*. On the evening of the same day, however, rupture had taken place. He had found the patient three quarters of an hour later screaming with agony, cyanotic, with a high temperature and a feeble, frequent pulse. Forty minims of Magendie's solution had been given, counsel sent for, and preparations made for an operation. An apparently very rapid improvement which the patient had made had created enough doubt in his mind to make him wait for daylight to work by. In two hours she had begun to sink, and when morning had come, despite free stimulation, an operation was out of the question. The temporary rally made by the patient had also deceived an eminent specialist whom he had called in. The case had occurred in private practice. In a hospital or clinic he would not have hesitated a moment. It was unfortunate that in private practice operators were apt to be overborne by side considerations, such as unwillingness to sacrifice a chance of the patient's having children in the future, even when her own life was in imminent peril. The patient in this case had been only twenty-three years old. An earlier operation would easily have saved her life. He might in the future change his opinion, but with such cases as the foregoing in mind he unhesitatingly advised opening the abdomen in any similar condition, wherever occurring. If the diagnosis proved incorrect, the opening could be closed again, no harm was done, and great risks were avoided.

He believed the diagnosis of pyosalpinx could be made in most instances. It was found unexpectedly at autopsies quite as often as it was mistakenly operated for. Hydrosalpinx and hæmatosalpinx, ovarian and parovarian cysts, could frequently be distinguished by the history. He had believed for several years that patients with intractable hydrosalpinx should be operated on, since the disease easily became purulent; or, if the tube ruptured, might cause fatal peritonitis. He believed in operating in cases of pyosalpinx without waiting for rupture to occur. The danger was then far less. Health was restored entirely, which never could be done while the diseased tubes remained. The patient was taken out of a condition of constant peril and almost constant suffering. The high mortality which a prominent German operator had ascribed to the operation was mainly due to the fact that the operation was deferred until every other means had been exhausted and the condition of the patient was already critical. Furthermore, in case an exploratory incision showed hydrosalpinx or hæmatosalpinx and the tube was firmly occluded at some point, it should not be left in to undermine the health and jeopardize life. The chance of pregnancy in such a case was nil, the likelihood of absorption very slight, and that of return of the fluid after tapping great. Whether the tube was occluded or not could easily be ascertained by observing whether gentle stroking toward its outlet diminished its caliber. When a tube filled with pus could be emptied by gentle pressure he would advise *proper* massage (after Brandt's method), rest in bed, and careful tamponing; but he did not meet with such cases often, and believed them comparatively rare. Also, when a tube was only moderately distended (to about the size of the thumb) and no symptoms were

given rise to, he did not favor an operation. Such a collection of pus might in time become inspissated, as occurred elsewhere in the body. But women with such a condition rarely consulted a surgeon or submitted to vaginal examination, even if it was proposed; and that was not likely to be done in the absence of symptoms of local distress. Aspiration of distended tubes was safe only when the operator felt sure of very firm adhesions about the site of the puncture. Some very greatly distended tubes due to puerperal infection gave no signs of their presence other than fever and emaciation. An examination should always be made in such cases, and an operation at once resorted to. It might be necessary to make an exploratory incision to distinguish this condition from the ordinary pelvic abscess in case there were extensive adhesions. It might not be possible without an incision to distinguish it from an ovarian tumor. Massage was a dangerous procedure in any but trained hands. Perhaps its main usefulness was to aid in diagnosis. Despite all he had said, no one was more averse than he to indiscriminate removal of the uterine appendages or more inclined to use every practicable means of saving young women from this (in one sense) degradation.

Dr. Wylie opened the discussion of the two papers by remarking that the reader of the first of them had spoken of tapping pelvic abscesses, as if they were themselves a disease and not a symptom. He thought the aspirator had done more harm than good in this department of gynæcology. "Curing" abscesses in the pelvis by aspiration might relieve symptoms and sepsis, but did not lead to a cure of the patient, that is, restoration to health, because that which had caused the abscess remained untouched. Then there were almost always two—one at least on each side. The most important fact to keep in mind in regard to them was that their frequency was entirely due to mistakes made during and after delivery. They would become less common, moreover, when salpingitis and pyosalpingitis were detected and treated earlier. He believed that, when they were found, no matter where they were situated, it was proper to open them through the abdomen, if the condition of the patient allowed and there was no sepsis. It could be done with a mortality of but one or two per cent. But if the sepsis was marked, then the danger of peritonitis after an operation was great, and we should then see if it was possible to puncture them behind the uterus. If it was, he would advise puncture, washing out, and subsequent operation. If they were out of reach, however, it was better to operate anyhow, not opening over the adhesions, but through a part of the abdomen free from these. A diagnosis could then be made and it could be seen whether an opening *per vaginam* was advisable. He used massage for diagnosis, but would not like to for treatment.

Dr. Paul F. Mundé remarked that pelvic abscess as he used the term was quite different from pyosalpinx, and meant an abscess in the cellular tissue. Under bimanual examination, any abscess in the cellular tissue was freely movable, whereas the uterus was fixed. On the other hand, any intraperitoneal exudation, especially into the tubes, whether palpable or not, allowed the uterus to be lifted up and down more or less. He had frequently verified this test by laparotomies. He did not agree to the statement that the aspirator had done more harm than good. The knife had also done harm. Whenever he was satisfied of the presence of a single pelvic abscess and could reach it, he aspirated and washed and drained the cavity.

Turning to the second paper, he would say that he entirely agreed with Dr. Boldt about operative treatment. He would, however, remove tubes filled with pus to the size of the thumb. The disease called pachysalpingitis (an increase of the connective tissue), which only Kaltenbach had described, always called for removal of the annexa. As to the diagnosis of pelvic tumors, he agreed that it was not always possible to make it bimanually. A woman who had grown tired of suffering had once forced him to perform laparotomy or leave her to call another surgeon who would. He had found hæmatoma of both ovaries as large as oranges, but with flaccid walls. He would remove the tubes and ovaries in all cases of hæmatosalpinx and hydrosalpinx. He had met with a case where the tubes and ovaries had been removed which proved to be one of polypoid endometritis which a single scraping might have cured. He did not deny that too much haste was sometimes used in proceeding to operate, and favored a certain amount of temporizing. But he was much dissatisfied with our present ability to make the diagnosis.

Dr. A. P. Dudley had treated two cases of true pelvic abscess by aspiration, and successfully. He thought it a valuable point in diagnosis that the pelvic abscess tended to dissect its way downward between the rectum and vagina, and not to rise into the abdomen. He would not use aspiration for an abscess in front of the uterus; he might for one in the iliac fossa. Pyosalpinx should not be called pelvic abscess, since it led to unnecessary confusion of terms. He thought a woman's station in life should not be allowed to influence the surgeon when her own life was at stake.

Dr. Boldt repeated that massage was suited to some mild cases. Brandt had told him that he had cured pyosalpinx by massage. He himself had never produced more than relief for a time. It was necessary to have the woman in a nearly sitting posture, with the abdominal walls relaxed and thin, and one finger behind the uterus as close to the tube as possible.

NEW YORK SURGICAL SOCIETY.

Meeting of January 9, 1889.

The President, Dr. Lewis A. Stimson, in the Chair.

Syringo-myelitis.—Dr. Frank Hartley presented a man in whom he had been able to find no other explanation for a slow, progressive deformity of the hands, with loss of some of the phalanges by ulceration, except by supposing it to be the result of a syringo-myelitis. There had been little pain. Syphilis, tuberculosis, and leprosy had been excluded. In scattered parts of the areas of distribution of the median and ulnar nerves in the hand and arm there had been loss of the senses of temperature and pain, and of tactile sensibility. Vaso-motor changes had been of frequent occurrence from day to day.

Dr. Lange had once observed a similar case, where the ulceration and atrophy had involved the feet, with shortening of the toes by loss of some of the phalanges, and ulcerations on the soles of the feet. A Chopart's amputation had been necessary on one foot, and amputation of the toes on the other. He had also heard of a few cases where a similar atrophy had followed injuries of peripheral nerves, with painless ulceration and loss of one or more phalanges. The term *lepra mutilans* was sometimes used to designate this form of atrophy.

An Operation for Pyelo-nephritis.—Dr. Lange then presented a patient upon whom he had operated for pyelo-nephritis by a lumbar incision. The gain in weight and recovery of strength made by the patient since the operation had been most gratifying. The urine, which just after the operation had contained some albumin, was now normal. To the usual longitudinal incision he had added two transverse incisions—above and below. The upper one had followed the course of the eleventh rib (which was removed); the lower, the border of the ilium. The twelfth rib was so short that it had been disregarded. He had thus made a sort of flap. When it was lifted and turned

forward, he had had an abundance of room in working on the kidney. When, in the third week, the ligatures were removed, some pus came away, but nothing was seen of the stump that had been included in them. The stump had been left without the capsule of the kidney, because the latter had been nearly absorbed and in places almost perforated. The stump had evidently been absorbed.

Dr. R. ABBE spoke of a somewhat similar case in which an early autopsy had shown that the portion of kidney tissue without the ligature had not spoiled, but had been imbedded in lymph without a trace of beginning disorganization.

Injury of the Humerus.—Dr. F. W. MURRAY presented a patient, seventeen years old, who, in consequence of a fall, had suffered a separation of the epiphysis of the humerus, with a dislocation of the upper end of the shaft inward beneath the coracoid process. The speaker had opened the joint in order to reduce the displaced parts, and had been compelled to remove three fourths of an inch of the shaft.

Dr. LANGE had met with a similar case, where coaptation had been made impossible by the tilting up of the edge of the lower fragment; and an operation had been necessary to effect reduction.

Colo-colostomy, with a Substitute for Senn's Bone Plates.—Dr. ABBE read a paper with this title. (It will be published in full.)

Dr. W. MEYER had been present at the operation, and could testify to the short time required to complete it as compared with the two hours or more needed for the old operation of colostomy, in which sutures were used to make coaptation. Dr. Senn, of Milwaukee, had done the same operation, using his bone plates, in less than twelve minutes. He thought that either Dr. Senn's plates or Dr. Abbe's rings should be on hand in all hospitals. In his own last case of colo-colostomy the operation has lasted more than two hours. After five days the man had begun to vomit fæcal matter and had become delirious without having fever. While in this condition the patient had broken open his wound and had died of hæmorrhage and peritonitis.

Dr. LANGE had done intestinal anastomosis in three cases (in one gastro-enterostomy and in two ileo-colostomy) before the method of union by bone plates or catgut rings had been brought forward. He thought the rings would be a good substitute for bone plates if (as Dr. Abbe had assured him) they brought into contact a sufficient area of the interposed surfaces.

Gastrostomy for Cancer of the Œsophagus.—The PRESIDENT showed a specimen, the stomach and œsophagus of a man upon whom last November he had done a gastrostomy for cancer of the lower end of the œsophagus and the adjoining portion of the stomach. At the time of the operation the patient had been so reduced by starvation that it was not thought possible that he could survive more than two or three days. The operation was done in two stages, the opening into the stomach being made twenty hours after the latter had been fixed to the edges of the incision in the abdominal wall. Through this opening the patient had been fed, first with milk and subsequently with solid food, and had survived the operation about five weeks, dying of the progress of his disease. About three weeks after the operation the œsophagus had again become pervious to liquids. The specimen showed the stomach firmly fixed in the abdominal wound and the opening healed all around.

In a second operation the stomach had been opened three days after its fixation in the abdominal wall, and, although the patient had died three days afterward from rupture of the œsophageal cancer into the trachea, the opening into the peritoneal cavity had been found to be solidly closed by adhesion between the opposing surfaces. He thought it was important to seek for early union of the cutaneous incision about the gastric fistula, and to drain the parietal wound only by its upper and lower ends, in order to avoid interference with primary union by leakage of the contents of the stomach.

Gunshot Wound of the Brachial Artery.—The PRESIDENT also showed a portion of the brachial artery of a man who had been shot in the arm with a pistol. Half of the portion of artery which lay in the course of the ball had been carried away. The accident was a rare one. In 80,000 cases of wounds by missiles recorded during the late war, only 45 had been put down as having shown partial wound of an artery.

Ligation of the Uterine Arteries in their Continuity as an Early Step in Total or Partial Abdominal Hysterectomy.—The PRESIDENT then presented two specimens removed by laparotomy—a large carcinoma of the body of the uterus and a uterus containing large fibroids. The circumstances in each case had compelled the choice of the abdominal method in preference to vaginal hysterectomy, but he was inclined to believe that the preference should be given to this method in many cases in which vaginal hysterectomy was possible, because in both instances he had found that the ligation of the uterine arteries beforehand greatly simplified and expedited the removal. In both cases also he had made a total removal, and he asked the opinion of those present concerning the relative advantages of removing and of leaving the cervix. In the first case (one of carcinoma of the body) the growth had spread anteriorly so as to involve a portion of the peritonæum covering the bladder, a circumstance which he thought would probably have made the removal necessarily incomplete if it had been attempted by the vaginal method. The operation had been begun in the usual manner, by multiple ligation of the broad ligaments and of the uterus below the tumor, with a view to possibly leaving the cervix as a pedicle. However, in the course of the operation he had sought for and tied the uterine arteries near the uterus, and had then found that he could remove the whole organ easily and rapidly with the knife and scissors, and with but slight hæmorrhage. The operation had thus been facilitated so much that in the second case he had proceeded at once to tie the uterine arteries. In this case two large fibroids had developed in the anterior wall of the uterus, the lower one extending so far down that the cervix could not be felt *per vaginam*. The uterus had been drawn out through the abdominal wound and the uterine arteries found by palpation of the posterior surface of the broad ligaments close to the cervix; the overlying peritonæum had been divided and catgut ligatures placed about the arteries. A silk ligature had next been passed around the outer border of each broad ligament well below the ovary, to secure the ovarian arteries. Both ligaments had then been cut straight across, and the incision prolonged across the peritonæum covering the back of the uterus, and across the lower fibroid anteriorly. Through this incision the fibroid, together with the adjoining part of the uterus, had been readily pushed out and the organ severed just above the cervix, thus facilitating the subsequent removal of the latter. This had been effected by lifting it with a volsella while a hole was made with a blunt instrument forced through into the vagina anteriorly, and by cutting round it with scissors. The bleeding had been insignificant. A comparatively slight reflux of venous blood from the divided edges of the broad ligaments had been easily controlled by the temporary use of a long-bladed clamp. In both cases the abdominal incision had been entirely closed, and drainage made through the vagina for the first three days. The first patient had now entirely recovered; the second (then in the fifth day) was doing well.

In all previous hysterectomies the speaker had left the cer-

vix, and treated it extraperitoneally. In some of them cicatrization had been long delayed by the inevitable suppuration of the pedicle and the slow filling up of the funnel-like canal created by its retraction. He believed removal of the cervix preferable, unless it proved to have special disadvantages, such as defective retention of the intestines within the abdomen because of lack of support at the floor of the pelvis.

The Prevention of Shock by Atropine.—The President also recommended the hypodermatic injection of from $\frac{1}{75}$ to $\frac{1}{100}$ of a grain of atropine previous to giving ether for an operation. In the second of the two foregoing cases the woman had been etherized, so as to admit of a brief examination, a few days before the operation, and had come out of the influence of the anæsthetic in a deplorable condition, from which she had not rallied for several hours. For considerable periods the pulse had been very weak and even imperceptible. On the contrary, atropine having been given before the ether on the day of the operation, she was taken from the table with a pulse as good as before the operation began. The subsequent symptoms of shock had been very slight. He had used atropine for this purpose for five or six years, having first observed its control of the inhibitory action on the heart in certain physiological experiments. How much influence it exerted it was not always easy to determine, but he believed it to be of great value.

Meeting of January 23, 1889.

The President, Dr. Lewis A. Stimson, in the Chair.

Rupture of the Kidney.—Dr. C. K. Briddon presented a patient who had sustained this injury by falling fifteen feet from a scaffold and striking on his hands and left side. He was forty years of age and gave no specific rheumatic or alcoholic history. The urine had been bloody after the accident. On coming under the speaker's care, ten days after the accident, the man had been anæmic, sallow, and emaciated. Both wrists had presented the characteristic deformity of Colles's fracture. A tumor had been indistinctly felt through the abdomen, in the region of the left kidney. The urine had contained blood and pus. Five days later the tumor had increased in size, but the pain had lessened. The temperature ranged from 100° to 102° F. The urine was from forty to fifty ounces per diem in amount, and contained blood and pus most of the time. Eight days later the tumor had reached the size of an orange and was painful on pressure. The speaker had then operated, making a vertical lumbar incision four inches long. He had found the perinephritic tissue thickened from inflammation, and the circumrenal fat broken down. On opening the capsule there had been a slight escape of pus and coagulated blood, which had exposed a rent in the kidney substance. The finger being passed around the kidney, beneath the capsule, considerable thick granular pus had been discharged. After irrigating the wound with a one-per-cent. solution of creolin he had left a drainage-tube in the wound and applied a dressing. Pus had rapidly disappeared from the urine and the wound had quickly granulated. Eight weeks after the operation the patient had been discharged, quite restored in flesh and strength.

Cuneiform Osteotomy for Talipes Equino-varus.—Dr. Briddon also presented a boy, fourteen years old, who had been treated two years previously for club-foot in an orthopædic hospital where tenotomies were practiced. There he had received the usual treatment. He had afterward relapsed into complete talipes equino-varus, probably owing to his own negligence and failure to persistently use the apparatus furnished him. The speaker had removed a wedge-shaped piece of bone, made up of the external cuneiform, a quarter of an inch of the posterior surface of the cuboid, and a small portion of the neck of the astragalus, the calcaneo-cuboid articulation, and about three quarters of an inch of the anterior extremity of the os calcis. The base of the wedge had been on the outer side of the foot. The tendo Achillis had been lengthened by first splitting it from side to side into two flat bands for a distance of two inches, and then severing one band at the top of the cleft and the other at its base (cutting backward at one end and forward at the other). The heel being then brought down, the portions of the two bands which still overlapped had been joined together. The plantar fascia had also been divided. The result had been excellent; the boy walked well, and planted the sole squarely on the ground. However, it was the speaker's belief that he must continue to use a splint for support, else the deformity would be apt, with time, to return.

The Treatment of Fracture of the Patella by a Subcutaneous Silk Ligature.—The President showed two patients with recent fracture of the patella treated by subcutaneous silk ligature. During the preceding two months he had thus treated five patients with recent fracture, the two now presented being the first and third of the series. The second had been discharged cured; the fourth and fifth were still under treatment and doing well.

The method employed might be called a modification of the external silk ligature employed some years ago by Volkmann, and had been suggested and employed in the first two cases, under the speaker's supervision, by Dr. E. W. Clarke, house surgeon at the New York Hospital. It consisted in passing a silk ligature through punctures made in the skin, through the tendon of the quadriceps femoris and the ligamentum patellæ and under the skin in front of the patella, in such a manner that by drawing the ligature tight the two fragments of bone were drawn together. He employed a long half-curved Hagedorn's needle and a stout braided silk ligature. The four punctures (through the skin and the sides of the tendons) were made close above and below the patella—at its four corners, so to speak. The needle was entered at the lower right-hand corner, carried through the ligamentum patellæ to the bone, then across and out through the opposite puncture. This made a loop through the lower tendon. Then the needle was entered beneath the skin at its recent point of exit and carried upward between the skin and the front of the patella and brought out at the upper puncture on the same side. It then re-entered at this upper left-hand puncture through the tendon of the quadriceps, crossed beneath it, emerged at the opposite puncture, and thus made a loop through the upper tendon. The needle was then passed in at this fourth puncture (through the skin) and carried down under the skin and in front of the patella to emerge at the first puncture (where it had entered). The two fragments of the patella were then pressed into close apposition, the silk cord was drawn tight and tied, and its ends were cut short. The entire suture being thus subcutaneous, the punctures through the skin were closed with a single suture passed through each. It was not necessary that the ligature should include the entire width of the tendon, but it was sufficient if it embraced just enough to give it a firm hold. It should also be passed close to the attachment of the tendon to the bone, in order that it might not become slack by cutting through the tendon toward the bone, under the strain. The silk-worm gut was apt to break at sharp turns. Catgut became absorbed too soon unless treated with chromic acid. The union obtained was not bony, but a close fibrous union; however, this had been shown to be true of the union of the patella in most instances where examination had been made after death, even when the fragments had been wired together. He had in a single instance produced bony union after uniting the fragments with catgut. He applied only a simple posterior splint. The stiffness of the knee which patients at first

experienced he was convinced was due to contraction of the internal and lateral ligaments of the joint and soon disappeared when the use of the limb was resumed.

In one case ten days had elapsed after the accident before the operation was done; in the others only a few hours. In the first case the needle had broken and a transverse incision had been made to remove the broken end. Silk-worm gut had been used in this case for a ligature, and its manipulation had been faulty. Twelve days later the fragments had been found to be an inch apart, probably owing to kinks forming in the ligature when first introduced. The operation had been repeated, this time silk being used. Suppuration had followed, but the process had remained extra-articular. After a month the silk suture had been removed through the sinus, and the silk-worm gut suture two weeks later. Since then the openings had closed rapidly. The patient could flex the knee nearly to a right angle and no separation could be felt.

In the second patient the fracture had been close to the upper border of the patella, and the patient had been discharged well in about six weeks. In the third patient (presented) the fracture had occurred five weeks before; he was now able to flex the knee to a right angle, and no separation of the fragments could be recognized. The fourth patient had been under treatment three weeks; there had been no inflammatory reaction, and the fragments were not separated. In the fifth case only two days had elapsed since the operation.

The speaker thought the method was to be recommended, not only because of its own merits, but also because it was an efficient and apparently much less dangerous substitute for open arthrotomy and metallic suture—a method which, although almost entirely abandoned in Europe, was still having numerous victims in America. He knew of three cases, of which no report had been made, that had occurred during the past summer in the hospitals of New York where, after that operation, the joint had suppurated, amputation had become necessary, and eventually the patients had died.

Dr. J. D. Bryant asked whether the method would be available where there was marked separation of the fragments with difficulty in making coaptation, or when there was an interposition of fibrous tissue, or when a firm blood-clot filled the gap.

Dr. G. A. Peters suggested, in answer to Dr. Bryant's first question, that four, six, or even eight separate loops could be passed and drawn together.

Two Cases of Enterectomy.—Dr. Briddon read a paper thus entitled (see page 255).

Dr. R. Abbe showed a specimen of intestine taken from a dog upon which he had performed resection some days previously, effecting union with the catgut rings described at the last meeting. The operation could be done on the human subject with their aid in from three quarters to half an hour, and thus the most serious danger in enterectomy be curtailed—namely, that of too prolonged an operation. The anastomosis between the intestines which were to be conjoined could be made as long as desired, and the catgut rings could be wound on two or more fingers to correspond in size. There was thus much more certainty of forming a free passage than after circular enterorrhaphy.

Dr. F. Hartley remarked that he had lately done the operation on the cadaver with bone plates in twenty-five minutes. He had found that Lembert sutures around the anastomosis externally increased the imperviousness of the union to fluids under pressure.

The President suggested that there were causes of death following enterectomy independent of the operation, or at least acting in parts distant from the wound in the intestine; for example, various functional disturbances in other organs. There might also occur a kinking of the gut near the point of operation, and this complication even the use of bone plates or catgut rings might not be free from. In a case of stabbing after which he had closed four wounds in the intestine with Lembert sutures the patient had done well for six days, but died in sudden collapse on the seventh. The post-mortem had shown but slight peritonitis, and the spots affected surrounded by adhesions, no escape of intestinal contents, the sutured parts firmly joined, but the intestine above distended and that below entirely empty. The passage had been obstructed in some unknown way, perhaps by sharp turns which the gut had made at that point.

Intraperitoneal Rupture of the Bladder, with Absence of the Usual Symptoms.—Dr. Briddon read the history of an obscure case of this sort. Laparotomy had been performed on the third day in the absence of conclusive indications. The pain had been intense and had radiated into the umbilical and hypogastric regions and the glans penis, the testicles had been retracted, the abdomen distended and rigid, the respiration purely thoracic, but the urine free from blood except just after admission. There had been some hiccough and vomiting, but a normal temperature. Renal colic, cystitis, peritonitis, and intestinal obstruction had each been thought of. The patient, until just before his death, had denied having received violence. After the suture of a rent which had been found in the posterior wall of the bladder, and the removal of several pints of fluid from the abdominal cavity, he had been free from pain, but had died exhausted after fourteen hours. In a case of extra-peritoneal rupture of the bladder reported by him in 1887, where the pelvic bones had also been fractured, he had made a suprapubic incision for the repair of the bladder, and the patient had recovered, but had never had an erection since.

Dr. Bryant and others spoke of instances in which rupture of the bladder had not given rise to definite signs, and in which Dr. Weir's test by injection had been inconclusive.

Cystic Adenoma of the Breast.—Dr. Bryant presented a specimen of this affection.

Book Notices.

Chemical Experiments for Medical Students, arranged after Beilstein. By W. S. Christopher, M. D., Demonstrator of Chemistry, Medical College of Ohio. Cincinnati: Robert Clarke & Co., 1888. Pp. 6–7 to 84. [Price, $1.]

The medical student will doubtless find this little book serviceable in the laboratory. He will find space also to jot down his notes in a number of blank pages at the end of the book. We can heartily commend the little work to those for whom it was compiled.

BOOKS AND PAMPHLETS RECEIVED.

Œuvres complètes de J. M. Charcot. Maladies des poumons et du système vasculaire. Tome V. Avec 51 figures dans le texte et 2 planches. Paris: E. Lecrosnier et Babé, 1888. Pp. 654.

Recherches cliniques et thérapeutiques sur l'épilepsie, l'hystérie et l'idiotie. Compte rendu du service des épileptiques et des enfants idiots et arriérés de Bicêtre pendant l'année 1887. Par Bourneville, médecin de Bicêtre, Sollier, Pilliet, Raoult, internes du service, et le Dr Bricon, conservateur du musée. Volume VIII. Avec 27 figures dans le texte. Paris: E. Lecrosnier et Babé, 1888. Pp. lix–263.

A Compendium of Dentistry for the Use of Students and Practitioners. By Jul. Parreidt, Dental Surgeon to the Surgical Polyclinic at the

Institute of the University of Leipsic, etc. Authorized Translation by Louis Ottofy, D. D. S., Lecturer on Physiology, Chicago College of Dental Surgery. With Notes and Additions by G. V. Black, M. D., D. D. S., Professor of Pathology, Chicago College of Dental Surgery. With Numerous Illustrations. Chicago: W. T. Keener, 1889. Pp. ix–229. [Price, $2.50.]

Intestinal Surgery. By N. Senn, M. D., Ph. D., Attending Surgeon, Milwaukee Hospital; Professor of Principles of Surgery and Surgical Pathology, Rush Medical College, Chicago, Ill. Chicago: W. T. Keener, 1889. Pp. viii–269. [Price, $2.50.]

Rectal and Anal Surgery, with Description of the Secret Methods of the Itinerant Specialists. By Edmund Andrews, M. D., LL. D., Professor of Clinical Surgery, Chicago Medical College, etc., and Edward Wyllys Andrews, A. M., M. D., Professor of Clinical Surgery, Chicago Medical College, etc. Second Edition, revised and enlarged, with Illustrations and Formulary. Chicago: W. T. Keener, 1889. Pp. xiv–140. [Price, $1.50.]

Diseases of the Skin associated with Disorders of the Female Sexual Organs. By George H. Rohé, M. D., Baltimore, Md. [Reprinted from the "Buffalo Medical and Surgical Journal."]

Miscellany.

Mortality in Cities in the United States.—The following table represents the mortality in the cities named, as reported to Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, and published in the abstract of sanitary reports received by him during the week ending March 2d:

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—										
				Cholera.	Yellow fever.	Small-pox.	Varioloid.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y.	Feb. 23.	1,555,604	870	..	..	..	..	..	..	4	58	52	12	15
Philadelphia, Pa.	Feb. 23.	1,040,245	347	..	..	..	..	..	..	18	11	7	1	4
Chicago, Ill.	Feb. 23.	830,000	246	..	..	..	..	..	..	2	5	22	4	2
Brooklyn, N. Y.	Feb. 23.	814,505	341	..	..	..	..	..	..	..	12	19	9	10
Baltimore, Md.	Feb. 23.	500,343	178	..	..	..	..	..	..	2	..	2	..	2
San Francisco, Cal.	Feb. 15.	330,000	110	..	..	..	..	..	..	..	..	3	..	....
Cincinnati, Ohio.	Feb. 23.	255,139	103	..	..	..	..	..	..	8	..	..	..	....
Pittsburgh, Pa.	Feb. 23.	.....	67	..	..	..	..	..	..	1	2	4	2	3
Washington, D. C.	Feb. 23.	225,000	102	..	..	..	..	..	..	4	1	2	..	3
Kansas City, Mo.	Feb. 23.	180,000	.....	..	..	..	..	..	..	..	1	..	..	....
Newark, N. J.	Feb. 19.	179,139	94	..	..	..	..	..	..	5	..	2	..	1
Providence, R. I.	Feb. 23.	127,000	51	..	..	..	..	..	..	1	..	1	..	....
Rochester, N. Y.	Feb. 23.	120,000	44	..	..	..	..	..	..	..	..	..	..	2
Denver, Col.	Feb. 22.	100,000	26	..	..	..	..	..	..	..	..	2	..	....
Toledo, Ohio	Feb. 22.	80,000	19	..	..	..	..	..	..	..	..	1	..	....
Nashville, Tenn.	Feb. 23.	65,153	15	..	..	..	..	..	..	..	..	..	..	....
Fall River, Mass.	Feb. 23.	65,000	26	..	..	..	..	..	..	1	..	1	..	....
Charleston, S. C.	Feb. 23.	60,145	30	..	..	..	..	..	..	..	..	..	1	....
Lynn, Mass.	Feb. 23.	50,000	22	..	..	..	..	..	..	..	..	..	..	....
Manchester, N. H.	Feb. 16.	42,000	13	..	..	..	..	..	..	..	..	..	..	....
Portland, Me.	Feb. 23.	40,000	14	..	..	..	..	..	..	1	..	..	..	....
Wheeling, W. Va.	Feb. 16.	35,000	5	..	..	..	..	..	..	2	..	..	..	....
Davenport, Iowa.	Feb. 23.	33,715	11	..	..	..	..	..	..	..	..	6	..	....
E. Saginaw, Mich.	Feb. 23.	33,000	9	..	..	..	..	..	..	..	..	..	..	....
Altoona, Pa.	Feb. 16.	30,000	4	..	..	..	..	..	..	..	..	..	..	....
Auburn, N. Y.	Feb. 23.	26,000	5	..	..	..	..	..	..	..	..	..	..	....
Haverhill, Mass.	Feb. 23.	25,000	7	..	..	..	..	..	..	..	..	..	..	....
Newport, R. I.	Feb. 21.	22,000	6	..	..	..	..	..	..	..	..	..	..	....
Newton, Mass.	Feb. 23.	21,553	11	..	..	..	..	..	..	..	..	..	..	....

The Health of the State of New York.—According to the State Board of Health's "Monthly Bulletin" for January, the whole number of deaths reported was 8,437, including 35 from cerebro-spinal fever, 89 from typhoid fever, 51 from malarial diseases, 15 from small-pox, 242 from scarlet fever, 164 from measles, 29 from erysipelas, 195 from whooping-cough, 606 from croup and diphtheria, 101 from diarrhœal diseases, and 77 from puerperal diseases.

Recent Advances in the Preparation of Pepsin.—In the "Medical News" for February 16th we find an elaborate article by R. H. Chittenden, Ph. D., professor of physiological chemistry in Yale University, entitled "Observations on the Digestive Ferments." According to the author's observations, such a well-known preparation as Boudault's pepsin is far inferior in proteolytic power to several of our American pepsins. Assuming, for example, the proteolytic action of Parke, Davis, & Co.'s "pepsinum purum in lamellis" to be 100, that of Boudault's preparation is found to be only 14.

The New York Academy of Medicine.—At the next meeting of the Section in Surgery, on Monday evening, the 11th inst., Dr. W. W. Van Arsdale will read a paper entitled "Subluxation of the Head of the Radius, with a Résumé of One Hundred Consecutive Cases."

At the next meeting of the Section in Pædiatrics, on Thursday evening, the 14th inst., Dr. H. N. Vineberg will report "A Case of Laryngismus Stridulus and Eclampsia associated with Rhachitis"; Dr. A. Jacobi will reply to Dr. O'Dwyer's question, "By what Force is a Collapsed Lung inflated while freely exposed to Atmospheric Pressure through an Opening in the Pleural Cavity?"; Dr. C. H. May will read a paper on "Scarlatinous Otitis"; and Dr. A. Brothers will read "A Report of 1,000 Consecutive Cases of Diseases of Children, with Special Reference to Treatment."

At the next meeting of the Section in Orthopædic Surgery, on Friday evening, the 15th inst., Dr. A. M. Phelps will present a case illustrating the management of hip-joint disease.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

RESECTION OF GANGRENOUS INTESTINE OCCURRING IN STRANGULATED HERNIÆ,

*WITH THE REPORT OF A SUCCESSFUL CASE.**

BY A. J. McCOSH, M. D.,

ATTENDING SURGEON TO THE PRESBYTERIAN HOSPITAL, NEW YORK.

WHAT is the best method of dealing with intestine which has become gangrenous from constriction in a hernial sac? So much has been written on the subject of strangulated hernia that we might expect a definite answer to this question. Such, however, is not the case. In the numerous elaborate papers on this subject much uncertainty and difference of opinion will be found to exist. In most of our text-books decided opinions are expressed as to the advisability of returning the gut, or the propriety of dividing the stricture; but, when they discuss the treatment of a loop of intestine whose condition forbids its return into the abdominal cavity, vague generalities often take the place of definite rules. If decided opinions are expressed on this point, they are so little in accord that the conclusion is apt to be formed that the final decision of this question has not yet been reached. The reason of this doubt and disagreement is probably found in the fact that only within the past few years have there been published a sufficient number of carefully reported cases from which inductions could be drawn. Although more or less complete accounts of a series of operations performed for this condition have been published, yet no article has appeared in recent years which has gathered together the various isolated cases and grouped them in such a manner that from their analysis we could derive conclusions which would aid us in the management of similar cases. On the other hand, many valuable papers have appeared which deal with the results of the different operative procedures which have been employed when a portion of intestine has been removed because it was the seat of malignant disease. Recently Dr. Weir † has read an exhaustive paper on this subject before this society, and in Germany the articles of Madelung ‡ and Rydygier # have brought out all possible facts with reference to the different operations when performed for cancer of the bowel. No one, however, has written up the other branch of the subject since this task was performed so elaborately by both Reichel ‖ and Mackin △ some five or six years ago.

When a loop of intestine in a strangulated hernia is found to be gangrenous, and when its return into the abdominal cavity is out of the question, the main point at issue is whether it is best to establish an artificial anus or, after resection, to restore the continuity of the gut by means of immediate suture. One of the three following plans must be adopted: 1. The gangrenous intestine may be left in the wound and nature be allowed to form the artificial anus. 2. After removal of the gangrenous portion, the divided ends may be sutured in the wound and a carefully formed anus be established. 3. The sphacelated portion may be resected and the cut ends united at once by suture, and the intestine returned into the abdominal cavity. If either of the first two plans be adopted, but one step in the procedure is accomplished, and, with but few exceptions, the continuity of the intestinal canal must be restored by a subsequent operation.

The preponderance of authority at the present time seems to be in favor of the formation of a temporary artificial anus. In a recent discussion on this subject at the Medical Society of London most of the debaters, including, among others, Banks, Baker, and MacCormac, agreed that primary resection and suture were suitable in only comparatively few cases, and that, as a rule, the preferable plan was to divide the operation into two steps. Treves * says: "It may be said, therefore, that in resecting the intestine a temporary artificial anus should always be established, and the suturing of the bowel left to a future period." He makes one exception to this rule where the resected portion is high up in the jejunum, in which event immediate enterorrhaphy should, if possible, be performed. Reichel,† in an elaborate paper on this subject, holds that the danger of primary intestinal suture in gangrenous hernia is greater than the existence for a short time of an artificial anus. His opinion should have special weight, as it is based on a critical study of fifty-six cases which he has collected. In the majority of text-books that express any decided opinion on this point the advice is generally given to establish a temporary artificial anus.

On the other side there are surgeons who are in favor of doing the primary operation in nearly all cases. Kocher is the most powerful advocate of this method of treatment, which he thinks is the safest and wisest to carry out in the great majority of cases, provided that the patient can have the benefit of a skillful surgeon. He does not stand alone in this position, for there are other good operators who have the same preference for this course, although they do not urge it upon others in such a decided manner.

Between these two extremes there is a large class of writers who either do not feel certain as to the best course to adopt, or who recommend in some cases the primary and in other cases the double operation. This latter view is well expressed by Wyeth ‡ when, in speaking of the treatment of gangrenous intestine, he says: "If the patient is in good condition, and especially if in the prime of life and usefulness, exsection should be done. If, on the other hand, collapse is imminent, or if there is anything in the condition of the patient to contra-indicate a prolonged operation, the fæcal fistula should be established."

I think unquestionably that the most potent factor in the decision ought to be the condition of the patient. In many cases there can be no choice. To prevent death from

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* Read before the New York Surgical Society, December 26, 1888.

† "Med. News," 1886, p. 173.

‡ "Arch. f. kl. Chir.," Bd. xxvii, p. 32.

"Berlin. kl. Wochenschr.," 1881, p. 593.

‖ "Deut. Zeitschr. f. Chir.," vol. xix.

△ "St. Thomas's Hosp. Rep.," vol. xiii, p. 181.

* "Intestinal Obstruction," p. 492.

† "Deut. Zeitschr. f. Chir.," vol. xix, 1884.

‡ "Text-book on Surgery," p. 507.

collapse, the operation must be completed in as rapid a manner as possible, and this is best accomplished by the mere fixation of the gut in the wound. Whether or not at this time an incision is made in order to allow the intestinal contents to escape is a matter of little moment, as, if the opening is not made by the surgeon, the same result will be accomplished by sloughing and perforation in a few hours. This, however, is a debatable question, as is also that of the propriety of dividing the stricture at the neck of the sac. There are other cases, however, where the condition of the patient before operation is not so desperate, which open the question whether it would not be better for the surgeon to remove the sphacelated portion of intestine and, by fastening the open ends in the wound, form an artificial anus. Such an anus is generally considered to be more satisfactory than one which nature has been allowed to form, although the latter is more apt to heal spontaneously. It is, however, in the treatment of yet another class of cases that there is most uncertainty and disagreement as to the best plan to adopt. It is when the patient's condition is sufficiently good to promise the probability of his being able to undergo a somewhat prolonged operation that the advisability of performing resection with immediate suture of the divided ends demands consideration. There can be no question but that this is the ideal operation, bringing about, as it does, an immediate closure of the intestinal canal and avoiding the long-continued and dangerous treatment which the existence of a false opening generally demands. More than this, if the radical cure of the hernia be at the same time accomplished, as should certainly be attempted, the patient is saved from any further discomfort and danger from this source.

From a careful review of the literature on this subject, my own feeling is that this operation might be more frequently resorted to than is now customary, yet I do not believe that it is the wisest procedure to adopt in the majority of patients, because so often their condition has been allowed to become so desperate before a herniotomy is done that they are unable to endure the somewhat severe shock which inevitably accompanies this plan of treatment.

In the following case which I will report the result was a happy one, even though some of the conditions considered necessary for success were not present:

Mrs. V., a German woman, sixty-six years of age, was admitted into my service in the Presbyterian Hospital at 4 P. M. on June 5, 1888. She gave the history of having always enjoyed good health, and of being afflicted with no ailment until about a year before, when she first noticed a lump in her left groin which had never entirely disappeared. She had never worn a truss, and had suffered no discomfort until some forty-eight hours before admission, when she first experienced pain in the mass, which increased in severity up to the time of her entrance into the hospital. Vomiting had commenced some twelve hours before, and continued with increased frequency. There had been no movement of the bowels for forty-eight hours. Several futile attempts to reduce the hernia had been made by her physician, Dr. Ellison, who then wisely decided that the case was one for immediate surgical interference.

On her arrival at the hospital the patient was in fairly good condition. She had frequent projectile vomiting, the vomited matter being of a dark-greenish color, but without fæcal odor. She complained of severe pain in her right groin, where was found a hard, elastic tumor about the size of a hen's egg, painful on pressure. Tympanitic resonance was present in the tumor. The skin covering it was reddened and discolored. No impulse could be obtained when the patient coughed. Temperature was 99½°, pulse 108. The house surgeon recognized at once the nature of the swelling and made no attempt to reduce the hernia.

At 6.30 I saw the patient, and found her considerably prostrated and vomiting almost constantly. Her pulse was 112. Ether was at once administered, and, after the usual shaving and cleansing of the lower part of the abdomen, an incision three inches long was made over the tumor. Before reaching the sac a layer of purplish, œdematous, adipose tissue was encountered. On cutting through this the sac came into view. It was tense, of blackish color, and at first sight appeared like the intestine. Slight manipulation lacerated it, allowing to escape a drachm or two of badly smelling dark fluid. A loop of intestine was now seen, being of ashen color, variegated with purplish patches. The surface looked dull and soggy, and the usual glistening appearance was entirely absent. The point of constriction was sought for and found to be at the external ring. This nipped the knuckle of gut so tightly that it was with difficulty that my finger-nail could be forced under it. By gently insinuating a sharp-pointed bistoury the external abdominal aponeurosis was freely cut upward and the constriction relieved. The gut was now drawn downward and the constricted loop found to be about three inches long. At each end was a very deep furrow around its entire circumference, caused by the pressure at the external ring. One of these furrows was so deep that the circumference at its bottom could not have measured more than a fourth that of normal intestine. Beyond this there was considerable distension due to accumulation of fæcal matter and gas. At the other extremity the furrow was less marked, and beyond it the gut appeared collapsed. Through the tighter stricture gas, but no fæces, could be forced. Any attempt to stretch the furrowed portion was useless and would have been unwise. The appearance of the serous coat of the intestine was not such as to allow of its immediate return, and, in order to derive more certain information as to its state as well as that of the stricture, a longitudinal incision long enough to admit the finger was made in the gut. A few drops of liquid fæces and some gas escaped. The mucous membrane was seen to be agglutinated in places with that of the opposite wall, and there were numerous black patches where the membrane was quite rotten. In passing the finger into the gut at the tightest furrow, its lumen was found to be almost completely obliterated, so that a grooved director would scarcely pass through. By means of an artery clamp it was stretched so as to admit the finger, when abundance of liquid fæces and gas poured out. Before this was done, however, the intestine had been well pulled out so that the gangrenous portion was well away from the wound, which had been packed with hot towels and sponges wrung out in bichloride-of-mercury solution (1 in 5,000). All through the operation every precaution was taken to prevent the entrance of any septic material into the peritoneal cavity.

It was evident that the entire loop must be exsected and the cut ends be united at once, or a temporary artificial anus established. As the patient had thus far stood the operation well, and as she seemed to have sufficient vitality to undergo the longer procedure, I proceeded at once to do a resection and enterorrhaphy.

The abdominal incision was somewhat extended and the intestine drawn out still further, so as to permit of free manipulation. The house surgeon, Dr. Madill, held up the gut, his fingers grasping it at points some two inches beyond the

furrows and at the same time closing its caliber. I then divided the gut well beyond the furrows, about four inches being removed. A triangular portion of mesentery, its base corresponding to the resected intestine, was taken with it, being careful to allow the mesentery to project slightly beyond the cut ends of intestine, in order to prevent any separation from its blood-supply. The hæmorrhage from the cut mesentery was slight and needed only compression with artery clamps, no ligatures being used. The mesentery was then sutured with a continuous catgut thread. The intestinal ends being approximated by Dr. Madill, the mucous membrane was seen to project about an eighth of an inch beyond the other coats. The cut ends were then united with two rows of sutures. The inner included only the mucous membrane, and consisted of interrupted stitches of Chinese silk with the knots (except the two last) left inside the bowel. They were introduced at intervals of about a tenth of an inch. After the cylinder of mucous membrane was united, a row of Lembert's sutures of fine catgut was introduced through the serous and muscular coats only. These were also interrupted and placed at about the same interval from one another. A fine round cambric needle was used, being introduced about a sixth of an inch away from the edge, passing through the muscular coat for about an eighth of an inch, and again emerging through the serous coat about a twelfth of an inch distant from the cut edge, and then inserted on the other end in inverse manner, thus inverting and bringing into apposition a rim of the peritoneal covering of the intestine about an eighth to a tenth of an inch around its entire circumference. When this row was completed, another partial row of similar sutures was employed in order to pick up and bring into contact still more of the serous coat where the junction did not appear very perfect. The intestine was then thoroughly irrigated with hot bichloride solution and returned into the peritoneal cavity.

The sac, which was partially gangrenous, was extirpated, the peritonæum sutured with catgut, and then the muscles and skin, a drainage-tube being placed in the lower angle of the wound, but extending only down to the muscular layer. An antiseptic dressing was applied. The operation lasted an hour and twenty minutes. The patient suffered comparatively little shock, and rallied quickly with but little vomiting. She was given a third of a grain of morphine hypodermically. On the next morning (June 6th) she complained of but little pain. No nausea or vomiting, and no prostration. Pulse 90, temperature 100·5°.

On that night the temperature rose to 103°; the pulse remained, however, under 100, and the patient appeared well and comfortable. On the next day (June 7th) temperature had fallen below 101°, pulse 92. The wound was dressed; a slight purulent discharge came from the tube, which was removed and iodoform gauze substituted. Thus far the patient had been allowed only ice, but toward evening she was given beef extract in small quantities.

On June 8th, at the end of sixty hours, temperature 100°, pulse 92; complains of no pain and feels well. At the expiration of the third day she was allowed small quantities of matzoon, which she takes with relish and without the production of nausea or flatulency. Up to this time the patient had been given small doses of morphine hypodermically. These were now discontinued. On the fifth day her bowels were moved by injection, the passage being natural and no blood was present. Her temperature was now about 99° and pulse 90. A moderate purulent discharge came from the lower angle of the wound.

On the eighth day her bowels were moved freely by a saline cathartic, and from this time she was gradually allowed fuller diet. At the end of the third week the wound was entirely healed and the patient sitting up. She left the hospital a well woman a week or two later. I have seen the patient within the past week (six months and a half since the operation), and she reports herself as being in perfect health. There is no return of the hernia. Her bowels are regular and the movements natural.

In this case I endeavored, principally on account of the age of the patient, to complete the operation as rapidly as was consistent with proper attention to details. I consider that, especially in aged patients, this is quite important. I feel little doubt but that this patient would have succumbed to shock had double the time been taken to complete the operation.

The suture employed was very much the same as that known as the Czerny-Lembert. This, or some modification of it, is at present the most popular, and apparently gives the best results. The old plan of invagination is now seldom used, and the more complicated sutures have no special advantage. I feel that interrupted sutures, though more tedious to apply, are yet the safest. According to this method, two rows of sutures are employed, the inner uniting the mucous membrane and the outer being the original Lembert suture by means of which considerable surfaces of the peritoneal coat are inverted and brought into apposition. It is this outer layer of sutures which favors rapid and strong union, the closing of the mucous coat and its inversion being done more to serve as a protective covering or a sort of buttress to prevent the intestinal contents from coming in contact with the real line of union. Though I think that the inner row is undoubtedly of advantage, yet without it very many cases have been carried through successfully. The mucous membrane as a means of union is esteemed so lightly by certain operators that they recommend that its projecting portion be cut off and all the coats made even before the suturing is commenced. This seems to me to be a mistake, as even when not sewed its mere inversion must form a useful covering to the main line of suture.

As regards the material, it makes little difference whether silk or catgut be employed, provided it be aseptic. A fine, round needle is generally preferable, the intestinal wall offering but little resistance to its introduction. Special forms of intestinal needles, such as that of Hagedorn, are also employed with equal satisfaction.

What is, however, more important than either the needle or the material, is the character of the tissue through which the sutures are passed. If the circulation of this is impaired, every attention to the details in adjusting the stitches will be of no avail. As it has been expressed, "where one sews is more important than how one sews." Not only must the sutures be introduced in sound tissue, but the greatest care must be taken that no part of the intestine be united which is separated in the minutest degree from its mesentery. In the case reported, as is very commonly done, I removed a wedge of the mesentery, its base corresponding with the exsected gut. I do not think now that this is the best practice, and in future I should cut off the mesentery close to its attachment along the border of the intestine, and allow the resulting fullness to arrange itself in

folds, perhaps uniting the lower angle with a few sutures. When a wedge is removed, the further away the cut is made from the gut the larger the arteries which are severed, and, as the branches of these vessels spread out in a fan-shaped manner, many of them may be needlessly cut off from the main source from which comes the blood which they carry to the intestinal walls. Now, this same portion of intestine may not have been removed, and to deprive it at such a time of a certain proportion of its blood-supply may be followed by disastrous consequences. This may be of no significance when only a few inches are removed, but when a longer exsection is made the wedge must be correspondingly deeper, and the greater will be the number and size of large arterial trunks which must be divided.

For closing the caliber and holding the ends of the gut many ingenious clamps have been invented. I found, however, that the fingers of my house surgeon performed this task in a most satisfactory manner. Without skillful manipulation on the part of one's assistant I can quite understand how some mechanical device might be preferable.

My reasons for preferring immediate resection and suture were the following: 1. The patient's condition seemed to be such as to give reasonable promise that she could withstand the shock of the operation. 2. The dividing-line between healthy and gangrenous gut was so clearly defined, and the circulation of the intestinal wall beyond the furrows appeared so good, that I felt encouraged to believe that tissues could be brought into apposition which were in condition to favor rapid primary union. 3. As the sphacelated portion was part of the small intestine, and as the patient was old and not particularly well nourished, I feared, if a temporary anus was established, that before it could be closed her strength would be so diminished as to offer but little prospect of a successful result.

This leads me to discuss briefly the advantages and disadvantages of the two operations. The strong point in favor of immediate resection and suture is that, if recovery results, the patient is cured and no further surgical procedure is demanded. If, on the other hand, an artificial anus be established, but one step toward cure has been effected. In the great majority of cases the opening is situated at a point which does not permit the food to be brought into contact with a sufficient length of the intestinal canal to properly nourish the patient. Hence inanition results in very many cases, and in not a few cases death, before an attempt can be made to close the artificial anus.

In a small number of cases, however, the opening is at such a point that nutrition continues unaffected and no secondary operation is demanded to prevent death from starvation. Such patients, nevertheless, are afflicted with a disgusting deformity which is constantly forcing itself not only on their own attention but on that of their family and friends. When a colotomy has been done because of malignant disease, the patient will endure the presence of his false anus with patience, for it prevents suffering and prolongs his life. It is quite otherwise when no advantage is to be gained from the persistence of such an opening, and the patients will generally demand its cure even with a full knowledge of the dangers of the operation necessary to effect this result.

Cases, however, are comparatively few where the artificial anus can be allowed with safety to remain. Besides the dangers of malnutrition, there is increased liability to intestinal disease and to obstruction in one form or another. Kocher * states that of his seven patients with artificial anus resulting from gangrene of the intestine, all have died, and that in every case that he has seen this condition has in some manner caused death at a longer or shorter interval.

The exact extent of intestinal surface with which the food must come in contact in order to nourish the patient has, as far as I know, never been determined. The dividing-line seems to be at a point somewhere about the middle of the ileum. Riedel † relates a case where the anus was situated half way between the duodenum and cæcum, some three metres and a half from the pyloric end of stomach, and in this patient inanition resulted so rapidly that at the end of twelve days, as a last resort, he was forced to operate, the result, as expected, being unsuccessful.

On the other side, however, there are grave disadvantages connected with the primary operation. 1. It is undisputed that, being necessarily a more protracted operation, the danger of death from shock or collapse is greater than when an anus is formed. The operation is one that requires so much attention to detail and so many sutures must be accurately placed that it must always be a somewhat lengthy procedure. The usual length of time taken for its performance in the cases I have collected has ranged between an hour and a half and two hours, though in some cases three and four hours have been found necessary. 2. The second great objection is found in the fact that the intestine is not in a condition which is most favorable for rapid primary union. The line of demarkation between healthy and gangrenous gut is not always well marked, and often the shading is so gradual that it is difficult to determine at what point we can trust its circulation. Not only is a circulatory disturbance of uncertain limits caused by the distension and constriction, but also a so-called paralysis of the bowel is apt to be the result of these two conditions. That the disturbance of the circulation of the gut extends often some distance beyond either the seat of constriction or the limit of the gangrene can not be doubted. At the time of operation these changes may not be noticeable, and it is in this circumstance that the danger lies, for ends of intestine may be united which afterward become sphacelated. This danger is not imaginary. A number of deaths have resulted from this accident. Kocher ‡ reports a case where, on autopsy, gangrene of the gut 10 ctm. above the line of suture was revealed as the cause of the fatal septic peritonitis, and in a patient of Taendler's # six inches of intestine were found to be in a similar state.

Reichel, in his exhaustive paper on the treatment of gangrenous hernia, makes a strong argument against the primary operation on the ground of this uncertain condition

* "Correspondenzbl. f. schweiz. Aerzte," March 1, 1886.

† "Deut. med. Wochenschr.," 1883, p. 656.

‡ "Ctrlbl. f. Chir.," No. 29, 1880.

Madelung, "Arch. kl. Chir.," Bd. xxvii, p. 32.

of the intestine in the neighborhood of the stricture and as a result of overdistension. There can be no doubt but that there is truth in his claim that it is safer to wait until the intestinal wall shows what its condition is to be before applying the sutures.

It seems to me that often the fatal results from these causes might be avoided. I find in the reports of cases that often the surgeon has endeavored to remove as small an amount of intestine as possible, and that he has been contented with the fact that the separation has been made well beyond the stricture and the gangrenous portion. It is undoubtedly wise not to uselessly sacrifice any portion of the intestine, still the removal of a few inches more or less can have no effect on the after-nutrition of the patient, and can have none but a beneficial influence on the union of the cut ends. Within certain limits, the results of operations where a considerable length of intestine has been removed are just as favorable as where but two or three inches have been exsected. Perhaps, when over four or five feet has to be removed, the question of loss of absorbent surface ought to be considered, but there are numerous cases where over this amount has been resected without deleterious effect on the patient. Thus Kocher* removed 1 m. 60 ctm., and Koeberle† resected 2·05 m., and in neither case was there any appreciable change in the nutrition of the patients. If, on careful inspection of the ends when ready for suture, there is the slightest suspicion that the circulation is not perfect, then more of the gut should be boldly removed until a point is reached where the intestinal wall is in good condition. If this can not be found, then the case is not an appropriate one for this operation.

It is hardly excusable to have gangrene resulting because of separation of the mesentery. Tesas‡ has shown that, if the mesentery is separated, even for the shortest distance, close to its intestinal attachment, gangrene of that portion of the gut is sure to follow unless it be at once resected. When the separation takes place at a certain distance—say, two to three centimetres—from its line of attachment, it may be of considerable length without endangering the vitality of the gut.

To escape in part from some of the dangers of both operations, Riedel# recommends that the gangrenous portion be fastened away from the wound well down on the thigh, and that it be left in this situation until the next day, a free incision having been made to allow the intestinal contents to escape. At the end of this time the bowel will have recovered its contractility, the distension will have been relieved, and it will be easy to determine at what point the blood-supply is abundant. Another advantage is that the operation of suturing can generally be carried out without the use of an anæsthetic. If a longer time, as is generally recommended, is allowed to elapse before the secondary operation be attempted, anæsthetization becomes a necessity. This plan strikes me as one that would be most appropriate in certain doubtful cases.

* "Correspondenzbl. f. schweiz. Aerzte," vol. xvi.
† "Bull. de la soc. de chir.," Paris.
‡ "Arch. f. klin. Chir.," Bd. xxxiii, p. 303.
"Deut. med. Wochenschr.," 1883, p. 656.

The final decision must rest, however, on the death-rate of the different operations. If either method is attended by a smaller mortality than the other, then this is the one to adopt. All statistics agree that the operation of enterorrhaphy, performed for closure of an artificial anus, is less dangerous than the operation of immediate resection and suture done for gangrenous intestine. For the former operation the mortality in both Makin's table* of thirty-nine cases and in Reichel's† thirty-seven cases is computed as being about 38 per cent. For the latter operation Makin calculates a death-rate of 52 per cent. in fifty-five cases, and the figures of Reichel in fifty-six cases and of Madelung‡ in forty-four cases are practically the same. I have been able to collect accounts of one hundred and fifteen cases where the operation of resection and suture has been at once carried out in the treatment of intestine found gangrenous from strangulation in herniæ. Out of these cases fifty-seven died and fifty-seven recovered (one was doubtful). This gives a mortality of 50 per cent. This result differs but little from the 52 per cent. which other writers have computed from a smaller number of cases. I have been careful to exclude all cases where the suturing was not done at once, and no case is mentioned unless a cylinder consisting of the entire circumference of the gut had been resected. The death-rate of the operation of resection for cure of artificial anus is 38 per cent. I find that writers often compare these two rates in their endeavors to decide which is the preferable operation. This is unjust. In such a calculation they forget to reckon the deaths due to the operation of kelotomy and formation of the anus, and the dangers to which a patient is exposed before the anus can be closed. If we would judge fairly from statistics, we must add together these three mortalities, and compare the sum-total with our 50 per cent. It is difficult, however, to ascertain how many patients succumb to the original operation, or as the result of the establishment of an artificial anus before it can be closed. Cases fatal from either of these causes are apt not to be reported. Schmidt,# in an analysis of three hundred and eight cases where kelotomy was done for strangulated hernia, and where the gut was simply returned, found that 27·4 per cent. died. If, then, for the sake of calculation, we were to place the death-rate of the primary operation at 20 per cent., it would not, I think, be excessive. Of the number who die before the anus can be closed, certainly 5 per cent. would be moderate. The sum of these mortalities is 63 per cent., which we have computed as the death-rate resulting from operations for gangrenous herniæ where a temporary artificial anus has been established. Of course, to some extent this reasoning is theoretical, and, in order to strengthen it, I collected reports of one hundred and twenty cases which had been treated in this manner. Sixty-two of the patients died from the effects of operation or as the result of the anus, and fifty-eight recovered, giving a mortality of about 52 per cent. Körte‖ reports thirty such cases which have come under his observation, sixteen patients having died and fourteen recovered. I think, however, that

* *Loc. cit.* † *Loc. cit.* ‡ *Loc. cit.*
"Deut. med. Wochenschr.," 1883, p. 246.
‖ "Berl. klin. Wochenschr.," 1883, No. 57.

these figures are too low, for many patients, after leaving the hospital with an artificial anus, pass into other hands for treatment, and the final result is not known to the original operator. Schmidt's statistics place the death-rate of the double operation at 80·5 per cent. (against 76 per cent. for immediate enterorrhaphy).

It is often maintained that it is better to allow nature to deal with the gangrenous intestine as best it may. That this plan is not attended by better results is shown by the figures of Ill,* who collected twenty nine cases treated in this manner in the United States, and in these, twenty-five patients died. I am sure, however, that, if more cases treated in this manner were reported, the results would be more favorable.

I fully believe that the 50-per-cent. death-rate for the immediate operation is far too low, for, without doubt, many fatal cases have never been reported. The mortality of both operations is a high one, and, judging from figures, no very decided advantage can be claimed for either method.

In the foregoing argument there is one fallacy—viz., the artificial anus may be cured without resorting to the dangerous operation of resection. Nature may accomplish this, or some minor plastic operation, or the application of the enterotome may bring about this happy result. The latter method is again coming into vogue, and may reduce the 38 per cent. which resection claims as its mortality-rate.

There is always risk of error in arguing from statistics, especially where they must necessarily be incomplete from non-publication of cases; still I thought that a collection of operations in tabular form might at least encourage surgeons to report their cases more freely, particularly those that terminate fatally.

After a careful analysis of the reports of operations, my conclusion is that neither one of these two methods can be recommended as the wisest procedure to adopt in all cases. Under certain circumstances the one plan will be found to be the safest, and under different conditions the other will be the operation to adopt. It is on these points that an expression of opinion from the members of this society would be most valuable.

CASES OF IMMEDIATE RESECTION FOR GANGRENOUS INTESTINE.†

No.	Operator.	Where reported.	Disease.	Age and sex.	Length removed.	Mesentery.	Suture material.	Result	Cause of death.	Remarks.
1	Ramdohr, 1727.	"Moebius disput. Anatom.," Gothingæ, 1751, vol. vi.	Inguinal hernia.	.....	2 feet.	Wedge removed.	Invag. of upper end in lower; silk sutures.	R.		
2	De Vernale, 1728.	"Observ. et remarq. de chirurg. pract.," Mannheim, 1765.	Inguinal hernia.	.....	2½ inches.	.....	Invag. of upper in lower end; silk sutures.	R.		
3	Duverger, 1737.	Louis, "Mém. de l'acad. roy. de chir.," 1757, p. 188.	Inguinal hernia.	.....	2 inches.	.....	Ends sewed with silk sutures over trachea of calf.	R.	.....	Trachea of c'lf pass'd *per anum* on twenty-first day.
4	Schmidt, Jos., 1759.	"Dissertatio de Ileo.," Wien, 1759.	.....	.....	6 inches.	.....	Silk sutures.	R.		
5	Nayler, 1794.	Cooper, in "Anat. and Treat. of Hernia."	Inguinal hernia.	.....	4 inches.	Wedge removed.	Silk sutures; mesen. held against abd. wound by sutures.	R.	.....	Fæcal fistula on second day, which remained.
6	Cooper, A., 1806.	Cooper on "Hernia," p. 147.	Femoral hernia.	.....	2½ inches.	.....	.....	D.		
7	Cooper, A., 1806.	*Loc. cit.*, p. 148.	Femoral hernia.	.....	¾ inch.	.....	.....	D.	Recov. from prim'ry operation, but death in 2 months, due to closure of intestine.	On eighth day fæcal fistula formed.
8	Dieffenbach, 1836.	"Wochensch. f. gesam. Heilkunde," 1836, No. 26.	Inguinal hernia.	.....	3 inches.	Wedge removed.	Lembert's suture (silk).	R.	.....	Patient d. in 4 wks. fr. intest. obstruct. well above sutures.
9	Von Langenbeck, 1875.	"Arch. kl. Chir.," v. xix, p. 410.	Properitoneal inguinal hernia.	.....	20 ctm.	.....	Invag. (Ramdohr), with separation of mesent., & Lembert sutures of catgut.	D.	Delirium tremens and exhaustion.	Line of suture did not leak.
10	Kuester, 1877.	"Verh. der Gesellsch. f. Chir.," 1879, p. 83.	Femoral hernia.	.....	4 ctm.	Wedge removed.	Lembert's sutures with catgut.	D.	Septic peritonitis.	2 sut. had giv'n way & leakage tak'n place
11	Czerny, 1878.	"Berl. klin. Wochensch.," 1880, p. 638.	Femoral hernia.	Fem., 43.	10 ctm.	Wedge removed.	Two rows of silk sutures (24).	R.		
12	Kuester, 1877.	Rep. by Madelung, in "Arch. f. Chir.," Bd. xxvii, p. 84.	Ing. hernia; bef. op. fæces had escaped in peritonæum.	.....	5 ctm. by laparotomy.	.....	Lembert's suture (catgut).	D.	Septic peritonitis.	Eight hours after operation.
13	Kuester, 1878.	Personal communicat'n to Madelung.	Inguinal hernia.	.....	5 ctm.	.....	Lembert's suture (catgut).	D.	.....	Twenty-eight hours after operation.
14	Nicolidini, 1879.	"Wien. med. Blätter," 1879, Nos. 6 and 7.	Femoral hernia.	.....	.....	.....	Edges inverted and silk sutures.	R.	.....	Fistula formed on 5th day, but afterward closed.
15	Wahl, 1879.	"St. Petersburg med. Wochenschr.," 1879.	Properitoneal ing. hernia.	.....	15 ctm.	Wedge removed.	Lembert's suture, catgut (10).	D.	Peritonitis in 7 hrs.	Union of sutures good.
16	Woelfler.	"Wien. med. Wochensch.," 1881, p. 116.	Femoral hernia.	Fem., 65.	15 ctm.	.....	25 silk sutures.	D.	Septic peritonitis due to fæcal escape before operation.	
17	Hagedorn.	"Verh. Gesellsch. f. Chir.," 1880, p. 64.	Femoral hernia.	Fem., 68.	16 ctm.	Wedge removed.	Lembert's suture of catgut.	R.	....	On fifth day fæcal fistula formed.
18	Hagedorn.	*Loc. cit.*, p. 65.	Femoral hernia.	Fem., 40.	2 ctm.	.....	Lembert's suture of catgut.	R.	.....	On sixth day fæcal fistula.
19	Kocher.	"Bull. de soc. méd. de Suisse romande," April, 1880.	Ing. hernia, reduced *en masse* by pat.; laparotomy.	.....	42 ctm.	.....	Lembert's suture.	R.		
20	Ludvik, 1880.	"Wien. med. Presse," 1880, p. 743.	Femoral hernia.	Fem., 60.	10 x 12 ctm. of ileum.	Cut off close to attachment.	Upper invag. in lower end; 20 catgut sutures.	R.	.....	Stool on fourth day.
21	Bardenheuer, 1880.	"Die Drainirung der Peritonealhöhle," 1881, p. 218.	.....	.....	.....	.....	Two rows of suture.	R.	.....	Fistula formed, wh. healed in 4 mos.
22	Kocher, 1880.	"Centralbl. f. Chir.," 1880, p. 466.	Femoral hernia.	.....	11 ctm. sm'l intestine.	.....	Lembert's suture of catgut (8).	D.	Septic perit.; d. on 10th day; gang. of intest. 10 ctm. above line of suture.	

* "Med. Record," Sept. 22, 1882.

† For a number of the following cases I am indebted to the tables of Madelung and Reichel.

CASES OF IMMEDIATE RESECTION FOR GANGRENOUS INTESTINE—(*Continued*).

No.	Operator.	Where reported.	Disease.	Age and sex.	Length removed.	Mesentery.	Suture material.	Result	Cause of death.	Remarks.
23	Czerny.	"Berl. kl. Wochensch.," 1880, p. 45.	Inguinal hernia.	Male, 49.	6 ctm.	Wedge removed.	.....	D. dur. op.	Collapse and impact of vomited matter in trachea.	
24	Heusner.	"Deut. med. Wochenschr.," 1880, p. 558.	Femoral hernia.	Fem., 73.	10 ctm.	Wedge removed.	Lembert's sutures, catgut (10).	D.	In 24 hrs.; septic peritonitis; leakage thro' line of suture.	
25	Gussenbauer, 1880.	"Prager Wochenschr."	Inguinal hernia.	.....	18 ctm.	Wedge removed.	Two rows suture, Lembert's, catgut.	R.	.....	On sixth day, fistula formed; healed on fourteenth day.
26	Julliard, 1881.	"Rev. méd. de la Suisse romande," June 15, 1881.	Femoral hernia.	.....	18 ctm. by laparotomy.	Wedge removed.	Jobert's method; catgut.	R.		
27	Jaffé, 1881.	"Samml. klin. Vorträge" (Hamburg), p. 1699.	Femoral hernia.	.....	12 ctm.	Wedge removed.	Czerny-Lembert (catgut).	R.	....	Stool (spontaneous) on fourth day.
28	Taendler, 1881.	Personal communicat'n to Dr. Nebel. Rep. by Madelung.	Femoral hernia.	Fem., 52.	11 ctm.	.....	Ten catgut sutures between serous and muscular coats.	D.	In 62 hrs. after operation.; septic peritonitis.	Sutures loose; intest. gang. six inches above.
29	Billroth, 1881.	Communicated by Woelfler. Rep. by Madelung, "Arch. kl. Chir.," Bd. xxvii, p. 277.	Inguinal hernia.	Male, 60.	5 ctm.	....	Two rows silk, outer row in Lembert's method.	R.	.....	Fistula formed, wh. closed in three weeks.
30	Roggenbau, 1881.	"Berl. kl. Wochensch.," 1881, No. 29.	Inguinal hernia.	.....	32 ctm.	.....	Czerny-Lembert (silk).	R.	.....	Stool on 5th day.
31	Rydygier.	"Berl. kl. Wochensch.," 1881, p. 593.	Femoral hernia.	Fem., 58.	54 ctm.; projecting ends of muc. mem. cut off	.....	1st row of contin. gut sutures thro' ser. & musc. coats; 2d row of Lembert's.	D.	Peritonitis in twenty hours; line of suture closed.	
32	Billroth (Woelfler).	"Verhand. d. Gesellsch. Chir.," 8th Cong., p. 85.	Femoral hernia.	.....	.....	.....	....	D.		
33	Billroth.	"Wien. med. Wochensch.," 1881, No. 5 (Nittelshöfer).	Crural hernia.	.....	15 ctm.	....	Two rows, 25 sutures.	D.	Collapse.	Fæces in perit. cav., prob'bly escap'd in pulling out intest.
34	Billroth (Woelfler).	*Loc. cit.*, p. 85.	.....	.....	.....	.....	....	D.		
35	Bryk.	Schramm in "Przeylad Lekarski," 1881, No. 22. Mentioned by Rydygier.	Femoral hernia.	Fem., 36.	12 ctm.	.....	Lembert's.	D.	Collapse.	In few hours after operation.
36	Bryk.	*Loc. cit.*	Inguinal hernia.	Male, 29.	12 ctm.	.....	Lembert's.	D.	On 7th day from inflam. of lungs and carbolic-ac. poison.	Patient vomited fr'm time of operation until death.
37	Obalinski.	Personal communicat'n to Rydygier.	No details.	.....	.....	....	.....	D.		
38	"	*Loc. cit.*	" "	.....	.....	.....	....	D.		
39	"	"	" "	.....	.....	.....	.....	D.		
40	"	"	" "	.....	.....	.....	.....	D.		
41	Korzeniowski.	"	.....	.....	.....	.....	.....	D.		
42	Weiss.	Communicat'n to Michl. Mentioned by Rydygier.	Inguinal hernia.	Fem., 47.	10 ctm.	.....	Te n Lembert and 12 superfic. fine silk sutures & invaginat'n.	D.	Inanition due to fæcal fistula.	Died at end of four weeks.
43	Nichaus, P.	"Correspondenzbl. Schweiz. Aerzte," 1886, p. 70.	Femoral hernia.	Fem., 58.	.....	.....	....	D.	In 2½ days; due to inanition.	
44	Kofranyi.	"Wien. med. Wochensch.," 1885, p. 965.	.....	Fem., 50.	.....	.....	Serous coat only united.	R.		
45	Rosenberger.	"Munch. med. Wochensch.," 1888, p. 447.	Femoral hernia.	Fem., 40.	.....	.....	Serous coat only.	R.		
46	Jones, S.	"Lancet," 1885, p. 616.	.....	Fem., 42.	....	.....	Czerny-Lembert.	?	Pt. died at end of 15 d.; supposed to be due to abort'n; sept. peritonitis present.	
47	Viertel.	"Deut. med. Wochensch.," 1877, No. 10.	Femoral hernia.	Fem., 56.	3 ctm.	Wedge removed.	Lembert, of silk (15).	R.		
48	Fischer.	Reported by Reichel, "Deut. Zeitsch. Chir.," vol. xix.	Umbilical hernia.	Fem., 55.	5 ctm.	.....	Lembert's.	D.	Septic peritonitis on second day.	
49	Fischer.	Reichel, *loc. cit.*	Ing. hernia.	Fem., 47.	7 ctm.	.....	Lembert's.	R.		
50	Moledonkow and Minim.	"Centralbl. f. Chir.," 1881, No. 46.	Inguinal hernia.	Male, 21.	.....	.....	Lembert's catgut (25).	R.		
51	Roser.	"Centralbl. f. Chir.," 1881, No. 52.	Femoral hernia.	.....	1½ ctm.	.....	2 rows; 8 in inner and 6 in outer; coats inverted.	D.	In 42 hrs. from ileus. Valve-like swelling of mucous memb.	
52	Aman.	Schmidt's "Jahrbuch," 1882, p. 266.	Femoral hernia.	Fem., 63.	.....	Wedge removed.	Czerny's.	D.	In 17 hours from peritonitis.	Line of suture closed.
53	Bardeleben.	"Deut. Gesellsch. f. Chir.," Berlin, 1883.	.....	.....	.....	.....	....	D.	.....	No details.
54	Bardeleben.	.....	.....	.....	.....	.....	....	D.	....	No details.
55	Feld.	"Arch. kl. Chir.," Bd. xxx, p. 222.	Inguinal hernia.	Male, 33.	18 ctm.	Wedge removed.	Two rows of silk interr. sutures.	R.		
56	Hofmokl.	"Wien. med. Presse," 1888, p. 357 and 394.	Umbilical hernia.	Fem., 48.	22 ctm.	.....	Three rows.	D.	Peritonitis at end of 24 hours.	
57	Reichel.	"Deut. Zeitsch. f. Chir.," Bd. xix, p. 230.	Umbilical hernia.	Fem., 56.	21 ctm.	.....	Lembert's.	D.	Septic peritonitis of 2 days.	Union imperfect; op. lasted 2½ hours.
58	Reichel.	*Loc. cit.*	Inguinal hernia.	Fem., 55.	5 ctm.	.....	Lembert's.	D.	Septic peritonitis on 2d day.	Leakage at line of suture.
59	Reichel.	*Loc. cit.*	Ing. hernia.	Fem., 47.	7 ctm.	.....	Lembert's.	R.		
60	Reichel.	*Loc. cit.*	Inguinal hernia.	Male, 35.	37 ctm.	.....	Lembert's.	R.	....	Fæcal fist. formed by punct. of intestine on account of obstruction.
61	Serres.	"Rev. de chir.," 1887, p. 928.	Inguinal hernia.	Fem., 69.	8 ctm.	....	.....	R.		
62	Prater.	"Rev. de chir.," 1884, p. 859.	Inguinal hernia.	Fem.. 61.	21 ctm.	....	Two rows, one for muc. memb. and one for serous coats.	D.	Shock at end of 24 hours.	
63	Ill, E. J.	"Med. Record," 1882, Sept. 22.	Femoral hernia.	Fem., 24.	....	.....	Lembert's.	....	.....	On fifth day fæcal fistula formed.
64 to 83	Mazzoni.	"Ital. Cong. of Surg.," 1886, reports 20 cases done in Italy up to 1886.	20 cases of strangulated hernia.	.....	.....	.....	.....	12R 8D		
*83	Mazzuchelli, A.	"Gaz. Med. Ital.," Lomb., 1884, p. 475.	Inguinal hernia.	Male, 51.	16 ctm.	.....	Czerny-Lembert.	R.	.....	Operation lasted two hours.

* I have added these cases on Mazzoni's authority. Have been unable to ascertain particulars of more. No. 83 is included in this number.

CASES OF IMMEDIATE RESECTION FOR GANGRENOUS INTESTINE—(*Concluded*).

No.	Operator.	Where reported.	Disease.	Age and sex.	Length removed.	Mesentery.	Suture material.	Result	Cause of death.	Remarks.
84	Kocher.	"Correspondenzbl. f. Schweiz. Aerzte," 1886.	Inguinal hernia.	Male, 57.	1 m. 60 ctm.	Separat. close to attachment to gut.	Inner of interr.; outer continuous; both silk.	R.		Out of bed on 14th d.; disch. on 18th day. No bad effects.
85	Sobolewski	"Deut. med. Woch ensch.," 1887, p. 496.	Femoral hernia.	Fem., 26.	15 ctm.	Wedge removed.	Two rows interrupted.	R.		Operation lasted ¼ hour.
86	Nedopil.	"Wien. med. Woch ensch.," 1880, No. 51.	Inguinal hernia.	Male, 52.	8 ctm.	Mesent'ry separated at attachment.	2 rows, in part continuous and in part interrupted.	R.		
87	Nedopil.	" " "	Inguinal hernia.	Fem., 48.	20 ctm.			D.	From septic peritonitis on second day.	Gangrene of intest. for 3 ctm on both sides of sutures.
88	Nedopil.	" " "	Femor. hernia which slipped into abd., and feces escaped	Fem., 53.				D.	In six hours from septic peritonitis and collapse.	Laparotomy was performed; death not due to operation.
89	Nedopil.	" " "		Fem., 49.	6 ctm.		Two rows of interrupted sutures.	R.		
90	Burckhardt.	"Correspondenzbl. f. Schweiz. Aerzte," 1887.	Inguinal hernia.	Fem., 21.			Inner row contin.; outer row interrupt.	R.		
91	M. Banks.	"Lancet," 1885, p. 750.	Inguinal hernia.	Male, 25.		Wedge removed.	Czerny-Lembert.	R.		Operation lasted two hours.
92	Parker.	"Brit. Med. Jour.," Jan. 22, 1887.	Inguinal hernia.	Male, 50.	12 inches.	Wedge removed.	2 rows of inter. catgut; muc. memb. not included.	R.		
93	Carson, N. B.	"Jour. Am. Med. Assoc.," May 7, 1887.	Ing. hernia; laparotomy.	Male, 12.		Wedge removed.		R.		
94	Stewart, J. E.	"Am. Jour. of the Med. Sci.," 1886, p. 152.	Femoral hernia.	Male, 68.	4 inches.	Removed at point of attachment.	Lembert's, of catgut.	R.		
95	Crespi.	"Bollett. Cliniche Milano," Sept., 1887.	Inguinal hernia.	Fem., 53.			Lembert's.	R.		
96	Postempski	"Bollet. della Acad. Med. di Roma," Dec., 1887.	Inguinal hernia.	Male, 20.				R.		
97	Prati.	"Centralbl. f. Chir.," 1883, p. 45.						D.	Shock a few hours after operation.	
98	Marcy.	Rep. by Ill, *loc. cit.*						D.		
99	Rosenberger.	"Magdeburg Naturversamm."	Inguinal hernia.					D.		
100	Rosenberger.	*Loc. cit.*; rep. by Haenel, "Arch. kl. Chir," Bd. xxx, p. 395.	Femoral hernia.					D.		
101	Kosinski.	"Centrlbl. f. Chir.," 1886, p. 178.						D.		
102	Kosinski.	*Loc. cit.*; rep. by Haenel.						D.		
103	Riedel.	"Deut. med. Wochensch.," 1883, p. 656.	Inguinal hernia.		30 ctm.			D.	In 4 days, septic peritonitis.	Intest. gangr. above and below sutures.
104	Wettergren.	"Hygeia," 1883; "Centralbl. f. Chir.," 1883, p. 784.	Femoral hernia.	Fem., 60.	10 ctm.		Catgut.	D.	Septic peritonitis in two hours.	In replacing gut, fæces escaped in abdomen.
105	Wettergren.	*Loc. cit.*	Femoral hernia.	Fem., 65.	10 ctm.	Wedge removed.		R.		Death in 25 days from cancer.
106	Walter, K. A.	"Hygeia," 1886; "Centralbl. Chir.," '86, p. 692.	Inguinal hernia.	Male, 52.	28 inches.	Separated at attachment.	Two to three rows of Lembert's sut.	R.		
107	Agnew, D. H.	"Med. and Surg. Reporter," 1888, p. 321.	Umbilical hernia.	Female.	14 inches.	Wedge removed.	Lembert's silk.	D.	In 24 hours from hæmorrhage.	One suture torn out, but no leakage.
108	Fuller.	"Med. Rec.," vol. xxii, p. 430.	Femoral hernia.	Fem., 50.	5½ inches.		Continuous linen.	R.		
109	Richardson, M. H.	"Boston Med. and Surg. Jour.," 1886, p. 535.	Umbilical hernia.	Fem., 40.	8 inches.			R.		
110	Richardson, M. H.	*Loc. cit.*	No details.					D.	Exhaustion or collapse in 12 hours.	
111	Rosenberger, J. A.	"Münch. med. Wochensch.," 1888, p. 447.	Femoral hernia.	Fem., 40.			Serous coat only sutured.	R.		
112	Burtscher.	"Correspondenzbl. Schweiz. Aerzte," 1881.	Femoral hernia.	Fem., 40.				D.	On fifth day.	
113	Lange, F.	Personal communication.	Inguinal hernia.	Male, 45.	5 inches.		Czerny-Lembert.	D.	Collapse in few hrs. after operation.	
114	Briddon, C. K.	Personal communication.	Femoral hernia.	Fem., 40.	4 inches.		Lembert's.	D.	Collapse within 24 hrs. after operation.	
115	McCosh, A. J.		Inguinal hernia.	Fem., 66.	4 inches.	Wedge removed.	Czerny-Lembert; inner of silk, outer of catgut.	R.		

MEDICAL EDUCATION
AND METHODS OF INSTRUCTION IN MEDICINE.*

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At this time, when so much attention is being paid to education in general, when older methods are being superseded by new and very different ones—when men are beginning to learn that the aim of education is not the setting of wearisome tasks with a view of "training the mind" (often at the cost of confusing the understanding), not the acquirement of mere knowledge but of wisdom—it is well to look at the methods of instruction in medicine. I do not intend to weary you with a useless discussion of points of little moment, but wish to direct attention to matters of practical moment. Many members of this society are teachers. All are interested in raising the standard of medical education. Within the past ten years more radical changes in the modes of teaching have occurred than took place in the previous century, perhaps even more than in the centuries which have elapsed since the first didactic lectures were given. How far were the older methods good and how far the newer? For absolute dependence upon didactic instruction we must not substitute clinical and laboratory work unaided by systematic lectures. There is a certain something taught by a good lecturer which can not be imparted by books, recitations, or practical instruction. The lecturer can *feel* his audience and knows whether it understands him.

* Read before the New York Clinical Society, January 25, 1889.

In some things the personal influence of the speaker seems to make an impression which nothing else can make. Yet this sort of instruction is only of limited value. There are also distinct limits to laboratory and clinical work and recitations as means of teaching medicine. It must be admitted, however, that if we were compelled to abolish one of these methods it would be the didactic lectures which could best be spared. After considerable experience in "quizzing" and some as a didactic and clinical lecturer, I am convinced that this statement is true. I have asked many students and recent graduates whether they learned most at these lectures or at "quiz." The answer has always been that in almost all subjects it was in the "quiz" that they learned; not at the lectures. The impossibility of teaching histology, pathology, actual, general, or physical diagnosis, surgery, or anything which requires the use of trained senses, is self-evident. As well attempt to teach piano-playing in such a way! On the other hand, no clinic, laboratory, "quiz master," or book can really entirely supplant the lectures.

No class of men is more conservative than teachers. It is strange how tenaciously they cling to traditions. In the past, books were scarce and dear and lectures were the most important means of instruction. Now, when books are common (alas, how very common!), lectures are by no means so valuable. In spite of this fact, they continue to hold far too high a place in the instructor's mind. It is distressing to hear a lecturer attempting to teach a subject which can only be learned by practical study. Anatomical lectures are, for the most part, very useless. In the lecture-room general anatomical principles may be taught; much can also be taught in regard to development; but the dissecting-room is the place for most real instruction. All of this has been said before, and is, indeed, so self-evident that I would not repeat it were it not that so many medical students, already overworked, are compelled to waste a number of hours each week listening to professors who are also wasting time in vain attempts to explain, in a most laborious, tedious, and complicated way, facts which can be learned far more easily and accurately. It is a shame that the brilliant men who occupy many of the chairs of anatomy should be employed in such a futile effort. It is a shame that students should be compelled to listen to such lectures. Time wasted is one of the few entirely irremediable losses.

What has been said of anatomy applies, though with less force, to lectures on physiology and the other subjects taught. It must be remembered that in physiology, medicine and surgery, and that most confusing jumble called therapeutics, knowledge rapidly advances. A lecturer has, therefore, a peculiar usefulness in bringing his subject up to the times. One of the greatest difficulties with teachers of the so-called "theoretical" branches is that of deciding what should be taught to medical students and what omitted. While appreciating the absolute necessity of considerable knowledge of anatomy and physiology to the practicing physician, I must frankly say that a great deal of the talk about the need of thorough knowledge of these branches is, to my mind, nonsense. Bearing in mind that the great aim of a medical college should be to produce good physicians, and that it is impossible for any man to be really a good anatomist, physiologist, and practicing physician, it is hardly well to cram him too full of information which he will soon forget and which he will rarely need. Perhaps the anatomists, more than physiologists, err in trying to teach too much. The kind of mind necessary to an anatomist is one capable of grasping detail. The study of anatomy is well calculated to intensify this quality. Very often the teacher, in his interest in detail, fails to see the relative importance of things. To him it seems that the exact course and relations of some small nerve are as necessary to his three or four hundred hearers as the topographical anatomy of the thoracic viscera. Yet his audience are students most of whom wish to become practitioners. They may live long lives and never need the first piece of information. They *must* know the second if they wish to have even a slight knowledge of diagnosis. All of the theoretical branches are given fresh life and interest if the teachers would take the trouble to show, as far as possible, their practical application.

Clinical instruction is a most valuable method of teaching. This method may be employed in two very different ways—clinical lectures to large audiences and bedside instruction to small classes. Of the former it may be said that in some cases it is no better than didactic lectures. The patient is merely a lay figure, and might as well be a plaster model so far as the students are concerned. A lecture upon symptomatology with a patient for an excuse or text differs not at all from a lecture without such patient. This, of course, does not apply to all cases; only to those where the patient has nothing visible as a symptom.

To small classes bedside instruction is of the greatest value. By "bedside instruction" I mean teaching medicine not only actually at the bedside, but also in any manner which enables each student personally to examine the case. There the student learns to use his special senses and his mind. He also is able to get some idea of the differences between patients in the clearness of their accounts of their illness and how to gather the facts upon which a diagnosis is based and treatment instituted. He can see the physiognomy of disease, and can learn to make careful, thorough, and systematic examinations. Such study corresponds to work done in the laboratory or dissecting-room. Its value can hardly be overestimated as an adjunct to thorough instruction by means of didactic lectures, reading, and "quizzing."

In both large and small classes of medical students there is one serious danger—the instructor is apt to forget that he is trying to teach men of little previous experience. He therefore is inclined to show rare and curious cases rather than those which make up the bulk of medical experience. It is much more useful to teach students to examine and study cases of chronic gastritis, phthisis, etc., than to show them cases of leucocythæmia, acute yellow atrophy of the liver, or any rare disease. The medical student, like every student, should be taught to think and to see. Very peculiar and complicated cases are no more fitted for such study than Wagner's operas or Bach's fugues to a beginner in music. A clinic is not intended to be a place where the

instructor is to impress students with a sense of his own diagnostic ability, but where he teaches them how to work.

As a check upon clinical work, the autopsy-table should have a more prominent place than it heretofore has held in this country. I will admit that this sort of check has not been altogether pleasant to me personally. It is by no means gratifying to show a case to students, make a diagnosis, and explain the precise reasons for this diagnosis, and then at an autopsy, held before the same students, demonstrate, with frightful precision, that the diagnosis was absolutely incorrect. This I have done more than once. The only thing more embarrassing is to meet with similar blunders committed by some one else, for one feels that one must try to excuse and explain them.

The words of "Truthful James" are in one's mind at such a time:

> "Now, I hold it isn't decent for a scientific gent
> To say another is an ass, or at least with all intent;
> Nor should the individual who happens to be meant
> Reply by heaving rocks at him to any great extent."

It is unpleasant, but perfectly right, to expose one's own errors; but it is more unpleasant to do the same for another. Moreover, one can in so doing easily do injustice, on the one hand, by creating a false impression that the error was more serious and inexcusable than it really was, and, on the other, by failing to tell the exact truth while trying to excuse and explain the blunder. Although all science should be studied for the love of Truth (with a big T), there is usually a greater or lesser mixture of this love with personal pride and ambition. Though the clinician, whose errors have been exposed by the pathologist, does not actually "heave rocks at him," he sometimes would like to, and he often feels hurt, not infrequently with reason. As a "jack" of both trades—clinical medicine and pathology—I can see how easy it is to make blunders and how often they are natural and excusable. Unfortunately, there is too often a spirit of antagonism between clinicians and pathologists. The former regard the latter as people who don't know so very much after all, and are, moreover, dogmatic and disagreeable, while the pathologist is apt to dwell with great satisfaction upon clinical mistakes which he has demonstrated. Pathology is not such an exact science as many seem to think. While the pathologist may clearly see the clinical errors, he blunders in much the same way. Do not understand me to mean that the pathologist should try to cover up clinical blunders. There is far too little truth told in our profession because of a fear of hurting men's feelings. It is, however, quite as untruthful to give too much as too little prominence to a fact.

The "quiz" has been and will be an important part of medical education. There is no better method of fixing knowledge than by recitation, except by teaching. The "quiz," like everything else, is undergoing change. As a matter of course, the student wants a "quiz" which will enable him to pass his examinations. The method of instruction, therefore, varies with the nature of these latter. The much-abused "cram quiz" was a natural result of the kind of examinations usual in the colleges and hospitals. This sort of quizzing had its advantages; it taught system in study and recitation; but let us hope it has passed away forever! It was calculated to give the student isolated facts and not general principles. While the examiners were in the habit of asking such questions as "What is the strength of the preparations of iodine in the U. S. Pharmacopœia?" or "What is Smith's disease?" the cram quiz was absolutely essential to the student. So long as the object of examinations seemed to be to ascertain not what a student knew, but what he did not know (always a large subject), he was obliged to learn the most peculiar and useless things in a mechanical way. Of late, since the idea has been slowly gaining ground that general principles and their application are really more important than isolated facts, the "cram" system has languished. Examinations are always objectionable, since they, instead of real knowledge, inevitably become an end for which the student works. When questions of the above-mentioned type are asked, common examinations become simply detestable.

In the curriculum now in vogue in our colleges is much that were better omitted altogether, and still more that could be abolished in the didactic courses. There is a growing sentiment against the teaching of materia medica, properly so called. Therapeutics should take its place and some laboratory instruction should be given in pharmacology. Most of the anatomical lectures could, as I have said, be abolished with advantage. The lectures on physiology could be largely supplanted by demonstrations to smaller classes. Most of the other didactic courses could be cut down. In the laboratories, as elsewhere, the fact that the object of the college is to give a good general education, not to make experts in the various branches, should be remembered. Everywhere the faculty of observation and thinking should be improved. The laboratory teacher is as apt as any one else to think his specialty of too great importance. Let special workers be taught as much as possible, but the medical student needs much simpler work. Thoroughness is necessary; but the word has a relative as well as an absolute meaning. It is possible to be thorough in a simple course as well as a complicated one.

What should be taught in chemistry at a medical school is a serious question. One thing at least might be emphasized with advantage—namely, that a man who is untrained in practical analytical work had better not attempt any. If this idea could be impressed upon the mind of the student there might be less time wasted in making inaccurate observations. I do not speak of simple clinical tests, which are recognized as rough, but of more thorough analysis. There is no time for satisfactory laboratory instruction. Perhaps the best that can be done is to teach the general principles and to demonstrate them practically. There is no use in burdening the mind with "atomic weights"; there is much in a clear explanation of what is meant by the term. To write formulæ is of little use—to understand them is important. Physics, unobscured by formulæ and uncomplicated by adding to each law the name of its discoverer, should be more fully explained. It is perfectly possible to make clear the doctrine of the correlation of forces, and never once refer to the square root of anything. The same may be said of all the essentials of phys-

ics. Of course it will be said that these principles should be understood before men enter the medical school. Perhaps they should, but, as a large number of men have the most muddled notions about them after they graduate, it seems probable that they are not. A great many rational men are very vague in their ideas about the difference between fluids in motion and fluids at rest, for example; a great many seem to be more or less confused by the relations of chemical combination to heat, motion, etc.

There is no use in criticising each branch separately. The object of this paper is merely to bring to your mind some points for discussion.

Preliminary education is beginning to receive some of the attention it deserves. It is well to consider what is the best training for one who intends to study medicine. Let me avoid starting the old discussion of the relative value of classics or mathematics. It seems to me that, if it really be necessary to "train the mind" by the study of some language in the irritating and complicated way so long the fashion among teachers of Latin and Greek, German might be made quite as dull, quite as involved and complex as Latin. When the student finishes the "training process" he will end with a more or less confused notion of a language which he must use and can learn perhaps more easily because of the training. I am not speaking of the rational teaching of Latin and Greek, merely of the method of lifeless drill in grammar so long in vogue.

Let us suppose that a student has a fair general education; what does he need to prepare for medical studies? Surely the answer should be: Special training in some branch of science requiring observation, classification, and more or less delicate use of the hands and special senses. It does not make much difference what is selected—chemistry, botany, comparative anatomy, or any other. Whatever it be, let the student learn it not from a book alone, but let him do practical work. This does not preclude a good education in other matters; in fact, it presupposes such an education.

Perhaps the greatest need in medical education is some method for teaching teachers. It is almost unavoidable that medical instructors should go to work in an amateurish sort of way. Teaching to them is a small part of their aim in life. Most men really are practitioners first and teachers afterward. Many seek to teach merely because they can thereby advance their private practice. This is natural, as instructors are poorly paid. Unfortunately, many men teach without having the faintest idea of the difficulties of so doing.

It is not only necessary that a teacher should know his subject. He should also know precisely what he wishes to teach about it. He should appreciate the difficulties likely to trouble his pupils. He should cultivate the faculty of expressing himself clearly and concisely. Should be on the lookout for illustrations and similes. Above all, he should try to learn how to make his pupils think for themselves. As in all educational institutions, so in medical schools, the greatest object should be to show *how* work is done.

The Medical Department of the University of Pennsylvania.—Dr. John Guitéras, of the Marine-Hospital Service, has been elected professor of pathology and morbid anatomy.

A CASE OF BILATERAL POST-HEMIPLEGIC ARTHRITIS.

By F. LE ROY SATTERLEE, PH. D., M. D., AND J. LEONARD CORNING, M. A., M. D.

It is a well-known fact that after the occurrence of hemiplegia from cerebral hæmorrhage, certain joints on the paralyzed side may become the seat of acute or chronic inflammation. The time at which these joint affections sometimes occur is a factor worthy of note. In a certain percentage of cases the arthritis makes its appearance a short time before, or concomitantly with, or a short time after, the advent of contracture; or, in other words, the inflammation of the joints is a concomitant, or, to speak more exactly, *appears* to be a concomitant, of the secondary changes in the cord. Whatever current conceptions regarding cerebro-spinal physiology may be, the fact itself, regarded even from a purely pathological standpoint, is not without interest.

The case about to be narrated differs from ordinary post-hemiplegic joint trouble in this important regard: that not only were the articulations on the paralyzed side involved, but several of those on the healthy side were likewise the seat of acute inflammation.

Now, it is well known that after a lesion of the great ganglion cells of the motor portion of the cortex, or of the motor fibers of the corona radiata, the internal capsule, the crus, or the pons, secondary degeneration of those motor fibers which are situated below the lesion takes place. If the decussation of the motor tract is a complete one, we find, on section of the cord, that the degenerated tract is situated in the lateral column on the side opposite the primary central lesion. Should, however, the decussation be incomplete, then we find a degenerative condition of the uncrossed motor fibers on the same side as the primary lesion. These uncrossed fibers are known as the direct motor tract (see the investigations of Flechsig), and they are found to a great extent in the column of Türck.

Besides these secondary changes in the direct motor tract after cerebral lesions, Pitres has shown that, in some cases, a slight secondary degeneration may be found in the lateral column on the same side as the primary central lesion.

Now, is it not possible that, where vaso-motor and trophic disturbances are found, after hemiplegia not only on the paralyzed side but in the healthy limbs as well, such an occurrence has something to do with the presence of secondary disease, not only in the decussated fibers, but in those uncrossed filaments which have been examined by Flechsig and Pitres?

We are fully aware of possible theoretical objections to this proposition; but this much may be said of it: that it suggests investigations which may possibly lead to more exact knowledge.

Abandoning these purely speculative considerations, let us examine briefly the more salient features of the case which has called them forth.

A. E. C., a man fifty-two years of age, suffered, some two years since, from hemiplegia of the left side, due apparently to hæmorrhage, as there was neither cardiac disease nor any other

probable sources of embolism. His kidneys were sound, and patient denied that he had had syphilis, though the fact that there was a complete loss of hair, both from the head, face, and body, some fifteen years before the attack, might be construed as militating against the truth of his statement on this point. Still, so far as could be ascertained, this was absolutely the only suspicious symptom, all other manifestations of specific trouble being absent. Dr. Satterlee, who attended him from the beginning, found the left side completely paralyzed and anæsthetic. The anæsthesia disappeared in about ten days; there were few if any evidences of aphasia, and the affected muscles began to regain strength at an early date.

This improvement continued for three or four months; the patient was able to get about by the aid of sticks, and could use the affected hand in holding the newspaper and other operations of a grosser sort. At the end of this time the first evidences of rigidity were observed in the affected hand, and soon afterward (from two to three weeks) it was noticed that the healthy (right) arm and hand were thrown into a state of mild tremor whenever voluntary movements were attempted with the left hand. Complaint was also made of a feeling of "stiffness" in the right (healthy) hand. These manifestations were shortly followed by acute inflammation of the joints on both sides of the body. The first joint to become affected was the left shoulder, which became stiff and exceedingly painful, both to the touch and when passive and active motion were attempted. This was followed by acute inflammation of the joints of the fingers and toes on the affected side and a similar extension of the trouble to the joints of the healthy side. At the same time there was a considerable rise in temperature, which persisted for some days. The tenderness, local heat, redness, swelling, and other evidences of inflammation continued for several weeks. The appearance of these inflamed joints was and is still quite different from that of acute rheumatic arthritis. Two years subsequent to the apoplectic attack Dr. Corning saw the patient with Dr. Satterlee. At that time there was neither local heat, pain, nor other evidence of active inflammation in any of the joints. But, while the morbid process had evidently ceased, its effects were most apparent, especially in the feet and hands. The articulations of the metacarpal bones were so loosened that the fingers could be bent backward to a remarkable extent; there was a myxœdematous puffiness pervading both hands and feet, while the color of the skin was greatly and permanently altered to a bluish-red. This discoloration was evidently due to vaso-motor paralysis and consequent capillary stasis, for when the arms were allowed to remain pendent the hands immediately became engorged, offering apparently no more resistance to the influx of the blood-stream than if they had been so many bladders. On elevating the arms above the shoulders the transformation was equally remarkable, the blood flowing out and leaving the deformed hands in a condition of anæmia.



A similar condition of things is visible in the feet. As long as the patient remains in a horizontal position they give him no trouble; but, as soon as he sits or goes about with sticks for any length of time, they become livid, swollen, and the seat of considerable œdema. At such times the skin has a peculiar glossy, erysipelatous appearance, contrasting strangely with the cold, dead sensation experienced when the hand is applied to the part.

Such are the more salient features of this interesting case.

Hitzig* has published a number of cases of post-hemiplegic joint trouble in which, with one exception, the shoulder joint was alone affected. He believes that in these cases the articular affection has no direct connection with the central lesion, but that, on the contrary, it is to be "regarded as the consequence of the paralytic subluxation of the head of the humerus."†

Unfortunately for the integrity of this theory, the shoulder joint is by no means the only one which may be affected after hemiplegia; the elbow, the knee, and the metacarpo-phalangeal joints have all been seen in a state of more or less acute inflammation, due evidently to a preceding hemiplegia.‡ Hitzig's theory also fails to explain the vaso-motor complications—phenomena which can only be adequately accounted for by assuming a profound derangement of the central nervous system.

Charcot, besides showing that these joint troubles are not to be ascribed to either gout or rheumatism, has expressed some plausible opinions as to their probable pathogenesis. According to him, a kind of neuroparalytic process, resembling that which is universally assumed as the cause of the lividity and swelling of paralyzed limbs, is to be held accountable for these inflammatory changes in the joints.

Finally, Brown-Séquard# observed, as early as 1861, in

* "Ueber eine bei schweren Hemiplegien auftretenden Gelenkaffection." Virchow's "Archiv," xlviii, 1869, 3, 4.

† *Op. cit.*, page 353, fourth line from the top.

‡ "Sur quelques arthropathies qui paraissent dépendre d'une lésion du cerveau ou de la moëlle épinière." "Archives de physiologie," i, 1868, p. 396.

"Lectures on the Diagnosis and Treatment of the Various Forms of Paralytic, Convulsive, and Mental Affections," by C. E. Brown-Séquard, M. D., etc. The "Lancet" for July 13, 1861.

the course of one of the Gulstonian Lectures at the Royal College of Physicians, London, that "this subinflammation in paralyzed limbs is the result of an irritation of the vasomotor or nutrient nerves in the encephalon."* Here, then, we have a theory, founded, apparently, upon premises which are quite the opposite of those upon which Charcot bases his opinions.

As to the occurrence of the joint troubles on the healthy side, nothing further need be said than that such phenomena, though curious enough in themselves, are no more paradoxical than the associated movements and cognate phenomena so frequently observed after hemiplegia. Whether the occurrence of secondary degeneration in the cord about the time the arthritis makes its appearance is to be regarded as constituting in some cases a co-sequence, or merely an accidental concomitant, is, of course, a matter of the purest speculation. Until physiology has done more for us, it is, therefore, idle to anticipate great things from mere deductive reasoning, in so far as the ultimate elucidation of the pathogenesis of these joint affections is concerned.

ACUTE ŒDEMA OF THE SUBEPIGLOTTIC REGION AND LOWER PHARYNX IN A DIABETIC PATIENT.†

By E. J. MOURE, M. D.,
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I shall not refer here to the history of acute and primary œdema of the mucous membrane of the larynx, the existence of which is proved to-day by numerous and perfectly established facts.

The influence of cold and traumatism (injuries) in the production of serous infiltration is equally clear, and the question has been treated learnedly and at length by my former *chef de clinique*, Dr. Charazac, of Toulouse, in his important monograph on "Œdema of the Larynx," published in Paris in 1885.

On the contrary, observations of dyscrasic œdema are less numerous, although Lefevre (quoted by Lestier in his well-known work) has reported facts relating to œdematous infiltration in the case of overworked convicts. Granting that the malarial cachexia also gives rise to this lesion, we must acknowledge that cases of this class are far less numerous than those first mentioned. As much must be said of scorbutic œdema. The infiltration of albuminuria, on the other hand, is rather better known, and it would be even easier to report several examples of this complication in Bright's disease. Its appearance in an affection essentially œdematous (characterized by anasarca of the eyelids, extremities, etc.) is likewise readily understood. Facts relating to laryngeal œdema developing in the course of diabetes are, however, much rarer, and it is especially to this subject that I take the liberty of calling your attention, a case of this kind having recently been under my observation:

Mr. X., fifty-three years of age, consulted me on the 14th of June, 1888, concerning a difficulty which he experienced in swallowing saliva. He was apparently robust and had always enjoyed good health, but has been subject to trouble with his throat, which, however, has been usually of short duration, yielding to anodyne medication (gargles and mild saline purgatives). This time the attack appeared to be worse than usual. He experienced something akin to pain on the right side when swallowing his saliva and food; wine produced a disagreeable burning sensation; the pain seemed to extend to the ear on the same side; respiration was not embarrassed. He was able to attend to his usual occupations. Appetite fairly good. When questioned as to a probable cause for his sore throat, he thought he might have caught cold three days before, while out on the water. Upon examination, I found the tongue coated and dirty; the mucous membrane of the posterior wall of the pharynx was somewhat redder than normal, and the pillars of the fauces seemed thickened and glazed; the pharynx was rather dry, without abnormal secretion.

Laryngoscopical Examination. — Near the base of the tongue on the right side and on a level with the lateral insertion of the epiglottis was a tumefaction, red at its borders and almost transparent in the center, which, gaining the outside of the arytæno-epiglottidean fold, projected considerably into the sinus pyriformis, partially obliterating it. The edge of the epiglottis was infiltrated and red. In a word, the œdema had invaded the whole right subepiglottic region and the external part of the arytæno-epiglottidean fold of that side, reaching to the orifice of the œsophagus. The painful symptoms complained of were now quite easily explained, and having been assured that the first manifestations were of but three days' standing, and, moreover, having examined the heart and lungs by way of caution, I prescribed a saline draught (sulphate of sodium), a gargle, and emollient fumigations, as well as a hot poultice to the right side of the neck. Three days afterward, June 18th, all trace of œdema had disappeared, likewise the dysphagia and pain complained of. The patient noticed, however, a slight pricking sensation near the base of the tongue. Antiphlogistic medication was discontinued and a gargle of iodo-phenol and laudanum substituted. I could not, however, understand how such a trivial influence could produce this œdema in a vigorous, healthy subject, and therefore asked the patient to have his urine analyzed.

June 29th.—The patient returned to me very much frightened at the result of the examination, the chemist having found sixty grammes of sugar to the litre; he also reported that the urine was largely increased in amount. Specific gravity, 1·039. In order to be perfectly certain, another analysis was made by a different chemist a week later, and this time were found *seventy-seven grammes to the litre.* No trace of albumin or other pathological residue. In the presence of such a considerable quantity of glucose I did not hesitate to attribute the production of the laryngeal œdema to this morbid condition, and I advised the patient to treat the diabetes. This he has scrupulously done.

As I have remarked above, sugar was present in such quantity that I had no fear in attributing the laryngeal œdema to the existence of this product. Had the cold been the ætiological factor and recognized as capable of producing the acute œdema, it surely would have been one of those cases in which its influence would have been very manifest and its action promptly felt. Here, on the contrary, the patient was obliged to make an effort of memory in order to connect his excursion upon the water with his subse-

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* *Op. cit.*, page 29, ninth line from the bottom of page.

† Presented at the tenth annual congress of the American Laryngological Association.

quent condition. On the other hand, as neither the ingestion of hot liquids nor the presence of a foreign body could be regarded as causal, apparently our only resource was to attribute the observed phenomena to the minimal cause mentioned. I was thus led to order an examination of the urine of my patient, and therefore do not hesitate to regard the diabetes as the primary cause of the œdematous infiltration. Hence, I think, in the so-called acute cases of laryngeal œdema, with but few exceptions where the cause of the trouble is evident (burns, traumatism, foreign bodies, etc.), it would be wise to have the urine examined, and thereby we would perhaps find, in the majority of cases, the primary cause of a lesion which, at first sight, is often inexplicable. With the view of calling atttention to this point, I have taken the liberty of offering this communication for the consideration of your learned body.

August 3, 1888.

SOME RESULTS IN THE TREATMENT OF ATROPHIC RHINITIS WITH THE GALVANIC CURRENT.*

By J. H. HARTMAN, M. D.,
BALTIMORE.

At the last congress of this association the attention of the fellows was called to some recent investigations by Dr. Delavan of the treatment of that form of rhinitis of the atrophic variety by the application of the galvanic current, at the same time referring to some conclusive results which Dr. Shurly had arrived at several years previous. Since then it has been my pleasure and profit to investigate and carry out the suggestions of Dr. Delavan and Dr. Shurly, and I beg to bring before you the results for your consideration.

In an article in the "Medical Record," September 16, 1882, Dr. Bosworth speaks of the application of the faradaic current in the treatment of turgescence of the nasal mucous membrane, which he regarded as due to lack of tone in the muscular coat of the venous sinuses. His experience was a favorable one, being confined, though, entirely to the use of the faradaic current, but suggests that the galvanic current may be equally valuable, and probably less painful.

Dr. J. D. Lente, in an article on the "Treatment of Nasal Diseases by Electricity," in the "Medical Gazette," vol. ix, p. 471, 1882, also refers to this method of treating nasal turgescence and engorgement, and considers its action as prompt and decided. He further says that it may and has been used by him for other abnormal conditions; but Dr. Lente used the galvanic current. He advises not to have the current too strong, using from two to three cells, his method of application being very similar to that advised by Dr. Delavan, but does not say whether he uses the positive or negative pole of the battery in the nostrils. He claims no originality in this method of treatment, stating that he was not aware that there was anything novel about it, having used it for some years—referring also to Dr. Bosworth's article in his remarks. So far these are the only references that I have been able to trace up upon the application of either the mild faradaic or galvanic current in the treatment of nasal diseases.

The action of the galvanic current upon mucous membranes has not, up to the present time, been satisfactorily explained. In my own view, I have no doubt that a stimulating action is set up, causing a molecular change and altering the secreting functions of the tissues. This, of course, only applies to mild currents, for, should a strong current be used, we then get destruction of tissues and death to cell-forming structures.

During the past fifteen months twenty-one patients with atrophic rhinitis have been treated by me with the mild galvanic current. Fourteen of them have been discharged cured. Five are still under treatment, being greatly benefited, and two gave up the treatment after a short time. No definite period can be given to obtain positive relief. Each case seems to vary. Some patients improve from the beginning and seem to make rapid progress. Others improve less rapidly, but nevertheless improve, and eventually are relieved.

The form of battery used is of no special importance, my own preference being for the chloride-of-silver batteries, which are readily managed, cleanly, and not likely to get out of order, and give a mild regular current.

The method of application followed has been similar to that advised by Dr. Delavan, the positive pole being applied to the nape of the neck by a sponge electrode, and the negative to the nasal mucous membrane by means of pledgets of absorbent cotton, wrapped on insulated copper wire and well moistened before being applied. The strength of the current should be exceedingly mild at first, but can be gradually increased after several applications. The length of time of the applications varies in different patients, and I have found that some will admit of a lengthy sitting from ten to fifteen minutes, while others complain after four or five minutes. The nasal membrane should be thoroughly cleansed before such application.

A flow of a watery secretion invariably follows after the use of the current, but ceases in a short time. In a number of cases I have noticed paroxysms of sneezing to occur during or following the treatment. Should they persist, it is evidence of either the strength of the current being too strong or the sitting too long. As regards the frequency of the applications it is impossible to lay down any rule. Daily sittings are seldom necessary. Generally three to four applications a week will suffice in most cases. As Rauney so well says: "Our present ignorance of the molecular and nutritive changes in tissues (as the cause or result of disease) renders it impossible to do more than speculate upon the theory of the therapeutical action of electricity in many cases; but, on the other hand, our empirical knowledge of these effects is none the less valuable because we are unable to explain them." The same criticisms would otherwise hold good in reference to many of the drugs employed in medicine; none of us know exactly *how* they produce their specific effects. So it may be regarded in the action of the mild galvanic current upon the mucous membrane of the

* Read before the American Laryngological Association at its tenth annual congress.

nasal passages. As the view I expressed regarding its action as a stimulant is only a theory, nevertheless certain results are obtained, and such as warrant me in esteeming this method of treatment superior to any which has heretofore been suggested, and one which, if faithfully and patiently carried out, will, I am sure, gratify the operator in the end.

TEMPERATURE IN FEVERS.

By J. ELLIOT LANGSTAFF, M. D.,
BROOKLYN.

The following case will show the absurdity of the general impression that a "temperature of 104° must be energetically combated":

I was called to see Mrs. X. on November 1st. She complained of slight pain in the head, with mental irritability, loss of appetite, chilly sensations, and pains in the back and limbs; temperature 102°, pulse 98, white fur on tongue. (The nurse, who had been sent to the hospital, had died of typhoid a few days previously.) I gave calomel, gr. ij, and a saline mixture every four hours. The next morning the bowels were well moved and symptoms abated. On the third day the previous symptoms increased in severity, temperature 103·4°, bowels not moved, tongue heavily furred. I ordered calomel, gr. j, night and morning, and the mixture continued. The bowels did not move till the 5th, when the temperature had reached 104°. I ordered acetanilide, gr. j, every two hours for five doses, and stopped all other treatment. On the 6th there was nausea, pulse 120, temperature 104°. Gave quinine, gr. vj. On the 7th pain in the head increased, with intolerance of light and sound and distressing ringing in the ears. All medicine was now discontinued and the ice-cap applied; after seven or eight days the pain almost ceased. From the 4th to the 20th the temperature remained almost stationary between 104° and 105°. After the 5th the bowels were moved every day by an enema except on the 17th and 18th, when diarrhœa was present, accompanied by a little blood, which was easily checked by opiates. This diarrhœa was preceded by extreme tenderness in the left hypochondriac region, and on the 17th colicky pains. From the 20th to the 22d, temperature 103·6°. On the 23d, morning temperature was normal, evening 104°; from this day on, the morning temperature returned to normal, and the evening gradually to 102° on the thirty-fifth day. The diet throughout was almost entirely milk (every three hours) with liquid peptonoids (℥j) till the 23d, when the appetite gradually returned and more freedom was allowed. On the thirty-fifth day the evening temperature rose to 104° and appetite disappeared. I then gave quinine, gr. v, at 3 P. M., and calomel, gr. j, in the morning for two days, when the temperature went back to 102°, and on the forty-first day the temperature was normal and remained so. The patient lost a very moderate amount of flesh. The pulse ranged from 110 to 130.

My experience leads me to believe that antipyrine given in the afternoon would have reduced the morning temperature and increased the evening, as a result of the depressing effect of the drug. If the bowels had been allowed to remain constipated for days (as is recommended by some authorities), the continued pain in the head would have been concealed by delirium, caused by the reabsorption of the poison which was leaving the system with the fæces.

I do not wish to denounce the antipyretic treatment of fevers with antipyrine and acetanilide, but I record the fact that a continuous temperature of 104° for seventeen days is not always dangerous.

I should deem it advisable to be as watchful of the injurious effect of the drugs on the system as of the injurious effect of the temperature.

Cases recorded as deaths from high temperature in fevers have also been associated with energetic antipyretic treatment. I consider the early evacuation of the bowels with the constant daily washing out of the rectum as the best treatment that could have been used in the above-given case.

Correspondence.

LETTER FROM PARIS.

The Société de médecine pratique.—Zooplastic Grafting.—Winckel's Disease.—M. Fort's Method of treating Urethral Stricture.—Successful Surgical Treatment of a Cerebral Tumor.—Charcot's New Treatment for Ataxia.—Salol as a Remedy in Cholera.

Paris, *February 25, 1889.*

La Société de médecine pratique de Paris is one of the most important of our local societies, numbering about three hundred. It meets, in common with other bodies, in a large building called the *Palais des sociétés savantes* on the rue des Poitevins, a little street near the Faculty of Medicine. The sittings are held on Thursdays from 4 to 6 P. M. at present, but it is intended to have extra meetings in the evening, once or twice a month. This society was founded in 1808 by Chaussier, and has had for presidents Baron Portal, Antoine Dubois, Trousseau, and Legrand du Saulle. Dujardin-Beaumetz, who was president for 1888, is continued this year as *président d'honneur*, while Dr. Laburthe is the actual presiding officer for 1889. M. Gillet de Grandmont is general secretary. The society's official paper is the "Journal de médecine," ably edited by the distinguished gynæcologist, Dr. Luteaud. The studies of the society are of the most practical nature; during the past year there have been taken up antipyrine, by Dujardin-Beaumetz; the regulation of prostitution, by Luteaud; the sale of milk in Paris, by St.-Ives Ménard; and anomalies of insertion of the placenta, by Porak. Numbers of other papers have been presented by such eminent men as Labbé, Desnos, Terrier, Saint-Germain, Balzer, Auvard, Polaillon, Terrillon, Landolt, and Apostoli.

The society is divided into fifteen sections, with presidents as follows: Medicine, Cadet de Gassicourt; Surgery, M. Péan; Therapeutics, M. Huchard; Hygiene, M. Duchêne; Legal Medicine, M. Luteaud; Medical Chemistry and Pharmacy, M. Dethan; Gynæcology and Obstetrics, M. Porak; Dermatology and Syphilography, M. Balzer; Genito-urinary Diseases, M. Reliquet; Ophthalmology, M. Landolt; Laryngology, M. Desarènes-Garrigou; Odontology, M. Richard; and Hydrology, M. Leudet. The final section is one of "*Free Associated Members*," which is intended to comprise a certain number of savants who are not directly engaged in medical science, but who are yet interested in such work. There are, besides, a number of corresponding members in France and other countries. It is intended to increase the foreign element so that the meetings of the society during the coming universal exposition will have considerable interest from the coming together of eminent men from all parts of the world. All the medical societies will hold frequent

meetings during the world's fair in Paris this year, and a sort of International Congress of all branches of medical science will be held. The society of practical medicine has lately taken the initiative in naming a commission whose duty it shall be to study the basis of an *international medical language*. Delegates are asked for from all other medical bodies, and M. Dujardin-Beaumetz, the president of the committee, says he hopes to succeed in giving some practical and interesting result to this novel idea. The following papers were presented at the society's last meeting: M. Dubousquet-Laborderie showed a young man whom he had treated by grafting a portion of a frog's skin on an open wound of the foot resulting from an abscess. The member presented a most natural appearance and the operation seemed to have been a complete success. The surgeon stated that he had treated nineteen persons in this way and one with chicken skin, and in seven of the cases he had had complete success; they were cases of loss of substance after burns, ulcers, etc. He had used the frog in preference, as its skin had no follicles and was extremely vascular. His success with the method had led him to hope that zooplastic grafting would become of great practical utility, so that there would be no longer any danger of inoculation of syphilis or tuberculosis through open wounds, which certainly had happened. He, however, admitted that the operation would sometimes fail, though conducted with the greatest care and attention. M. Polaillon said that one reason why such operations did not succeed was that the frog's skin was anything but aseptic, and not only should the precaution be taken of cleaning the frogs, but they should swim for some time in a solution of boric acid before the skin was used. Very often grafted skin was reabsorbed, but even then it favored cicatrization; and, while it was not the frog's skin that remained on the patient, still it had acted by its presence and been the point of departure of a cicatricial proliferation. M. Danet remarked that, while the skin was not the same in different parts of the body, it did not matter which part was used, as the result would be good, and the first speaker closed the discussion by saying that he had once restored an eyelid with skin taken from the scrotum.

M. Bar presented a colored drawing of a newly born child that presented all the marks of a curious disease that had sometimes been called Winckel's disease. M. Bar, however, showed that it had been seen and described before Winckel by Laroyenne and by Parrot. The first had named it "*maladie bronzée hématique*," and the latter had called it "*tubuhématie rénale*." The drawing shown gave a dark bronze coloring of the skin, and the autopsy made by Bar gave the macroscopical and histological lesions, as described by Winckel, who stated that this malady was epidemic and that it had a rapid course, but that it was in no way similar to Addison's disease. M. Fort then read six observations of cure of urethral stricture by his new method of linear electrolysis, and he presented his instruments by which the operation was performed. One of his patients had had an opening of only a millimetre in diameter, and yet after an application of a minute and a half he had been able to return to his work completely relieved. This method is worthy of the attention of surgeons.

M. Péan, surgeon to the St.-Louis Hospital, has related to the Academy of Medicine a case of successful surgical treatment of a cerebral tumor. The results of such operations, which are now becoming numerous, prove that there is no danger in opening the skull-cap when proper antiseptic precautions are taken, and it is a striking proof of the value of motor cerebral localization and of the newly shown cranio-cerebral topography, which allows of the localization of brain neoplasms with such precision as to permit of such surprisingly successful operations as that which M. Péan has performed. The localization was done by young Professor (Agrégé) Gilbert Ballet, of the faculty in Paris. He indicated the exact spot to trephine, although there was not the slightest sign of a wound, cicatrix, or elevation of the skin or bone at the place where the tumor was found. The skull was in fact healthy. Certainly it is now possible for a physician to call in a surgeon's aid in such cases, and with proper care success is almost certain. The patient was shown at the Academy, some two months and a half after the operation, in good health. Those who still persist in denying the reality of cerebral localization must cease to do so when they see that the doctrine is no longer a speculative one, but now enters into the domain of practice. The patient was a young man of twenty-eight, who had been treated by Dr. Gélineau for epileptic troubles for the last six years. Bromides had kept them under restraint for five years with considerable success, but within the last year the attacks had increased so much in frequency that they had become a danger to life. Dr. Ballet was called in consultation and diagnosticated a brain tumor, which M. Péan was asked to operate for, with the success as stated above, thus confirming the facts, as given by Charcot and his disciples, that there exists a motor zone with at least three centers, and that it can be determined with sufficient precision to permit of the successful surgical treatment of brain tumors.

Speaking of Professor Charcot reminds me that he has been using a new treatment for ataxia. It is simply suspension according to Professor Sayre's well-known method, which does not need to be described to your readers. It seems that some five years ago a Dr. Motchoukowsky, of Odessa, noticed the good effects of suspension in tabes. He had applied a Sayre jacket to a patient who not only was ataxic but also had scoliosis; there was at once a considerable amelioration in all the spinal symptoms, and it has led to an extensive use of suspension in ataxia; quite a number of patients have derived the greatest benefit from the treatment, including a girl who had Friedreich's disease, for which she was treated by Dr. Blocq, and who is now walking and doing well. Other ataxics who had to be carried to the hospital for treatment now walk there with ease, and when we know that the opinion of such men as Charcot is that it is useless to give mercury and iodides, or indeed to employ any other treatment in such cases, the value of such simple treatment can not be overestimated.

From experiments made by M. Loewenthal, in Professor Cornil's laboratory, it would seem that we have in salol a remedy for cholera. It had, indeed, been indicated by M. Sahli, when he first introduced the drug some time ago. M. von Nencki reports to the Academy of Sciences that where it is thought best to submerge the organism, and more particularly the intestinal tube, in a substance that is strongly antiseptic and at the same time not hurtful, the salicylate of orthokresol or of parakresol may be used in place of salol with certain advantages.

The Cause of Seasickness.—"At a recent meeting of the Paris Academy of Medicine a paper was read by M. Pampoukis (of Athens) and M. Dastre upon experiments on 'sea vertigo' (*le vertige marin*). They show that, in spite of their peritoneal connections, the abdominal viscera are considerably shaken in movements of the body, and that they impinge particularly against the diaphragm and anterior abdominal wall. Owing to this, contractions occur through irritation of sensory nerves, with the effect of limiting the visceral movements. It is suggested that the Pacinian corpuscles in the mesentery may be the structures which are stimulated by the dragging of the mesenteric nerves occasioned by the movements referred to, and that through their irritation motor impulses are excited reflexly. Abdominal belts which restrain the movements of the viscera against the wall do not, however, prevent those against the diaphragm."—*Lancet.*

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DISEASES OF THE FALLOPPIAN TUBES.

THE general interest in the subject of diseases of the Fallopian tubes has not abated, as is shown by a review of current medical literature. Among other articles on salpingitis we note a paper by Rochet, in the "Province médicale" for December 15, 1888, entitled "Salpingites abdominales et leur traitement," which, although it is to be regarded largely as a compilation of previous work by German observers, is interesting as presenting the subject from the standpoint of a French writer. The title is rather ambiguous, since the adjective *abdominales* would seem to imply that the author referred to a new variety of salpingitis. As it appears from the context, it has no particular bearing on the condition and should have been omitted. Rochet classifies cases of salpingitis as follows: 1. *Salpingite catarrhale végétante*, characterized by hypertrophy of the mucous membrane of the tube (previously described by Doran). 2. *Salpingite purulente*, or pyosalpinx. 3. *Salpingite hémorrhagique*, or hæmatosalpinx. 4. Hydrosalpinx. He refers also to the tuberculous variety and to interstitial salpingitis, the latter, by the way, being really a hypertrophy of the muscular coat of the tube and not a separate condition. The symptomatology is obscure and ill-defined. In describing the treatment, reference is made to the conservative views of Laroyenne, who believes that puncture of the dilated tube through the vaginal fornix offers an easy and safe means of dealing with this condition. After puncturing, Laroyenne enlarges the opening and washes out the sac, as in an ordinary case of pelvic abscess. Rochet does not commit himself in favor of this palliative treatment, for it can only be regarded as palliative, which certainly does not commend itself to laparotomists at the present day, except in a limited number of cases in which, on account of firm adhesions, it is found to be impossible to remove the diseased tubes by an abdominal incision. We are sure that the consensus of opinion is in favor of removal, and that the palliative measure is one which can find favor only with timid or inexperienced surgeons, since it does not secure the patient against subsequent danger.

Apropos of the diagnosis of diseases of the tubes, attention should be called to a recent article by Schauta, in the "Archiv für Gynäkologie," Bd. xxxiii, Hft. 1, "Ueber die Diagnose der Frühstadien chronischer Salpingitis," and one by Winawer, in the "Centralblatt für Gynäkologie," No. 52, 1888, which describes the application of Thure Brandt's method to the palpation of diseased tubes. Schauta refers especially to the condition that he terms *salpingitis isthmica nodosa*, which in plain language is simply a localized hypertrophy of the tube that gives rise to nodular swellings situated at the uterine end. These may be mistaken for small myomata or for old exudations, but they are usually bilateral and are continuous with the tubes. As before stated, they are due to localized hypertrophy of the muscular coat, resulting from salpingitis, usually of gonorrhœal origin. As a characteristic symptom the writer notes the occurrence of periodic attacks of colicky pain at the time of menstruation, which he attributes to contractions of the tubes in their attempts to overcome the stenosis at the isthmus; hence the muscular hypertrophy at this point. In eighteen cases, these peculiar pains were absent only once. In removing such a hypertrophied tube, it should be ligated close to the uterus, and, if necessary, a wedge may be excised from the cornu, so as to remove the nodule entirely, the fundus being temporarily encircled by an elastic ligature.

Winawer dwells upon the great difficulty which is experienced in palpating a tube which is only moderately dilated or thickened in consequence of chronic catarrhal salpingitis. The diseased tube is usually buried in a mass of exudation so that it is impossible to distinguish its characteristic shape. In practicing Thure Brandt's method of pelvic massage, the writer found that he was often able to map out the affected tube as he had not been able to do before. In order to accomplish this the conditions must be favorable, and all evidences of subacute inflammation should be absent. It is unnecessary to give an anæsthetic, since, as the result of massage, the abdominal walls become relaxed, and the adhesions around the imprisoned tubes and ovaries are rendered more elastic and less painful. Unfortunately, in none of the author's cases was the diagnosis confirmed by laparotomy.

Both of these papers are interesting as showing a tendency on the part of German gynæcologists to endeavor to attain greater accuracy in the clinical diagnosis of an obscure class of affections which, it must be confessed, are too often recognized only at the operating table. While the experienced laparotomist may not desire to distinguish a diseased tube from a diffuse, ill-defined exudation in Douglas's pouch, to the gynæcologist, whose tastes or opportunities lie rather in the direction of conservative treatment, it is encouraging to observe that some progress is being made in the diagnosis of salpingitis by the vaginal touch as well as by the exploratory incision. If there is any one direction in which there is room for improvement, it is in that of the diagnosis of obscure intrapelvic affections, and we must always hail with approval any advance in methods which lie within the scope of the general practitioner as well as the laparotomist.

THE WORK OF INSECTS ON A DEAD BODY.

WHEN a dead body is discovered it is often a matter of importance to ascertain with a close approach to precision the length of time that has elapsed since death took place. In our treatises on medical jurisprudence this matter is not so fully treated of as to leave nothing to be desired. A case that was lately before one of the New Jersey courts seems likely to furnish a notable addition to our stock of facts bearing on the subject.

The circumstances, which have been furnished us by Dr. Norton L. Wilson, of Elizabeth, were as follows: A divinity student, twenty-nine years old, was last seen alive on the morning of June 24, 1888. Twenty one days afterward his dead body was found in a wood near Westfield. Its identity was proved beyond doubt. With the exception of a coat and hat, it was fully dressed. The soil in that locality is a black loam, kept moist by a pond about fifty feet distant. There was but little underbrush about the body, and there were no low branches on the neighboring trees, so that a free circulation of air was possible at all times. The mean temperature had been 73·50° F. While it is true that the circumstances were such as to favor rapid putrefaction, it is remarkable that the remains consisted of little more than the skeleton, and this gave rise to the idea that something besides the ordinary processes of decay must have been at work. Most of the skin, the muscles, and a number of the ligaments were gone. What flesh remained was chiefly on the feet, where it was protected by the shoes and stockings. The ligaments of the right ankle had parted, the right ligamentum teres had been destroyed, and a number of the ligaments of the vertebral column, especially of its upper portion, were lacking, together with some of the intervertebral fibro-cartilages. The only ligaments remaining intact were those of the knees. A little muscular tissue was still clinging to the tendo Achillis. The scalp had disappeared and the hair was lying on the ground. Not an organ remained, and the dura mater was completely stripped from the skull. Some of the ribs had been parted from their cartilages, and not a few of the cartilages were riddled with small holes. The long bones presented a clean white surface, having been stripped of their periosteum; the shorter ones were not so thoroughly denuded. Dr. Wilson is quite sure that there did not remain three pounds of flesh, all told; and by flesh he means skin, fascia, muscle, and tendon.

A careful examination showed that no bones had been broken, except those of the skull and face, and there was no such evidence of gnawing as one would expect to find if dogs or other large animals had attacked the body. The skull had been broken into a number of pieces. The inferior maxilla had been fractured on the left side at the junction of the ramus with the body, and both condyles broken off. There was a comminuted fracture of the vault of the cranium, with the outer table depressed, and a disc about an inch in diameter was missing from the inner table. The theory was that the man had been murdered, probably with a carpenter's hammer, and his body dragged into the wood. It was thought that the first blow had been dealt him upon the vertex; that, by falling forward and striking on his chin, he had fractured the condyles of the lower jaw; and that his assailant had then given him a succession of blows on the left side of the head and face.

Inasmuch as the clothing had not been disturbed, Dr. Wilson is of the opinion that neither birds nor dogs had had anything to do with the rapid consumption of the body, but regards it as the work of maggots, beetles, and ants, with which the remains were "alive." The ants were of the large black variety. It is not credible, he adds, that in so short a period as three weeks putrefaction alone could have wrought such complete destruction of the tougher membranes as well as all the softer organs of the body. He thinks that the ants were the most active agents in the work.

MINOR PARAGRAPHS.

THE ADMINISTRATION OF ETHER.

A recent number of the "Medical Record" contains a very wholesome article on this subject by the editor, Dr. George F. Shrady. While we can not admit the correctness of Dr. Shrady's idea that the existence of residual air in the lungs is a source of danger when ether is given, and that it can be driven out by the vapor of ether, we regard most of the practical suggestions that he makes as promising much for the comfort and safety of those to whom his readers may administer ether in the future. He teaches that the vapor should be administered gradually; that the likelihood of unpleasant sequelæ is in proportion to the duration of the anæsthesia and the amount of ether consumed; that the shock occasioned by it is lessened by its even administration; that the minimum amount of force should be employed in controlling the patient's struggles; that "mixed narcosis" is often advisable for prolonged operations; and that many of the measures in vogue for the resuscitation of patients are not only useless but harmful, the utility of galvanism, in particular, being questionable, and the most trustworthy means being artificial respiration, hypodermatic stimulation, the use of nitrite of amyl by inhalation, and inversion of the body. The statement that, "after the stage of primary anæsthesia is reached, the more pure ether vapor the patient breathes the better," seems rather too absolute. The author properly insists that the administration of anæsthetics should be intrusted only to those who have had experience in it.

CREMATION IN PARIS.

The "Progrès médical" states that the first authorized cremation in Paris took place on the 31st of January, at Père-Lachaise. It seems that there are still difficulties in the way of carrying out the practice in Paris, consisting apparently of obstacles raised by the municipal administration. In this instance the necessary authorization was given in consideration of the fact that the deceased's father, who applied for it, was an alien.

THE NEWARK CHARITABLE EYE AND EAR INFIRMARY.

The "Ninth Annual Report" of this institution shows, not only a continuance, but a steady increase in its work. We are sorry to see by the report that the infirmary's income does not grow proportionally. The people of so flourishing a city as Newark ought certainly to furnish their institutions of this character with the means of keeping pace with the natural growth of the demands made on them.

A RHUBARB RASH.

At a recent meeting of the Berlin Medical Society, a report of the proceedings of which is given in the "Deutsche Medizinal-Zeitung" for February 14th, Dr. Litten related the case of a man to whom rhubarb had been given, the doses being made small in consequence of his giving a history of having before suffered repeatedly with a rash after taking the drug. He was ordered an 8-to-200 infusion of rhubarb, with sodium bicarbonate, also a rectal injection of a solution of chloral hydrate.

Within half an hour of his having taken the first teaspoonful of the rhubarb mixture the rash appeared. There were large maculæ, together with severe pemphigus, ushered in with a chill as pronounced as is observed, for example, in ulcerative endocarditis. The rash was particularly marked on the elbows, hands, and feet, and appeared also on the genitals, giving rise to "colossal" hæmorrhages from the penis. The buccal mucous membrane, the tongue, and the lips showed epithelial desquamation. The recovery was slow. The speaker remarked that the examples of a rhubarb rash previously put on record had been of the very slightest form.

THE SENSE OF SMELL IN CRIMINALS.

By means of comparative experiments upon criminals and other persons, Dr. Ottolenghi, of Turin, has been led to these conclusions: That the sense of smell is less developed in criminals than in other persons, and that it is a little less acute in women than in men. The author's account of his investigations is published in the "Giornale della Reale academia di medicina di Torino," and an abstract of it is given in the "Union médicale" for February 5th. He made use of a sort of osmometer consisting of twelve watery solutions of essence of cloves of graduated degrees of concentration.

EMBRYOCARDIA.

Huchard has lately called attention to a new form of abnormity of the cardiac sounds which he calls embryocardia. On auscultation, the heart sounds resemble those of the fœtus. There is no difference between the first and the second interval; the sounds are feeble, precipitate, and equal, like the ticking of a watch. In the "Revue générale de clinique et de thérapeutique" for February 14th, Dr. A. Guillot, of Lisy-sur-Ourcq, reports three cases of typhoid fever in which the heart sounds were of this character.

THE ORTHOPÆDIC DISPENSARY AND HOSPITAL.

The "Twenty-first Annual Report of the New York Orthopædic Dispensary and Hospital," for the year ending September 30, 1888, presents a readily intelligible account of the work done by the institution during the year in continuation of its past career of usefulness. The surgeon, Dr. Newton M. Shaffer, calls attention to the satisfactory results that have been attained in the correction of deformities, and remarks upon the decreasing frequency with which deformed persons are now seen on the streets of New York—a result, as he justly states, of the excellent work done at the orthopædic institutions. It seems that the accommodations, both in the dispensary and in the hospital, are getting to be insufficient. This, we trust, the institution will be enabled to remedy before long.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending March 12, 1889:

DISEASES.	Week ending Mar. 5		Week ending Mar. 12.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	6	1	9	2
Scarlet fever	361	47	341	49
Cerebro-spinal meningitis	4	2	3	1
Measles	313	18	236	20
Diphtheria	194	51	203	45

The Health of New York City.—During the four weeks ending Tuesday, March 12th, the following numbers of cases and deaths from infectious diseases were reported to the Sanitary Bureau of the Health Department: Typhoid fever, 33 cases and 8 deaths; scarlet fever, 1,376 cases and 185 deaths; cerebro-spinal meningitis, 11 cases and 6 deaths; measles, 1,105 cases and 73 deaths; diphtheria, 759 cases and 209 deaths; small-pox, 1 death.

The "Memphis Journal of the Medical Sciences" is the title of a new monthly journal published in Memphis, Tennessee, and edited by Dr. Alexander Erskine, Dr. Thomas J. Crofford, Dr. S. A. Rogers, Dr. Bennett G. Henning, Dr. William B. Rogers, and Dr. James L. Minor. To judge from the first number, dated March, 1889, these gentlemen hold no sinecures, for the entire contents, in so far as formal articles are concerned, are contributed by them.

The late Professor Dalton.—At a special meeting of the trustees of the College of Physicians and Surgeons in the City of New York, held February 26, 1889, the following minute was adopted and ordered to be entered on the minutes of the board:

The trustees of the College of Physicians and Surgeons desire to express their deep sense of the loss sustained by the college in the death of its president, Dr. John Call Dalton.

During the thirty-four years of his connection with the college, first as professor of physiology, and afterward as president, Dr. Dalton took a warm interest in all that concerned the welfare of the institution. The college was in a special and peculiar sense his real home. A large portion of his daily life was spent within its walls, and here was accomplished most of the work which rightly placed him in the front rank of American physiologists. Although a man of broad sympathies, which carried him into other departments of science and into questions of public affairs, his life was centered here, and nothing lay so near his heart as the College of Physicians and Surgeons, its best interests, and its advancement to a higher plane of professional education.

As a teacher, Dr. Dalton possessed qualifications of the highest order. He was always master of his subject, while, by a seeming paradox, his subject mastered him. There was, for this reason, a certain contagiousness in his absorbing interest in his theme. Even the dullest facts, under his treatment of them, acquired a new freshness, either by some original illustration, by some presentation from an unusual standpoint, or by a quaintness of expression that gave them an air of novelty. But nothing displayed so well his rare genius in imparting knowledge as the skill with which he simplified the most difficult subject by his orderly arrangement of its principles and the transparent clearness of his language. To this directness and simplicity of speech, which was typical of the whole character of the man, was joined a peculiar charm of manner that fascinated every one who came in contact with him. With children he was a great favorite. From him an explanation of the mechanism of some familiar object, or a story of natural history told in his inimitable way, brought greater delight to the child at his knee than the most exciting fairy-tale from any one else.

And so in the lecture-room, although Dr. Dalton had none of the conspicuous but more commonplace gifts of oratory, there was a certain personal magnetism about him—a rare, subtle quality of vital power—that at once placed him in sympathy with his audience, and gave him absolute control over it.

To the office of president Dr. Dalton brought a practical knowledge of men and affairs, a love of work, and thoroughness in it, and a shrewd common sense, that qualified him for the position to a degree that now seems almost providential.

During his busy administration the college was removed to its present situation, its new buildings were erected, and its curriculum was enlarged. Out of these changes grew a host of difficulties, many of them of an entirely novel character, which could be solved only by the exercise of the soundest judgment and the most laborious attention to details. Dr. Dalton approached this task in a conscientious spirit, determined that the trust imposed by the generous benefactors of the college should be carried out faithfully. With health already impaired by the disease of which he died, his labors were indefatigable. He seemed to feel that the time was short; but, when the end came, he had the satisfaction of knowing that his work had not been in vain. The ambition of his later years was realized. He had lived to see the college he had loved with a more than filial affection entering with bright prospects upon a new era of prosperity. Could he have known also with what a fullness of gratitude his unselfish labors were regarded by all of the alumni and officers of the college, who can doubt that even his well-merited scientific honors would have had less value to him in his dying hour than such a tribute to his personal character?

[Signed.] George G. Wheelock, M. D., *Registrar.*

The International Congress of Hydrology and Climatology will hold its second session in Paris, from the 3d to the 10th of October. Papers and letters of inquiry should be addressed to Dr. F. de Ranse, 53, avenue Montaigne, Paris, until June 1st, or Néris (Allier) from June 1st until October 1st. Subscriptions, with a postal order for 20 francs, should be addressed to M. O. Doin, 8, place de l'Odéon, Paris.

The First District Dental Society of the State of New York.—A paper entitled "Photomicrography, and its Possibilities in Demonstrating Tissues," was announced to be read by Dr. W. Xavier Sudduth, of Philadelphia, at the meeting of Tuesday evening, the 12th inst.

The Society of Medical Jurisprudence and State Medicine.—The special order for the sixty-first regular meeting, on Thursday evening, the 14th inst., was a paper on "Some Relations of Scientific Experts to the Administration of the Law," by Judge Willard Bartlett, of the Supreme Court.

Change of Address.—Dr. William H. Dukeman has moved to No. 247 South Spring Street, Los Angeles, California.

College Commencements have been held during the week as follows: On Monday, Bellevue Hospital Medical College and the New York College of Dentistry; on Tuesday, the Medical Department of the University of the City of New York; on Wednesday, the New York College of Veterinary Surgeons and School of Comparative Medicine; on Thursday, the Woman's Medical College of Pennsylvania.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from March 3 to March 9, 1889:*

Webster, Warren, Major and Surgeon. Retired from active service, February 28, 1889. Par. 9, S. O. 50, A. G. O., March 1, 1889.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending March 9, 1889:*

Marsteller, E. H., Passed Assistant Surgeon. Detached from monitors at Richmond and to wait orders.

Cabell, A. G., Passed Assistant Surgeon. Detached from the Naval Hospital, Chelsea, Mass., and ordered to monitors at Richmond.

McClurg, Walter A., Passed Assistant Surgeon. Promoted to rank of Surgeon.

Babin, H. J., Surgeon. Detached from the Mohican and to proceed home and wait orders.

Bradley, G. P., Surgeon. Ordered to the Mohican.

Lung, George A., Assistant Surgeon. Detached from the Vermont and ordered to the Mohican.

Society Meetings for the Coming Week:

Monday, *March 18th:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Medico-chirurgical Society of German Physicians; Hartford, Conn., City Medical Association; Chicago Medical Society.

Tuesday, *March 19th:* New York Academy of Medicine (Section in Theory and Practice of Medicine); New York Obstetrical Society (private); Medical Society of the County of Kings, N. Y.; Ogdensburgh Medical Association; Baltimore Academy of Medicine.

Wednesday, *March 20th:* Northwestern Medical and Surgical Society of New York (private); Harlem Medical Association of the City of New York; Medical Society of the County of Allegany (quarterly), N. Y.; New Jersey Academy of Medicine (Newark).

Thursday, *March 21st:* New York Academy of Medicine; New Bedford, Mass., Society for Medical Improvement (private).

Friday, *March 22d:* Yorkville Medical Association (private); New York Society of German Physicians; New York Clinical Society (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

Saturday, *March 23d:* New York Medical and Surgical Society (private).

Letters to the Editor.

BEEF-EATING CANCERS.—A TEREBENE RASH.

Dalhousie, N. B., Canada, *March 5, 1889.*

To the Editor of the New York Medical Journal:

Sir: Referring to your editorial on "The Proper Management of Cancer," in your issue of March 2d, I desire to say that the superstition that cancer is of a "reasonable mind" is not entirely confined to the *West.* I find the impression prevailing among a certain class in this neighborhood that the application of raw beef to a cancerous ulcer will restrain the ravages of the disease, and am aware of one case of scirrhus of the breast in a lady, a doctor's widow, in which it was used with alleged benefit. This was before my residence here, therefore I can not give particulars of the case further than that the cancer is stated to have "eaten" *five pounds of steak daily.*

Will some of the readers of the Journal state if they have found the use of terebene accompanied by the appearance of an acneform rash on the face and neck which causes a good deal of discomfort from its itching? I have observed this in six cases. It always disappeared when the drug was omitted for a time, and as invariably reappeared on its resumption.

Allan G. Ferguson.

THE SUCCESSFUL REMOVAL OF A LARGE CALCULUS FROM A MAN SEVENTY-TWO YEARS OLD.

Bedford, Pa., *March 7, 1889.*

To the Editor of the New York Medical Journal:

Sir: The following notes are only interesting in so far as they prove that old age has occasionally greater recuperative power than it is usually credited with. During the autumn of 1888 Jonathan Reigard, a German by descent and a farmer by

occupation, came to me complaining of all the symptoms produced by vesical calculus. His history was that he began to notice that something was wrong with him about three years previously, and that for the last twelve months life had become intolerable, although he had been guaranteed cures without number, and turned his stomach into a drug-store, so far as pills, powders, and physic could make it. The examination with a sound made it certain that a large stone was in the bladder. Under the influence of ether, given by Dr. Enfield, of Bedford, I performed the lateral operation, and after great difficulty extracted a stone weighing seven ounces and measuring three inches long, two inches and a half broad, and an inch and a half thick. The usual after-treatment was adopted, and, although I did not expect it, from the age of the old man, the incision had healed completely at the end of five weeks. Since the operation he has gained in flesh considerably, and whenever he sees me tells me that he has not been so well for the last ten years. H. B. Runnalls.

Proceedings of Societies.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Meeting of January 28, 1889.

The President, Dr. A. S. Hunter, in the Chair.

Septic Poisoning in Early Life.—Dr. H. D. Chapin read a paper with this title in which he called attention to several often unsuspected sources of blood poisoning in young children, especially to pediculi giving rise to points of ulceration in the scalp. He did not take account of such well-known causes as diphtheria, gonorrhœa, and scarlet fever, but of lesions of the scalp, mouth, teeth, nose, ears, and umbilical cord from which pus might be absorbed. It often caused an appearance in the child like that resulting from a scrofulous constitution. His experience had convinced him that whenever the glands in the neck were enlarged or ulcerating, search should be made for such a local cause. The lymphatics could dispose of pus up to a certain amount; after this it entered the blood and gave rise to general symptoms, and sometimes abscesses in different parts of the body. In one case related by the reader the rubbing of a nævus with a piece of placenta (an old woman's prescription) had produced general sepsis. Overfeeding and consequent intestinal fermentation gave another class of cases of an equivalent sort. He had been called to see cases of "malaria" in poor families in crowded quarters, and had found children suffering from fever and headache and showing a coated tongue. Investigation of the premises had shown that the practices of the family in the disposal of garbage and bodily excreta were so uncleanly and dilatory that no further cause of illness had been looked for. He had found affections of the respiratory tract, and especially of the tonsils, often resulting from the inhalation of air thus laden with germs. When the lymphatic glands were found to be enlarging it was better not to poultice them with a view to favoring suppuration, but to search carefully for some point where pyogenic germs might have entered.

Dr. J. Lewis Smith had often met with sepsis in the newborn from mismanagement of the cord after birth. When the stump took on an unhealthy action instead of healing or mummifying, the microbes (found in several instances to be the *Staphylococcus pyogenes aureus* and the *Streptococcus pyogenes*) spread through the surrounding lymphatics at first. They did not enter by the veins, as he had once supposed, except in a few cases. Aphthous mouth he thought could not often be a cause of sepsis, as it passed away under treatment so quickly. In scarlet fever and diphtheria many cases of sepsis were to be met with, but they had become less common since the general use of antiseptic solutions. He did not consider borated cotton a sufficiently active antiseptic dressing for the umbilical stump, and preferred iodoform gauze. He had cured two cases of umbilical phlegmon by applying carbolized oil. When it was desired to give the bichloride solution internally in scarlet fever or diphtheria, it could be administered in proper amount by a spray sent through the nose or against the back of the throat, so as to get both a local and a general effect. He had also found great advantage in keeping the air impregnated with the vapor of a mixture of carbolic acid, eucalyptus, and turpentine. The combined odor was quite pleasant.

Dr. A. F. Currier spoke of the septic infection of the eyes met with in new-born children as giving a striking illustration of the value of antiseptics. A five-per-cent. solution of nitrate of silver dropped into the eye as either treatment or prophylaxis had for a time been an empirical measure until the high power of nitrate of silver as a germicide had been shown.

The Value of Water in Modern Therapeutics. — Dr. Simon Baruch, in a comprehensive paper on this subject, presented a clinical study of methods and applications in various diseases and their results. Unusual interest being aroused among various members of the society, it was determined to devote the next meeting to the discussion of the paper.

The reader premised that he was not coming forward as a hydropath, and was actuated by no enthusiasm for a single truth to the exclusion of all others. He had as a clinician collected points from his own experience which seemed well founded, and had added ideas taken from the best writers both here and abroad. He would first present an account of the ascertained uses of cold water in therapeutics, then of hot water, then of moist applications. A great deal of attention to details was very important in getting results from the various uses of water. The text-books never treated of the subject fully enough, considering its moment. External applications of water were now a very essential part of surgery. Its value had been imperfectly ascertained during the recent rebellion, when it had been applied to wounds by sponges and wet compresses; these were now replaced by irrigations of boiled water or antiseptic solutions and by permanent absorbent dressings. It was just beginning to be recognized that heated water was better for this purpose than cold water, and that boiled water was quite as good as water charged with germ-destroying drugs, if not better. Very hot water as a styptic and a preventive of shock was not so widely recognized as it should be. A notable illustration of its value in this direction was its efficacy in arresting post-partum hæmorrhage, without forming the clots which resulted from persulphate-of-iron injections. The hot douches used in gynæcology to remove inflammation were another important use of hot water. But here, too, there must be great attention to detail. Dr. Emmet had insisted that the patient must be in a reclining posture, the temperature of the water not far from 110° F., and the stream intermittent and applied by a nurse; he could tell by an examination with the fingers in a series of patients which of them had received the douches properly. When we turned to the uses of water in skin diseases we came upon its first contra-indication—namely, in diseases of which eczema was the type. He had known cures to result from a simple avoidance of water after applications of oxide-of-zinc ointment and tar and rubber gloves had all failed even to relieve. A similar beneficial change in our ideas had led to the dry boric-acid packing in suppurative otitis media in place of the frequent injections of water. The odor and discharge were thus cured at once, even after having persisted for

years. The vaginal injection following normal labor was another bad thing which was going out of vogue.

The internal applications of water were only beginning to be known at all widely, and were often not alluded to in the text-books. The author then reviewed the various conditions in which irrigation of the stomach by the soft rubber tube had been found of value—dilatation, gastritis, fermentation of retained food, pain caused by *débris* not passed through the pylorus, and intestinal obstruction. He had also made the diagnosis between the more usual causes of dyspepsia and gastric neuralgia or ulcer of the stomach by examining the washings. The drinking of warm water to cleanse the stomach must also be done methodically. Half a pint of hot water slowly sipped an hour before meals had been found by actual examination to cleanse the stomach of mucus. An occasional washing of the stomach five hours after eating much increased the benefit to be gained by sipping water. Irrigations had also been used with benefit in the gastro-intestinal affections of children in summer and for jaundice caused by gall-stones.

Catarrhal jaundice was now treated by injections of two quarts of water, at a temperature of 60° F., into the large intestine, the patient being placed in the knee-elbow posture, and the water retained as long as possible; infantile diarrhœa, by introducing a soft tube as far as the ileo-cæcal valve, and gently washing out the whole large intestine with water charged with bicarbonate of sodium.

Returning to cold-water treatment, the author remarked that a mechanical and a thermic influence were here to be taken into account. By proper manipulations, either hyperæsthesia or anæsthesia, hyperæmia or anæmia, could be produced in a given area. It acted by reflex nervous influence on the circulation, and the amount of reaction depended upon the shock, up to a certain point (which would vary with the strength of the patient). It changed nutrition by its effect on the blood-vessels, heart, and respiration. It was thus of great utility in the treatment of lithæmia and neurasthenia. If the condition was much reduced, the exposure must be very short; the colder the water and the briefer the contact, the better. A sheet dipped in ice-water and thrown about the body (in a warm room), followed by vigorous rubbing and careful drying, so as to keep the patient in a glow, was an excellent mode of application, to which gastric and cardiac symptoms often yielded. By taking portions of the body separately this bath could be made useful even in cachectic states. In anæmic children it was more efficacious than cod-liver oil, hypophosphites, iron, or pepsin. Cold water was of excellent use as an antipyretic in acute diseases, and acted partly as a stimulant to the nerve-centers, enabling them to regain control of the bodily temperature. This action was especially reliable in the high temperature of acute rheumatism, and also in that of insolation. After sunstroke the patient was to be sprinkled with cool water frequently, and cool water injected into the large intestine in large amount, since there was a lack of water in the blood. A high temperature occurred in summer diarrhœa, and could be found by placing the thermometer in the rectum. There was often a rectal temperature of from 102° to 106° F., although the extremities were cold and clammy. Here a graduated cold bath was indicated; the patient was to be put into water at 95°, which was slowly cooled to 80°. The temperature was thus to be controlled for twenty-four hours. After such a bath the patient was to be placed in a cold pack and hot bottles put to the feet.

The most remarkable aid was now obtained from the cold bath in typhoid fever. The idea that its usefulness consisted in reducing the temperature in typhoid had been widely prevalent and had prevented all who took this conception from realizing in what its real value consisted. In some records recently made of 7,000 cases of typhoid, 3,000 had been set down as fatal; besides this, it must be recognized that many really died of typhoid who were said to have had malarial disease. Dr. Delafield had placed the mortality in this country at nearly 25 per cent.; in Germany it had been placed at 21 per cent. The mortality in private practice in this city was also about a quarter, or as Dr. Delafield had estimated.

Since Brandt had published his invaluable researches as to the treatment of typhoid, and his method had become known in Germany, a partial application of it in a large number of cases had reduced the mortality from 21 to 7 per cent., and, where it had been strictly followed, to only 1 per cent. Not a single patient had been lost who had come under treatment before the fourth day. Brandt had recorded that in certain military hospitals where the method had been used the mortality had fallen off from 26 to 4 per cent.

As soon as the temperature reached 102° F. the patient was to be put for fifteen minutes into a bath with a temperature of 65°, and this bath might be repeated in two or three hours if necessary. Immediately on taking him out the patient was to be wrapped in a thick linen sheet, rubbed well, blanketed, and given a stimulant. In case the heart was feeble and the nerve-centers were overcome (even with the temperature below 102° this might happen), the patient was to be put into a tepid half bath, and there be given affusions of cold water accompanied by active friction. This was called the stimulating bath.

A wet compress was also to be kept upon the abdomen all the time. In these baths the benefit was derived almost entirely from the stimulus to the reflexes controlling circulation, respiration, and nutrition. Lung complications and heart-weakness did not contra-indicate their use; the heart was in fact aided. With these baths all the symptoms became lighter, there was less stupor and less sleeplessness, the nerves and nervous centers were not so apt to be affected, and the tendency to intestinal ulceration, hæmorrhages, and other complications was less. It was more a preventive than a curative remedy. Its statistical record was unparalleled. He had obtained very fair results for the past twelve years from a partial obedience to Brandt's instructions: a bath 10° below the body temperature, lowered gradually, after the patient was in it, to 68°. He had not thus obtained, and had not deserved to obtain, such results as had followed when directions had been really obeyed.

The Relations of Water in the Bodily Economy.—Dr. J. Harvey Dew read a short paper relating to the importance of water from a physiological standpoint. He would deal with water as an element necessary to the exercise of certain functions, and in the chemistry of animal life. Both laity and profession showed a sad neglect of certain facts about water, the results of which inattention he saw every day.

The chief of these facts were:

1. The body consisted mainly of water, the latter forming in health from two thirds to three quarters of its bulk.

2. Water constituted nearly the total volume of the circulating fluids of the body, the blood, lymph, and digestive secretions.

3. It was the vehicle for the processes of digestion, absorption, and transportation of food.

4. It formed a large part of the ultimate tissues, and must be present in every process of assimilation.

5. It served as a vehicle for the circulation of waste matters.

6. Three or four pints (or pounds) of it were needed daily.

7. It could be observed that all thin persons partook scantily of water, whereas all fleshy people drank freely of it.

8. All diseases involved a disturbance of the processes of digestion, absorption, secretion, and elimination.

9. A large proportion of the discomforts and troubles of the body arose from a poor performance of the functions depending upon water. It was proper that in health two pints of water should leave the body daily by the kidney, two by the skin, and one and a half by the lungs, or five and a half total. Water taken at meal-time was rapidly absorbed or passed through the pylorus. Lack of water caused constipation, made the secretions tenacious, the circulation defective, and the skin dry, and directly caused dyspepsia. The habit of taking water only in the form of such beverages as tea, coffee, and beer was not a good substitute for the drinking of pure water.

NEW YORK CLINICAL SOCIETY.

Meeting of January 25, 1889.

The President, Dr. J. W. Roosevelt, in the Chair.

Medical Education and Methods of Instruction in Medicine.—The President read a paper thus entitled. (See page 288.)

Dr. D. B. Delavan would say in regard to the question of didactic or clinical instruction that, in his experience, both were needed. The retention of facts stated in didactic lectures depended very largely on a personal element in the lecturer, something in the manner and voice. Thus he himself had learned much from Dr. Dalton which had never left him, but from some other men he had listened to hardly anything. He believed a thorough grounding in the fundamental parts of medicine should be held as the all-important thing, rather than a knowledge of technical details, or of the rare and curious. If some simple disease were taken up and made thoroughly familiar, more would be gained by embryo doctors than from dividing up the time so as to have their attention drawn in rapid succession to a large number of diseases, some of which they might not meet with twice in the whole course of their practice, if at all. He had noticed that some students tended to pay paramount attention to the clinical instruction given them, and did no reading-up on any subject outside of their notes of lectures. He thought the deliberate perusal of several writers on the same subject one of the greatest aids to the command of it. The best man he had ever had under his instruction had followed up this plan diligently. One subject at a time had been studied clinically, and followed through a series of works by standard writers. Diffuseness was the prominent evil in the medical teaching of the day; too great an area and not enough concentration on any subject, from the least to the greatest. The instruction of instructors was therefore the essential need. We had a great yearly influx of beginners, all different in capacity and previous equipment for scientific study. It was very difficult to get the under-men in the faculty to deal with these students in detail. He meant by that that a large part of those who were *willing* to undertake direct instruction of individual students were unable to do such work.

Dr. M. Allen Starr considered it of great importance that such a subject should be freely discussed. He concurred heartily in many of the president's conclusions, but would take exception to two points. He thought that the importance of anatomical knowledge as an aid to clinical diagnosis could not be exaggerated. It was indispensable to accuracy of diagnosis in the department of neurology. As an illustration there might be cited the necessity of a knowledge of the motor tract in the brain before the subject of hemiplegia, as contrasted with alternating paralysis, could be understood. To show clinically two cases illustrating these affections would be useless unless the student knew the anatomy of the brain sufficiently to appreciate the location of the lesion in each. By a knowledge of anatomy he would not imply the memorizing of the branches of the ulnar or any other nerve, but he meant a working knowledge of the central nervous system and its great sensory and motor tracts and areas, without which a diagnosis in a nervous case was impossible.

Again, as to the use of large clinics, it seemed to him that there were many things which could be taught in these as well as to a few men. It was possible to show various forms of talipes, the gait in different diseases, the extent and distribution of paralyses, anæsthesiæ, and atrophies, characteristic deformities, and electrical reactions, just as well to three hundred as to one, and with a great saving of time. Therefore large clinics had a place in any plan of instruction, but they certainly should be supplemented by smaller ones.

The greatest clinical teacher he had ever heard was Nothnagel, of Vienna, and the impressive point in his teaching was the manner in which he connected symptoms and lesions, bringing out clearly the pathological reason for every manifestation of disease. Another point in Nothnagel's clinic was the method of instruction. Cases were not taken up hap-hazard, but were shown in relation to one another—for example, patients suffering from various forms of lung disease were shown in succession, patients illustrating all the various forms being shown during a certain period of the course, then in the same way all kinds of cases of heart disease, and then kidney diseases, etc., were shown. This enabled points of differential diagnosis to be clearly shown, and was much more impressive and instructive to a student than the presentation of several different cases without mutual relation on the same day. The material at many of the colleges was certainly sufficient for such a systematized clinical course; he had found it perfectly possible to arrange his own clinic by this method, and with advantage. The last point to which he wished to call attention was the need of some method of co-work among the lecturers in a given college. It would be easily possible, if different men agreed upon a plan, to have the student studying the anatomy, physiology, and pathology of a given organ at the same time; and when this was going on the clinics might be arranged so as to illustrate the diseases of that organ. For example, to illustrate from his own branch, there was no reason why the structure and functions and lesions and diseases of the brain should not each be before the student at the same time, with a saving to him of labor and confusion. Other organs—the stomach, or liver, or lungs—might be taken up thus in turn, and instruction would then be more concentrated and more thorough.

Dr. W. G. Thompson spoke of the nervously exhausted condition usually reached by the student at the end of a course of study at a medical college. The crowding and effort toward the last, made in fear of the difficulties of the final examination, could be only injurious in its effects. Many students graduated in a state of nervous tremor which was simply pitiful. There were other faults connected with the final examination system: the questions asked were often absurd because taking up more the unexpected and unimportant. The examiner, usually full of other work, often thought up his questions in the greatest hurry, and put in questions which occurred to him because they were difficult and he would see if the students knew them, but which were no test at all of the actual conscientious and purposeful study put in by a student during the several years past. The knowledge that such questions might be in store for them tended to upset the balance of students through fear of failure to pass. Such questions did anything rather than increase the sum of useful knowledge acquired previous to examination. The condition of many text-books put into the hands of students was an unnecessary hindrance to their progress. The authors of these books often attempted to accomplish three separate

things in the same volume—namely, to write for practitioners as well as for students, and also to publish their own individual experiments in some one department, a knowledge of which was almost useless to the student of medicine. The student put to work on such an unbalanced book was in doubt as to what to take or what to leave untouched.

Much interest was being taken now in the colleges in the training of men for actual work, irrespective of the particular field they might go into. A professor at Yale had recently said to him in conversation that it was to be wished that more of the colleges of medicine would allow for fundamental training received previous to the special professional training. He believed such work should be freely taken into account in granting a diploma to practice. In regard to Dr. Starr's plan of having professors in the different departments co-workers, he thought the idea in itself was good, but that such co-operative work could not be done simultaneously to any advantage. Thus the physiologist could not begin his course by treating of nerves; neither could the anatomist; whereas the professor of nervous diseases must begin his course with them and nothing else. He believed quizzing had a place in the course of study, but that it should be done in the college and in small classes. If done by men attached to the college, the latter would gain a class of teachers from whom lecturers could be selected to fill vacant chairs who had been put early into the work of instruction and had real training in it.

The whole problem was, however, becoming greater year by year, owing to the increasing mass of knowledge vitally connected with practical medicine, and the special training in several directions which was getting to be indispensable to a man who would be considered qualified. Much of the material which for years past had been crammed by students must in the future be dropped as a new class of facts came to the front needing to be grappled with. He had seen an opinion lately that it would advance the interests of general literature if there could be a general clearing out every hundred years, so as to give a better field for men of equal talent who were writing to-day on subjects of as great interest and importance as any that were treated of in a previous century. Such a process would be equally beneficial if applied (and much oftener) in some departments of medicine. An elimination of what was practically trash, every few years, would be as much of a relief in general medicine as it was found to be in our pharmacopœias. As to the question of clinical or didactic lectures, he thought a balance between the two was best. In anatomy the examination should be only on the cadaver, and preparation for it made with that only in view.

Dr. A. A. Smith believed it better that a teacher should not be confined to a set course, but should be left free to exercise his own best judgment as to what he could teach that would be of real utility. It would often be out of the beaten track of his predecessors. Thus, in his own lectures on materia medica he constantly preferred therapeutics to botany. Whether a plant grew to eight or to sixteen feet in height, or even what its action on the body as a drug was, seemed to him less important for the student to know at the outset of his career than that he should understand the uses of water, heat, cold, and diet, and the management of patients. In fact, he thought *materia medica* doomed; it would be less and less studied in the future; the study of it to-day was a survival of times when drugs occupied a pre-eminent place in the physician's equipment. As to having didactic lectures almost done away with, as Dr. Roosevelt's paper advised, he thought it hardly feasible. It was perhaps conceit for any one to suppose that he could lastingly impress facts on the minds of hundreds of students not two of whom were alike and all of whom were seated together before him. He had found it necessary to use special means for making many subjects attractive to them. Thus he took up prominent symptoms of diseases and gave all the disorders which could give rise to each; dyspnœa, cough, jaundice, and dropsy were treated after this method. In his clinic he called down four of the students each time and gave them some actual work, and left the rest of the class to get what they could. It was true that students were crammed to repletion, so that there was constantly more overflow from their minds than matter retained. Still he hardly knew how this was to be avoided with the present amount of material to be taught, unless by making the course extend over several more years and having every man a model student. He had long favored the idea of having clinical work in some hospital made a part of the course and requiring each student before graduation to attend eight courses of moderate length in the direct study of diagnosis and management.

Dr. H. M. Biggs had one suggestion to make as to what the subject-matter of medical teaching in this country should be. Medical teaching was getting to be anomalous and would become more so if it ever went far from its natural basis in anatomy, physiology, and pathology. What he wished particularly to call attention to was the fact that, while anatomy was always taught more or less fully, there was a tendency to pass over pathology superficially and hurriedly, perhaps to quite omit it from the required curriculum. The student often went directly from his anatomy to the symptoms of disease. This not only was unscientific, but left him to make deductions in the vaguest way in regard to the real nature of disease processes and to give credence to methods of treatment which a trained pathologist would see at once could by no possibility accomplish what they were supposed to do. There was a notable lack of training in the intelligent conduct of autopsies and in the microscopical part of practical pathology. The debt which the rational therapeutics of to-day owed to pathology was greatly past computation, and was also constantly being increased. While histology might have limits to its usefulness in clinical medicine, a personal familiarity with the essential facts and principles in general pathology was indispensable to a clear conception of the nature of disease, its prognosis, and its amenability to treatment.

Students of medicine up to the day of their graduation commonly saw little of the internal organs in either a normal or a diseased state. They often had no idea of what they looked like during life. The material which they got in the dissecting-rooms was often brought there from autopsies without the viscera, or it was altered from being injected or by partial decomposition. Frequently they never saw more than one or two specimens of each viscus in its original state. Specimens brought before the whole class on plates, and rapidly passed from one man to the next while the lecture went on, were quite inadequate as a means of making the eye familiar with either normal or abnormal conditions in the viscera. Compared with the methods used in the study of pathology abroad, the usual practice of dealing with this department of work in America was very deficient. In Germany twenty to twenty-five hours a week were devoted to pathology. Here it was taught incidentally.

Dr. J. E. Winters discussed the question as to the best means of teaching anatomy with its bearings in so many directions. He was reminded of the method used by Dr. Darling and the excellent results which the latter had attained. This accomplished anatomist had been always more than that; he had taught his branch together with its practical relations to surgery and symptomatology, and never by itself. The summer months he had spent each year studying surgery in the hospitals of London. He thought it important that the therapeusis of affections of the viscera should be taught simultaneously with the

anatomy. The professor of anatomy should himself superintend the work of the students in the dissecting-room. It could not safely be left to demonstrators. The teaching of anatomy could never reach a high grade until the professor was to be found among the students. All the student was to take away with him he got there. He approved of the presentation of clinical material in groups showing allied diseases.

Dr. L. B. Bangs remarked that many students began work without the least capacity for or training in observation, and therefore needed instruction in that faculty. He thought that it was wasted time for them to attend clinics in the first part of their course, and was accustomed to discourage such attendance, believing that it was too early for them to gain any real information from seeing clinics conducted. The student must have some general knowledge of a disease before he could study its symptoms, or grasp the reasons for its treatment in this or the other way. As to the advantages of clinical over didactic teaching, in his opinion, so long as one had to deal with a great mass of students of the most unequal intelligence, and in all grades of preparation and fitness for scientific work, it would be necessary to make an average, and adapt the instruction to the majority of those to be reached. Some men needed the didactic teaching to take the place of a certain training in handling ideas which they had never before had. Above all, he tried to teach students to make observations, and to use method in making them, on the course of a disease. He compelled some of the students at a clinic to come down and tell him what they saw, and asked those on the seats to criticise and question the conclusions offered.

Dr. H. C. Coe, in discussing the value of those portions of anatomy which a student learned by force (such as that of the muscles of the back) but always forgot shortly afterward, quoted a remark made by Dr. O. W. Holmes about such knowledge, that it was "better to have loved and lost than never to have loved at all." He had studied the methods of teaching anatomy used in various countries, and had found the best in England. There no didactic lectures were given. The dissecting-room was the only lecture-room, and every man knew that only study with his own eyes and hands would give him any chance of passing the examinations. The questions asked in the latter were made with the cadaver in front of the student, and called for a statement of what structures would be exposed if a given section were made. Two years were devoted to the sole study of anatomy and physiology, and the subsequent teaching was such that familiarity with anatomy was kept up to a high pitch through the whole course, and was ministered to in every department of study. Dr. Darling had graduated at an English school. By making every clinical examination and the prelude to every surgical operation an opportunity for a review of the anatomy involved, the dry bones could be clothed in living flesh.

Dr. L. E. Holt coincided with Dr. Biggs's opinion that it was utterly impossible to teach therapeutics without there being previous correct ideas in the minds of students of the lesions they were to deal with. If a student, for instance, had no conception of the pathological conditions present in the intestinal mucous membrane in cases of chronic bowel complaints there was not a chance of his understanding or approving the rational treatment called for. In didactic lectures careful diagnosis could be taught, and was almost the only thing not better studied in other ways.

Dr. W. Mendelson, speaking of the difference between medical teaching in this and other countries, said that he himself had found when he went to Leipsic that his previous study had turned him into a memorizing machine merely. He had there first begun to observe. There seemed to him to be a notable lack of teaching in this country, devoted to what might be called the philosophy of medicine. General pathology and morbid physiology were at bottom the same thing. Cohnheim made such teaching a prominent part of his instruction in the hospitals. In other countries the hospitals were quite as much places for students to work in as for the reception of patients; here they were managed much more with the latter end in view. In Leipsic certain students would be detailed to go into the wards and examine and write up certain cases. Then those patients were wheeled into the amphitheatre, the report was read, and the other students were invited to join with the professor in criticising it.

The President made a general reply to the comparisons made in favor of foreign modes of teaching by reminding the society of the fact, however explained, that the German and English colleges did not turn out men superior in skill to those who grew up in America. American physicians were superior, on the whole, to those abroad. Even if the foreign methods of teaching did produce better men, that very training would unfit them for American life. As for making hospitals the working ground of students, it would be unjustifiable in this country, at least in any such way as that in which patients were placed at the convenience of medical students abroad. Neither the patients in an American hospital, nor its trustees, physicians, and stewards, would allow the liberties accorded to students abroad. Nevertheless, clinical instruction must be given a higher type here. He would have object lessons, didactic lectures, and recitations combined in proper proportion.

SOCIETY OF THE ALUMNI OF BELLEVUE HOSPITAL.

Meeting of December 5, 1888.

The President, Dr. Hermann M. Biggs, in the Chair.

Remarks upon the Yellow-fever Epidemic of 1888 in Jacksonville, Fla.—Dr. Sollace Mitchell, of Jacksonville, read a paper, in which he said that the introduction of yellow fever into Jacksonville during the past summer had been due to the importation of infected material from one or more points in south Florida, these points having been infected the previous year by fomites from Key West and Havana. The southern portion of the Gulf coast of the State was infested by smugglers, and it had been by these vessels rather than through the legitimate channels of trade that the disease had been brought into the State and concealed.

That the fever had existed in some localities in the southern part of the State during the winter and spring of 1888 was known both by the medical profession and by the people in general, but any quarantine save an absolute quarantine against the entire State was impracticable, because of the independent action of the various county boards of health and the non-existence of a State board of health.

The first case of yellow fever recognized had been that of Mr. McCormick, from Tampa, on the 29th of July; the patient and all attendants had been immediately removed to the Sand Hills Hospital. The attempt had then been made by the board of health to stamp out the disease, but all efforts had been rendered futile because of the failure of many of the physicians to recognize the disease; therefore cases had not been reported.

Yellow fever had been well written up, and he would not occupy time by rehearsing what every text-book contained, but he should mention some few things of interest, particularly in reference to a new method of treatment.

His observations had been made at the Sand Hills Hospital, where he had had charge. The hospital was beautifully situ-

ated on a ridge of ground some seventy feet above the level of the city; it was three miles and a half from the business portion of the town, and entirely shut in by the pine woods. Throughout the entire epidemic this hospital had remained uninfected, although the fever had traveled along the country highways in every direction for eight miles or more; still no case of fever had occurred among the thirty unacclimated nurses and attendants, the most of whom had never been South before.

Strenuous efforts had been made from the very first of the epidemic to prevent the Sand Hills Hospital from becoming infected. Guards had patroled the hospital grounds night and day; no communication had been allowed with the outside world, nor had the nurses been allowed to leave the hospital grounds until discharged. When a patient was brought in on the ambulance he was immediately stripped of all clothing and sponged thoroughly from head to feet with a hot solution of bichloride of mercury (1 to 1,000), then provided with a clean night garment and put to bed. No infected material had been allowed in the hospital; all clothing and personal effects had at once been put in the fumigating room. In addition to this, the floors of the wards had been sprinkled or wiped up with the bichloride solution night and morning; stools and urine had been disinfected, and black vomit had been at once removed and disinfected.

The treatment of yellow fever in this hospital had not been circumscribed by prejudice for any theory, several lines of treatment being followed at the same time upon different groups of patients. The speaker would only refer, however, to the "Sternberg treatment," which was of especial interest.

The Sternberg treatment was purely theoretical; it had been suggested early last summer by Dr. George M. Sternberg, of the army, after his study of yellow fever the preceding winter in Havana. The treatment consisted of the internal administration of bichloride of mercury and an alkali, preferably the bicarbonate of sodium. The bichloride was suggested merely for its use as a local disinfectant in the intestinal tract, this being believed to be the habitat of the germs; the alkali was to render the stomach and intestinal contents alkaline, as he had found that in yellow-fever patients the vomited matter and stools were highly acid. Aside from this theoretical reason for the alkali, the highly acid condition of the secretions furnished an indication for such a treatment.

Certainly this form of treatment had given by all odds the best results at this hospital, yet in a manner different from Dr. Sternberg's expectations. The action of the bichloride upon the kidney was marvelous. That a very large number of the deaths in yellow fever were directly due to suppression of urine was admitted by every one, and it was this symptom that the bichloride prevented or alleviated if taken in time.

The records of the hospital would show that in all cases treated without the bichloride the amount of albumin had averaged from twenty to thirty per cent. in ordinary cases, while in the urine of patients of like conditions on the bichloride treatment the average had been only from a trace to ten per cent. of albumin. Of all patients treated with bichloride from the start, but two had had suppression of urine; in both of these cases the bichloride had been discontinued because of gastric irritability for fully twenty-four hours before suppression symptoms set in. Had the speaker known as much about this effect of the bichloride as he now did, he would have continued its use hypodermatically.

In experimenting with the bichloride he had found that in a series of six cases one twentieth of a grain of bichloride had produced cramps and diarrhœa in from six to eighteen hours; one thirtieth of a grain had been given in a hundred and thirty-two cases without constitutional effects until the temperature had become normal, except in seven cases, one of mild cramps and six of salivation; one fortieth of a grain, one fiftieth of a grain, and one sixty-sixth of a grain had been used in several cases, each without any constitutional effect.

At first Dr. Sternberg's formula had been used exactly as he had recommended; *i. e.*, bichloride of mercury, gr. $\frac{1}{12}$, and bicarbonate of sodium, gr. x, given in thirteen drachms and a half of ice-water every hour; this had been modified somewhat from time to time, and the prescription as ultimately used was:

℞ Sodii bicarb..... gr. x–lx;
Hydrarg. chlor. corros..... gr. $\frac{1}{12}$;
Aquæ puræ..... ʒiv. M.

Sig.: Give *ice-cold* every hour during the day and every two hours at night.

What effect the alkali had, unless that ascribed to it by Dr. Sternberg, he could not say.

He did not believe that the alkali acted upon the kidneys as a diuretic; that effect came from the bichloride, as shown by a series of forty patients treated by the bichloride without the alkali; so too the diminution in quantity of albumin was attributable to the bichloride.

That the alkali did exert a decidedly favorable action he was positive.

He had examined hundreds of stools, finding fully ninety per cent. of them acid in reaction, until the alkali was given freely; under the free use of the alkali treatment the reaction of the stools invariably became alkaline in from one to three days.

During the last few days, before the hospital was closed, the speaker had become so satisfied in his own mind of the efficacy of the bicarbonate of sodium that he had put all patients upon the bichloride and alkaline treatment and had discarded the use of the bichloride alone. Since the hospital had been closed and he had had time to go through his charts and records, he had found that one hundred and six had been treated by the bichloride and alkaline treatment with a mortality of five, and that forty had been treated by the bichloride without the alkali, with a mortality of nine. A too hasty deduction must not be drawn from this, however, for the records showed that, though patients had been assigned to the different treatments in rotation, as they entered the hospital, yet the cases treated with the bichloride alone had been, as a class, more severe from the start than those treated with the bichloride and alkali. Of the six patients who recovered after black vomit, five had been treated with the triturated bichloride and one with the bichloride and alkali. The mortality of the entire epidemic had been about nine per cent.; the mortality among the colored had been less than two per cent., while the mortality among the whites had been over twenty per cent.

As to the contagiousness of yellow fever, the speaker did not believe in it; his experience at the hospital had proved conclusively that it was not even mildly contagious. If a yellow-fever patient was removed from the infected area, all infected clothing removed, and a thorough disinfecting bath given, it was impossible for yellow fever to develop from that case provided stools and vomited matter were disinfected; this could be made of practical importance in quarantine.

The type of fever had not been the exact counterpart of the West Indian yellow fever, the malarial element being visible in most of the cases.

He believed that Dr. Sternberg's treatment would prove to be a potent factor in the treatment of yellow fever in the future, and would aid in reducing the mortality to such an extent that the name "yellow fever" would lose its terrifying power.

Dr. L. W. Hubbard asked the speaker if he had arrived at any conclusion as to the primary cause of yellow fever, and

whether he thought the infection was conveyed directly from one patient to another.

Dr. MITCHELL replied in the negative to the first question. He had had no time to do microscopical work, but he thought the poison allied to the malarial in its action. The danger was at night entirely; the sun dissipated it as it did the malarial. The view of Sternberg and Gibier that the organism producing the disease was found in the alimentary tract, he thought, had no foundation in the ætiological or clinical history of the disease. The tendency to hæmorrhage could easily be accounted for by the disintegration of the blood from the presence of an organism there, but, so far as he knew, no examination of the blood had been made. Recently he had received a slide specimen of a bacillus found by Gibier in the duodenum, which he considered to be the cause of the disease. The speaker thought there was no reason for supposing it had any relation to yellow fever at all.

In reply to the second question, he thought the poison was generated in the infected area, or from infected material. He believed, as he had stated, that a yellow-fever patient could be removed from an infected area, and, if stripped of his infected clothing, would not spread the contagion. He did not believe that the period of incubation of yellow fever was over six days, though some of the books made it forty.

The PRESIDENT asked whether the infected area around Jacksonville had been small or large.

In reply, Dr. MITCHELL said that the infected area had been small, and the fever had spread very slowly. Very slight obstacles also, such as a difference of a foot and a half in the elevation of two sides of a street, had interfered with its progress. The limit of the infected area had been about half way from the city to the Sand Hills Hospital. For a week before he left Jacksonville there had been no cases in the city proper.

Dr. POPE inquired if Dr. Mitchell knew of any reason for the immunity of the negroes, as he believed they were very fond of going out at night; also why the rate of mortality was less, and if the doctor had seen any bad results from the use of antipyrine.

Dr. MITCHELL thought that possibly the immunity of the blacks might be explained on the same grounds as that of the Cubans, as the majority of them had had the disease in childhood, and then it was about as mild as measles. After the second month of the epidemic in Memphis the negroes had been attacked. In Jacksonville no negroes had been taken down till about the end of the first month. He thought the difference in mortality might be due to the fact that the blacks, as a rule, could stand any amount of fever. A high temperature seemed to have no bad effects. He had had one case where the temperature for eight days had never gone below 104° F., and most of the time had been 105·5°, without producing any special effect. The common expression was that "you could not kill a negro with yellow fever unless you clubbed him on the head." One physician, who had had an exclusive negro practice, had professed to have treated seven hundred cases, with only three deaths. He had seen no bad effects from antipyrine in yellow fever.

Dr. CARLISLE asked if there had been any difference in the height of the temperature in acclimated and unacclimated patients.

Dr. MITCHELL had not noticed any difference in the height, but he had noticed that in the unacclimated patients the high temperature occurred in the first two or three days, and then kept falling, while in the acclimated it frequently assumed a remittent type. In these cases quinine had acted well, showing an undoubted malarial element. In cases of pure yellow fever the spleen was not enlarged, and he had never found anything at the autopsy but the *café au lait* liver and nephritis. He thought the characteristic temperature and absence of splenic enlargement were points of diagnosis.

In reply to a question of Dr. Baldwin, Dr. Mitchell stated that the first cases of the epidemic had been mild and had kept increasing in severity until near the close, when the mortality had again diminished. In Savannah the board of health had been able to keep the disease from the knowledge of the people for a month.

In conclusion, Dr. Mitchell said he had been asked since coming North in regard to the "yellow-fever pulse," and he would reply that at first it might or might not be slow. Usually it ran from 90 to 100, with a temperature of 103° to 104° F. or more, but sometimes the pulse would go over 100. One of the nurses who had come from the North had had a pulse of 136, with a temperature of 103·5° F. After the third day the characteristic pulse was always noticeable. It kept dropping down to 80, 70, and 60. In three cases it had fallen to 44, and in one case to 26. It had been suggested to him that this might be due to the bile salts being set free during the period of incubation and thus depressing the pulse. The black vomit usually came on when the temperature fell. Dr. Potts, who died, was an exception, as in his case the black vomit appeared when the temperature was 105·5° F. The primary fever lasted, usually, from five to seven days, but in fatal cases from three to five days.

Miscellany.

Mortality in Cities in the United States.—The following table represents the mortality in the cities named, as reported to Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, and published in the abstract of sanitary reports received by him during the week ending March 8th:

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—										
				Cholera.	Yellow fever.	Small-pox.	Varioloid.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y.	March 2.	1,556,476	.....	..	..	..	..	..	..	6	50	35	26	18
Philadelphia, Pa.	March 2.	1,040,245	425	..	..	..	..	..	..	18	6	6	2	8
Chicago, Ill.	March 2.	830,000	296	..	..	..	..	..	..	9	4	16	5	....
Brooklyn, N. Y.	March 2.	814,505	365	..	..	..	..	..	..	1	6	27	7	11
Baltimore, Md.	March 2.	500,343	158	..	..	..	..	..	..	4	2	2	..	1
St. Louis, Mo.	Feb. 23.	440,000	161	..	..	..	..	..	..	1	2	10	4	3
San Francisco, Cal.	Feb. 22.	330,000	111	..	..	..	..	..	..	4	..	2	..	....
Cincinnati, Ohio.	March 2.	255,139	114	..	..	..	..	..	..	2	..	6	..	....
New Orleans, La.	Feb. 23.	254,000	93	..	..	..	..	..	..	2	..	3	..	1
Detroit, Mich.	March 2.	250,000	59	..	..	..	..	..	..	..	..	3	..	....
Pittsburgh, Pa.	March 2.	230,000	94	..	..	..	..	..	..	3	1	2	6	3
Washington, D. C.	March 5.	225,000	100	..	..	..	..	..	..	1	1	3	..	2
Milwaukee, Wis.	March 2.	210,000	63	..	..	..	..	..	..	1	2	1	..	1
Louisville, Ky.	March 2.	200,000	61	..	..	..	..	..	..	1	..	1	..	1
Minneapolis, Minn.	Feb. 23.	180,000	40	..	..	..	..	..	..	..	..	..	..	....
Minneapolis, Minn.	March 2.	180,000	49	..	..	..	..	..	..	1	..	7	..	....
Newark, N. J.	Feb. 26.	179,139	104	..	..	..	..	..	..	3	..	4	..	2
Providence, R. I.	March 2.	127,000	60	..	..	..	..	..	..	2	..	1	..	2
Richmond, Va.	March 2.	100,000	29	..	..	..	..	..	..	1	1	..	..	....
Denver, Col.	March 1.	100,000	31	..	..	1	..	..	..	..	1	1	..	....
Toledo, Ohio	March 1.	80,000	19	..	..	..	..	..	..	..	..	1	..	....
Camden, N. J.	Feb. 21.	70,000	26	..	..	..	..	..	..	4	1	..	..	....
Nashville, Tenn.	March 2.	65,153	24	..	..	..	..	..	..	..	..	..	..	....
Fall River, Mass.	March 2.	65,100	26	..	..	..	..	..	..	..	3	..	..	....
Charleston, S. C.	March 2.	60,145	31	..	..	..	..	..	..	..	..	..	..	....
Lynn, Mass.	March 2.	50,000	21	..	..	..	..	..	..	..	..	..	1	....
Manchester, N. H.	Feb. 23.	42,000	18	..	..	..	..	..	..	..	..	..	..	....
Galveston, Texas.	Feb. 15.	40,000	3	..	..	..	..	..	..	..	..	..	..	....
Galveston, Texas.	Feb. 22.	40,000	14	..	..	..	..	..	..	..	..	..	..	....
Portland, Me.	March 2.	40,000	11	..	..	..	..	..	..	..	..	..	..	....
Erie, Pa.	Feb. 16.	39,000	13	..	..	..	..	..	..	1	..	..	..	....
Council Bluffs, Ia.	Feb. 23.	35,000	5	..	..	..	..	..	..	..	..	..	..	....
E. Saginaw, Mich.	March 2.	33,000	9	..	..	..	..	..	..	1	..	..	..	....
Altoona, Pa.	Feb. 23.	30,000	3	..	..	..	..	..	..	..	..	..	..	....
Altoona, Pa.	March 2.	30,000	6	..	..	..	..	..	..	..	..	..	..	....
Auburn, N. Y.	March 2.	26,000	9	..	..	..	..	..	..	..	..	..	..	....
Haverhill, Mass.	March 2.	25,000	5	..	..	..	..	..	..	..	..	..	..	....
Newport, R. I.	Feb. 28.	22,000	4	..	..	..	..	..	..	..	..	..	..	....
Keokuk, Ia.	March 2.	16,000	6	..	..	..	..	..	..	..	..	..	..	....
Pensacola, Fla.	March 2.	15,000	7	..	..	..	..	..	..	1	..	..	..	....

The Health of Michigan.—According to the State Board of Health's Report for the four weeks ending March 2, 1889, diphtheria was reported from thirty-one places, scarlet fever from fifty-two places, typhoid fever from eleven places, measles from seven places, and small-pox from ten places.

The Discoverer of Hydrogen.—"Yet another pretender for posthumous fame has sprung up," says the "Lancet," "and, as usual, his claims are urged by an eager compatriot. It is so frequently a compatriot who endeavors to reform the history of science that the motive might almost be assumed to be a jealous longing for the reflected glory which each great discoverer is supposed to shed upon those of his own nationality. The history of the separation and recognition of hydrogen has now been questioned, and we are asked to give up our belief in Cavendish and to bestow the credit upon a French doctor, Theodore Turquet de Mayerne, who was physician to our Charles II. What a boon it would be if every one who believed he had added one new fact to the sum of knowledge would proclaim it loudly in no uncertain tones! It is wearisome and mostly profitless to wade through the ambiguous language of earlier investigators in the endeavor to settle these international disputes."

THERAPEUTICAL NOTES.

A Mexican Remedy for Venomous Bites.—Espantavaquero and Quiebraplato are names applied in Zacatecas, Charcas, and other parts of Mexico to a plant that is said to have been used with good results in cases of the bites of venomous and rabid animals. The "Deutsche Medizinal-Zeitung" for February 11th gives an abstract of an account published in the "Médico Científico" for August 15, 1888, of the cases of two persons who had been bitten by a rabid wolf, one on the lips, the cheek, the breast, and the shoulder, and the other on the breast and the cheek. In both instances the plant was used within twenty-four hours after the injury; both patients recovered perfectly and were still living at the time of the publication, long after the reception of the bites. It is added that snake-bites are often treated quite as successfully with the same plant. The method of using it is as follows: The bulb is bruised and water is added to the milky juice thus pressed out. Three cupfuls of the mixture are drank, and this suffices for the cure. The leaves, in addition, are bruised and applied to the wounds in the form of a poultice.

Rotter's Antiseptic Compound.—A correspondent writing from Munich, and referring to the "Münchener medicinische Wochenschrift" for Nov. 27, 1888, says that Dr. Rotter, having made a number of experiments with the purpose of producing such a combination of the chief antiseptics as would be sufficient for local antisepsis and at the same time so weak in any one substance as not to be poisonous, has settled upon the following formula:

Carbolic acid		2·00 grammes;
Chloride of sodium		0·25 gramme;
Corrosive sublimate		0·05 "
Chloride of zinc, Sulphocarbolate of zinc,	each	5·00 grammes;
Boric acid		3·00 "
Salicylic acid		0·60 gramme;
Thymol, Citric acid,	each	0·10 "

To be dissolved in a litre of water.

It is stated that this solution does not cause pain, has no unpleasant effect on the skin, and does not injure instruments.

A Stimulating Punch for Patients with Collapse.—A contributor to the "Union médicale" for December 15, 1888, recommends the following compound:

Tea		2½ drachms;
Alcohol or rum, Syrup,	each	5 ounces;
Water		8 "

The juice of a lemon.

Antipyrine as an Antigalactic.—Salemi ("Bull. gén. de thérap."; "Dtsch. Med.-Ztg.," Feb. 11, 1889) has succeeded in repressing the mammary secretion in a primipara by means of antipyrine after having failed with numerous other agents. He gave eight grains in three doses daily. The secretion was much diminished on the first day and had wholly ceased on the third day.

Rhamnus Catharticus as a Remedy for Toothache.—Gretschinsky ("Droggisten Ztg.," 1888, No. 44; "Nouv. remèdes," Dec. 8, 1888) has found a decoction of the bark of *Rhamnus catharticus* (*écorce de bourdaine*) cause complete cessation of the pain when introduced into a carious cavity on a bit of cotton. He directs 10 parts of the bark to be boiled in a quantity of water which, after straining, will leave 20 parts of liquid, to which 1 part of alcohol is to be added.

Cocaine Anæsthesia in the Extraction of Teeth.—In the "Archives of Dentistry" Dr. George S. Staples says: "Thoroughly dissolve twenty grains of cocaine in one ounce of ether (concentrated), and add one ounce of pure oil of peppermint; shake well before using. I have used this preparation for about two years, and, after having tried almost everything offered to the profession, find it gives better satisfaction than anything I have ever tried. In fact, for extracting sore teeth and fangs, where the inflammation is so great as to partially loosen them, I find it almost entirely does away with the pain, when applied from six to twelve minutes."

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the persons sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

ACOUSTICS OF THE HUMAN CHEST IN PHYSICAL DIAGNOSIS.*

PART II.

BY JAMES R. LEAMING, M.D.

IN a preliminary article which I had the honor to read before the New York Academy of Medicine on the 6th of December last I considered (1) the chest-wall as inclosing an acoustic chamber, (2) the lungs and convective tubes, and (3) the heart and blood-vessels as acoustic factors capable of originating sound-waves within the acoustic chamber. And, lastly, I made reference to the organ of hearing and to the instruments and methods of auscultation, mediate and immediate.

This brings us naturally to the practical application of chest acoustics, to the true interpretation of the physical signs of the heart and lungs in health and in disease.

Sound is caused by vibrations which send off sound-waves into the air, the universal sound medium, spreading out in every direction until they finally die away from diminished force. Causes of primary vibrations are readily illustrated by air forced through a tube, by a tense cord over which a bow is drawn, by a bell, or a bar of steel fastened at one end, set in motion by a stroke of a hammer or otherwise.

It is necessary, in order that the vibrations should produce sound-waves, that they should have definite force and frequency. The force of the primary vibrations must be sufficient to send off sound-waves into the air, and of frequency somewhere between thirty-two and forty thousand. Less than thirty-two produces a sensation of distinct noises, and more than forty thousand ceases to give off sound-waves. The designations of high pitch and low pitch have reference to the frequency of vibrations, and are of practical importance in determining the density of sonorous bodies under examination. High pitch denotes density, low pitch porosity. The pitch enables us to measure the number of vibrations in a second in any body under examination, determining the density; for, with an instrument called the siren, we can measure the number of vibrations in a second in any pitch, which brings acoustics under mathematical demonstration as an exact science, especially including auscultation of the human chest.

There are other limitations of hearing than those of pitch and loudness, which are more readily understood by comparing them with color-blindness in sight, the persons with such deficiency in either case not being themselves aware of it. Engineers and flagmen on railroads are examined in regard to their perceptions of differences in color in the protection of the lives and bodily safety of the traveling public. Why should not also the medical student, before devoting himself to physical diagnosis, test himself, or have himself tested, in regard to clang *-deafness before taking upon himself the responsibility of making delicate diagnoses where failure to appreciate the tone differences in the acoustic signs may lead to a plan of management fatal to the patient?

These inquiries approach the domain of æsthetic taste at the same time that they have the solid foundation of practical truth.

The entirely correct ear in auscultation gives its possessor pleasure in listening to natural sounds in the fields, in the forests, on the extended plains, or on the mountain-tops—all of which are but dreariness to one who has not that inner sense of the beautiful in nature dependent upon tone appreciation.

In the wonderful music drama of Siegfried the natural sounds in the forest—the singing of birds, the drone of insects, the sighing of the wind among the leaves of the trees—are reproduced in music, the "Waldweben." The correct acoustic sense that fits the student for an auscultator will be delighted and appreciative; but the clang-deaf will not see or hear the melody. It must be noted that this higher quality of tone recognition is entirely different from memory of a tune, which is memory with a sense of time and rhythm only, and enables its possessor to learn and sing "The Marseillaise" or "God save the Queen" without a thrill of delight in their harmonious chords and spiritual suggestions.

It is an interesting point to determine by trial whether the color-blind are also clang-deaf, which would show, if decided in the affirmative, that the deficiency is not owing to any mechanical fault in the structural formation of the organs of sight or hearing, but is essential in the organic or spiritual life of the body. One fact is demonstrable—that the senses of hearing and sight may be greatly extended in range and accuracy by cultivation. This is seen in experts in music and painting. Culture increases the power of discrimination and delight in color and in tone in the masses, while the exceptionally sensitive sense of sight or hearing will be increased thereby to expert excellence.

Primary vibrations may be conducted, reflected, or consonated. If there is in contact with the vibrating body another body or structure capable of being set into vibrations, the vibrations of both will be in unison; or, as in case of the lung connected by adhesions to the chest-wall or by intermediate structures, or by tense cord-like adhesions of any length, then the secondary body—as the chest-wall is when the lung is adherent—may give off sound-waves which will pass into the air the same as if coming from a primary source. The familiar example of direct conduction is the one given of scratching the end of a log with a pin by one person while another listens at the other end, fifty feet away, and hears by illusion the sound under the ear. In such a case there is no solution of continuity, nor is there in the consolidated lung, by which also there is direct conduction. Indirect conduction of sound takes place when there are adhesions of parts to parts adjacent, as of the

* Read before the Medical Society of the State of New York at its eighty-third annual meeting.

* Helmholtz uses this term. It describes a tone with the partial tones and over-tones.

pericardial sac to the lung, and the lung to the chest-wall, then the heart's sounds will be heard at the site of adhesion of the lung to the chest-wall, although the origin of the murmur may be in another direction and a long way off, and yet will seem to originate directly under the stethoscope, which fact may give rise to false diagnosis. For the natural intraventricular vibrations of a portion of the chordæ are in sound connection with the pericardial adhesion and are indirectly conducted into the chest-wall, while as yet there is no fault with the mechanism of the heart as a pump. This shows the fallibility of the stethoscope as an instrument of precision. The locality of the murmur in the chest-wall may be no guide to the local origin of the sound.

Indirect conduction may be illustrated by the violin. The strings are caused to vibrate by the bow primarily, but these vibrations are conducted by the bridge into the front or belly, which is made of straight-grained pine cut so that each fiber may vibrate separately and in unison with the strings. The sound-post conducts these vibrations accumulatingly to and against the back of the violin, which is made of maple or sycamore wood of interlaced fibers which can not vibrate in unison with the strings, but reflect the vibrations back into the air in the acoustic chamber. The sonorous material corroborates the vibrations at each passage from the strings to the bridge, from the bridge to the front, until they are reflected from the back into the body of pulsating air within the violin, which finally passes them out of the sound-holes into the open air.

Reflection of sound is the opposite of conduction, and in a sound-chamber prevents sound-leakage—in the violin through the back especially. In the human chest the pleural lining reflects equally from all directions. This acoustic fact becomes of diagnostic interest when adhesions connect the internal organs with the wall, or when they press against it as when swollen, or are hypertrophied, etc. Then sound-leakage takes place. Echoes are reflected sound-waves, either parallel or converging. Reflected sound pertains altogether to sound-waves—not to primary or conducted vibrations.

Consonation also has to do with sound-waves alone. It has nothing to do with primary or conducted vibrations. Let one sing before a sensitive violin, and each string will be made to give sound vibrations whenever its fundamental note is sounded. Consonation is one of the most frequent phenomena of the human chest, and is constantly made use of by auscultators practically in searching for consolidation of the lungs or interpleural adhesions or cavities, by sounding the voice in phonation, or whispering, or by the cough. Dr. Holden, of Newark, N. J., introduced a little instrument to the profession a few years ago which illustrated consonation practically. It was an India-rubber tube an inch in diameter, about fourteen inches long, with a metal mouthpiece at either end. The patient would breathe through the tube forcibly so as to create air-friction, while the auscultator would listen to his chest. If there were adhesions or any condensation of lung-tissue, it would be made evident at once by consonation and by the conducted sounds heard through the chest-wall; also, if there were cavities at the same time, it would diagnosticate them from tumors or consolidations, which otherwise may not so easily be done. When these principles of acoustics are applied—consonation, reflection, and conduction of sound—an interior view of the chest is opened to us as through a window. Much more is this evident in disease when we have previously applied these principles to the conditions of health.

The little group of air-sacs, six to thirteen in number, developed at the terminal ends of the air-tubes of the true respiratory system, forming a lobulette, do the principal work of aeration of the blood, the alveoli of the distensible tubes being but supplementary. The delicate muscular fibers over each alveolus and each air-sac contract upon the contained air which is constantly expanding under the influence of heat; and sound vibrations are thus caused during inspiration, and especially at its full; individually small, but collectively forming a body of sound of low note. This murmur is significant of the healthful action of the vital process of respiration. If it is interfered with by paresis of the enveloping muscular fibers, which always takes place in emphysema or in tuberculosis, the muscular susurrus, the true respiratory murmur, will not be heard. But when the disability is but temporary it is interesting to watch the gradual return of the murmur under successful treatment.

In centric pneumonia there is no other physical sign than the true respiratory murmur, except slightly raised pitch under percussion. This acoustic condition may remain scarcely changed for three or four days, but as soon as the pneumonic process has reached the pleural surface, immediately the physical signs show the fact. At once are heard interpleural râles and bronchial breathing, which denote consolidation of the lung and increased conduction of sound from air-friction in the tidal air-tract. The pneumonic condition existed just the same while there was yet no adhesion, but instantly became evident when sound-connection was established.

The early recognition of centric pneumonia gives time to prevent the pleural complications; a very important matter as regards pathological results. The greatly diminished true respiratory murmur over a definite area, corroborated by the slightly raised pitch, fixes the locality, completes the diagnosis.

To those who do not recognize the true respiratory murmur from want of attention or from imperfect sense of hearing, these cases are puzzling, for the rational signs indicate in a doubtful way the pneumonic state, pulse, temperature, and respiration slightly increased, with bloody or rusty sputa.

The recognition of the absence of true respiratory murmur in the center of the lung will enable the auscultator to make a correct diagnosis and to predict a sudden augmentation of all these signs and symptoms, physical and rational, in a given time—*i. e.*, just as soon as the pleura becomes involved, and the gluey exudation forms sound-connection between its surfaces.

In the normal chest the freedom of movement of the pleural surfaces gives evidence of health. For, as the lungs fill with air and the chest-wall expands, each little lobulette travels a little distance in inspiration and back again in expiration. If the ear or stethoscope is placed against the

chest-wall, a multitude of these little resonating air-sacs, each attached to a terminal bronchus—a minute speaking-tube—will pass under review and give sound vibrations: 1st, of themselves in the true respiratory system; 2d, of the air friction in the tidal air-tract—which extends from the entrance into the mouth and nostrils, into the respiratory passages, down as far as to the fourth division of the bronchi—in which the air moves in a body; and, 3d, outside noises.

Respiratory murmurs are composed of these three elements, which are all intensified by passing rapidly in review in a lively movement of the lungs under the ear in auscultation. Interpleural adhesions fixing the lung in one place are denoted in this way by the feeble respiratory murmurs, even when the air-sacs are free to contract and dilate as usual.

Every elastic air-sac dilated with compressed air is a resonator the sounds consonated in which are, first, sounds outside of the body. Auscultators for this reason choose a quiet room in which to make their examinations, and sometimes, too, make the mistake of attempting to exclude outside noises by closing the opposite ear with the finger, which adds unnecessary confusion and shuts off nothing but their fixed attention. Second, the air friction sounds formed in the tidal air-tract, which are conducted to and consonated in the air-sacs, such as sounds of dryness or of roughness, of mucous râles, and of foreign bodies.

In the first stage of acute bronchitis the mucous membrane is dry and rough and the air friction gives sounds accordingly, which are conducted to the air-sacs by the bronchial tubes, in which they are consonated with increased intensity. Mucus formed within the bronchia moves forward and backward in inspiration and expiration, causing mucous râles, which also are conducted to and consonated in the air-sacs, especially when adhesions increase the conduction into definite localities. Many times the mucus and the râles are both immediately removed by coughing and expectoration. The mucus is a foreign body, and, like all foreign bodies, should be removed.

The following cases are briefly referred to as evidences of the value of acoustic signs in diagnosticating the presence and locality of foreign bodies in the air-passages:

Case I. *A Spanish Silver Shilling diagnosticated to be in the Third Division of the Right Bronchus.*—A man, hurrying to catch a ferry-boat, put the coin in his mouth for convenience, and during a forcible inspiration it passed through the larynx. He came to me in the afternoon of the same day and told me that he had "swallowed" a shilling, and that he thought it was in the lungs. I then believed that it was impossible that a foreign body could pass the epiglottis. Dr. Horace Green had then but lately announced his ability to pass a catheter through the larynx. A committee appointed by the Academy of Medicine, after experiment and inquiry, had reported its impassability. I told the patient so, "but," said he, "I think I can feel and hear it here," placing his hand upon his chest. I listened and heard a "flap" in just about the fifth interspace in the right side. Keeping my ear to the chest, in a few moments there was another "flap," sending the sound in another direction. I soon discovered that after each "flap" a certain area of the chest-wall ceased to transmit respiratory sounds, which only lasted until the next "flap," when another area of the chest-wall became quiet. I was convinced that the coin rested its edge upon the septum of the third division, and, valve-like, turned back and forth as the newly inspired air underneath became rarefied by heat. I directed him to get on his bed and place a cushion on the floor near the bed, and then to suddenly turn down and bump his head upon the cushion, which he did, and the coin was expelled with an explosive cough.

Case II.—Through the kindness of Dr. W. W. Jones I saw a man who, three days before, had passed a head of timothy through his larynx. He had placed the stalk between his teeth and was chewing it while giving directions in his stable, and, suddenly attempting to call to some one at a distance, he drew in his breath, and with it the dry head of timothy. One can hardly imagine a more frightful calamity. He coughed some, but did not think it necessary to send for Dr. Jones until the next morning, and even then he did not believe the timothy had passed the larynx, the symptoms were so much less than might have been expected. But they gradually became serious, and on the third day I was called in to auscultate him. There was then no true respiratory murmur and there were interpleural râles over both lungs, but on the right side there was conducted bronchial breathing down so low that I thought it involved the liver. The next day he coughed and vomited up a large amount of muco-pus, and in it was the denuded stalk of the timothy-head, after which there was cavernous respiration. The autopsy showed abscesses in both lungs and extensive interpleural adhesions.

Case III. *Blood in the Right Bronchus and Lung.*—This occurred in a surgical case in St. Luke's Hospital, New York. A man was operated upon, while under the influence of ether, for the removal of dead bone in the jaw caused by phosphorus poisoning. While he was unconscious the blood trickled through the larynx and bronchia into the true respiratory system beyond the tidal air-movement, where it speedily putrefied and formed abscesses which caused the patient's death. I saw the patient each day and was able to note the physical signs. The first day there were conductions of bronchial râles, caused by the moving blood within the tidal air-space, and obstruction of the true respiratory murmur. The next day there were interpleural râles over both lungs, although the blood had passed mostly into and through the right bronchus. On the third day there was local peribronchitis with consolidation of the surrounding lung. On the fourth day there were moist râles in and around the consolidations. On the fifth day there were cavities. On the sixth day there was general acute plastic exudation over both lungs. He died on the seventh day. The post-mortem showed that the pathological processes had been accompanied by the acoustic signs in each particular. This case was an "object lesson" of value to me—full of instruction in regard to the treatment of bronchorrhagic hæmoptysis, and makes plain the danger of attempting to arrest bronchial hæmorrhage for fear of getting a clot below the tidal air-tract, where it rapidly causes destructive inflammation and cavities, and the patient dies, as is said, but which is a mistake, of "*acute phthisis.*"

Case IV.—The next case in time was Dr. Gurdon Buck's—*A Tracheotomy-tube in the Right Bronchus of a Patient at St. Luke's Hospital*—an account of which was published.

A man came into the hospital with gummy tumor occluding the larynx, and immediate tracheotomy was necessary. The next day the opening was enlarged and the tumor removed, and a tracheotomy-tube of hard rubber was introduced, corked, and tied with tape at the back of his neck. This was for safety in case any sudden swelling should obstruct the larynx, and he was allowed to walk about the grounds and corridors. After three or four days, on awakening early in the morning, he discovered

that the tube was gone. The house-surgeon, Dr. Riggs, and the junior, Dr. Lefferts, were at once called, but the tube could not be found. At Dr. Buck's request I auscultated the patient and found acoustic evidence of the tube in the right bronchus. It had dropped down and the lower end was engaged in the very short first division, which is subdivided into two or three bronchia distributed to the apex of the lung. Over this region alone the air friction in the tube could be easily heard. A consultation of all the surgeons and physicians of the hospital was called for the next day, and the tube was removed with a curved forceps.

Case V.—*A Molar Tooth "swallowed" by a Man while etherized at St. Luke's Hospital.*—The house-surgeon, Dr. Lefferts, diagnosticated its presence in the left bronchus, but the patient utterly refused an operation until destructive inflammation had done its work. Dr. Lefferts requested me to auscultate the patient, and I confirmed his diagnosis. The tooth was impacted just above the third division of the left bronchus, and two abscesses in the lung below had resulted. I have a photograph of the tooth in the bronchus, kindly given me by Dr. Lefferts.

Case VI. *A Collar-stud in the Right Bronchus, occurring in the Practice of Dr. J. T. Kennedy.*—A boy playing ball, becoming very warm, took off his collar, and put the bone stud between his teeth, but, on his attempting to shout to another boy at a distance, the stud was carried through the larynx by inhalation into the right bronchus. It caused some irritation and cough, but his discomfort was not great. After some days, perhaps weeks, Dr. Kennedy brought the boy to my office for auscultation. There was acoustic evidence of a foreign body in the right bronchus, just above the third division, the broad button side of the stud being pressed against one side of the bronchus and the cone end against the other side, and the shank extended between. After a time plastic exudation took place in the pleural cavity and in the lung, and the father, who had before refused, consented to an operation, which was tracheotomy, and was performed by Dr. Markoe, who removed the stud with a curved forceps.

Case VII. *Dr. Lefferts's Removal of a Brass Ring from a Boy's Larynx by Operation.*—A brass wire, bent so as to make a nearly closed ring, was in a child's mouth, and a woman, endeavoring to get it out with her fingers, pushed it below the epiglottis. It remained there about two years, although the child had been taken to clinics and to different doctors without relief. By the kindness of Dr. J. L. Smith, the boy was sent to my office, and the ring was traced acoustically to the upper part of the larynx. I sent the patient to Dr. Lefferts for laryngoscopic examination, who confirmed the acoustic diagnosis, and removed the ring by an operation. The case was published by Dr. Lefferts.

Case VIII. *A Man with Part of a Peach-pit in the Right Lung.*—After several months it was coughed up, but not until it had caused permanent injury to the lung. In the mean time he was frequently examined at my office, the acoustic evidence showing that it had passed beyond the tidal air-tract.

Case IX.—A child, about two years old, "swallowed" a plum-pit, and it passed through the larynx and into the right bronchus, but its exact location was difficult to make out, because the child could not be kept still enough for a careful examination, and also because the true respiratory murmur is not fully developed until after twelve years of age, but it was presumably in the tidal air-tract. It was finally coughed up, being assisted by a blow upon the child's back by its mother.

Case X. *Dr. J. A. Wyeth, at Mount Sinai Hospital. A Little Dart, made of a Pin and Yarn, used by Children to blow through a Tin Tube at a Target, in the Right Bronchus.*—The boy inhaled, and the dart passed through the larynx and into the right bronchus. By the kindness of Dr. Wyeth, the late Dr. Elsberg and I were requested to examine the boy. Dr. Elsberg could see its shadow with the laryngoscope, and I had acoustic evidence of its presence just above the third division of the right bronchus, and that it moved up and down in respiration as thickened mucus frequently does. Dr. Wyeth performed tracheotomy, and the dart was removed.

These interesting cases of foreign bodies in the air-passages are summarily alluded to for one purpose only—to show with what certainty their presence can be ascertained by applying the laws of sound in auscultation.

I have already, in Part I, given an explanation of the mechanism of the heart's sounds as agreeing with acoustic law. In studying the philosophy of murmurs we must remember that the heart is inclosed in a sound-chamber, enveloped in a non-sound-conducting medium—the lungs—with the exception of the apex-beat area, in which the heart has sound-conduction into the chest-wall in perfection only, while the heart is in contact with it. There is at all times more or less conduction of sound, because of the immediate connection of the pericardium with the heart while the pericardium is in sound-connection with the chest-wall. So that the first sound (and the murmurs connected with it are the only ones formed within the heart) is heard in its entirety from its commencement until it is ended with, and emphasized by, the apex-beat. The second sound is formed by the forcible closure of the semilunar valves by the return blood in the aorta and pulmonary arteries. It is a door forcibly closed, and the sound is conveyed through the cardiac wall to the apex-beat area by conduction. It is also conveyed through the mediastinum into the sternum and adjacent chest-wall of the left side. The closing of the semilunar valves of both the pulmonary artery and of the aorta have the same source of conduction, the mediastinum, and into the same area. The different areas marked out by teachers and writers as separate localities of murmurs have existence only in their imagination. Because there are two sets of valves, a very short distance apart, it was imagined that there must be two areas, and so they were marked out.

Both hearts contract in absolute unison, the valves close in the same moment of time, and there is perfect synchronism of the two hearts' sounds—the first and the second. And the intervals of silence must remain in exact synchronitic proportion so long as the heart remains in perfect mechanism as a pump. The perfect rhythm of the heart's sounds and intervals of silence in the cardiac cycle becomes absolute proof of its perfection as a pump. The heart may be weak, irritable, and irregular in its action, but if the rhythm of the sounds and intervals of silence in the cycle is correct, there is no valvular disease, no matter what may be the disturbed action of the heart or the number and location of its murmurs. But as soon as the rhythm is altered, its extent will measure the amount of injury the heart has received, and then the murmurs of obstruction and regurgitation will define the locality and nature of the disease, even although conducted into the chest-wall by the common medium, the mediastinum.

Obstruction of the aortic orifice will cause a murmur which, by conduction of the mediastinum, will be heard at

recurrence after yielding to my urgent advice to move into more salubrious quarters.

Under debilitated conditions of system, common membranous sore throat will not be unlikely to merge into phagedenic ulcerous sore throat.

Paralysis of the palate sometimes follows recovery from common membranous sore throat.

When the diagnosis of common membranous sore throat can be made out with certainty, there is nothing calling for special treatment; but the treatment pursued in ordinary sore throat may be generally followed with advantage. It is practically a self-limited disease with a tendency to recovery. When fœtor exists, as during the detachment of patches of exudation, antiseptic and detergent sprays may be employed. Solutions of borax, boric acid, carbolic acid, potassium permanganate, hydrogen peroxide, etc., are appropriate. Lemon-juice is often an agreeable and an efficient application. In those individuals, especially strumous and tuberculous subjects, in whom there is a constitutional proclivity to chronicity, or to the recurrence of the peculiar manifestations, more active measures will be required. Locally, frequent application of the dilute acids—say, every day or two—affords the most satisfactory results. Internally, iron and cinchona preparations should be administered. Opium in small doses is of special efficacy, not as a narcotic, but as a gentle stimulant or nervous tonic. Nux vomica and arsenic may be employed for similar purposes. The diet should be highly nutritious and easily assimilable. Unnecessary exposure should be avoided. Supporting measures generally, hygienic as well as medicinal, should be persisted in. When membranous sore throat exhibits a tendency to phagedæna, the treatment for gangrenous sore throat becomes indicated. Common membranous sore throat may invite an attack of diphtheria, or the diagnosis may be in doubt. In that case the prudent course is to treat the affection as diphtheria, but to avoid the recommendation for diphtheria of some indifferent remedy during the exhibition of which a case of membranous sore throat has ended in recovery. When extension to the larynx occurs and threatens suffocation, tracheotomy or intubation to avert death should be practiced, as in croup or diphtheria.

In cases of recurrent or chronic membranous sore throat the cause should be searched for in the dwelling of the patient or in his place of vocation. Should either of these be found unhealthy, nothing short of change to healthier surroundings will be likely to be of permanent service.

1431 Walnut Street, Philadelphia, *February 7, 1889.*

Hysteria in the Russian Army.—"According to Dr. Ozeretskofski, of Moscow," says the "Lancet," "the existence of hysteria among Russian soldiers is by no means an exceptional occurrence. The affection presents the same diversities of form that it does among women. Frequently men suffering from this affection are put down as malingerers. Other cases are looked upon as instances of serious but somewhat obscure organic disease, the true nature of the case being nearly always overlooked, because it is not generally supposed that soldiers are liable to hysteria. So real, however, does Dr. Ozeretskofski consider the existence of this male hysteria, that, having had an opportunity of studying no less than thirty-eight cases in the Moscow Military Hospital, he is convinced that hysteria ought to be recognized as one of the affections which entitle the subject of it to exemption from military service."

A CLINICAL PAPER ON THE TREATMENT OF FUNCTIONAL AND CATARRHAL DISEASES OF THE STOMACH AND BOWELS.*

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The purpose of this paper is to present the essential features of certain methods of treatment which I have found to be very useful. I shall endeavor to state them in a distinctly clinical manner, so as to show their practical application. It will be impossible to so enunciate them as to fit all cases, but I hope to convey an idea of measures that can be adjusted as they are needed. There is such a vast range between a functional derangement and an old chronic gastro-intestinal catarrh that no system of set rules can be made for uniform application. Accordingly, much will remain to be done in the way of wise adaptation by the good sense and skill of the physician. It is hoped, however, that the methods here outlined will prove to be generally applicable and of great service in one of the widest fields of practical work.

The first step in the treatment of functional and catarrhal diseases of the stomach and bowels, whether moderate or severe, is to obtain full control of the mental condition of the patient. Too much emphasis can not be put on this point, as failure here is sure to mean failure in the future. If there is a mental antagonism on the part of the patient to what the physician is attempting to do; if there is a lack of faith and willing co-operation; if there is, from first to last, a sort of secret indifference and resistance—then all treatment, no matter how judiciously advised and how worthily applied, is almost sure to result in failure. On the contrary, if the physician first obtains the confidence and respect of his patient, secures his cheerful submission to all instructions and requirements, and has his glad and hearty endeavor to help bring about a cure, then the principles and methods I am to offer are almost absolutely sure to result favorably, even in the worst of cases. All this can be done by patience and tact, and it is of first importance, because of that close relation existing between the brain, the sympathetic nervous system, and the organs of digestion. The influence of the mind over the body is simply tremendous, and both the patient and physician need to have such a great vital force working with determinate action toward health.

The second step in the treatment of these cases is no less important than the first. It consists in thoroughness, and repeated thoroughness, in examining into the patient's condition. It is in the highest degree essential to interrogate over and over again every organ, and to find out just how it is doing its work. To obtain the desired information there is no better method than carefully inquiring into the patient's habits of life, the duration and severity of his subjective symptoms, the significance of every physical sign, and then supplementing all this with a microscopical and chemical study of the blood, the urine, and fæcal dis-

* Read before the New York Academy of Medicine, December 20, 1888.

charges. Careful scientific study of the products of the system made daily is eminently important and useful. The reason lies in the fact that, if the machinery of the system is out of order, its products will be faulty; and hence, by studying abnormal products, one is enabled to read, as it were, the condition of the organs that made them so. If a study of the urine reveals the state of the kidneys, is it not just as reasonable to believe that a microscopic study of the blood and faeces will disclose the state of the stomach, bowels, and blood-making organs? It would seem to need no argument, then, to prove that a daily thorough investigation of the excretions and products of the system is, in the highest degree, useful. It is the only means of accurately determining to what extent patients are digesting their foods, to what degree the liver and kidneys are doing their work, and just what quality of blood is being made.

As a third preliminary consideration, it is highly necessary to place every patient under the most favoring hygienic conditions. In those cases where the affection is slight or limited, it may not be necessary to impose more than a few reasonable restrictions upon diet, habits of life, and hours of work and rest. On the contrary, where there is very much catarrhal disease of either the stomach or bowels, it is usually necessary to confine the patient to his home for a time, and carefully regulate his work, recreation, diet, and medical treatment. Indeed, everything pertaining to habits of business and life should be so regulated as to save nerve power, and the severer the disease the greater the necessity of this. To insure this result in bad cases, the patient should rest half an hour before meals and an hour and a half after meals. In other and still severer cases it is better to insist on the patient's resting, sleeping, if possible, from one to two hours every forenoon, or else on his not getting up until an hour and a half after breakfast, and retiring immediately after lunch and remaining in bed until the next morning. The great object and end is to so regulate the life of the patient as to avoid "overwork and underrest," economize nerve force, and acquire a quiet, calm, tranquil state of body and mind.

Having thus first gained the confidence and good-will of the patient and directed him in regard to his habits of life, his diet and rest, the next thing is to endeavor to remove from his stomach and intestines, and also from the kidneys and liver, all morbid material. As you are well aware, the lining of the stomach and bowels in the diseases under consideration becomes coated, as it were, with the morbid products of supersecretion and fermentation. The secretions, being in excess for a long time, become thick, tough, and stringy. They are highly acid and laden with the germs of fermentation. Moreover, as a rule, the liver and kidneys are in an abnormal state and burdened with an immense amount of morbid material. All these vitiated and unhealthy accumulations need to be eliminated from the system. In other words, the surfaces of the alimentary tract need to be washed off and the organs flushed out in order to put them in a healthy condition. Especially is it necessary to remove the bile from the blood and stomach. Every one knows that the effect of a large amount of bile in the stomach of a well person is to greatly interfere with the appetite and with the stomach digestion. If such is its effect in people who are otherwise well, it is not difficult to imagine what its presence does in the stomachs of those who are in poor health and suffering from catarrhal disease of the stomach. Hence the importance of freeing the stomach of vitiated, offensive mucus and bile by giving to it a rapid downward action. This can be done in several ways, but I know of none so simple, so grateful, and so effective as washing it out by drinking hot water. Long experience has now shown that quantities of hot water dissolve and liquefy the mucus and bile, stimulate the secretory and excretory glands, and excite downward peristalsis of the bowels. It is believed that morbid substances are rapidly eliminated from the system in some such manner. And this leads me to say that in such cases hot water needs to be taken systematically under the direction of a physician who appreciates its utility and knows what effect is to be achieved. At the beginning of treatment it is a good rule to order the patient to take one glassful an hour or an hour and a half before each meal and on retiring, increasing or decreasing the quantity according to the rule to be given further along. It should not be taken too hot, but about as hot as after-dinner coffee, or at a temperature of from 110° to 120° F. The patient should be charged to take it very slowly, consuming fifteen or twenty minutes in sipping a glassful, in order to avoid scalding the mucous surface of the throat and stomach. Water taken too hot may injure the lining of the stomach, produce a dry, feverish condition, or act too powerfully and promptly on the skin. There are other precautions to observe, which I will mention. If the glassful or more taken at bed-time causes too frequent urination during the night it can be dispensed with; if the patient has a weak heart, large quantities of hot water should be taken very slowly; if the patient has a tendency to hæmorrhages, the water taken should not be much more than lukewarm and should be taken very slowly; and if the patient is a woman subject to long-continued or excessive menstruation, she, too, should take water very slowly and at a low temperature. These precautions need to be observed so as to avoid ill effects and dangers that might otherwise supervene. If at any time the hot water is disagreeable to the patient, a little salt, pepper, lemon-juice, aromatic spirits of ammonia, or any innocent flavoring extract may be added to suit the taste. If hot water seems to nauseate the patient, its use should still be persisted in, since this is a positive evidence that the stomach is in a foul condition and needs cleansing; and, as evidence that cleansing does take place, it can be said that, after an abundance of hot water has been used for a time and the bowels get to acting from two to four times daily, as they frequently do, the discharges are often either black and sticky, or granular, like coffee-grounds, or else they contain masses of exfoliated, gelatinous mucus.

We often hear it said that the free and prolonged use of hot water tends to injure the system. Some say that it is weakening, that it weakens the nerves of the stomach, that it causes anæmia of the stomach, that it interferes with digestion, that it tends to produce a flushed face and cerebral hyperæmia, that it debilitates the alimentary tract, and

that it causes a host more of most direful evils. As a rule, all these objections are theoretical and come from those who never used it intelligently and systematically, and hence are ignorant of the facts. In reply to such objections, all I can take time to say is that I have used hot water daily for six years without the slightest perceptible injury, and have seen only uniformly good results in persons for whom I have prescribed its daily and long-continued use.

As all are aware from experience, it is always a difficult problem to successfully feed patients who are suffering from diseases of the stomach and bowels. There has ever been a demand for some article of food that would not ferment, that would afford a maximum amount of nourishment, and that would be promptly and easily digested. At last such a food has been found, for we now know that an animal diet, or, to speak more specifically, good, well-prepared muscle-pulp of beef, can be relied upon for the purpose before named. Inasmuch, however, as beef varies greatly in its quality, it is necessary to exercise care in selecting that which is best, and this is found in the center of the round of a well-fatted, corn-fed animal from three to six years old. This portion is freest from fat and is the richest in those nutritive elements required by the human system. It should be given to the patient in the form of beef-pulp, which may be prepared by the process of scraping, or by passing it through a "chopper" made for the purpose. The object of such preparation is to remove all of the fiber and leave the pulp in a condition to be both palatable and easily digested. When the fat and fiber are entirely removed, the pulp can be made into cakes containing the number of ounces the patient is able to digest. These cakes should be from half to three quarters of an inch in thickness, care being taken not to pack them too firmly. The cake of beef-pulp is then to be broiled over a slow fire, preferably charcoal, until it is so cooked that the outside is of about the color of ordinary broiled steak and the inside of a pinkish hue. Great care should always be taken not to over-cook the beef-cake and so make it dry, brown, juiceless, and indigestible. If it is cooked just right, patients will not tire of it, it is more easily and thoroughly digested, and all dangers from tape-worm are avoided. In rare instances beef prepared thus is not palatable at first, and when such is the case it can be broiled between two pieces of dried or chipped beef, or a few oysters may be broiled with it so as to impart their flavor, or a few spoonfuls of beef blood or expressed beef-juice freshly extracted from the beef may be added. The effort should be to employ simple means to make the beef palatable to the peculiar tastes and fancies of the patient. The beef-pulp thus prepared should be given in small quantities at first, not over four or six ounces in a day, until its effects have been carefully noted. Later on, as the stomach and bowels become cleansed and more tolerant, the quantity may be increased to eight, ten, twelve, fourteen, or sixteen ounces at a meal. If patients tire of beef prepared in this manner, or if it is very distasteful to them, it is better not to insist on their taking it for a time, but to let them have instead a lean chop, or a small plain steak, or a little game of some kind, like broiled grouse or pheasant. This change, however, should be as temporary as possible and an early return made to beef-pulp, for from this comes the maximum nourishment from the minimum effort. If the functional or catarrhal condition is not too severe, a limited quantity of starchy food may be given, such as a small piece of stale roll, or a piece of dry toast about one or two inches square. It sometimes happens in these cases and under this restricted animal diet that the patient's appetite will seem to fail. When such is the case it is invariably due to either bile in the stomach, to undigested food, to a tired and depressed state of the nervous system, or else to a combination of all these conditions. Under such circumstances an effort should be made to cleanse the stomach as rapidly as possible by the even freer use of hot water, limiting to a greater degree the quantity of food taken, and insisting on more physical and mental rest. At the same time the nerve tone should be improved as rapidly as possible by tonics, massage, and electricity. But, inasmuch as patients differ and diseases vary in severity, it is easy to understand that set rules in regard to the quantity and temperature of water, or to the amount of animal food to be given, can not be laid down. The amount of hot water should be sufficient to maintain the specific gravity of the urine at about 1·014, and the quantity of meat should be as much as can be digested. Whether the patient is drinking enough, or is digesting his food properly, is to be decided by the physician and never by the caprice of the sick one. It is to be borne in mind that the object of the use of hot water and a strictly animal diet is to prevent excessive fermentation, which is the underlying cause of the diseased condition, and therefore it should be employed systematically and persistently.

It is alleged by some, who are ignorant of facts, that this single article of diet will bring on dyspepsia, Bright's disease, and other serious troubles, and that it tends to establish a sort of meat-habit, so that the organs of digestion will not tolerate other kinds of food. I will not take time to discuss assertions and theories, but simply say that, in the treatment of hundreds of cases according to the methods here given, I have never seen any evil results. On the contrary, patients are gradually brought around to a mixed diet as soon as safe for them; the great majority get well, so that they can eat a reasonable amount of any kind of food, and in old chronic cases of twenty or thirty years' standing they are made comfortable and able to eat all that is necessary to supply the requirements of their system.

Having thus far dwelt on the general principles of treatment, I will now speak a little more specifically of the treatment of functional diseases of the stomach. In cases of this nature the patient should be held very closely to some form of animal food—such as the muscle-pulp of beef, beef-steak, lean mutton, white meats of fish and poultry, the pulp of oysters, well-fried bacon, and soft-boiled or poached eggs. The prepared muscle-pulp of beef may be used, but more to furnish variety than because really essential. But, as a rule, these cases will do better if the physician advises an almost constant use of either broiled or roast beef or mutton, eaten slowly and thoroughly masticated before being swallowed. It is also well to allow a very small quantity of starchy food, in the proportion of three or four parts

of animal to one of starchy food by bulk. It is safest to advise a very small piece of dry toast—so dry that it will snap—or a piece of stale roll, or a small piece of stale bread, or a tablespoonful of well-cooked rice or cracked wheat dressed with butter, salt, and pepper. In the matter of vegetables it is well to advise a few tender sprigs of celery, a little water-cress, or a little horse-radish, prepared with lemon-juice instead of vinegar. Moreover, the patient should be directed not to swallow coarse particles of any of the substances named, and to eat a moderate quantity and very slowly. The drinks to be allowed at meal-times are a single after-dinner cup of black tea or black coffee, sweetened with saccharin if desired. If these are not well borne, a cup of hot water, flavored or not with lemon-juice, may be taken. If the functional cases are at all recent and these precautions are observed, it will require but a few days to show a marked difference in the fermentation and in the comfort of the patient. As soon as the uncomfortable feelings have disappeared, the products of fermentation eliminated from the blood, the symptoms and physical signs of fermentation gone, and as soon as the urine shows normal characteristics, being absolutely free from biliary coloring matter, the patient may be given a larger proportion of starchy food—say, one of starchy to two of animal food. In functional cases of stomach and bowel disease, patients are to be kept on this routine as to food and drinks for a few weeks or months after the evidences of excessive fermentation have ceased. At the end of this time the patient may be led up, little by little, to other foods—such as fresh garden peas, string beans, half of a baked potato, and a few peaches, prunes, or grapes. These should be given in small quantities at first, and, if they cause any trouble, they should be discontinued, and recourse had to a rigid animal diet until the digestion has returned to a normal state. And here let me say that it is surprising how little gas is contained in the intestines of people whose digestion is absolutely healthy. It is equally surprising to note the serious disturbance of the mucous membrane after a few weeks or months of excessive fermentation. On the one hand I have seen cases that have given evidence that fermentation had existed in excess for twenty or thirty years without perceptibly affecting the general health. On the contrary, I have seen many cases where the most serious structural changes had resulted after only a few weeks of indigestion and fermentation, either in the stomach or bowels, or else in both. It can only be said in explanation of this that one is endowed with great resisting power, while the other is not so blessed. In other words, these conditions work but little injury in robust persons, while in others of less resistance and stamina they may cause decided damage and great suffering. Therefore I do not put very great stress upon fermentation and gas when they occur in people of good health; but they do have a very decided meaning when the health begins to fail and there are indications of serious structural change in the mucous surfaces of the stomach or bowels.

In the more strictly catarrhal states of the stomach or bowels, or of both, their lining becomes coated with an excess of sour, offensive, adherent mucus. This material is in a large degree a ferment, and, as a consequence, sweet and starchy foods are soon transformed into a sour, yeasty, irritating, and injurious liquid. If this state of things is long continued, it almost inevitably causes either vomiting of highly acid irritating liquids, or else frequent discharges from the bowels of gaseous products, undigested food, and thick, stringy, gelatinous mucus. The mucus thus cast off may be like the white of an egg, only more yellow; or a thin, black, gelatinous substance; or a thin, stringy material resembling wet tissue-paper; or, lastly, a distinct membranous exfoliation. It is in cases of this kind that an abundance of hot water, long continued, is of the highest utility for washing out the products of fermentation and keeping the surfaces in a fit condition for digestion and absorption. This practice must be continued and persevered in for months and years before the alimentary tract becomes thoroughly cleansed and restored to the power and function of normal digestion. In catarrhal cases of the stomach the best food is the muscle-pulp of beef, prepared in accordance with the methods described, and given as the patient is able to digest. It is well to hold patients on this diet from one to three months, because it is the only one that can be anywhere near perfectly digested. Later on other foods can be resumed, but with great caution. Among the first foods to be given should be fresh garden peas, string beans, fresh milk warm from the cow, a little tomato, or a few prunes, peaches, or grapes. The foods allowed at first should be guardedly chosen and taken in a cautious manner. Little by little the diet should be extended until ordinary diet can be taken with comfort. If at any time the patient shows signs of not digesting his foods, he should be brought back at once to the rigid animal diet, and held there until the organs again do perfect work. If the patient is thus promptly and strictly returned to a restricted animal diet, he will be all right in a few days. On the contrary, if he is not so treated, the former manifestations of disease will occur. It is impossible for a person ever to get so well but that, if he becomes sick again, it will be the weak organs that are assailed. Like causes will certainly produce like effects. It is to be borne in mind that the mucous membrane, while it may be sound, is still delicate and sensitive, and must be restored and strengthened up to its natural state. And if you consider particularly the changes that have taken place in advanced cases, not only in the mucous membrane but in the connective tissue, glands, and sympathetic nerves, it stands to reason that a good condition must be kept up long after the evidences of the disease have disappeared. And I might add in this connection that, in my experience, it takes from one to three years to bring about such changes and to cure a catarrh of the stomach and bowels.

In catarrhal disease of the bowels much the same line of treatment is to be followed. The use of hot water and the rigid animal diet must be persevered in until all traces of the disease have disappeared from the blood, the urine, and the fæces. After this system of alimentation has been persevered in thus long, there may be a very gradual return to the vegetable and starchy regimen already defined. At times there may be slight relapses, but these will be readily corrected by a return to a rigid use of the hot water and

animal diet for a few days. But, despite drawbacks, there will be a prompt restoration of comfort and a gradual progress toward health until recovery is complete.

The extent to which I have gone into the general principles of treatment and diet may lead to the belief that I am indifferent to the place and power of medicines in dealing with the functional and catarrhal diseases of the stomach and bowels. Such, however, is not the case, for there are medicines of very great utility and upon which I have come to rely with confidence. In my judgment, there are four leading indications for the use of medicines in these cases. There is a need for those that supplement the gastric juice, that stimulate the appetite, that invigorate the nervous system, that excite or retard the secretions, and that bear upon complications which may arise.

1. Among those of the first class is to be named pepsin, which is especially useful in aiding the digestion of animal food. To this useful agent may be added either bismuth, ginger, or ipecac, as needed.

2. Of the medicines calculated to stimulate the appetite I have found benefit to result from the preparations of cinchona, gentian, fluid extract of stillingia, and Fothergill's anti-dyspeptic pills.

3. In cases that need a decided nerve tonic to invigorate a feeble nervous system, and especially the nerves supplying the organs of digestion, there is nothing more advantageous than the preparations of strychnine and damiana.

4. For remedies to regulate the secretions I have obtained good results from the guarded use of Carlsbad salts, compound licorice-powder, fluid extract of cascara, mild laxative pills, and hydrastin. On the contrary, when secretions become too free, I often prescribe mild tonic astringents, like the fluid extract of blackberry-root, fluid extract of hamamelis, bismuth, or chalk mixture. In catarrh of the stomach, duodenum, or bowels, a combination of hydrastin and bismuth has rendered most excellent service. Hydrastin and bismuth seem to exert a peculiar and salutary effect upon mucous surfaces. In those cases where there is a marked tendency to acidity and fermentation, salicin alone, or with bicarbonate of sodium, or charcoal and magnesia, have given good and prompt results. Salicin usually affords excellent results, because it does not disturb the stomach, is tonic in its action, and is one of the best agents we have to counteract acidity and the evils of fermentation. There are, of course, many other remedies to be used in the treatment of the diseases under consideration, but these are the principal ones which, if properly prescribed, are of great service.

In conclusion, there are two features in the clinical history of cases treated after the manner here outlined that are worthy of special note. In the first place, there is a natural tendency for the patient to gradually get weaker and thinner. The deprivation of starch, sugar, and fat cuts off, so to speak, the "kindling wood" of the system that affords immediate strength and heat. Not only that, but excessive fermentation, especially alcoholic, is to some extent a stimulant, and it is the loss of its chronic effects that is felt by the system. No injurious consequences follow this weakness, however, if the patient believes what has been told him and does as advised. After a time the blood becomes richer, the nervous system stronger, and renewed strength takes the place of former debility. If necessary, as a matter of bridging over temporary weakness, the patient can be given from a teaspoonful to a tablespoonful of old whisky or brandy, in water, from one to two hours after meals.

And, secondly, in catarrhal cases of the bowels where the movements occur several times daily, it is sometimes necessary to bring them under control with simple remedies, like external heat, rest in bed, and the internal use of mild doses of bismuth, chalk mixture, or fluid extract of ginger. These rather frequent movements, while they sometimes weaken, are, after all, salutary. They are, as it were, Nature's "house cleaning," removing the products of fermentation, exfoliations of mucus, and other morbid material. Before or during these frequent movements or clearings the patient may experience local or general muscular or neuralgic pains, but all of these temporary disturbances soon pass away.

Such, then, are the methods which, in my judgment, are the best of all for removing the causes of functional and catarrhal diseases of the stomach and bowels, restoring the quantity and quality of the blood, augmenting the force of the nervous system, and putting the general health on a solid basis.

As you have already heard, they consist—

1. In securing a willing, obedient, hopeful, and confident mental condition.

2. In making a careful diagnosis, based on the usual methods, and, in addition, a frequent microscopical and chemical study of the products of the system, as the blood, the urine, and the fæcal discharges.

3. In placing the patient under the most favoring hygienic conditions.

4. In an intelligent and systematic use of hot water, for the purpose of cleansing the surfaces of the stomach and bowels, stimulating the secretory and excretory functions of the liver, kidneys, and other glands, and supplying the system with the requisite amount of liquid.

5. In using an article of diet that undergoes but slight if any fermentation, that can be easily digested, absorbed, and assimilated, and that will make, in time, the maximum amount of blood and nerve force. The great object is not to arbitrarily put the patient on a particular article of diet, but rather on one that will meet the above-named requirements and tide him over until well enough to resume the use of various articles. For this purpose I have not found any food comparable to the muscle-pulp of beef, prepared and used as before described. To afford the greatest service, it must be carefully prepared, properly eaten, and thoroughly digested. To know whether it is well digested, reliance must be placed on the usual signs and symptoms, and on a frequent microscopical and chemical study of the blood, the urine, and the fæces. The latter method affords the most accurate means of determining what manner of work is being done in the laboratory of the system.

6. In the use of medicines in so far as they improve

the appetite, excite or retard secretions, restore the blood and nervous system, and meet varying conditions and complications, if any develop.

40 East Twenty-fifth Street.

Correspondence.

LETTER FROM LONDON.

Renal Surgery. Colectomy versus Colotomy.—The Suspension Treatment of Locomotor Ataxy.

London, *March 2, 1889.*

Mr. Godlee has recently recorded a rather brilliant success in renal surgery. His patient, a lady aged twenty-six, had suffered from rheumatic fever four years before coming under observation, and had had repeated attacks of renal colic on both sides with hæmaturia. On July 31, 1888, she had an attack of right renal colic which passed off. It was followed the same day by left renal colic, which did not pass off, and when seen on August 8th she had had complete suppression of urine for fifty-three hours. The left kidney was exposed in the usual manner, and incised; very little urine escaped, and no stone was found, but, on passing the finger down the course of the ureter, a small stone was felt about two inches below the kidney; the ureter was drawn toward the wound and opened by a vertical incision, through which the stone was removed; a drainage-tube was left in the kidney. The bladder and lower ends of the ureters had been previously explored by dilating the urethra and introducing the finger. There was immediate relief from the symptoms; large quantities of urine were passed by the wound, but none *per urethram* for three days. Five days later there was an attack of right renal colic, and another ten days after that. The tube and stitches were removed a week after the operation, and in three weeks the wound had healed. On September 3d the right kidney was exposed and incised, but only a mass of gravel was found. There was no stone in the kidney or ureter, at any rate as far down as the point where the latter crosses the iliac vessels; blood appeared in the urine immediately after the operation, and some gravel. On the eleventh day the tube was removed, the patency of the ureter having been first ascertained by injecting some inky fluid into it, which speedily was passed by the urethra. On the following day a small stone was passed; between this time and the end of October the patient had three attacks of pain in the right side, but her ultimate recovery was complete.

At the last meeting of the Royal Medical and Chirurgical Society, Mr. Kendal Franks, of Dublin, occupied the evening with a paper on "Colectomy for Malignant Disease." His paper was based on two cases of his own, and an analysis of fifty-one recorded cases. His first patient died on the sixth day; but the second, who was operated upon in the middle of last October, was living and in good health at the time the paper was read. His statistics showed that the operation had proved fatal in 40·8 per cent. His conclusions were: 1. Colectomy rarely effects a cure. 2. As a palliative measure it is justifiable and frequently demanded. 3. Recurrence usually takes place in the liver or mesenteric glands, and death then is much easier than when the intestine is occluded. 4. The mortality after immediate suture of the intestine and after the formation of an artificial anus is nearly equal. 5. Immediate suture of the divided ends is preferable to the formation of an artificial anus. 6. The death-rate has been reduced in the later cases and a further reduction may be anticipated. Mr. Treves held that Mr. Franks's paper and statistics practically signed the death-warrant of colectomy. These operations concerned cases of cancer of insidious growth, which by the time they attracted the attention of the surgeon would already be of good size. When the disease attacked the ascending or descending colon, it must often be mechanically impossible to get it away. In many of the cases the surgeon had performed an operation in defiance of the most ordinary rules of surgery. If it was only a palliative operation, then it compared badly with colotomy, which certainly gave better statistics. Mr. Pitts thought that the chief difficulty was to get a case early enough; an early diagnosis was, however, a matter of great difficulty. Colectomy alone, in his judgment, was not a very dangerous operation, but if union of the large bowel was attempted, then it became a dangerous operation; but merely to cut out the disease and leave an artificial anus was not a very severe measure. A point in favor of colectomy was that columnar epithelioma of the bowel was slow to infect the surrounding structures or the glands. It remained for months apparently a local affection.

The only novelty in the department of medicine, so far as I know, is Charcot's suspension treatment of locomotor ataxy. It is well recognized how intractable a malady this is as a rule, and consequently every one is ready to jump at a new treatment, even though perhaps not very much for it can be maintained as yet. The patient is suspended much after the fashion of Sayre's treatment of spinal caries. The suspension at first should only be for half a minute or so, and after a while the time can gradually be prolonged, until the maximum of four minutes is attained. It is said that no discomfort is experienced by the patient during the suspension, and that as an immediate result he is enabled to walk more steadily. From the cases recorded by Charcot in his lecture, and published in one of the early numbers of the "Progrès médical" this year, there can be no doubt that some amelioration, perceptible both to the patient and to his doctor, does take place at once, but as yet no improvement has taken place in reference to the knee-jerk or the condition of the pupils. I think that the new treatment is interesting in that it confirms the idea of a vascular origin of the disease, inasmuch as it would seem probable that the effect of the suspension would be exercised mainly through the vascular system.

Massage in Pelvic Inflammation.—"Dr. Semianikoff has employed massage in twenty cases of pelvic inflammation of a chronic character which had resisted other forms of treatment, and speaks very highly of the results obtained. All the cases were in Professor Slavianski's gynæcological clinic in St. Petersburg. The cases in which the most marked effects were produced were those where there were peri-uterine effusions of moderate dimensions. Chronic ovaritis, too, yielded to the same treatment. It should be stated that in some of the cases daily sittings for about three months were required to effect a cure. Of course the treatment was intermitted during the menstrual periods."—*Lancet.*

Round Ulcer of the Stomach.—"Dr. Cherbakoff, of Moscow, in order to study the conditions under which gastric ulcers occur, injected a solution of chromate of lead into the gastric arteries of dogs, with the result that ulcers were produced which bore a considerable resemblance to ordinary round gastric ulcers in the human subject. These experimental ulcers, however, evinced a great tendency to heal rapidly and completely. This tendency could be combated by increasing the acidity of the gastric juice. Indeed, by this means it was found possible to cause the ulcers to become deeper and deeper until they perforated all the coats of the organ. Clinically speaking, these results would appear to be not devoid of significance, as it is well known that round ulcer of the stomach is frequently associated with hyperacidity of the gastric juice."—*Lancet.*

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MENTAL DEPRESSION AND URIC-ACID EXCRETION.

MENTAL depression is a functional disorder, slight or profound, and of variable duration. Melancholia, according to Broadbent, is in many cases an aggravation of mental depression, and often both may be due to the same cause. When depression or melancholia is chronic and continuous, the conditions about to be considered will scarcely avail to explain its cause. Yet depression of purely functional origin, when complicated by organic changes, such as vascular degeneration or failure of cardiac power, may be more or less continuous and severe.

In the "Practitioner" for November, 1888, Dr. A. Haig considers the relation of mental depression to the excretion of uric acid. A certain form of headache bears a close relation to such excretion; and the author's researches concerning headache have shown him that mental depression and its opposite condition of well-being and exaltation are also dependent upon the amount of uric acid in the blood. Variation of this amount may produce or put an end to the headache; and, in like manner, mental depression or the joy of living may be called into existence. The amount of this acid required to produce headache is probably greater than that which causes depression, irritability, or simply that undesirable state known as being on bad terms with one's self. It has been noticed that a number of persons suffer from a certain amount of mental depression and heaviness at the time of day when the excretion of uric acid is at its greatest—that is, in the morning between breakfast and lunch—when the acidity of the urine is lowest. This Sir W. Roberts calls the "alkaline tide." In the afternoon there is often a second period of falling acidity. It corresponds in every way to the condition that may be produced artificially by giving alkalies. An artificial alkaline tide is brought about, washing uric acid in excess into the blood, and so inducing the depression. The process may be reversed at any time; and, by giving acids sufficient to overcome the alkaline tide, heaviness and low spirits may be made to give way to a feeling of well-being, mental clearness, and enjoyment of life.

The treatment of mental depression due to a temporary excess of uric acid in the blood resolves itself into the prevention of such excess by drugs or diet. One or two small doses of a dilute mineral acid (say fifteen drops) will have a marked effect in the removal of this kind of mental condition and in producing its opposite state. Where there is gastro-intestinal disturbance, even to a slight degree, drugs given for the relief of uric-acid headache or depression may remain for hours in the stomach unabsorbed, thus failing to bring about the more or less immediate results that may be expected. On some other occasion and in the same individual the dose may act fairly well. Supposing, however, all difficulties are surmounted and the condition is greatly relieved by acids; it only remains to alter the diet in such a way that an excess of uric acid in the blood shall afterward be impossible. This excess in the blood probably comes from the accumulation of uric acid in the liver, spleen, joints, and other tissues, such accumulations being for the most part the result of the action of acids taken in the food or drink. They may be formed internally, as in dyspepsia, or retained on account of defective action of the skin.

Foods may increase acidity of the blood and tissue fluids by the salts they contain, such as phosphates, sulphates, etc., or by their originating acid-fermentation processes and dyspepsia. Meat is an example of the first class, and sugar and sometimes fruit in certain individuals are examples of the second class. Beers and wines are for the most part highly acid, and thus directly introduce acids into the system. They may possibly originate fermentation processes as well. Alcohol and stimulants in general appear to induce acidity, possibly by stimulating nitrogenous metabolism. An excess of meat is to be avoided, as meat stimulates nitrogenous metabolism, and increases the formation of uric acid and urea, its salts and the increased metabolism causing acidity as well as retention of part of the uric acid formed. Sometimes any meat at all is an excess. Beers and wines also induce acidity, stimulate metabolism, and cause decided retention of uric acid. Alcohol, apart from acids mixed with it in beer and wine, may possibly cause acidity by increased metabolism and bodily activity. A full diet, in which meat twice a day with beer and wine in some quantity is a marked feature, must be modified at once. Meat must be replaced by milk and fish, wine and beer by a little whisky or gin and water. An occasional bit of fowl or game may be allowed, and now and then an egg. This diet, continued for months, may bring about such good results that nothing more will be needed. Often, however, greater modifications are necessary, and fowl, eggs, game, and all the alcohol must be abandoned, with indulgence in fish limited to twice a week, or less, or none. Such a diet—reduced to milk, fruit, vegetables, butter, and fat—may be continued for years or for life without permanent loss of weight, bodily or mental power, or any sign of deterioration appreciable by medical examination. The rewards of this self-denial in the matter of diet are a comparatively placid and equable mental condition and a complete absence of the intense depression and irritability caused by uric acid. With such a diet not only is the formation of urea and uric acid small, but the uric acid is all passed out of the body at once along with the urea that corresponds to it, for there is no high acidity to cause its retention in the liver, the spleen, the joints, and other tissues. With such a diet, nitrogenous metabolism does not go beyond what is required for the maintenance of healthy structure. The large amount of alkali in the fruit and vegetables which form so large a part of the daily food prevents any high degree of acidity. Thus the prevention of mental depression due to excess of uric acid is complete.

Patients must not be allowed to become discouraged if at

first the change in diet seems to make them worse and the depression more constant; for, as the acidity falls owing to a change in food and to the increased ingestion of alkali, the uric acid stored in the liver, spleen, and other tissues will be washed out into the blood, and during the washing-out process there will no doubt be depression. This depression may be mistaken for increased weakness, but perseverance beyond the washing-out stage always results in recovery. Great care and attention to details constitute an essential feature in the plan of diet here indicated. Without it success is not possible. Persons assert that they can not live without meat. In a certain sense this is true, because the prevalent idea of living without meat is to leave it off and put nothing, or else a totally insufficient quantity of milk, in its place. A loss of weight and strength is the natural consequence. It requires constant supervision to prevent such a catastrophe. It is a good plan to weigh the patient before making the change in diet, and then the patient and his friends can not frighten each other about an imaginary loss in weight. The washing out of uric-acid accumulations may be accomplished more quickly and with less depression if some salicylate of sodium (fifteen grains, three or four times a day) is given at the beginning of the diet treatment; in some cases a single daily dose of fifteen or twenty grains is sufficient.

The following is a sketch of a fruit, milk, and vegetable diet that would seem admirably adapted to meet the requirements of the lithæmic constitution. With certain modifications in individual cases, such a plan of daily food might avert attacks of migraine, certain epilepsies, periodic attacks of simple physical prostration, gouty headache, and some forms of iritis and other inflammations or irritations that are dependent upon an excess of uric acid in the blood:

Breakfast.—Bread and butter, toast and butter (total of butter, four ounces), and jam. Porridge and a pint of milk, and occasionally fruit.

Lunch.—Potatoes and butter, bread and butter (total of butter, an ounce and a half), jam, fruit, and from eight to ten ounces of milk.

Afternoon Tea.—Tea with much milk, bread with much butter, and plain cake (if the cake does not contain eggs, the quantity does not much matter).

Dinner.—Soup without any stock (haricot beans with an abundance of milk and a good bit of butter make a soup that few would believe devoid of stock; and the same can be done with peas, potatoes, lentils, and other vegetables). Potatoes fried or otherwise prepared, and at least one other vegetable, with butter and milk, form the next course. Then pudding, pastry, or stewed fruit, followed by bread and butter or biscuit and butter. And last, but not least, dessert of several kinds of fresh and dried fruit eaten in considerable quantity. Milk, to the extent of ten ounces, is taken with the dinner; and any other liquid must be plain water or some simple aerated water, such as Salutaris. Milk, which is disliked by many persons, may be made more palatable by the addition of salt, as has been suggested by Dr. Emmet. Taken in large quantities, it has a tendency to cause constipation. If this can not be overcome by exercise, the amount of milk taken should be reduced.

The increased expenditure for fruit and vegetables about balances the saving in the meat and fish that they replace. In other words, health and good spirits, milk and fruit, may be had for the same sum of money as meat and fish with mental depression and bad temper. The exchange seems fair. Nothing stands in the way but habits, fears, prejudices, and preconceived ideas. These once overcome, all is plain sailing.

MINOR PARAGRAPHS.

THE BEE'S VENOM AS A REMEDY FOR RHEUMATISM.

The "Union médicale" publishes an abstract of an article in the "Wiener medicinische Presse" in which Dr. Terc describes a singular method of conferring immunity against rheumatism, namely, by saturating the system with the venom of the bee. The author had noticed that, when bees stung a rheumatic person, the little swelling produced by the sting in most persons was slow in appearing, and, if the stinging process was continued, finally failed to appear at all; then the person was free from rheumatism and reasonably safe against relapses. Dr. Terc is said to have carried out the process in 173 cases, in which 39,000 stings were required. He reports success in acute cases, but especially in chronic cases that had been given over as hopeless.

PLEGAPHONY; A NEW DIAGNOSTIC SIGN.

Dr. E. Sehrwald, a tutor in the University of Jena, describes, in the "Münchener medicinische Wochenschrift," a method of auscultatory percussion of which he considers it useful to avail one's self when bronchophony, ordinarily relied upon, is absent or feeble. According to an abstract given in the "Deutsche Medizinal-Zeitung," the method consists in percussing the larynx while the ear is applied to the chest. A plessimeter is laid upon the side of the thyreoid cartilage, with its front edge coinciding with the crest of the larynx, and gentle percussion is made with the finger or with a hammer. This may be done by the patient or by an assistant, while auscultation is performed by the physician. If the ear is applied over infiltrated pulmonary tissue, the percussion sound, transmitted through the air in the bronchi, is that of a loud, clear, quick stroke, tympanitic in character. It is called plegaphony (in German, *Plegaphonie*), from *πληγή*, a blow, and *φωνή*, sound. Manifestly the term might as well be given to the sound heard in any other form of auscultatory percussion, but we doubt if anybody will find fault with its application to the sound under consideration. Where there is extensive atelectasis, the sound is heard if the patient simply opens or shuts his mouth; it is weakened over exudates, but rendered louder and more decidedly tympanitic over large cavities than over infiltrated tissue; in pneumothorax there is a metallic by-clang; it is always most intense on the side opposite the half of the larynx percussed; over healthy pulmonary tissue there is only a soft, low, but distinctly clinking, sound.

THE IMMUNITY OF LIME-BURNERS AGAINST CONSUMPTION.

In the "Berliner klinische Wochenschrift" Herr Halter treats of the freedom from pulmonary consumption enjoyed by workers in lime-kilns. According to a summary published in the "Centralblatt für klinische Medicin," the author observed that the workmen in the Lengerich kilns, where the ground is

very dry, the temperature from 105° to 158° F., and the air always freely charged with lime-dust, were proof against phthisis. He considers the high temperature of more importance than the dryness or the inhalation of lime-dust in bringing about this immunity. For the prevention and cure of pulmonary consumption, he recommends the use of the Irish-Roman bath once or twice a day, for from fifteen to thirty minutes at a time, also, several times daily, inhalations of dry air heated to between 248° and 374° F. Feverish patients and those with hæmoptysis, however, should avoid the hot-air baths. The treatment is supposed to act by checking the growth of the bacilli.

THE BITE OF THE SCORPION.

Ordinarily the bite of the European scorpion is not followed by serious results, but occasionally the contrary is the case, phlegmonous inflammation and gangrene taking place in particular. According to tradition, the scorpion is especially venomous in the month of July; this seems to be borne out by experiments undertaken by Signor G. Sanarelli, who found that the venom taken from a scorpion in July killed a frog in two hours, while that taken in April hardly produced the same result in twenty-four hours. In 1871 M. Jousset experimented with the venom of the *Scorpio occitanus*, and the conclusions at which he arrived, as set forth in the "Comptes rendus de l'académie des sciences," were that the poison acted directly upon the red blood-corpuscles, and apparently upon them only; that it broke up the proper substance of the corpuscles, the fragments of which united to form little masses; and that these masses acted as emboli to impede the circulation. Signor Sanarelli's account of his experiments has been published in the "Bollettino della sezione dei cultori delle scienze mediche," and an abstract of it is given in the "Centralblatt für klinische Medicin" for March 2d. Being unable to obtain a sufficient number of specimens of *Scorpio occitanus*, he made use of the *Scorpio europæus*. His results were substantially the same as Jousset's.

MILKERS' CRAMP.

At a recent meeting of the Berlin *Verein für innere Medicin*, a report of the proceedings of which is given in the "Deutsche Medizinal-Zeitung" for February 14th, Herr Remak showed a milkmaid, twenty years old, who was the subject of this affection. The speaker remarked that milkers' cramp had first been described by Basedow, in 1851, who showed it to be a tonic spasm of the muscles of the forearm, brought on by any attempt to milk cows, but not by labor in the field, and classed it as a so-called functional cramp, or co-ordinatory professional neurosis, like its prototype, writers' cramp. In Herr Remak's case the cramp was ascribed to a degenerative inflammation of the median nerve.

ETHICS AMONG THE DENTISTS.

At a meeting of the New York Odontological Society, held on Tuesday evening, Professor Horatio C. Meriam, of Harvard University, read a paper on "Professional Atmosphere and Morals." The meeting was looked forward to as an important one, chiefly because it was expected that there would be a discussion turning largely upon the servitude of dentists to holders of patent rights; and that proved to be the case. It was maintained that members of the dental profession should not themselves obtain patents for appliances to be used in the practice of their art; that when they did so they contributed to lower the status proper to the profession, besides throwing a burden upon their professional brethren. There is an evident purpose on the part of American dentists to cultivate ethics in its application to their work, and to assimilate themselves more closely to the medical profession in that respect. The motives by which they are actuated are entirely praiseworthy, and it is to be expected that they will add still greater luster to the fame of American dentistry.

CYSTITIS IN WOMEN.

Dr. Thomas More Madden, of Dublin, contributes to the "British Medical Journal" an article in which he insists upon the greater frequency and more serious consequences of inflammation of the bladder in women than in men, and then considers its palliative and curative treatment in the former. Where it is possible to get rid of the cause, that, of course, is the thing to be done; but, given a case of cystitis in which this is impracticable, none of the measures before proposed have been really curative, except Dr. Emmet's button-hole operation. To this Dr. Madden has found these objections: The general difficulty of keeping the fistulous opening patulous long enough to allow the bladder to regain its normal condition; the irritation occasioned by the button; and the occasional difficulty of closing the fistula when its persistence is no longer necessary. He has therefore abandoned the use of Emmet's operation, and now resorts to digital dilatation of the urethra and the neck of the bladder, occasionally associated with the cautious use of a dull curette upon the proliferating mucous membrane of the bladder, and in all cases with the application of carbolic acid (the glycerine of carbolic acid of the British Pharmacopœia) to the same membrane. This treatment, he says, seldom has to be repeated more than two or three times, at intervals of a week, to effect a cure, even in the most aggravated cases.

THE PHARMACOPŒIA OF 1890.

Whoever has examined the present United States Pharmacopœia, and compared it with the preceding decennial issues of the work, must have realized the unusual amount and the careful character of the labor expended upon it by the committee of revision. This fact alone should have entitled the committee to the gratitude of two professions, but it is worthy of additional praise for having taken great pains to facilitate the work of its successors of 1890. This the committee has done by collecting from various sources precisely the data and queries that will have to be considered by the next committee. These are published in the form of a brochure of nearly two hundred pages, entitled "Digest of Criticisms on the United States Pharmacopœia, Sixth Decennial Revision (1880)." We have examined this publication with some care, and we find the suggestions contained in it to be such as ought to commend themselves to the new committee. We infer that it is to the industry and public spirit of the old committee's chairman, Dr. Charles Rice, that the professions of medicine and of pharmacy are indebted for this timely work.

SOME NEW APPLICATIONS OF LARYNGEAL INTUBATION.

In the "British Medical Journal" for March 2d a well-known Edinburgh surgeon, Mr. Thomas Annandale, describes certain uses to which he has put Dr. O'Dwyer's operation of intubation of the larynx—namely, as an aid in certain operations, as a means of restoring or carrying on respiration in cases of sudden obstruction in the larynx or trachea, and for laryngeal stenosis resulting from chronic inflammatory conditions or from accidental or surgical wounds. By the simple expedient of surmounting the O'Dwyer tube with a channeled hard-rubber gag to which a soft-rubber tube is attached to be brought

out through the mouth. Mr. Annandale has done away with the necessity of tracheotomy as a preliminary to operations involving danger of the trickling of blood down into the trachea; but he gives to Dr. Macewen, of Glasgow, the credit of priority in this use of intubation, that gentleman having resorted to it so long ago as in 1878. Besides describing these special applications of O'Dwyer's operation, Mr. Annandale gives an exceedingly fair comparison of its value in general, and it is gratifying to see that he attributes to Dr. O'Dwyer's labors the entire merit of having successfully established the operation.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending March 19, 1889:

DISEASES.	Week ending Mar. 12.		Week ending Mar. 19.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	9	2	9	3
Scarlet fever	341	49	387	46
Cerebro-spinal meningitis	3	1	1	0
Measles	236	20	189	20
Diphtheria	203	45	200	46

The Philadelphia Polyclinic.—The Appropriations Committee of the Pennsylvania Legislature has recommended a grant of $20,000 to the institution for its new hospital building, provided it raises a like amount. Toward meeting this provision, subscriptions amounting to about $10,000 have already been secured.

The Howard University.—The commencement exercises of the medical, dental, and pharmaceutical departments were held in Washington, on Saturday, March 16th. The degree in medicine was conferred on twenty-four, in dentistry on six, and in pharmacy on four candidates.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from March 10 to March 16, 1889:*

Baxter, Jedediah H., Colonel and Chief Medical Purveyor, will, by direction of the Secretary of War, proceed to New York city on public business connected with the Medical Department, and on completion thereof return to his station in this city. Par. 18, S. O. 57, A. G. O., Washington, March 11, 1889.

Greenleaf, Charles R., Major and Surgeon, is appointed a member of the board to meet in this city, on March 11, 1889, for the purpose of revising the blank forms now in use in the army, and preparing the "Book of Forms" for issue. Par. 13, S. O. 55, A. G. O., Washington, March 8, 1889.

Johnson, Richard W., Captain and Assistant Surgeon, is relieved from duty at San Carlos, Arizona, by direction of the Secretary of War, and will report in person to the commanding officer, Whipple Barracks, Arizona, for duty at that station. Par. 15, S. O. 57, A. G. O., Washington, March 11, 1889.

Shufeldt, Robert W., Captain and Assistant Surgeon, having been found incapacitated for active service by an army retiring board, is, by direction of the Secretary of War, granted leave of absence until further orders on account of disability. Par. 7, S. O. 56, A. G. O., Washington, March 9, 1889.

Society Meetings for the Coming Week:

Monday, *March 25th:* Medical Society of the County of New York; Boston Society for Medical Improvement; Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement; Baltimore Medical Association.

Tuesday, *March 26th:* New York Academy of Medicine (Section in Laryngology and Rhinology); New York Dermatological Society (private); Buffalo Obstetrical Society (private); Medical Society of the County of Lewis, N. Y.; Boston Society of Medical Sciences (private).

Wednesday, *March 27th:* New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medical Society of the County of Albany; Auburn, N. Y., City Medical Association; Berkshire, Mass., District Medical Society (Pittsfield); Philadelphia County Medical Society.

Thursday, *March 28th:* New York Academy of Medicine (Section in Obstetrics and Diseases of Women and Children); New York Orthopædic Society; Brooklyn Pathological Society; Roxbury, Mass., Society for Medical Improvement (private); Cumberland, Me., County Medical Society (Portland).

Letters to the Editor.

MEDICAL EDUCATION.

1032 Lexington Avenue, *March 15, 1889.*

To the Editor of the New York Medical Journal:

Sir: In a recent issue of the Journal an article appeared upon "Medical Education," written by Dr. Roosevelt. Ever since I read Herbert Spencer's "Essay upon Education," several years ago, my thoughts have constantly reverted to its application to medical education, and the publication of Dr. Roosevelt's paper may render an expression of my views not inappropriate. Mr. Spencer's essay has been received as an authority by advanced thinkers upon the subject; but it would appear either that Mr. Spencer is mistaken in his premises and conclusions, or that the present system of medical education is fundamentally faulty. Mr. Spencer's general application is that, in any system of education, the completed work should be shown to the student. This impels a desire in his mind to know the causes of the result, and to stimulate and then satisfy this desire is the office of the teacher. Applied to medicine, would this not mean a reversal of the present order of instruction? Suppose clinical instruction to come first, would not anatomy, physiology, and materia medica have a real meaning instead of being a matter of dry detail? For instance, suppose a student were asked to listen to the heart-sounds, and told to note their rhythm and quality. He would naturally ask the cause. When he heard of the valves he would desire to know their construction and action. If the objection should be made to this that we have here only physiology after all, take a surgical operation as an example. Suppose a student were to see the femoral artery ligated, his natural inquiry would be as to arteries in general and the femoral artery in particular. Next would be a desire to know the anatomy of Scarpa's triangle. A man with an extremely inquiring mind might even wish to know who Scarpa was. In conclusion, let me give a striking example of this method. There are two systems of test-glasses in vogue—those of the inch and those of the diopter. A student of ophthalmology could master the details of these systems and convert one into the other from a description about as easily as he could decipher the inscriptions upon Cleopatra's Needles. Nevertheless, it is not a hard matter, and is readily understood by any one who has practically applied the two systems in testing refraction.

By putting practice first and theory afterward, the time consumed in teaching medical subjects would be no greater, that in learning them probably less. The increased satisfaction to the student can only be surmised. H. H. Seabrook.

THE ANTISEPTIC TREATMENT OF MAMMARY ABSCESSES.

133 West Thirty-fourth Street, *March 11, 1889.*

To the Editor of the New York Medical Journal:

Sir: The paper of Dr. J. P. Marsh, entitled "Care of the Female Breast during Lactation," published in the Journal of March 9th, was a very satisfactory one in all respects save on the subject of the treatment of mammary abscess after the pus has been evacuated. The author says: "Perhaps antiseptics had better be excluded from the treatment of these abscess cavities, and, where irrigation is required, simple boiled water be used." Every surgeon who is familiar with modern ideas felt his bristles rise when he read that expression of sentiment. It is true that our best antiseptics—bichloride of mercury and carbolic acid—might be dangerous when used for irrigating a large abscess cavity; but if we substitute for them peroxide of hydrogen and balsam of Peru, the abscess cavity will with graceful submission fill quickly with healthy granulations, and the dangers of wound infection and the discomfort of long-continued suppuration will be done away with.

If Dr. Marsh, after making a very free opening into an abscess cavity of large size, will inject once daily thereafter a few drachms of a twelve- or fifteen-volume preparation of peroxide of hydrogen, and follow this injection with the introduction of a small quantity of balsam of Peru, he will be very much pleased with the results. The peroxide is injected most easily by means of a hard-rubber syringe and a small soft catheter, the latter being inserted into the deepest cavities and the injection then made through it. After waiting a few minutes the masses of foam and the *débris* which are thrown out are brushed away and another injection made. This is repeated until the peroxide which is injected ceases to foam. The abscess cavity is then known to be chemically clean. Fluid remaining in the cavity is gently expressed and balsam of Peru made to take its place. A very large drainage-tube—or, what is better, a strip of gauze soaked in the balsam—should be introduced and the whole breast enveloped in a large handful of bichloride gauze or cotton.

Robert T. Morris.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

Meeting of February 7, 1889.

The President, Dr. A. L. Loomis, in the Chair.

Address of the Retiring President.—Dr. A. Jacobi, in resigning the chair to Dr. Loomis, read a carefully prepared paper, in which he reviewed the labors of the Academy in the past, and called attention to some things in which he hoped improvement would be made in the future. The prosperity of the Academy in membership, finances, buildings, and equipment, and in having an abundance of interesting papers read before its meetings, was a matter for general satisfaction. That so active a part in the proceedings was taken by the younger men he regarded as a fulfillment of one of the purposes of such an association—namely, "to foster the growth of young cells" in the "tissues" of the profession. The function of physicians in the body-politic should be that of the trusted advisers of the public on all matters in which life and health were at stake. Only when the profession as a body came to represent the widest and most accurate thinking of all times in matters relating to the physical welfare of the individual and the community would they take their proper place in regulating the public policy in matters connected with the prevention as well as the cure of diseases; bills presented to the Legislature, prepared and indorsed by leading medical organizations, would be passed without revision by men untrained in the science of medicine; and even on the managing boards of our hospitals it might come to be thought prudent to have one member a doctor.

He called attention to the meetings of the Section in Hygiene and Public Health as being most important as regarded the possible service they might render to the public. The attendance on these meetings by so many representative men in the educated class belonging to other professions was no reason why so few doctors should be present to take active part in the discussions. The Section in Materia Medica and Therapeutics had not been productive of valuable work. He sometimes wished it were called the Section in Therapeutics including Materia Medica, and that it might deal with a wider range of subjects than experimental studies of the effects of new drugs on animals. He would propose as the field of investigation proper to this section the discovery and application of all laws and means by which recovery from disease could be promoted. A knowledge of these was the first and last accomplishment of the physician—one to which all his other knowledge was subsidiary, or should be. The speaker then passed in review the recent advances in our knowledge in this great department of work. He endeavored to show the subtlety of the practical problems which had to be dealt with, and the innumerable variations which perverted body-action as affected by drug-action presented. It was scarcely to be wondered at that so much scorn was put upon internal medicine by the skeptically minded in the laity, who comprehended neither the uses of drugs nor yet their limitations, especially when acting on a body past the middle period of its life. Remembering the great complexity of the subject, it was easier to understand how so many graduates from poor colleges were able to sell their ignorant services to country communities, and how proprietary medicines could have such sales, and why, in some classes of the community, doctors were changed so often. A surgeon could become great at thirty years of age if he had the temperament, and due energy in applying certain well-established principles. On the contrary, only many years of labor could give trained senses and ripened experience sufficient to entitle a physician in general practice to be called great, whatever his inherent ability might be.

Inaugural Address.—The President, upon taking the chair, read an address in which he considered particularly the needs of scientific medicine in New York. He concluded that, in the first place, a higher and broader culture was needed in those entering upon the scientific pursuit of medicine. An examination in mathematics and classics was no test of this. Medicine was no longer based on authority and tradition. A special training in the natural sciences should be made the prerequisite. In Europe, where higher standards prevailed, no uneducated man thought of studying medicine. In this country the profession was largely responsible for the large numbers of weak men in their ranks by encouragement given to men to enter the study of medicine who were neither fitted nor personally qualified. After reviewing the defects of medical colleges and outlining improvements to be desired in the present modes of instruction, the speaker considered the need of having laboratories fitted out and endowed in this city where the scholarly men constantly coming here could work unhampered by expense. Men of wealth desiring to do real good with it should turn their attention less to the alleviation of the bodily discomforts of the ignorant and more to the promotion of intelligence as being more important to the general welfare. The endowment of hospitals and dispensaries had been so overdone in some

instances that there was actually a premium put on patients to fill the wards. This was misdirected charity. Already there were indications that the stream of emotional benefaction was turning into educational lines. There was a need for the establishment of scholarships, fellowships, and independent lectureships to enable scholars of limited means to engage in scientific work. History showed that power and wealth had never achieved greater glory than in fostering the useful sciences.

The speaker proceeded to criticise the standard of our medical literature. A leading fault was in the "vain repetitions such as the heathen use," printed and reprinted in hastily written articles, of facts already too familiar. Too many men were writing for the fame supposed to be obtained by an appearance in print. Other causes of the present redundancy of medical literature were discussed, and the need was shown for men devoted each to the discovery and application of single truths. The tasks which science set were usually without pay or thanks, and yet were necessary to the influence and dignity of the profession.

Dr. Fordyce Barker, being called on by the president, said that he could hardly give expression to the pleasure that he had in being present, as the contrast which was forced upon his mind between the present condition of the Academy and that of ten years before, when he had had the honor of giving his inaugural address, illustrated the prosperity, the rapid growth, and the increasing usefulness of the Academy. It might perhaps be interesting and profitable to briefly refer to the many important changes which had taken place in that period. Then its hall was only the room adjoining, which now served for a committee room and for the overflow of the general meetings. This hall, which had been built since that time, was already so crowded with books that a new one was absolutely necessary, and he was sure would be built in the near future. The number of volumes in the library had nearly quadrupled in the past ten years. On that evening ten years before the Academy owed a debt of ten thousand dollars, and there was a mortgage on the property for that amount. Now not only had the debt been paid off, but there was, as he had been told, more than twelve times that amount in the treasury, which had been contributed by friends or given by bequests, ready to be used for the new hall that was so much to be desired. Its material prosperity was a subject for mutual congratulation, but if, as many of those present believed, the future standing and character of the profession in this city rested mainly on this Academy, he thought it had given great promise for the future in its higher aims—those of elevating and advancing its literature. He might say without question that, when this Academy was organized, the medical profession of this city had the reputation of doing very little for literature and science. While it had always had some bright and shining lights, who, by their abilities and acquirements, their able medical writings, and their brilliant achievements in surgery, had secured an honorable record in the annals of the profession, yet it had long been a reproach that the profession of this city did less for literature and science than it should, but that it was chiefly devoted to its pecuniary rewards. But this stigma no longer remained, and it was chiefly due, as he believed, to the stimulating influence of this Academy. The number of volumes on medicine and surgery, and on every variety of the specialties, which had been published by the fellows of this Academy, would constitute a library greater in number and of more value than could be found in the possession of a vast majority of the profession anywhere.

The speaker had spent a little time recently in looking up this matter, and he felt safe in asserting that, in the past decade, the fellows of this Academy had contributed to medical literature more than 25,000 8vo pages. The president, who had been listened to with so much pleasure, had added in one volume more than 1,100, besides at least a hundred more in the published transactions of medical societies. The retiring president, in the numerous papers which had emanated from him, had added several hundred more.

The truth was that so rapidly was medical literature increasing all over the world that it was a matter of extreme difficulty for a busy man to keep abreast with it, however earnestly and conscientiously he might try to do so; and a careful study of its periodical literature would almost drive one of advanced years in the profession to despair, for it aimed to absorb all the practical knowledge and progressive science of all languages and nations. This had caused such a change in medical literature by the introduction of so many new terms in it—derived from the modern languages—that if one of our most eminent men of fifty years ago could be raised from the dead, he would find it difficult to understand a great deal that he heard or read.

Fortunately, one of the fellows of the Academy had done much to remedy this difficulty and to enable us to secure accurate knowledge by the editorship of that remarkable work, with the assistance of most able collaborators, the "Encyclopædic Medical Dictionary." But the theme of the medical literature which the fellows of this Academy had contributed was too large a one for him to enter upon on this occasion.

Some ten years ago, at a public dinner of the Alumni Association of one of our medical colleges, he had been called upon to respond to the subject "Our Medical Literature." He had referred to the fact that between the years 1835 and 1845 Paris had had a larger galaxy of eminent men than had ever before been found aggregated in one city, for in this period there had been living Louis, Andral, Chomel, Trousseau, Dubois, Velpeau, Dupuytren, Lisfranc, Roux, and many others that he need not enumerate.

He had then expressed the belief, in view of the very large number of bright, ambitious young men who had been thoroughly educated and who had sought every advantage that could be received by study in foreign cities and hospitals, that within twenty-five years New York would have as large and as distinguished a class of medical men as Paris had had at the time to which he referred. He asked now whether this prophecy was not rapidly becoming history. Whether it should prove to be really so would in a great measure depend upon the fellows of this Academy.

The retiring president had, by his zeal, his unflagging devotion, and his wisdom and ability, done everything in his power to bring about this result.

The past history and the character of his work, in every field in which he had been occupied, were a full guarantee that the new president in every respect would be fully up to the standard of our high expectations.

It only remained for the fellows each and every one to aid him in every way in their power. Might it not be confidently hoped that the scheme which had been portrayed in the speaker's valedictory four years ago would eventually be carried out, and make this Academy the most important and the most influential of the medical institutions of the world, this being in accord with our future destiny as a nation in its commanding influence and position in the world?

Meeting of February 21, 1889.

The President, Dr. Alfred L. Loomis, in the Chair.

The Treatment of Inguinal Hernia with Reference to Radical Cure.—Dr. Charles McBurney, in a paper with this title, reviewed the reasons why recurrence of a hernia was so

common after the operations heretofore used, and proceeded to describe his own operation minutely, and to give the results accomplished by it in the last two years. He concluded that any operation for the cure of hernia which left even a slight dimple in the peritonæum at the site of the opening invited a return of the hernia. When a drainage-tube was kept in the abdominal wall after a laparotomy, the peritonæum healed with a dimple at that point, and it was well known that ventral hernia was of much more frequent occurrence in such cases than when the peritoneal cavity had been closed without drainage. For the same reason any operation by which the sac of an inguinal hernia was removed at the external ring left an indentation into which the bowel would be apt to force itself again, in spite of the many accessory means that were attempted with a view to strengthening the support of the peritonæum at that point. Macewen's operation, or the reduction of the sac wrinkled up on itself inside the abdominal cavity, there to act as a pad over the opening, was a valuable procedure in that it obliterated the sac, but it did not reproduce the smooth surface of the normal peritonæum, and, moreover, was not available in cases where the sac was in an unhealthy condition, or where it was small and thin as in children, or in the congenital forms of hernia.

Some had proposed twisting the sac, but this method could not commend itself for general adoption when we considered the liability of the sac's breaking, or of its not being entirely obliterated, or of a part of the mesentery being included. It was, moreover, entirely unsuitable in the same classes of cases in which Macewen's operation was not available. A study of the causes of the previous failures in making a "radical cure" of hernia had led him directly to the method which he had come to adopt, and he had not been aware at the time that, in Germany, Otto Reisel had preceded him by twenty-five years in deciding to make the operation really radical by splitting the canal up to the internal ring, and there tying the sac with silk, or, if injured or congenital, cutting it off and sewing the opening together. This restored a smooth peritoneal surface at that point, as had been found by post-mortem examination a considerable time afterward.

The author then reviewed the various steps which were taken to strengthen or support the internal ring and to obliterate the canal—such as sewing together the pillars of the internal ring, narrowing the canal by sutures, freshening its sides by passing the finger up so that they might unite, or, as in Macewen's operation, carrying the tendon of the transversalis over and suturing it to the conjoined tendon and Poupart's ligament. The wedge of intestine, once started from above, would force its way through the resistance made by any or all of these attempted obstructions. The second object in his operation was to secure a dense and abundant cicatrix in the site of the canal, and to do this it was essential to have an open wound packed with gauze, and so absolutely avoid sepsis and œdema.

As to the time-honored idea that cicatricial tissue was always an unstable tissue and likely to yield whenever depended on for resistance, should it not be remembered how much trouble arose in various conditions from cicatricial tissue which was not absorbed and showed no tendency to become lax or elastic? The umbilicus was a cicatrix; we often saw such persistent cicatrices after burns and following a pelvic peritonitis. That after a laparotomy the scar did not prevent a ventral hernia in certain cases must not be given undue weight, since here the intestine was forced directly against the scar. The inguinal canal was a natural passage, and contained fat and areolar tissue, and nothing short of a granulation process could permanently obliterate it.

He began his operation by making a free incision from a point on the abdomen above the internal ring downward and inward, so as to lay open the whole canal. The spermatic cord was separated, and the sac dissected out to its very point of origin. It was then opened, any contained intestine reduced, and any pieces of omentum were tied off. The sac was now held up and the finger inserted to prevent the descent of the intestines; it was then tied off close to the internal ring. The conjoined tendon was next brought down, as in Macewen's operation. Then he proceeded to make an open wound by turning in the integument and suturing it to the superficial layers of muscle; he also passed several deep tension sutures. The wound was then packed with iodoform gauze and a suitable dressing applied. The urine was withdrawn with a catheter for the first few days to avoid soiling the dressings, and in the case of children a plaster-of-Paris dressing was used to give additional security, with a coat of shellac added in female children.

The supine posture was to be maintained during the five or six weeks necessary for healing to become complete, but it was time well spent, for the scar would thus be stronger, and the patient got up finally, free from the "slavery of the truss." It was better, in fact, not to apply a truss, as it would impair the strength of the scar by keeping up constant pressure and massage. He felt that he could safely say of his method that it was the only one which really secured an obliteration of the sac, a union of the walls of the canal throughout its length, and a minimum risk of abscess or infection. It was applicable to every variety of hernia, and cure was effected rapidly. In thirty-six operations on herniæ of every sort in which he had used this method he had had one death, and that from alcoholic delirium. There had been one relapse, due to a defect in the manipulation. Two patients had passed out of sight, and three were still under observation in the hospital, but there was every reason to believe that the remainder were permanently cured.

Dr. L. A. Stimson commended the many advantages of the operation and contrasted it with the other expedients to which recourse was sometimes had. When he had first heard of Dr. McBurney's operation he had thought the time needed more than was necessary for the cure of hernia, and that the same process set up in a portion of the wound would do as well and give a quicker cure. He had wasted a year, and had subjected a number of patients to disappointment, by attempting to get a cylinder of granulations formed about a drainage-tube which he had fastened in the canal; but, though cicatrization had formed, the recovery had been delayed beyond the time required after Dr. McBurney's operation, because the sutures used to fasten in the tube had become the seat of infection, and sinuses had resulted.

Some surgeons had hoped by operation to restore the canla, but it was well to keep in mind what the canal was in the normal anatomy. In people free from a tendency to hernia the so-called canal was a closed tract, the entrance to which was valve-like, and so placed that no amount of pressure in the abdominal cavity acted upon it except to press its walls still more tightly together. But in old herniæ there was no canal and no valvular arrangement; instead, there was a hole in the wall, formed by the coming together of internal and external rings into one, and covered only by skin, subcutaneous fascia, and peritonæum. The normal canal was not restored by any operation that he knew of, although it might look as if it had been at the time. We had no means of knowing that the dispositions of fasciæ and muscles which were sometimes made, with sutures to retain them in artificial positions, remained afterward. Only a hernia starting in a depression in the peritonæum just to one side of the origin of the cicatrix was likely to threaten the success of the result after Dr. McBurney's operation.

Dr. A. G. Gerster approved of the operation, but thought we should wait for from two to five years before calling the result

of it a permanent one; until such a test was made, argument on the radical nature of the procedure was *a priori*.

Dr. R. Auer remarked that a year previously he had thought, as Dr. Gerster had just suggested, that the cicatrix formed in the manner which Dr. McBurney had described would be apt to act like the median cicatrix in the incision made in laparotomy, but after seventeen trials he had concluded it was the best operation we had. He had operated for hernia a hundred and seventeen times, and fifty-two times by Macewen's method; this operation by contrast was simple, and required no special skill. When asked as to the reason of failures following his operation when done by others than himself, Macewen had said it was because no one did it correctly.

The Care of the Indigent Insane.—Dr. A. Jacobi called attention to the fact that a special bill had recently passed the House in the State Legislature allowing the people of Madison County to withdraw their insane from the State institutions, and to care for them in whatever local institutions or almshouses they might see fit. The conditions and professional talent which could be supplied in these small establishments were always so deficient that the chances of the recovery of that class of patients were almost destroyed. Considering, too, that the bill of the State Charities Aid Association providing for this same class of indigent persons was now before two committees and would soon come before the two houses, he had prepared a resolution in which the Academy protested against further action being taken in regard to the first bill until the fate of the second was determined. Carried.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN THEORY AND PRACTICE OF MEDICINE.

Meeting of February 19, 1889.

Dr. R. C. M. Page in the Chair.

The Hot-air Cure for Phthisis.—Dr. A. L. Stearne exhibited the apparatus devised by Weigert for heating the inspired air, and gave an account of the results which followed its use by consumptives. It consisted of a stand, supporting a double cylinder, which was covered with asbestos. The interior of the inner cylinder was heated by a Bunsen burner, so that pure air drawn in between the two cylinders became heated and at the same time disinfected. At the outset of treatment patients were made to inhale air at a temperature of 212° F. for thirty minutes. Gradually the sitting was prolonged to two hours, both morning and evening, and the temperature of the air was slowly increased to the highest point each patient could endure without discomfort; the maximum reached in any case had been 482°.

The chief results were the following: 1. The pulse, at first faster, became slower as the inspirations continued, and the respirations became deeper. 2. The body temperature rose at first one or two degrees, but in the course of an hour sank to normal, the exhaled air having a minimum temperature of 113° F. 3. While the general health remained undisturbed, the difficulty in breathing was at once removed; there was lessening and finally cessation of cough, fever, and night-sweats, and the appetite and strength improved. The disease in time came to an end in fact, the hæmorrhages, catarrhal lesions, infiltrations, and the dilatations of the bronchi all being put a stop to; cavities underwent cicatrization; the weight increased rapidly, especially where emaciation had been extreme; and the bacilli slowly disappeared from the sputa, sometimes in as short a time as fourteen months.

Simple Non-tubercular, Non-metastatic Abscess of the Lungs.—Dr. S. S. Jones read a paper with this title. He called attention to the fact that there was nothing in the text-books which took account of the occurrence of this lesion. The lung was peculiarly prone to inflammation, but could easily discharge the products through the bronchi, so that a small abscess might easily run its course without attracting notice. There were four forms which the disease might take: 1. The condition might remain obscure from the beginning, and give no manifestation of its presence until the discharge of pus, or the appearance of evidences pointing to a cavity. 2. It might give rise to symptoms simulating pleurisy, with effusion which afterward became purulent. 3. Phthisis might be simulated. 4. It might resemble *pneumonia ambulans* in its going from lobule to lobule, or from one lung to the other. However, there were two conditions which almost always presented in connection with the disease—a depreciation in the general health for months before the abscess formation, and general alcoholic poisoning. The liability was the same at all ages. The course of the disease could best be examined by reviewing the history of several typical cases.

1. A delicate boy, for two weeks previous to the development of the pulmonary abscess, suffered from headache, insomnia, fever, pain in the left side, and cough without expectoration. An area of dullness had been found below the spine of the scapula, which also gave loss of vocal fremitus and respiratory murmur. Later on suppurative amygdalitis had been developed, and still later a large amount of fœtid pus had been coughed up, after which recovery had slowly taken place.

2. This case (taken from the "Lancet") had resembled an attack of pleurisy with effusion, toward the close of which a bulging had appeared on the left side, the tonsil had become inflamed and had suppurated, and afterward the swelling in the side had burst and discharged a large quantity of pus; but, as the proper treatment had not even then been gone into, the patient had died of the abscess.

3. This case had begun with suppurative amygdalitis, which had gone on to recovery, but subsequently there had been a rigor, and signs of consolidation had developed, and still later a pint or more of pus and blood had been coughed up. Apparent recovery from this attack had been followed after a time by a second attack in which the same symptoms had been repeated. The pus had contained the pneumococcus of Friedländer.

4. This case had first presented palpitation resembling that resulting from a gastric disturbance, and the condition had been much improved by a better diet; but afterward cough, fever, and emaciation had appeared, and an area of dullness had been found in the right subscapular region; still later pus and blood had been coughed up in amount. A cavity and profuse expectoration had persisted for some time, but gradually the cavity had closed, the night-sweats had ceased, and the patient had regained his ordinary weight of two hundred pounds and robust health in every particular.

The rapid recovery of health that followed the evacuation of one of these simple abscesses, as well as an examination of the pus under the microscope, would serve to distinguish them from tubercular abscesses. The larger abscesses of this variety should be freely incised and drained early in the course of the disease. Injections of antiseptic solutions were to be avoided. Much attention was to be given to food, air, and surroundings. There was no doubt that many died of the disease in whom it was not recognized.

The Chairman would add that no reference had been made in the paper to abscesses resulting, often only after years, from the lodgment of a foreign body in the lung substance.

Dr. A. L. Loomis said that he regarded the disease as very rare. He had met with it in a very few cases, and in one or two instances had made autopsies by which its nature had been

proved. In all his cases, signs of inflammation had preceded the abscess formation; in all, the general condition had been such as would have favored the spread of any inflammatory process; and in some it had seemed to occur in a lung which had previously been the seat of a pneumonia followed by increase of connective tissue in the lung and pleura. As to treatment, he would only say that he himself should be loath to pass a knife through the lung to empty such an abscess while any chance remained of the pus finding an outlet through the bronchi.

Anodal Diffusion.—Dr. Frederick Peterson read a paper with this title, in which he endeavored to show the powerful influence of the positive pole of the galvanic battery in causing the absorption of drugs—such as chloroform, cocaine, or aconitine—through the unbroken skin, thus affording an unequaled means of relieving neuralgias. He exhibited an apparatus consisting of a carbon cylinder covered with linen, both of which materials could be impregnated with the solution of the drug, and about which there was a rubber cup by which evaporation was checked.

Dr. M. A. Starr remarked that the subject deserved attention, and the method described by Dr. Peterson a general trial. He could testify himself to the relief afforded. Provision needed to be made to prevent an overdose of the drug being used. He believed that the method might be made useful in diagnosis to determine whether an attack of *tic convulsif* in a branch of the trifacial nerve, for instance, was due to a peripheral inflammation or to hysteria; in the former case the anode charged with cocaine being placed over the painful nerve would at once stop the pain. No scar was made, as when cocaine was injected.

Dr. L. C. Gray and Dr. B. Sachs expressed doubts as to the usefulness of the method; Dr. W. R. Birdsall thought that the action of the anode had much to do with the good effects, but that perhaps it was the combined action of both current and drug which gave the results that had been observed; and Dr. C. L. Dana was surprised that Dr. Peterson had got no constitutional effects from aconitine used in this way, since Dr. Squibb had obtained them from merely rubbing a little of a one-per-cent. solution of the drug into the unbroken skin. The method, he believed, had an undeniable value.

Diffused Pigmentation following the Use of Arsenic.—Dr. W. M. Leszynsky presented a young child in whom this condition had been slowly developed, after the administration of ordinary doses of Fowler's solution for chorea. There was no erythema, and the health was good. There was nothing pointing to Addison's disease.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN SURGERY.

Meeting of February 11, 1889.

Dr. Robert Abbe in the Chair.

The Repair of Nerves and Tendons severed at the Wrist.—Dr. C. A. Powers presented a man who two years before had received a wound in the wrist by which the uppermost tendons, the median artery, and the ulnar nerve had been cut through. The case had been referred to the speaker by the physician who had first been employed, with the statement that the tendons and nerves had not been united when the wound had healed. In the parts of the hand supplied by the ulnar the speaker had found complete anæsthesia and muscular paralysis. He had sewed up the severed tendons and nerve and had obtained deep union. Six days later there had been great pain in the skin supplied by the reunited nerve, but this had slowly subsided. After three months sensation had returned in the hand, but motion in the muscles of the hand supplied by the distal part of the nerve had not returned as yet. This was the usual order after union of a divided nerve-trunk. To get good union of severed tendons free from adhesions was too important a result to be left to the unaided effort of repair, especially in the case of the flexor tendons. Immediate suture of these tendons, flexion of the hand on the wrist, and three weeks of rest followed by passive motion, were always best to secure recovery of function.

Dr. E. V. Agramonte believed that movement should be begun as soon as healing commenced, to prevent the formation of adhesions.

The Chairman remarked that the extensor tendons did not retract when severed as much as the flexor did, and that, after division of the former, position alone was enough.

Bony Reproduction of the Patella.—Dr. V. P. Gibney presented a boy in whom the entire patella had been formed anew after being removed for necrosis. The functions of the joint had been entirely restored. Only the prepatellar region had been opened, and drainage of the cavity left after the extraction of the decayed bone had been made. Recovery of motion with a fibrous growth in place of the patella, and a growth of the bone with a stiff joint resulting, had been reported in several different instances. In one case in which he had attended, acute rheumatism had been followed by suppuration in the prepatellar region and exfoliation of the patella. He had removed the latter in time to prevent invasion of the joint, a step which he considered it was always better to take in such cases rather than risk a suppurative arthritis. The bone had formed anew in this case, but with many cicatrices about it, and the joint had remained stiff and subluxated.

The Chairman commented on the resemblance of this sort of bone formation to that often seen when a subperiosteal abscess healed after the extrusion of the sequestrum.

Two Anomalous Cases.—Dr. R. T. Morris presented two pathological specimens of obscure formation and origin, and asked for opinions as to diagnosis and prognosis. In the first case scarlet fever in a man of thirty-four had been followed by a swelling in the lobe of the left ear which had extended downward along the ramus of the jaw. The skin in this region had become hot and swollen, and solid to the feel, owing to the infiltration which it had undergone. It had also been noticed that the change was confined to the integument. Finding that the swelling was constantly increasing, he had removed the whole mass. It had proved to be composed of gelatinous and cheesy material surrounded by connective tissue, and a microscopical examination had revealed the presence of an infiltration of young cells and lymphoid cells of a clearly malignant character.

In the second case an abscess on the lower surface of the left lobe of the liver, after remaining in a latent condition for eleven years, had all at once become enlarged and painful, so as to require opening. The discharge of pus had been considerable at the time, but had continued after the first evacuation, and some time afterward a large amount of calcareous matter had been found to have formed about the sides of the cavity. Having thereupon made a wide opening over the site of the tumor, he had come upon a large fibrous mass to which the intestines were adherent. In its interior was a cavity lined by a pyogenic membrane of extraordinary thickness which was covered with scales of calcareous deposits. There were also concretions in the wall of the sac. He had been unable to remove the fibrous capsule on account of the adhesions, but had scraped out the interior thoroughly, and the wound had healed without difficulty. However, the pyogenic membrane had since formed

again, and the discharge of pus and the deposit of calcareous matter had become as active as ever.

The Chairman remarked that the case had at one time been under his care, and that he had performed the same operation as that vainly done a second time by Dr. Morris. The persistence of the discharge might perhaps represent a perversion or a vicarious performance of the urinary function.

The Organization of Bone from Blood-clots after Excision of the Knee.—Dr. A. M. Phelps showed diagrams of the excavations in the tibia and femur which he had made during excision in several typical cases of tubercular disease of the knee joint, and which he had allowed to fill with blood, and had then left to organize by displacement into bone. Several times he had obtained renewal of the bony substance, amounting to a replacement of almost the entire head of the tibia or femur, when amputation would otherwise have been necessary. Antiseptic precautions had to be carried to their utmost limits of nicety if organization of the clot was to be hoped for. It would not take place under gauze unless the wound was covered with Lister's protective, and the latter dressing was the only one which he had found reliable for placing directly over the wound in this operation. Above it he placed antiseptic gauze, then cotton over the whole limb, and plaster of Paris over that, and finally slung up the limb to secure absolute rest. Bichloride-of-mercury or carbolic-acid solution or a drainage-tube left in the cavity prevented organization of the clot. This method of bone reproduction applied in excision was less dangerous than amputation, and always deserved trial first, unless the disease extended too far into the shaft. No wire should pass through the cavity.

He had operated in this way for disease of the knee joint twenty-one times, and with good results; only one of these patients had to wear a posterior splint, as good fibrous union had occurred when bony union did not. In no case had there been suppuration or a temperature above 102° F.

The Chairman remarked that he had obtained organization of a blood-clot many times under a sheet of rubber-tissue. If the latter was properly cleaned, he could not see how it should interfere with success.

NEW YORK NEUROLOGICAL SOCIETY.

Meeting of February 5, 1889.

The President, Dr. George W. Jacoby, in the Chair.

A Study of Experimental Myelitis.—A paper on this subject was read by Dr. Christian A. Herter, in which he said that the object of the paper was twofold—first, to show that it was possible to give rise to an acute localized myelitis in animals (cats, rabbits, dogs) by temporarily shutting off the blood-supply of the spinal cord; secondly, to describe in detail the histological characters of the process thus induced. Stenson's operation, as modified by DuBois-Reymond, was used to deprive the cord of its blood-supply. This consisted in passing a curved needle through the abdominal wall on one side of the vertebral column and bringing it out on the other in such a manner as to include among other structures the aorta and vena cava. The needle carried a strong ligature, which was tied so tightly over the back of the animal as to effectually compress the abdominal vessels. The spine of the fourth lumbar vertebra was the level at which the needle was passed. The effect was to produce an almost instantaneous paraplegia. If compression was exercised for a shorter time than three quarters of an hour, the paralysis passed off rapidly; if for more than an hour, it became permanent, and did not diminish during the life of the animal. In these cases lesions of the cord, peripheral nerves, and muscles could regularly be detected shortly after the operation. Pathological changes were visible in the anterior horns of the fifth and sixth segments as early as twenty-four hours after the operation. In a few ganglion cells the cell-body was pale and swollen and the nuclei were obscured. Twelve hours after, a larger number of cells was involved, and many had lost their processes and in some instances their nuclei. After a lapse of seventy-five hours the necrotic changes in the ganglion cells were much more intense, and involved, at least to some extent, about half of the cells in each section. In consequence of these changes in the ganglion cells the anterior nerve-roots had undergone partial degeneration. Sections stained by Weigert's method showed that the fine network of medullated fibers of the gray substance was also distinctly altered in places. Many of the vessels and perivascular spaces showed evidence of inflammatory change. By the end of the sixth day the inflammatory process was much more advanced. Twelve days after the operation no normal ganglion cells could be found in the fifth and sixth lumbar segments. After thirty days the nervous elements of the central gray matter were all but completely destroyed. In a majority of sections from the most diseased region no ganglion cells could be detected. Nothing remained of the network of medullated fibers. The anterior horns were completely degenerated. The posterior nerve-roots were infiltrated with small round cells, as was also the intervertebral ganglion. The spinal nerves derived from the diseased portions of the cord underwent degeneration closely resembling that occurring in distal parts of divided nerves. Interesting changes were found in the muscles. Hæmorrhages into the perimysium were visible in the first week. By the sixth day a curious condition of vacuolization was found in individual fibers, which by the thirtieth day could only be detected here and there. At this time the majority of the fibers had undergone simple atrophy, and coincident with this change there was hyperplasia of the interstitial connective tissue. Many of the larger fibers had undergone granular degeneration. In long-standing cases the bladder was the seat of great muscular hypertrophy and connective-tissue hyperplasia. In non-pregnant females the mucous membrane of the uterus was regularly the seat of hæmorrhagic infarctions. In Stenson's experiment we had a method of inducing a form of myelitis in animals which in certain stages bore a close resemblance to processes which occurred in man. This fact suggested that interference with the blood-supply of the human spinal cord might be an ætiological factor in some varieties of myelitis. A few cases had been recorded which justified the suspicion that embolism of the spinal cord could give rise to an acute myelitis, and it was not improbable that other causes of vascular obstruction might produce the same effect.

Dr. Heitzmann felt that he could discuss the subject of myelitis intelligently after having studied it twenty-five years. Experimental myelitis had been the object of much careful work in his own laboratory by Emerson, Rockwell, and Bayer. The results of their work had been published in this country, and he wondered why Dr. Herter had ignored them. He could understand the writer's taking the ground of his teacher that there was an emigration of leucocytes, and not a proliferation of neuroglia cells. Why was Cohnheim ignored? In the drawings accompanying the paper he had noticed œdema very distinctly, but Dr. Herter had not mentioned its presence. This œdema was no doubt the cause of the change in shape of the central canal. In his opinion the gray matter itself furnished most of the corpuscles which Dr. Herter called leucocytes. This he had learned from his own laboratory work, and Robinson had shown, twenty-five years ago, by producing inflammation in the sympathetic ganglia, that the ganglion cells plainly broke up into these corpuscles. They were not replaced by leucocytes, but, through nutritional changes, fell back into embryonal con-

ditions. What right had we to speak of connective tissue in the gray substance? It was protoplasm full of activity. To show these changes, osmic acid, bichromate of potassium, and chromic acid should be used, and not alcohol, which he supposed the author had employed. There was not a single proof that leucocytes, even if present, ever formed connective tissue. As to the myositis, he supposed the author would refer that too to migration of leucocytes into the perimysium.

Dr. VAN GIESON had but to say that he was gratified to hear so excellent a paper upon the subject, and believed that Dr. Herter was perfectly correct in all his inferences and conclusions.

Dr. BIRDSALL agreed with Dr. Van Gieson. He thought the deductions of the paper very carefully and cautiously stated, and that the author had avoided any decided expression of pathological theories. He was unable to see that the writer had ignored any literature upon the same subject. Dr. Heitzmann's references were not to work upon experimental myelitis produced in animals, but to myelitis. He would ask Dr. Heitzmann if this was not true. (Affirmative answer.) He believed that some of the tissues were produced in the way that Dr. Heitzmann suggested, but that no theory was as yet entirely satisfactory. From his own embryological study he thought that ganglionic cells were composed of embryonal corpuscles, but did not think it certain that there was a retrogressive change of this kind in the inflammation described. He thought that Dr. Herter ought to go on with this subject, as there was evidently much that could be done. There might be other factors in producing the inflammation than mere cutting off of the blood-supply, as the operation seemed to be quite severe. He had observed a particular susceptibility to paraplegia in dogs and rabbits, although few or no post-mortem changes were discoverable.

Dr. SACHS thought that the point of greatest importance established by the author was that the cells of the anterior horns were the first to be changed. The theory of Strümpell and others as to the infectious nature of some spinal-cord diseases might often be explained perhaps by vascular changes. Possibly bacterial occlusion of spinal vessels might cause acute poliomyelitis. The muscular changes described by the writer were different in man. In animals vacuolization was early, but in man after long-continued chronic disease of the muscles.

Dr. MARY PUTNAM JACOBI had been particularly struck by the apparent identity of symptoms produced by cutting off the blood-supply and by furnishing blood in excess. Some of the older experimenters had occluded arteries by the injection of powders. The author's contribution confirmed Ranvier's statement that the first step in inflammation was change in nutrition. The question had occurred to her whether all these vascular alterations were not the immediate result of loss of directive power over the blood-vessels by the cells which governed it.

The PRESIDENT had examined Dr. Herter's specimens microscopically, and there was no doubt as to the changes in the posterior roots. He did not think the alterations in the muscles were properly vacuolization—not such as in Wagner's specimens, which he had also seen. It was a question if all the changes were due to the cord lesion.

Dr. HERTER said that, as to Dr. Heitzmann's criticisms, to answer him would involve a reconsideration of the whole question of inflammation, as his views upon that subject seemed to be so sweeping and revolutionary that they would require more examination and thought than he was able at the time to give them. His specimens had many of them been examined in the fresh state, and some after hardening in Müller's fluid. They had not been treated with alcohol. As to there being no connective tissue in the spinal cord, this was at variance with the generally accepted views, and it was difficult for him to conceive of its absence. He knew of the experiments referred to by the president, but thought they were confined more to the study of grosser effects and lesions, and not to the study of microscopical changes.

A Case of Hemiplegia with remarkably Perfect Associated Movements on the Paralyzed Side.—Dr. SACHS then presented a young man of twenty-three who had had infantile hemiplegia at the age of one year as the probable result of a fall. The paresis, contractures, and exaggerated reflexes of the left side were the remnants of this early attack. He also described a second case occurring in a girl of twelve whose early history was very obscure, but whose physical symptoms pointed to a similar attack in early life. Both cases presented the marked peculiarity that all the movements of the sound arm and hand were imitated by the paretic members, and *vice versa*. The same was true to a lesser degree of the lower extremities. In Case No. I, if he attempted to raise his arm, the right would also be raised; in lifting a glass from the table with his left hand, the right hand would perform the same movements. They were very marked in buttoning or unbuttoning his clothes, when the paretic hand would make the same motions. In Case II these delicate movements were also present, but the grosser kinds were not imitated by the paretic hand. Some charts designed by Dr. Peterson were exhibited to show the resemblance between the original and the associated movements. They were copies of zigzag lines made by the patient on a horizontal blackboard with a piece of chalk in each hand. Dr. Sachs remarked that it was difficult to explain these associated movements, and it was curious that the very members of our bodies which were innervated singly from our earliest days should perform associated movements in disease. It was supposed by some that, inhibition having been removed by cortical or intracerebral disease, the natural tendency to bilateral movements returned, and that the paretic hand was moved from the sound half of the brain. There were numerous objections to this theory, and it could not explain the associated movements of the sound hand when attempts were made to move the paretic hand. The speaker thought it more probable than an irradiation took place lower down in the central nervous system, either in the pons, medulla, or even in the spinal cord, and that these associated movements were to be regarded as imperfect reflex movements. He did not think that such movements could be explained by the supposed existence in many persons of an unusually large number of uncrossed motor nerve-fibers.

Dr. HERTER asked if there were athetosis and atrophy in the cases, and was answered that there was as much atrophy as usual in cerebral cases, but no athetosis.

Dr. LESZYNSKY had noticed in such cases that when the attention of patients was directed to the paretic hand these associated movements occurred, but not otherwise.

Dr. PETERSON said they were undoubtedly increased by the attention of the patient being directed to the movements, but not caused by it.

Dr. BIRDSALL and the PRESIDENT both remarked upon the great rarity of cases showing associated movements to such an unusually perfect degree.

Miscellany.

Irish State Prisons and their Physicians.—Dr. Thomas Laffan, of Cashel, Ireland, has sent us a communication in which he says: "I venture to invite a discussion in your columns on the obligations of

prison doctors to their prisoners. I do not propose to deal with the political aspects of the question. I shall not therefore offer any opinion as to whether Mr. William O'Brien, now confined in Clonmel Jail, is a political or an ordinary prisoner. Neither shall I discuss the topic as to whether political prisoners ought or ought not to be treated like ordinary ones. I shall merely propound for your opinion and that of the profession the following questions:

"1. Is it, or is it not, a fundamental dogma of our profession that a physician is to see in an individual under his charge the patient only, irrespective of rank, place, moral guilt, etc.?

"2. Can a prisoner be properly examined in the course of one minute or thereabouts by an official physician, as was the case with Mr. William O'Brien?

"3. Does a patient actually suffering from phthisis, like Mr. O'Brien, receive all the treatment to which he is entitled at the hands of our profession when he is merely sent to an infirmary, but without receiving any other diet, etc., than that prescribed for the healthy?

"4. If an official physician is not a perfectly free agent, is it compatible with professional honor that he should continue to hold office under such circumstances?

"5. Are Irish prison doctors so hampered as not to be free agents, or are they, on the contrary, entirely unfettered and at perfect liberty to prescribe for their patients in accordance with the rules of their art?

"To conclude, I am strongly of opinion that this is a matter which so nearly touches the honor of the profession that medical men of opposite politics and of no politics ought to address themselves to it. I have carefully avoided all reference to politics in this letter, though, of course, I have, as I have a right to have, my own political views, and have never shrunk from asserting them at the proper time and place."

Mortality in Cities in the United States.—The following table represents the mortality in the cities named, as reported to Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, and published in the abstract of sanitary reports received by him during the week ending March 15th:

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—										
				Cholera.	Yellow fever.	Small-pox.	Variloid.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y.	March 9.	1,557,348	877	..	..	..	..	..	..	2	54	50	21	24
Philadelphia, Pa.	March 9.	1,040,246	435	..	..	..	..	..	..	21	8	8	..	2
Chicago, Ill.	March 9.	830,000	295	..	..	..	..	..	..	2	3	26	8	2
Brooklyn, N. Y.	March 9.	814,305	398	..	..	..	..	..	..	2	6	26	13	8
Baltimore, Md.	March 9.	500,343	151	..	..	..	..	..	..	1	3	4	..	1
St. Louis, Mo.	March 9.	440,000	172	..	..	..	..	..	..	3	..	11	5	3
Cincinnati, Ohio.	March 9.	255,139	119	..	..	..	..	..	..	3	..	10	..	....
New Orleans, La.	March 2.	254,000	114	..	..	..	..	..	..	1	..	5	..	....
Detroit, Mich.	March 9.	250,000	63	..	..	..	..	..	..	2	2	2	..	....
Cleveland, Ohio.	Feb. 16.	235,000	66	..	..	..	..	..	..	5	2	1	..	....
Cleveland, Ohio.	Feb. 23.	235,000	76	..	..	..	..	..	..	1	1	4	..	....
San Francisco, Cal.	March 1.	230,000	129	..	..	..	..	..	..	3	..	2	..	....
Pittsburgh, Pa.	March 9.	230,000	96	..	..	..	..	..	..	2	2	2	7	3
Washington, D. C.	March 9.	225,000	87	..	..	..	..	..	..	2	..	..	..	2
Milwaukee, Wis.	March 9.	210,000	69	..	..	..	..	..	..	1	1	3	1	....
St. Paul, Minn.	Feb. 23.	180,000	37	..	..	..	..	..	..	2	3	2	1	....
Minneapolis, Minn.	March 9.	180,000	48	..	..	..	..	..	..	..	..	5	..	....
Providence, R. I.	March 9.	127,000	41	..	..	..	..	..	..	..	1	1	..	1
Rochester, N. Y.	March 9.	120,000	41	..	..	..	..	..	..	1	..	2	..	1
Denver, Col.	March 8.	100,000	29	..	..	..	..	..	..	..	..	..	..	....
Richmond, Va.	March 9.	100,000	21	..	..	..	..	..	..	..	..	..	..	....
Toledo, Ohio	March 9.	80,000	19	..	..	..	..	..	..	..	2	1	..	....
Camden, N. J.	Feb. 28.	70,000	32	..	..	..	..	..	..	2	1	1	..	....
Nashville, Tenn.	March 9.	65,153	17	..	..	..	..	..	..	..	1	1	..	....
Fall River, Mass.	March 9.	65,000	28	..	..	..	..	..	..	1	2	1	..	....
Charleston, S. C.	March 9.	60,145	21	..	..	..	..	..	..	..	..	..	..	....
Lynn, Mass.	March 9.	50,000	12	..	..	..	..	..	..	..	..	..	..	....
Manchester, N. H.	March 2.	42,000	12	..	..	..	..	..	..	..	..	..	..	....
Portland, Me	March 9.	40,000	15	..	..	..	..	..	..	..	..	..	..	....
Council Bluffs, Ia.	March 2.	35,000	.....	..	..	..	..	..	..	..	..	..	..	....
Davenport, Iowa.	March 9.	33,715	7	..	..	..	..	..	..	..	..	1	..	....
E. Saginaw, Mich.	March 9.	33,000	11	..	..	..	..	..	..	..	..	..	..	....
Burlington, Iowa.	Feb. 22.	30,166	7	..	..	..	..	..	..	..	..	..	..	....
Altoona, Pa.	March 9.	30,000	6	..	..	..	..	..	..	..	..	..	..	....
Auburn, N. Y.	March 9.	26,000	4	..	..	..	..	..	..	..	..	..	..	....
Haverhill, Mass.	March 9.	25,000	8	..	..	..	..	..	..	..	..	..	..	....
Newport, R. I.	March 7.	22,000	9	..	..	..	..	..	..	..	..	..	..	....
Newton, Mass.	March 2.	21,553	5	..	..	..	..	..	..	..	..	..	..	....
Newton, Mass.	March 9.	21,553	7	..	..	..	..	..	..	..	..	1	..	....
Keokuk, Ia.	March 9.	16,000	4	..	..	..	..	..	..	..	..	..	..	....
Pensacola, Fla.	March 9.	15,000	4	..	..	..	..	..	..	..	..	..	..	....

The New York Academy of Medicine.—At the next meeting of the Section in Laryngology and Rhinology, on Tuesday evening, the 26th inst., Dr. T. W. Corwin will present a case of complete bony occlusion of the anterior nares; Dr. S. T. Armstrong will present a case of laryngeal vertigo; and Dr. C. L. Dana will read a paper on "The Central Tracts of the Olfactory Nerve and their Diseases."

At the next meeting of the Section in Obstetrics and Gynæcology, on Thursday evening, the 28th inst., Dr. J. E. Janvrin will report a case of myxo-sarcoma of the Falloppian tube; Dr. P. F. Mundé will report a case of myxo sarcoma of the uterus; Dr. H. W. Mitchell will report cases of fistula in ano in women, operated on by suture; and Dr. P. F. Mundé will read a paper on "Combined Operations in Gynæcology."

ANSWERS TO CORRESPONDENTS.

No. 257.—Our impression is that sulphonal is not. The others are.

No. 258.—We do not remember to have seen the condition treated of as a complication of locomotor ataxia, but perhaps you may find it mentioned in connection with Charcot's joint disease. As to treatment, a mild galvanic current applied to the ulcer might be of service, but we should not be confident of benefit from any treatment.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

TREATMENT OF PNEUMONIC FEVER.

By EDWARD F. WELLS, M. D.,
LATE PROFESSOR OF MATERIA MEDICA, COLLEGE OF PHYSICIANS AND SURGEONS, CHICAGO.

INTRODUCTORY.

IT is only by a correct appreciation of the limits of our art in modifying the natural course of pneumonic fever that we are able to realize how far we as yet fall short of the ideal in its treatment. At the very threshold of this most important theme we must candidly admit that the ordinary management of this affection in times past has been, on the whole, signally unsatisfactory. Can we review that in vogue to-day with greater complacency? With all our boasted advances in diagnostics and pathology, in chemistry and pharmacology, are we able, by known means, to exert a certain and direct control over the course and termination of this malady? Time and experience have demonstrated that the vast majority of the measures formerly considered essential to its cure are either useless or pernicious; and may not this be the fate of many of those now employed and lauded? Hahnemannites and therapeutic nihilists have shown that the mortality of pneumonic fever is not appreciably increased by the non-employment of drugs in its treatment, and I have demonstrated * that the fatality, in a vast number of cases, varies but little, regardless of time, place, and circumstance. From these facts we may legitimately conclude that if the past and present appalling death-rate of this ubiquitous foe of mankind is to be reduced, the best means are yet to be formulated.

The expectant plan of treatment has been investigated by a number of observers,† all of whom bear witness to the truth of the proposition above laid down, to wit: that the withdrawal of drugs from the management of pneumonic fever does not appreciably increase the mortality.

My own experience in this line is limited to fifteen cases. In nine of these the patients were either convalescent or moribund when first seen, four were very mild cases, and two were severe. All save the moribund patients recovered, but the limited number of cases, their character, and the circumstances under which they were observed, render them an unsuitable basis for deductions. My experience in this malady, however, has abundantly convinced me that much can be done toward relieving suffering, in modifying and curtailing the course of the disease, and in diminishing its dangers. Holding such tenets, and having an abiding faith in a rational system of therapeutics, I can not advise the practitioner to assume the rôle of a useless, although an interested, spectator by the pneumonic bedside.

From this conclusion it does not necessarily follow that more successful methods of treatment may never be found, nor that the physician should be only an indolent and apathetic student of the natural history of the disease. On the contrary, thought, investigation, observation, analysis, and publication should be the order of the day, for only in this way is real progress possible.

There are two methods of estimating the comparative value of different modes of treatment—the statistical and the clinical. Both are open to many and serious objections. As to the former, it is evident that, although the disease under discussion has been for generations the chosen battle-field of therapeutics, and to which each sect has "pointed with pride" in the way of "unparalleled results," it is one peculiarly unfitted for such comparison, inasmuch as it is impossible to take into consideration the disturbing influence of age, sex, race, condition, habits, residence, season, climate, and weather; the extent, stage, character, and locality of the local morbid process; the complications, intercurrent affections, epidemic influences, and many other important circumstances liable to raise grave doubts as to the correctness of conclusions deduced from such unknown quantities. On the other hand, the opposite plan is open to objections of almost equal gravity. This will be acknowledged when it is considered how difficult it must be to obtain trustworthy evidence regarding a vast number of incidents as observed, analyzed, and weighed by a great number of minds of widely different caliber and in various unknown psychical conditions. In estimating the value to be accorded to the statements of authors regarding their impressions derived from individual experience, it is well to bear in mind the old and often true maxim of *experientia fallax*. Both methods being open to such serious objections, it is our plain duty not to subscribe to or employ either exclusively, but to accord to each its due proportion of merit.

PROPHYLAXIS.

Prophylaxis, as concerns pneumonic fever, consists in avoiding exposure to those external and internal influences which are known to favor the development of the disease. The clothing should be warm and comfortable, the house should be carefully warmed and ventilated, and exposure to chilling winds, sudden changes of temperature, and night air avoided. Although it has not as yet been demonstrated that the malady is propagated by the inhalation of the dust of dried pneumonic sputa, yet ordinary discretion should lead us to disinfect * and destroy it as soon after expectoration as possible. Remaining long in a room containing a pneumonic patient should be avoided.

Burdon Sanderson † hoped for good results in the direction of prevention by means of inoculations of pneumonic exudate; but to be convinced that this promise is illusive, one need only call to mind the fact that, instead of one attack preventing subsequent infection, it predisposes to it.‡

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* "Cincinnati Lancet and Clinic," June 10, 1882, p. 500; "Jour. of the Am. Med. Assoc.," Dec. 12, 1885.

† Arnold, "Trans. of the Ninth Int. Med. Cong.," Washington, 1887; Blache, "Bull. gén de thérap.," 1862, p. 368; Bondet, "Soc. méd. de Lyon," 1864; Borgeois, "L'Union méd.," Jan. 3, 1860; Cantani, "Il Morgagni," 1882; Charcot, "Thèse de l'aggreg.," 1857; Cotting, "Med. Addresses," Boston, 1875; Dietl, "Pneumonie," Wien, 1848; Faure, "Mal. des enfants," Paris, 1866; Fiere, "Thèse de Montpellier," 1864; Le Beuf, "Pneumonie," Paris, 1870; Legendre, "Arch. gén. de méd.," September, 1859; Loebel, Canstatt's "Jahresb.," 1865; Niemeyer, "Spec. Path. u. Therap.," Berlin, 1862; Rühle, "Berliner k. Wochenschr.," 1884; Trousseau, "Clin. med.," 1873; Walcher, "Thèse de Strassb.," 1868; Wilbrandt, "Inaug. Diss.," Rostock, 1862.

* Budd, "On Fevers," London, 1873; Marriner, "Lancet," 1882, vol. ii, p. 237.

† "Brit. Med. Jour.," July 14, 1877.

‡ See, also, Rohé, "Jour. of the Am. Med. Assoc.," July 2, 1887, p. 3.

In some cases an initiatory catarrh—a common cold—prepares the system for an attack of pneumonic fever. It should therefore be the endeavor of the medical attendant to relieve this condition as speedily as possible, and in this manner prevent possible ulterior evil consequences.

By proper management most cases of ordinary catarrh may be certainly, quickly, and easily cured. If the bowels are sluggish, an aperient or a brisk cathartic should be given. The patient should have a hot foot-bath and then be put to bed, between woolen sheets, in a moderately warmed room, the atmosphere of which is moist. He should drink freely of hot and stimulating drinks, and have the nose, throat, and chest anointed with stimulating and unctuous substances, such as turpentine and vaseline, etc. Of medicines there may be mentioned veratrum viride, pilocarpine, morphine, chloroform, etc.*

Various drugs have been reputed to have a preventive power over the disease.

Thus Merrill,† believing, on insufficient grounds, that pneumonic fever is due to the malarial poison, has recommended the use of quinine and arsenic for this purpose.

Regimen and Diet.

The surroundings and nursing of the patient are matters of prime importance. The sick-chamber should be of moderate size, well ventilated, comfortably furnished,‡ and having, if possible, a sunny exposure. The air of the room should be maintained at an agreeable temperature, free from draughts,# and charged with moisture and soothing, stimulating, antiseptic, or odorous substances,‖ as indicated in each particular case.

Lebert△ recommends a temperature of 66° F., but this may vary within moderate limits according to the sensations of the patient.

Although an agreeably warmed room is to be desired, yet my experience does not indicate that it is indispensable. During the intensely cold weather of January, 1875, I was asked to see an old, broken-down man, six days ill with pneumonic fever, locally involving the entire right lung. He lay in a miserable hut which afforded absolutely no protection from the cold. His mustaches were a mass of ice. He was very ill, with delirium, carphologia, subsultus tendinum, a weak and thready pulse, sordes, etc., yet his recovery was prompt and complete.

So long ago as 1618 Tossius a Serra* recommended cold air in the treatment of this malady, and the plan has been advocated by Chomel,† Drake,‡ Everett,# Hartshorne,‖ Woitkewitsch,△ Wyman,◊ and others.↕

Hartshorne was called to see a man of thirty-five, in the midst of an attack of pneumonic fever, and "found him lying with his two windows wide open near the bed, the thermometer indicating 17° F. When I attempted to close one of the windows he made known at once his distress for want of air. Continuing, with reluctance, this aerial refrigeration of his lungs, his recovery suggested the thought that to the inflamed pulmonary tissue possibly a direct apyretic influence may have been thus extended, similar to that of cold applications to a superficial inflammation."

Everett keeps his patient in a room heated to 80° or 85° F., whilst he inspires, through an elastic tube, air having a temperature of from 10° to 15° F. If the outside air is not cold enough, it is drawn through a refrigerator.

I have had an opportunity of observing this method of treatment in nineteen cases. In eleven the sick-room was such as to afford unwilling experimental conditions—the patients being exposed in apartments having temperatures ranging from — 20° to + 32° F. In two cases Everett's plan was instituted, but was discontinued in six and ten hours, respectively. Both cases proved severe and the patients declared the treatment very disagreeable and, they believed, harmful. Both recovered. In six other cases the cold air was inhaled for fifteen minutes every one or two hours, but without any manifest advantage. In two of these cases the local inflammation extended its limits after the inhalations were begun, and this result might be expected when we consider that the germ of pneumonic fever is either favored in its growth or the air-cells are less able to withstand its attacks in the presence of a low temperature. On the whole, my experience and reflection satisfy me that this method of treatment offers no advantages in compensation for its evident inconveniences and possible dangers.

The sick-room should be used for no other purpose, and especially not for cooking. Sweeping and dusting should be peremptorily interdicted unless measures are taken to protect the patient from the dust.↕ The bed should not be so wide that the patient can not be readily approached from either side, and it should be placed near the center of the room. The mattress should be elastic, the pillows soft, the sheets woolen, and the covers light.

If it is thought desirable to influence the surface of the body by a temperature differing from that of the room in general, a

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* The following is a useful mixture for an adult:

℞ Ext. verat. virid. fl. ..... ♏xvj;
Pilocarpin. hydrochlor., } ..... āā gr. j;
Morph. hydrochlor., }
Chloroform. ..... ♏viij;
Syr. acaciæ. ..... ℥ ij.

M., ft. sol. et sig.: A teaspoonful every one to four hours.

† "Am. Practitioner," Jan., 1871, p. 31.

‡ The floor should be carpeted, the windows draped, and the walls decorated.

"Draughts of air are arrows of death," says the Eastern proverb.

‖ For further information see Cohen, "Med. News," Oct. 11, 1884; Cousins, "Lancet," July 19, 1884; Hassal, *ibid.*, May 5, 1883, and Aug. 16, 1884; Jacobi, "Diphtheria," New York, 1880; Pepper, "Trans. of the Am. Med. Assoc.," 1880; Robinson, "N. Y. Med. Jour.," July 18, 1885; Tyndale, "Med. Rec.," March 18, 1882; Van Bibber, "Jour. of the Am. Med. Assoc.," July 28, 1888, p. 116; Yeo, "Consumption," London, 1882.

△ "Berliner k. Wochenschrift," Oct. 2, 1871.

* "Peripneumon. cur. rat.," Venet., 1618.

† "Pneumonie," Leipzig, 1841, S. 387.

‡ "Am. Jour. of the Med. Sci.," vol. ii, p. 229, and vol. iii, p. 53.

"Med. Rec.," Sept., 1881.

‖ "Reynolds's Syst. of Med.," Philadelphia, 1880, vol. ii, p. 213.

△ "St. Petersburger med. Wochenschr.," 1886, No. 24.

◊ "American Lancet," 1887.

↕ Eichberg, "Med. Rec.," Nov. 24, 1888.

↕ "A close, narrow, stifling room is exceedingly inconvenient to any person sick of a fever, as I have many times observed, especially among the lower part of tradesmen when two or three families, perhaps, live in a house together. Celsus's advice is never more proper—nay, necessary—in any kind of a fever than in a peripneumonia, '*in amplo conclavi tendendus æger.*' If such close rooms can not be avoided, they certainly should be frequently but prudently aired." See Huxham, "On Fevers," London, 1757, p. 199.

water-bed—supplied with hot and cold water cocks and a thermometer—will be found very convenient. Such beds are used in the fever wards of the Hamburger Krankenhaus and are highly praised.*

The patient's under-clothing should be of fine, soft wool, and so made that it can be changed, at proper intervals, with the minimum of exertion.

The nurse should be competent, quiet, and discreet, and her work should be of the best.

The surface of the body should be bathed one or more times daily, as indicated by the state of the skin, with warm or hot cologne (or other) water. If the baths are frequently employed, the skin should be very thinly anointed with some unctuous substance, as, *e. g.*, vaseline † or cacao-butter. ‡

The subject of baths in this disease has engrossed much attention since the days of Hippocrates # and Thenison,‖ and especially since the times of Currie △ and Smith.◊ The reduction of the fever has always been thought desirable, and inasmuch as this is effected with great promptitude by cold baths, these have found high favor at the hands of many physicians,‡ while others consider them of doubtful utility‡ or positively injurious. ‡ The wet-sheet pack, as being less opposed to the popular prejudices, has been oftener employed ** than the full bath, but it is no less dangerous. Warm or hot sponge-baths,†† by the radiation of heat which follows their employment, will produce a temporary and permanent antipyretic effect not inferior to the cold bath, and they are not objected to by patients. In my own practice I order the entire surface sponged every two or three hours, or oftener, or less frequently, according to the indications or wishes of the patient. The temperature of the water used is regulated by the sensations of the patient, and it is remarkable how hot it can be borne with comfort and satisfaction. Such baths will reduce the temperature, retard and strengthen the pulse, lessen or abolish delirium, and promote sleep, and all this without perturbation or danger of producing internal congestions.* It must be remembered that but little effect can follow the employment of baths in patients having a large amount of subcutaneous adipose tissue.

If the head aches or is very hot, the ice-cap † or cold coil may by applied, the consequent cooling of the head having a general as well as a local effect. Local thoracic applications are of great importance, and of these the sweat-jacket is the most useful, and it should be employed in every case.

This jacket is made by fitting a thick layer of carded wool to the chest, and covering with oiled silk or rubber cloth. It should open in each axillary line and upon the shoulders, so as to allow of ready access for examination, the application of stimulating or soothing oleaginous medicaments, etc. The retained perspiration and heat cause it to act as, but with none of the inconveniences of, a poultice, as employed by many‡ and objected to by a few.#

Tossius a Serra‖ lauds compresses of cold water applied to the affected side, and the practice is upheld by many modern authors.△

These cold applications have a very marked influence in reducing temperature, especially if they are extended over the præcordia◊ and clavicle, but I agree with Loomis‡ and others‡ in condemning the practice as being both disagreeable and dangerous. The atomizer has been used in this direction to apply water,‡ ether,** etc., for the same purpose, but the objections to this procedure are of equal force with those against the cold compresses.

Mental and physical rest†† and quietude are very important factors in influencing a successful result, and every endeavor should be made to obtain them. From the beginning of the attack the patient should be confined to his bed, and on no account should he be moved long distances or over rough roads. When we consider that the hepatized lung is often so softened that it may be readily broken down by a slight pressure of the finger, or a not very powerful stream of water, we can ap-

* See Page, "Med. Rec.," Feb. 26, 1886, p. 254.

† Nasser, "Thèse de Lyon," 1884.

‡ Austin, "Med. Rec.," April 7, 1888, p. 399.

"De acut. affec.," lib. ii.

‖ Quoted by Kinsman, "Ohio Med. Recorder," June, 1880, p. 11.

△ "Water in Fever," Liverpool, 1803.

◊ "Med. and Surg. Mem.," Baltimore, 1831, p. 93.

‡ Campagno, "Gaz. méd.," 1835, p. 11, et 1838, p. 107, et "Jour. de méd.," t. ii, p. 332; Chaumier, "Gaz. des hôp.," 1884, et "La France méd.," 1885; Finlay, "Med. Gaz.," Feb. 11, 1882, p. 69; Flint, "Med. News," Nov. 28, 1885, p. 605; Grisolle, "Traité de la pneumonie," Paris, 1841, p. 678; Haussert, "Thèse de Nancy," 1875; Holt, "Med. Rec.," April 7, 1888, p. 387; McMurtry, "Jour. of the Am. Med. Assoc.," April 26, 1884, p. 464; Niemeyer, *op. cit.*; Tausky, "Cin. Clinic," Feb. 6, 1875, p. 61; Waller, "Inaug. Diss.," Erlangen, 1877, S. 7; Weber, "Path. Anat. d. Neugeb.," Bd. ii, S. 63; Yale, "N. Y. Med. Jour.," Nov., 1874, p. 449.

‡ Smith, "Med. Rec.," Feb. 27, 1886, p. 238; Garland, "Pneumonia," Detroit, 1888, p. 85.

‡ Juergensen, "Ziemssen's Handb.," Bd. v, S. 162; "Med. Rec.," Oct. 22, 1887, p. 543; Pepper, "Med. Gaz.," July 15, 1882, p. 328; Dujardin-Beaumetz, "Therap. Gaz.," 1888, p. 74.

** Caldwell, "Trans. of the Ill. Med. Soc.," 1880; Flint, "Med. News and Abst.," 1881, p. 284 et p. 518; Kaufmann u. DeBary, "Berliner k. Wochenschr.," 1888, S. 558; Sholl, "Med. and Surg. Rep.," Vol. xlix, p. 621; Spencer, "Therap. Gaz.," April, 1884, p. 157.

†† See Rewnow, "St. Petersburger med. Wochenschr.," 1876, No. 15.

* See Struver ("Med. News," April 29, 1882, p. 455) on the use of the full hot bath, which I can not think superior to the method advised.

† Lydston ("Jour. of the Am. Med. Assoc.," May 16, 1887, p. 427) applies the cold ice-bag to the nape.

‡ Chambers, "Lancet," N. Y., 1862, vol. ii, p. 260; Forcheimer, "Cin. Lan. and Clin.," 1885; Grimshaw, "Dublin Jour. of Med. Sci.," May, 1875; Lewin, "Deutsche med. Wochenschr.," 1878, No. 13; Ripley, "Med. Rec.," Feb. 21, 1885, p. 217; Smith, *ibid.*, Feb., 1886, p. 238; Winters, *ibid.*, Feb. 21, 1885, p. 217.

Peters, "Med. Rec.," Feb. 21, 1885, p. 217; *et al.*

‖ *Op. cit.*

△ Esmarch, Langenbeck's "Archiv," Bd. ii, S. 275; Green, "Quain's Dic. of Med.," N. Y., 1883, p. 890; Juergensen, *op. cit.*; Niemeyer, "Präger Vierteljahrschr.," Bd. iv, S. 121; Thompson, "N. Y. Med. Jour.," March, 1875, p. 291; Weber, *op. cit.*, Bd. ii, S. 63.

◊ Grigorovich, "Practitioner," Aug., 1886; Lydston, "Jour. of the Am. Med. Assoc.," April 16, 1887, p. 427; Stephan, "St. Petersburger med. Wochenschr.," 1884.

‡ "N. Y. Med. Jour.," March, 1875, p. 292.

‡ Fox, "Med. Rec.," July 10, 1886, p. 51; Polk, *ibid.*, Oct. 11, 1884, p. 414.

‡ Flascher, "Berliner k. Wochenschr.," March 31, 1884, S. 202; Preyer, "Jenaischen Sitzensb.," Feb. 22, 1884.

** Unna, "Berliner k. Wochenschr.," 1882, No. 20 u. 21.

†† Putnam, "Med. World," 1888, p. 17; *et al.*

precate the importance of keeping our patients perfectly quiet.*

On this point I entertain positive opinions, based upon circumstances occurring under my own observation, and I believe the combined experience of the profession will confirm my conclusions. † Of my cases, twelve had been moved considerable distances, and of these, eight, or 66⅔ per cent., died, as set forth in the following table:

No.	Sex	Age	Days ill	Side	Result	Remarks
28	M	23	11	L. u. l.	D.	Moved two miles, in sleigh, on second day. Very cold.
32	M	35	12	L., entire.	D.	Moved fourteen miles, in sleigh, on second day. Very cold.
45	M	38	9	L., entire.	D.	Moved five miles, in sleigh, on second day. Intensely cold.
36	F	51	10	R. m. & l. l.	D.	Moved ten miles, in buggy, on second day.
38	M	20	6	D. l. l.	D	Rode eleven miles in farm wagon, over rough roads, on second day.
40	M	30	5	L., entire.	D.	Rode forty-four miles, in open wagon, on second and third days.
112	M	30	15	L., entire.	D.	Rode fourteen miles in open wagon, in hot sun, on third day.
130	M.	30	5	R. l. l.	R	Rode ten miles, in buggy, on third day.
131	M	58	10	L. l. l.	R	Rode twelve miles in open wagon, in hot sun, on fourth day.
246	M	60	45	L. u. l.	R	Rode four miles, in farm-wagon, on second day.
304	F.	66	7	L., entire.	D.	Rode six miles, in sleigh, on second day. Quite cold.
326	M	60	7	L., entire.	R	Walked about and worked first three days.

The mortality of these cases is simply appalling, and almost equals that of some hospitals which admit patients who have been jolted over the rough streets of the city.

In case convalescence is protracted and resolution retarded, moving is not objectionable, and may be even advisable. Change of climate may be recommended in some of these cases, and I have seen examples of pneumonic fever in which dullness, tubular respiration, and cough, continuing long after resolution should have been fully completed, rapidly disappeared, with complete restoration of health, under the influence of climatic changes. ‡

Intense thirst is a marked feature of many cases, and this is best relieved by plain, cool, fresh water.# Other drinks may be substituted to meet special indications or the desires of the patient.

Of these there may be mentioned toast, seltzer or aerated water, lemonade, gruels; sweet, sour, butter, or fermented milk; almond emulsion, ‖ tea, coffee, etc. If lemonade is desired, its use should not be long continued, on account of its tendency to irritate the stomach. King △ and some others advise that the drinks be iced, but I prefer them less cold.

Unless the patient is very much debilitated by previous disease or cachexia, the diet, during the first few days, should be bland and spare. It is my custom to direct that the patient be not importuned to eat, and, inasmuch as there is almost always anorexia, the consequence is that he gets but little food. Later, or early in the case of weakly patients, easily digestible but nourishing food should be given, in such quantity and at such intervals as indicated. In exceptional cases the nourishment must be concentrated and stimulating, and its digestion assisted, perhaps, by papayotin, pepsin, pancreatin, etc. In general, the food should be presented in a liquid or semi-solid form. Rectal alimentation must be resorted to in those cases in which the stomach does not retain food.

In many cases the expectoration is so viscid that more or less of it adheres to the teeth and other parts of the mouth and throat, and this, together with unremoved catarrhal secretions and portions of food, causes a foulness which may be removed by washes and gargles. Solutions containing boric acid, thymol, lemon-juice, and glycerin are most appropriate. Glycerin should be applied to the tongue when it is dry and fissured.*

Curative Treatment.

Beginning the treatment in the earliest stages of the disease, certain definite objects should be kept in view, and systematic and rational measures adopted for their attainment. The treatment must necessarily be largely symptomatic, but it should never be indefinite or hap-hazard.

One of the most important questions arising in the treatment of pneumonic fever is the possibility of an abortion of the disease, either by the spontaneous efforts of nature or the well-directed measures of art. I have elsewhere shown † that this occasionally occurs through the operation of natural laws, and the experience of every observant physician must afford examples wherein this much to be desired but rather unexpected result has been due, at least apparently, to the effect of the remedial measures employed.

The abortion of pneumonic fever is aknowledged by Flint,‡ Grimshaw,# Huss, ‖ and others,△ but is denied by Holt◊ and Loomis. ‡

After having put the patient to bed, as above recommended, diaphoresis, catharsis, and perhaps emesis should be brought about as quickly as possible. The pulmonary congestion should be lessened, the general circulatory and nervous excitement controlled, and the pain and dyspnœa relieved. This much having been accomplished, by a variety of means, a certain small number of cases will at once enter upon convalescence—the disease having been aborted.

If the surface of the body is cool and exsanguine, the

* In the face of these facts, the proposition of Sturges ("Nat. Hist. Pneumonia," London, 1876, p. 222), that pneumonic patients be sent to the country for treatment, is strange, to say the least.

† See Lebert, "Berliner k. Wochenschr.," Sept. 4, 1871; Wells, "Cincinnati Lancet and Clinic," June 10, 1882, and "Jour. of the Am. Med. Assoc.," Dec. 19, 1885; Wyman, "Boston Med. and Surg. Jour.," Dec. 15, 1881, p. 569.

‡ See Coffin and Geddings, "Climate Cure," Charleston, 1870; Cummins, "Med. Rec.," Aug. 13, 1887, p. 187; "Jour. of the Am. Med. Assoc.," vol. v, pp. 180, 183, 523, and 701; Simons, "Am. Jour. of the Med. Sci.," January, 1872, p. 91; Thorowgood, "Climatic Treatment of Consumption."

The fear of this boon of nature so often manifested by the laity has no foundation, either in theory or experience.

‖ Heiss, "Inaug. Dis.," Munich, 1857, S. 23.

△ "Jour. of the Am. Med. Assoc.," Aug. 14, 1886, p. 184.

* Cotter, "Indian Med. Gaz.," 1885.

† Wells, "Cincinnati Lancet and Clinic," Nov. 10, 1882.

‡ "Med. Rec.," July 14, 1877.

"Dublin Jour. of Med. Sci.," May, 1875.

‖ "Lungenentzündung," Leipzig, 1861, S. 10.

△ Lebert, "Berliner k. Wochenschr.," Sept. 4, 1871; Pause, "Lungenentzündung," Leipzig, 1861, S. 74.

◊ "Med. Rec.," Feb. 7, 1885, p. 156.

‡ "Med. News," Feb. 7, 1885, p. 161.

circulation must be stimulated and equalized. For this purpose a hypodermatic injection of atropine and morphine may be given, the surface sponged with warm mustard-water, and the extremities enveloped in mustard packs. Sinapisms should be applied over the whole spine and the seat of pain.

Cloths dipped in hot mustard-water should be closely applied to the lower extremities, to above the knees, and to the forearms and hands, and these enveloped in an impermeable covering. This is a convenient and efficient substitute for the foot and hand bath.* Weber† recommends the full mustard bath, but this I believe to be unnecessary. In severe and exceptional cases, when a prompt and powerful effect is required, the hot mustard pack is to be preferred.‡

If reaction has been already established, or after this has been brought about by the means above indicated, pilocarpine may be administered hypodermatically and the patient be made to drink largely of sudorific teas, etc.

Owing to the tendency of pilocarpine to cause pulmonary œdema in certain states of the system, it should be employed with circumspection. It should not be given when the cutaneous circulation is not good, and, in order to avoid overaction, it is best to give small doses, frequently repeated, rather than a single large one. In the treatment of this disease pilocarpine is highly recommended# and as strongly condemned.‖

If the resulting sweating is very profuse, the surface must be dried with heated towels and the under-clothing changed, but this is not necessary if the skin is simply moistened. A gentle perspiration should be maintained throughout the whole course of the disease. If drugs are required for this purpose, minute doses of pilocarpine or ipecacuanha may be frequently given.

Small doses of ipecacuanha, in my experience, have always produced a very happy effect.△ The skin and tongue have been kept moist and the bronchial secretions free.

In case free sweating is desired, without the use of pilocarpine or other internal medicine, it may be effected by the employment of the steam or hot-air bath.

Either of these can be given while the patient is in bed, by surrounding him with moist or dry heated articles, or by making a tent to envelop him below the neck, and generating steam or heat underneath, or conducting it thence from a distance. Subsequently the patient should be enveloped in warm woolen blankets.

Unless there is already diarrhœa, a cathartic ◊ should be at once administered, and as the agent I prefer calomel in the majority of cases. Usually the dose should be large enough to insure rapid and thorough action, and if this does not occur in from six to eight hours, a dose of castor-oil or an enema should be given. The bowels should be kept open throughout the attack.

Mercury, once so extensively employed in the treatment of this disease, has been to a great extent discarded, although recently there have been indications of a tendency to again use the remedy. Personally I am convinced that the early exhibition of a single large dose, or of a number of small or minute doses of calomel at short intervals, until the characteristic evacuations have been secured, is of the greatest value,* especially in infantile cases. A portion of the beneficial effects following the administration of this salt is probably due to the elimination or destruction of morbid matters. Whatever the mode of action, it is nevertheless true that after two or three free movements of the bowels have been obtained the patient usually perspires gently, passes urine more freely, is relieved of nervousness, and falls into a quiet sleep. Co-etaneously with these results the temperature is considerably reduced and there is a general amelioration of all the symptoms.

Many times, in severe cases, have I seen the tide of disease favorably turned apparently by the use of this agent, and in some instances life was probably saved by it.†

On May 19, 1880, pneumonic fever attacked a girl five years of age, the inflammation affecting both upper lobes. The fever ran high, with delirium, and she fought furiously and determinedly against the administration of food and medicines. Water she would occasionally venture to take, but all besides she obstinately refused, and when forcibly given they invariably produced emesis. All the symptoms gradually assumed so serious an aspect that death seemed certain, when, on the fourth day, calomel, in two-grain doses every two hours, was prescribed. After the fourth dose free bilious catharsis ensued and the patient fell into a gentle slumber. Copious sweating and diuresis followed, the fever declined, delirium vanished, the appetite returned, and convalescence was soon established.

(*To be continued.*)

* It may be of interest to know that pediluvia have been thought to be dangerous. See Routh, "Brit. Assoc. Med. Jour.," June 8, 1855, p. 533.

† "Ohio Med. Recorder," June, 1878, p. 43.

‡ Emerson, "Boston Med. and Surg. Jour.," 1877; Wells, "Cincinnati Lancet and Observer," August, 1877.

Dominicis, "Med. Rec.," May 31, 1884; "Memorabilien," 1886, Heft 4; Mollière, "Jour. de méd.," Feb., 1886.

‖ Smith, "Jour. of the Am. Med. Assoc.," Jan. 7, 1887, p. 30.

△ See, also, "Jour. of the Am. Med. Assoc.," vol. v, p. 293; Lebert, "Berliner klin. Wochenschr.," Sept. 4, 1871; Testa, "Deutsche Med.-Zeitung," 1884.

◊ They are objected to by Chambers, "Lancet," New York, 1862, vol. ii, p. 260; McBride, "Cin. Lancet and Observer," Aug., 1861, p. 480.

* Bartel u. Moritz, "St. Petersburger med. Wochenschr.," Jan. 16, 1886; Cammann, "Med. Rec.," Jan. 24, 1885, p. 99; Chambers, "Lancet," New York, 1862, vol. ii, p. 260; Claiborne, "Clin. Reports," Petersburg, 1873; Clark, "Lancet," 1843, p. 278; Clay, *ibid.*, Aug. 21, 1841; Cunning, "Trans. of the Dublin Col.," vol. v; Droux, "Bull. de thérap.," 1884; Duncan, "Med. Com.," 1783, vol. ix, p. 191; Fowler, "Med. Rec.," Nov. 19, 1887, p. 646; Gohee, "Prac. Tijdschr.," 1835; Graves, "Clin. Med.," Dublin, 1835; Hamilton, "On Purgatives," 1783; Hillier, "Diseases of Children," 1868, p. 32; Horn, "Bibliothek. Med.," Bd. lxxxiv, S. 398; Law, "Dublin Jour. of Med. Sci.," Jan., 1839; Leaming, "Dis. of the Heart and Lungs," New York, 1883; Lente, "Med. Rec.," Jan. 24, 1885, p. 100; Lithushly, "Med. World," May, 1886, p. 172; Luckie, "Am. Jour. of the Med. Sci.," vol. viii, p. 354; Maunsell, "Dis. of Children," p. 108; McManus, "Med. Rec.," Sept. 8, 1888, p. 260; Michaelis, "Hufeland's Jour.," Bd. iii, S. 185; Posodski, "Ieschenedjelanja klin. Gaz.," No. 30, 1885; Putnam-Jacobi, "Med. Rec.," Jan. 24, 1885, p. 100; Reil, "Clin. Med.," vol. ii, p. 93; Robinson, "Med. Rec.," Feb. 21, 1885, p. 204; Schiffner, "Heidelb. Med. Ann.," 1836, Bd. ii; Sevestres, "Med. and Surg. Rep.," 1887; Smith, "Med. Rec.," Oct. 20, 1888, p. 469; Todd, "London Med. Gaz.," April 6, 1849; Vogel, "Dis. of Children"; Waring, "Therapeutics," 1871; Waters, "Dis. of the Chest," 1868, p. 49; Watson, "Prac. of Phys.," Philadelphia, 1845, p. 584; Wittich, "Pneumonie," Erlangen, 1850.

† Clark ("Med. Gaz.," 1880) believes life to have been saved in an apparently hopeless case by three sixty-grain doses one day and twenty grains thrice daily afterward. The patient, however, lost all his teeth as a result of the treatment.

HUMAN CALORIMETRY.

By ISAAC OTT, M. D.,
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The estimation of the amount of heat produced hourly by a man has been attempted by direct and indirect means. Scharling, in 1849, was the first to make experiments upon this point. His method was as follows: In a room whose temperature remained nearly constant he had constructed a completely closed box. When a man was introduced into the box the temperature of the box was higher than the temperature of the room, and the more it exceeded that of the room, the more heat was known to be produced. The differences between the temperature within the box and without gave a measure of the amount of heat produced. This measure was a relative, not an absolute determination. Scharling sought to determine the absolute amount by placing within the box a closed copper vessel of warm water and allowing it to cool, and then studied the differences between the temperatures of the water and the air. He arrived in this manner at the result that a man in half an hour gave off sixty-six calories, or, hourly, one hundred and thirty-two calories. By other experiments he sought to determine how much was given off from the lungs alone, and by the rest of the body. He brought the man into the box so that he breathed outside of it, and at another time permitted him to breathe within the box while his body was outside of it. He found that about 12 to 20 per cent. of the whole amount of heat given off was from the lungs. Vogel also constructed in the same way an air-calorimeter, and obtained one hundred calories per hour in a man weighing one hundred and fifty-four pounds. An air-calorimeter was made use of by him, the air being mixed by a special contrivance. He gauged the reliability of his apparatus by burning hydrogen. A bath whose temperature was a few degrees above that of the air was tried by Liebermeister, as a calorimeter, to determine the amount of heat given off by man. Certainly here no estimate could be made of the heat thrown off by the lungs. He also used the human body as a calorimeter, making the water in the beginning of the same temperature as that of the body. The leg of a man was used by Leyden to determine the amount of heat dissipation. D'Arsonval made an air-calorimeter of circular form for a man. The air was inclosed between two air-tight cylinders. The expansion of air from the heat given off by the man inside caused a manometer of mercury to register the rise, which corresponds to the amount of heat. Air was supplied to the man through the center of the roof of the instrument, and emerged through the base of the pedestal upon which the calorimeter rested. Langlois has recently constructed an air-calorimeter for children, and noted the amount of heat given off in health and in fever. He made a large number of observations. The air was inclosed between two air-tight copper shells. The expansion of the air was communicated to a siphon-manometer which registered the amount of heat. The instrument was so constructed that a lid covered in the child, a hole in the lid supplying the air. He found that a child weighing between 14·3 and 16·5 pounds gave off 4·300 calories per kilogramme. He also found that in chronic diseases with diminished temperature there was a diminution of heat production, while in fevers with increased temperature there was increased production of heat. As to indirect calorimetry, all the estimates rest upon the heat value of food and the oxidation changes of the ingesta and egesta. By this means Helmholtz calculated that a man averaged to the hour one hundred and thirteen calories, his weight being one hundred and seventy-eight pounds. According to the formula of Immerman, that would make ninety-two calories for a man weghing one hundred and thirty-one pounds. Ranke has made the average an hour one hundred calories for a man weighing about one hundred and fifty-four pounds. Liebermeister states that a water-calorimeter for a man would be too unwieldy for practical purposes. This would be true for the square-box form of calorimeter usually employed. If one adopts the form of cylinder, then the problem is much easier. D'Arsonval was the first to use this form. All air-calorimeters are attended with large errors, and no means so far known will diminish them. It is impossible to control the external temperature so that it shall be at the same level, and the least change in it will produce a change in the air contained in the calorimeter. With a water-calorimeter it is only large changes in external temperature which are appreciable. It is on this account that I attempted to make a water-calorimeter for man. It is composed of two cylinders of galvanized iron—one smaller than the other and inclosed within it (Fig. 1). The space in which the man lies upon a mattress is six feet long and two feet in diameter. Air is conveyed to him through the tube H, when it traverses the whole length of the apparatus and enters the hollow tube of lead at P, and finally emerges at B, having given off its heat to the water between the two cylinders. The meter, M, is run by the water-wheel, N, which aspirates the water through the whole apparatus by means of a hose, R, connecting it with the lead tube at B. The space between the cylinders is filled with about four hundred and eighty-four pounds of water. This water is kept thoroughly mixed by means of the agitator, O, which has two arms. These arms are pushing the water back and forth thirty times a minute, the motion being caused by water running the motor, X, which, by means of the wheel, Z, and the eccentric, drives the agitator. The thermometer, A, gives the temperature of the water, and, on account of the thorough mixing of the water by the agitator, gives the accurate record of the temperature of the water throughout the apparatus. The thermometer is pushed farther down than is represented in the figure; it usually lies aside of the tube H. The air-tube, B, also has a thermometer to denote the temperature of the air as it is heated up by the man. The thermometer at B is graduated into tenths, while the thermometer at A is also graduated into tenths, but they are so far apart that one one-hundredth of a degree Fahrenheit can be read. The temperature of the mouth was taken by a thermometer giving tenths, but I expect to use one so graduated that I can read fiftieths. The rectal temperature would have been preferable on account of accuracy. The bucket, I, receives the water from the motor, X, and so conveys it to the water-wheel, N, that it runs the meter as an aspirator. The meter is filled with

water, and belongs to Voit's little respiration apparatus. The quantity of air aspirated an hour is five to six thousand litres, which is sufficient for respiratory purposes. The instrument is made air-tight by means of the door, K, which is lined at its outer edge with rubber. The whole apparatus is inclosed in over six inches of sawdust, the door, K, having against it a sawdust mattress. To test the effect of the temperature of the external air when aspirated through the instrument, I kept the temperature of the air twenty degrees for a whole day above the temperature of the water in the calorimeter. It was found that for every degree the air was above that of the water in the calorimeter the error was one one-thousandth of a degree Fahrenheit an hour. To determine the accuracy of the instrument, I placed a closed metal vessel containing sixty pounds of water in the instrument, and noted its elevated temperature at the beginning and end of the hour. The agitator was worked during the whole time. The error of the instrument was found to be about one per cent. The little calorimeter is made in the same manner. In my experiments I employed two healthy young men, Mr. A. and Mr. Z. Mr. A. was experimented upon during four days, Mr. Z. one day. In my experiments no apparatus was used to determine the moisture of the air expired, as heat becomes insensible in this manner. This defect will be overcome when I have the necessary help to carry out the experiment. At first sight it might occur that a man so surrounded by metal, although lying upon the mattress, would take a severe cold. Upon actual experimentation no such result ensued, but rather when the calorimeter was above 70° F.—too much warmth. The darkness of the interior of the instrument can be remedied if necessary by an Edison electric light of one candle-power, and its heat determined, or by a glass inserted in the door, K.

As a result of twenty-nine hours' observation, a mean average of 272 heat units was obtained. That the number of heat units of heat production and heat dissipation is constantly fluctuating is seen in Fig. 2, which gives the amount for seven hours with the mouth temperature. This number is much less than that obtained by Helmholtz, who gives an average of 92 calories for a man weighing 131 pounds. Now, one calorie is equal to 3·96 British heat units, and 92 would make 324 heat units. The German heat unit is one gramme of water raised one degree C.; the French, a kilogramme, or 2·2 pounds, raised one degree C.; while the British heat unit is one pound of water raised one degree F. Now, 324 heat units is Helmholtz's average an hour for twenty-four hours, while 272 heat units is the average dur ing the day, minus the calculation of moisture of breath. As the heat production is less during the night than during the day, it is readily seen that Helmholtz's calculation is too high.

It has been shown by Vierordt, Fredericque, and Langlois that at about 10 A. M. and 2 P. M. the highest heat production of the day is obtained, and my curves seem to bear this out. The average number of heat units must be considered in relation to the size of the man, for Liebermeister has pointed out that in proportion to the body weight the smaller individual has a greater surface for radiation of heat than the larger man. In consideration of this fact, Immerman has constructed a formula for the amount of calories in relation to body weight. It is also highly important to ascertain the exact heat production of several men on a full diet before any calculation can be made upon the amount of tissue change or heat production in fever. It is also seen in Fig. 2 that there is no relation between the temperature changes and the amount of heat production. Hence, in giving an antipyretic to a fever patient it is more necessary to know the amount of heat production than the temperature, supposing the antipyretic has a necessary relation to the heat production. I do not see any reason to prevent this instrument being installed within any hospital, or any difficulty or danger in subjecting any fever patient to a daily morning and evening estimate of his heat production. Calculations of this kind carried upon fever patients or others afflicted with disorders of nutrition would be of much

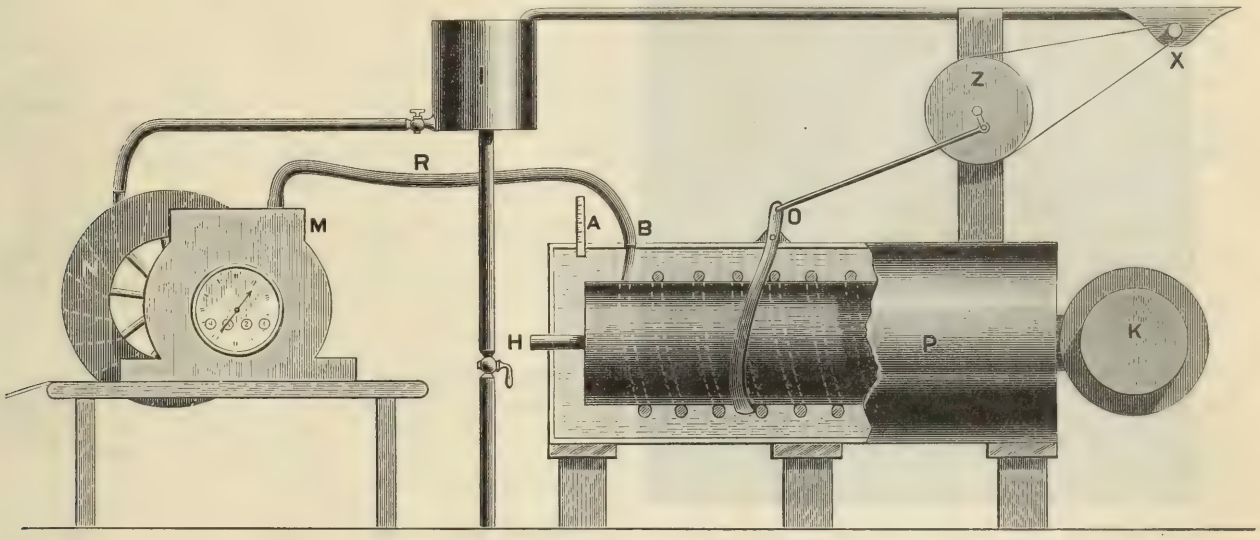
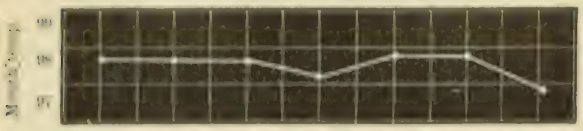


FIG. 1.—Transverse section in part.

value in every practical sense. For the sum of two hundred dollars the apparatus could be put in working order. The calorimeters can be obtained from Mr. E. B. Mack, of



A. M. Dinner P. M.

Time 8.24, 9.24, 9.4—10.45, 11.16—12.10, 1.28, 2.28, 3, 4, 4.16, 5.16, 5.30, 6.30

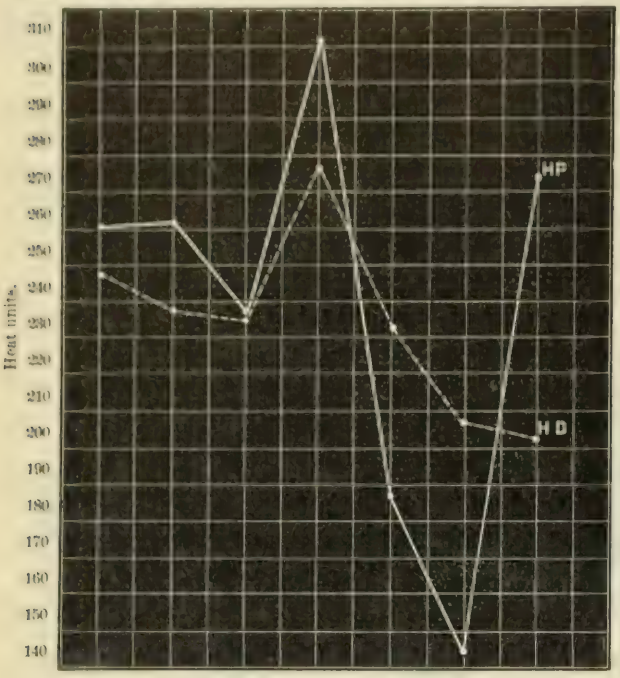


Fig. 2.—Experiment 4.

this city—the large one for about seventy-five dollars, the small one for twenty dollars. Appended are the experiments:

A. T. means temperature of air.
C. T. " " of calorimeter.
E. T. " " of exit tube.
M. T. " " of mouth.

I wish to express my thanks to Dr. Shick for the diagram of the instrument. All the thermometric data were corrected.

Experiment 1.

Mr. A., aged 23; height, 5½ feet; weight, 134·24 pounds.
7 A. M., breakfast.
9.54 A. M., had been in calorimeter half an hour.

Time.	A. T.	C. T.	E. T.	M. T.	Litres of air.
10.17 A. M.	68·25°	64·21°	64·0°	99°	5,744
11.17	67·25	64·71	64·5	98⅔	
		5			

H. D. = 303·61; H. P. = 259·05.

12 M., dinner. Weight, 135·16 pounds.

Time.	A. T.	C. T.	E. T.	M. T.	Litres of air.
12.50 P. M.	68·25°	64·54°	64·7°	98°	5,825
1.50	65·25	65·09	65·0	98	
		55			

H. D. = 324·25 H. P. = 324·25.

Weight, 134·80 pounds.

Time	A. T.	C. T.	E. T.	M. T.	Litres of air.
3.15	64·75°	64·09	65·1	98⅔°	5,543
4.15	65·75	65·49	65·5	98⅓	
		4			

H. D. = 284·22; H. P. = 261·85.

Weight, 134·38 pounds.

Time	A. T.	C. T.	E. T.	M. T.	Litres of air.
4.40	66·25°	65·39°	65·5°	99	4,786
5.40	65·50	65·89	66·8	98⅓	
		5			

H. D. = 304·43; H. P. = 282·13.

Experiment 2.

Mr. A., weight, 132 pounds.
7.45 A. M., breakfast.

Time.	A. T.	C. T.	E. T.	M. T.	Litres of air.
8.31 A. M	66·25°	64·89°	65·2°	98°	4,693
9.31	66·25	65·39	65·5	99	

H. D. = 305·35; H. P. = 414·91.

Weight, 131·50 pounds.

Time.	A. T.	C. T.	E. T.	M. T.	Litres of air.
9.50	64·25°	65·39°	65·5°	99°	5,415
10.50	66·25	65·79	66·0	99	

H. D. = 245·75; H. P. = 245·75.

12 M., dinner. Weight, 133·62 pounds.

Time.	A. T.	C. T.	E. T.	M. T.	Litres of air.
1.05 P. M.	66·25°	66·79°	66·3°	98⅜°	4,847
2.05	66·75	66·24	66·5	98⅘	

H. D. = 274·15; H. P. = 295·92.

Weight, 132·75 pounds.

Time.	A. T.	C. T.	E. T.	M. T.	Litres of air.
2.30 P. M.	66·25°	66·15°	66·5°	99°	4,910
3.30	66·25	66·55	66·8	99⅕	

H. D. = 245·27; H. P. = 267·29.

Weight, 132·38 pounds.

Time.	A. T.	C. T.	E. T.	M. T.	Litres of air.
4.00	67·25°	66·49°	66·8°	99°	4,670
5.00	67·25	66·99	67·1	99⅕	

H. D. = 304·18; H. P. = 326·15.

Weight, 132·36 pounds.

Time.	A. T.	C. T.	E. T.	M. T.	Litres of air.
5.20	68·25°	66·89°	67·1°	98⅖°	5,555
6.20	68·25	67·39	67·6	98⅕	

H. D. = 302·58; H. P. = 278·62.

Experiment 3.

Mr. Z., aged 18; height, 5 ft. 6¼ in.; weight, 135·38 pounds.
7 A. M., breakfast.

Time.	A. T.	C. T.	E. T.	M. T.	Litres of air.
9.01 A. M.	66·25°	66·37°	66·6°	98⅗°	5,380
10.01	66·25	68·84	67·6	98	

H. D. = 241·10; H. P. = 173·69.

Weight, 135·10 pounds.

Time.	A. T.	C. T.	E. T.	M. T.	Litres of air.
10.25	67·25°	66·84°	67·4°	98⅘°	6,390
11.25	67·25	67·29	68·1	98⅘	

H. D. = 229·31; H. P. = 229·31.

12 M., dinner. Weight, 134·86 pounds.

Time.	A. T.	C. T.	E. T.	M. T	Litres of air.
12.54 P. M.	69·25°	67·09°	67·8°	99·0°	5,230
1.54	69·25	67·675	68·6	98·8	

H. D. = 317·17; H. P. = 294·79.

Weight, 134·38 pounds.

Time.	A. T.	C. T.	E. T.	M. T.	Litres of air.
2.20	68·25°	67·60°	68·3°	98⅘°	6,695
3.20	68·75	68·38	69·1	98⅖	

H. D. = 400·62; H. P. = 356·62.

Weight, 134·32 pounds.

Time.	A. T.	C. T.	E. T.	M. T.	Litres of air.
3.42	68·25°	68·19°	68·7°	98·4°	5,430
4.42	69·25	68·69	69·5	98·3	

H. D. = 255·49; H. P. = 244·80.

Weight, 134·24 pounds.

Time.	A. T.	C. T.	E. T.	M. T.	Litres of air.
5.00	70·25°	68·64°	69·2°	98·3°	6,380
6.00	69·25	69·10	69·9	98·1	

H. D. = 279·90; H. P. = 256·63.

EXPERIMENT 4.

Mr. A., weight, 135·40 pounds.

Time.	A. T.	C. T.	E. T.	M. T.	Liters of air.
8.24	65·25°	67·70°	67·4°	98⅗°	5,365
9.24	66·25	68·18	68·5	98·7	

H. D. = 249·92; H. P. = 261·16.

Weight, 135·20 pounds.

Time.	A. T.	C. T.	E. T.	M. T.	Litres of air.
9.45	67·25°	68·10°	68·4°	98⅗°	5,640
10.45	68·25	68·64	69·0	98⅘	

H. D. = 238·83; H. P. = 263·27.

Time.	A. T.	C. T.	E. T.	M. T.	Litres of air.
11.10	68·25°	68·44°	68·7°	98⅗°	5,890
12.10	70·25	68·91	67·4	98⅗	

H. D. = 238·47; H. P. = 238·47.

12.30, dinner. Weight, 136·46 pounds.

Time.	A. T.	C. T.	E. T.	M. T.	Litres of air.
1.28	68·50°	68·710°	68·8°	98⅖°	5,557
2.28	68·25	69·245	69·8	98⅘	

H. D. = 276·97; H. P. = 312·47.

Weight, 136·20 pounds.

Time.	A. T.	C. T.	E. T.	M. T.	Litres of air.
3.00	70·75°	69·19°	69·5°	98⅘°	7,455
4.00	68·25	69·64	70·3	98⅖	

H. D. = 232·68; H. P. = 187·56.

Weight, 136·6 pounds.

Time.	A. T.	C. T.	E. T.	M. T.	Litres of air.
4.16	68·75°	69·59°	70·0°	98⅘°	6,440
5.16	69·75	69·99	70·6	98⅕	

H. D. = 208·48; H. P. = 140·46.

Weight, 136·4 pounds.

Time.	A. T.	C. T.	E. T.	M. T.	Litres of air.
5.30	69·75°	69·89°	70·3°	97⅘°	8,145
6.30	72·25	70·29	70·8	98 1/10	

H. D. = 205·35; H. P. = 273·27.

EXPERIMENT 5.

Mr. A., weight, 133·8 pounds.

Time.	A. T.	C. T.	E. T.	M. T.	Litres of air.
8.20 A. M.	68·25°	68·60°	68·4°	98⅗	5,555
9.20	67·25	68·915	69·0	99	

H. D. = 161·39; H. P. = 205·81.

Weight, 133 pounds.

Time.	A. T.	C. T.	E. T.	M. T.	Litres of air.
9.45	70·25°	68·79°	68·7°	98½°	7,365
10.45	70·25	69·39	70·0	98⅘	

H. D. = 303·57; H. P. = 303·57.

Weight, 132·74 pounds.

Time.	A. T.	C. T.	E. T.	M. T.	Litres of air.
11.15	70·25°	69·09°	69·3°	98⅖°	6,565
12.15	69·75	69·615	70·0	98⅘	

H. D. = 267·83; H. P. = 311·86.

12 M., dinner. Weight, 133·42 pounds.

Time.	A. T.	C. T.	E. T.	M. T.	Litres of air.
1.30	70·25°	70·504°	69·5°	98⅗°	6,225
2.30	71·25	71·029	70·5	98⅘	

H. D. = 268·42; H. P. = 296·53.

Weight, 133·40 pounds.

Time.	A. T.	C. T.	E. T.	M. T.	Litres of air.
3.00	70·25°	69·74°	70·0°	98⅕°	5,265
4.00	70·25	70·19	70·7	98⅘	

H. D. = 230·02; H. P. = 230·02.

Time.	A. T.	C. T.	E. T.	M. T.	Litres of air.
4.30	70·25°	69·99°	70·1°	97⅕°	5,660
5.30	70·25	70·49	70·75	98⅗	

H. D. = 257·21; H. P. = 344·27.

TENDON RESECTION AND TENDON CONTRACTION FOR SHORTENING THE RECTI MUSCLES.

BY GEORGE T. STEVENS, M. D.

SINCE, in 1845, Guérin first made advancement of a rectus muscle with the view of re-establishing its action by virtue of the new position, many modifications of his operation have been made, depending partly upon the progress made in the management of primary strabismus and partly upon the individuality of the surgeons who have proposed the various modifications. Principal among these newer methods are those of Critchett and von Graefe, but practical improvements upon the original methods and of those of Critchett and Graefe have been suggested and practiced by Weber, Agnew, Wecker and Landolt, Prince, and others.

In all these modifications the purpose has been, by advancing the insertion of the tendon nearer to the cornea, to effect a re-enforcement of its action in rotating the cornea toward the inner or outer canthus.

It is probable that nearly every surgeon who has had any considerable experience in these operations has learned that each of the methods which have from time to time been in vogue promises much better than it fulfills, and that failure in producing any exact results is the rule rather than the exception.

There are certainly important objections to the operation for advancement in either of its forms and at every stage of the proceeding. The extensive wound of the conjunctiva, the dissection of it to the border of the cornea, the enormous extent of tissues involved in the sutures, and especially the wedging of the tendon far in advance of its normal position, are all undesirable features of these operations. But beyond these details of procedure, which leave

unpleasant reminders after healing has taken place, there is the necessary uncertainty of the result which renders a simpler operation, and one which can be at least approximately graduated, much to be desired.

The operations for *tendon resection* and *tendon contraction* present many advantages over the operation for advancement. During the past four years I have made many operations for the purpose of shortening the tendons of the recti by the methods about to be described, and the experience thus gained appears to be sufficiently extended to enable me to form a judgment respecting these methods.

Tendon shortening is available and often advantageous in primary as well as secondary strabismus, and in the lesser anomalous tendencies of heterophoria. For cases in which a slight effect is desired—for example, where it is proposed to effect a correction of two or three degrees—shortening by tendon contraction is sufficient. If, however, more considerable effects, such as in cases of strabismus or in high degrees of heterophoria, are to be obtained, tendon resection is required.

Advancements were formerly made only in cases of overcorrection after operations for strabismus or in cases of paralysis. More lately they have been, to a limited extent, made auxiliary to primary operations. In 1874 Dr. J. F. Noyes, of Detroit, reported a method for shortening the recti by complete tenotomy and lapping the muscular under the scleral end of the tendon. If necessary, a portion of tendon was to be cut out. Several sutures were used and no tenotomy of the opposing muscle was made.

In making tendon resection the proceeding which I have adopted is as follows:

With the narrow-pointed scissors used for subconjunctival tenotomy, and which are figured in connection with this article, an opening is made in the conjunctiva less than one millimetre in extent and about a millimetre posterior to the insertion of the tendon and exactly over its central portion. The opening should be the smallest possible—not more than sufficient to expose a small point of the surface of the tendon. The fine tenotomy forceps * is then introduced, its branches closed through this small opening and forced slightly backward, when, by removing the pressure of the fingers, the expansion of the blades pressing against the elastic tissues surrounding them causes the opening to expand, thus temporarily enlarging the wound and permitting the operator to grasp in the teeth of the forceps a small fold of the tendon slightly removed from its insertion. With much care the tendon is divided transversely, a little in front of the insertion, carrying the division each way as in the case of graduated tenotomy until the border of the tendon is reached and which is to be preserved.

With the fine traction hook (Fig. 6) the central portion of the proximal lip of the tendon opening is then drawn forward through the opening in the conjunctiva, which, without tearing, expands to allow of this procedure. While the tendon is thus held forward the small plow or divulsor is insinuated and pushed backward over all the parts of the tendon behind the wound, effectually releasing the tendon from any connection with the surrounding tissues.

This separation of the tendon will permit it to be drawn forward without causing so much of a fold of the conjunctiva as is otherwise likely to result if the tendon is much shortened. The tendon being now drawn forward to an extent equal to the amount of resection desired (and the resection must be made to conform to the extent of shortening proposed), either by making traction by means of the traction hook or by the fine fixation forceps which may be made to replace the hook, and using as much care as possible not to enlarge the conjunctival wound, a cut is made from each extremity of the transverse incision backward so that the two nearly meet just behind the insertion of the forceps. By this means a triangular piece of tendon is very nearly removed. Making traction now with the fixation forceps which holds the bridge at the apex of the triangle, the needle, armed with No. 000000 silk thread, is passed through just behind the apex, when the resection of the triangle is completed. The needle is next carried through the corneal extremity of the tendon and the extreme border of the conjunctival wound, including not to exceed one millimetre, when the suture is to be tightened and secured. The object of the fixation forceps is to maintain a hold upon the exact central portion of the tendon. Should resection be made without the precaution of thus securing this part, it would be doubtful whether the exact angle of the resected part could be readily found afterward. Approximately this may be done, if the fixation forceps have not been used, or if the hold has been lost, by carrying the slender hook beneath the tendon after the resection is made, observing special care as to its direction and thus drawing the angle forward. It is much better, however, to secure this point from the beginning, when it is possible to be very precise.

During the different stages of the operation the conjunctival wound, originally very small, is in danger of being enlarged by tearing or cutting, but this should, as far as possible, be avoided. The tissues are susceptible of a considerable degree of stretching, and what may during the operation appear like an opening of two or three millimetres will after a few minutes contract to a small point. The amount of tissue to be removed in the resection must of course, as has already been intimated, be graduated by the effect desired. The surgeon should determine beforehand the extent to which it is desirable to change the relative position of the eye. The distance from the base to the apex of the resected triangle should correspond nearly to the extent to which the eye is to be rotated.

Tendon resection is available when considerable change in the relative position of the eye is to be made. For slight or great moderate changes, tendon contraction may be practiced.

In making tendon contraction, the conjunctival opening is made as already described. Then the tendon is drawn slightly forward through the opening and is cut transversely toward each border. The small traction hook shown below is then introduced beneath the tendon which it draws forward. The needle is carried through the tendon as far

* See figure.

back as necessary. If it is carried so far back as to leave in front of it any considerable extent of the tendon, this may be shaved off by the scissors so as to leave a very thin border. The needle is then carried through the anterior lip of the tendon, as has already been directed, and the suture secured as before. Before finally tying in either case the patient should be tested in respect to the result, when, if it is excessive, the suture may be loosened before finally tying, and, if insufficient, the operation can be carried further.

No extensive cicatrization occurs after such operations. The tendon is not bound either to the sclera or the conjunctiva. Union takes place by first intention, hence there is very slight prospect of losing the result of the operation, although, owing to the elasticity of the parts included in the suture, an excess of effect should be temporarily induced. Owing to the extreme fineness of the thread, no inflammation is set up about it. It may be removed after five or six days, or it cuts its way out without assistance. A few weeks after such an operation only minute traces of it can be discovered. No unsightly scar and no adhesions are left to remind the patient or the surgeon that an operation has been done.

Two great disadvantages following the standard operations for strabismus are the recession of the caruncle and the loss of ability to bring the cornea of the eye operated on sufficiently toward the canthus corresponding to the severed tendon. These defects may be avoided by the adoption of two measures: 1. The tenotomy is to be made by the method which I have described * for heterophoria, except that the division of the tendon is made more complete. Little, if any, recession of the caruncle succeeds to such an operation, as the wound of the conjunctiva is reduced to the smallest extent, and the tissues are not separated from the sclera as in the ordinary operation. 2. The tenotomy should not be carried to the extent of so complete a setting back of the tendon as to alter the position of the caruncle or to seriously interfere with the rotating action of the muscle. After a moderate relaxation of the shortened tendon by such a guarded tenotomy, tendon resection of the opposing muscle can be made to supplement the effect, thus maintaining a more uniform tension of the two opposing muscles than could be preserved after a greater setting back of the tendon or after an advancement without tenotomy.

In most cases of the ordinary converging or diverging strabismus, therefore, tendon resection can be advantageously combined with moderate tenotomy on one or both eyes. I have found that, in a certain proportion of cases of heterophoria in which the balance appears to be lost through the feeble action of one set of muscles rather than through the immoderate contraction of their opponents, tendon resection preserves more perfectly the functions of the recti muscles than does tenotomy. In high grades of esophoria or exophoria, also, tendon resection is advantageously combined with tenotomy. In such cases we make a slight shortening of each of the weaker muscles, followed by tenotomy of each of the opposing tendons. There is less objection to so many operations than to a single excessive tenotomy.

For the performance of tenotomies or of tendon resections in the manner which I have described, certain forms of instruments are necessary and certain others desirable. It will therefore be in place here to refer to the various instruments which I find useful in these operations. They are such as have resulted from the necessities or conveniences of the operations during the various stages of their evolution.

It is with much satisfaction that I acknowledge the practical assistance which I have received from time to time from Mr. F. A. Stohlmann, of Messrs. Tiemann & Co., who has brought to the work his great experience and a sincere desire to render every aid in perfecting the instruments.

Each instrument is so constructed as to admit of perfect cleanliness, those having crossed blades being provided with Charrière's lock; they can, therefore, all be kept easily and perfectly aseptic.



Fig. 1.

The scissors (Fig. 1), which have been described * heretofore, are now improved by being furnished with the lock-joint, thus allowing the two blades to be separated from each other. The lock also insures the perfection of the relations of the two blades to each other—a condition which is readily lost when the blades are united by a screw. Continued experience with the scissors convinces me of their great value. Their cutting properties are perfect, they are strong enough to overcome every resistance, while their points are so very slender that they work beneath the conjunctiva through an extremely small opening.



Fig. 2.

The forceps (Figs. 2 and 3) and small tenotomy hook (Fig. 4) have also been described elsewhere, † and are both



Fig. 3.

found to serve their purpose perfectly. The delicacy of the hook enables the operator to insert it beneath the tendon at



Fig. 4.

the extremities of the section already made, with little, if any, disturbance of surrounding tissues.

* "Archives of Ophthalmology," vol. xvi, No. 2, June, 1887, and vol. xvii, No. 2, June, 1888.

* "Archives of Ophthalmology," June, 1888.

† *Ibid.*, June, 1887.

I have found it necessary to have constructed for use in tendon resection a fixation forceps (Fig. 5), similar in its

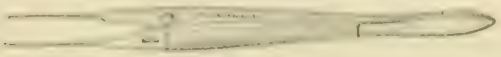


Fig. 5.

general form and in delicacy to the tenotomy forceps. This instrument has proved of great service in the perfection of the operation. A very delicate traction hook (Fig.



Fig. 6.

6) has also proved almost essential in operations for tendon contraction and for tendon resection. The hook is of about the same size and delicacy as Tyrell's iris hook.

The hook, however, is in the form of a straight barb, bending backward at an angle of 45° from the very slender shaft; the barb is very fine and sharp, and is perfectly calculated to catch and hold the cut border of the tendon without becoming entangled in it, as the Tyrell hook is very likely to do. The little plow or divulsor used for separating the tendon from its surroundings is a triangular lance-blade, at the extremity of which is an olive or button which serves as a leader. The blade is about a millimetre



Fig. 7.

broad at its widest part (Fig. 7). Messrs. Tiemann & Co. have constructed for me a needle-holder (Fig. 8), very light and convenient in operations about the eye. Its handle, in size and form, corresponds to that of the majority of the instruments used in eye surgery, and the jaws, while slender, are so short as to give them unusual strength. The lever fastens by Tiemann's automatic catch. Since the introduction of cocaine there is but little and usually no pain in operations upon the eye muscles; but I have long observed that in operations in which a needle is used a thrill of pain is sent through the frame of any patient when the ordinary needle-holder is made to release its hold upon the needle. The snap of the release is invariably described as a most severe shock. In the instrument here figured this violent snap



Fig. 8.

is avoided. Like the tenotomy scissors, the blades of the needle-holder are readily detachable, being united by the Charrière lock, hence they can be separated with ease for cleansing.

So many oculists have already presented designs for eye specula that I hesitate to add another to the list. I yield, however, to the suggestion of others in describing the instrument which I have used for two years past (Fig. 9). It is a modification of old forms, and its merit is rather in its simplicity and convenience than in its novelty. The spring itself resembles some of the oldest forms of eye specula, and is quite flexible, as I find that a stiff spring is not required since the introduction of cocaine. Consequently the spring is quite light, being made of silver-coated steel, and

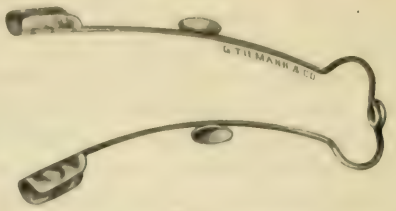


Fig. 9.

each branch is terminated by a thin plate of tortoise-shell so folded upon itself as to hold the border of the lid firmly, and to effectually remove the lashes from the field of operation. The even pressure of the tortoise-shell is far less disagreeable to the patient than the pressure caused by the stiff bent wires almost universal in the blades of eye specula. About the middle of each branch a little cup-shaped finger-piece is attached as a holder. The speculum is light, easy to the patient, perfectly simple in construction, and therefore has the merit of cheapness.

In operations upon the superior muscles the common eyelid retractor is used; Messrs. Tiemann have constructed for me one considerably smaller than those commonly used, the blade being of tortoise-shell (Fig. 10).



Fig. 10.

All these instruments, together with fine needles and a quantity of No. 000000 silk, are put up by Messrs. Tiemann & Co. in a very neat case.

33 West Thirty-third Street, New York.

THE CURABILITY OF PULMONARY PHTHISIS.

By GEORGE A. EVANS, M. D.,
BROOKLYN.

Although my only purpose in this short paper is to present evidence to show that pulmonary phthisis is a curable disease, and to stimulate a more hopeful view regarding its prognosis, I commence by stating to what conditions I apply the word phthisis, believing that by so doing I shall be better understood, for this term seems to have different meanings to different medical men.

Two varieties of tubercular phthisis are generally recognized—the *acute* and the *chronic*. The former, Bayle's miliary tuberculosis or acute miliary tuberculosis, when it forms the only anatomical lesion, is undoubtedly an infectious disease. It is rapid in its progress. It begins with and produces the true histological miliary tubercle in great numbers throughout the lungs, and undergoes rapid caseous metamorphosis. We have strong evidence for believing that it is analogous to the bacillary disease which may be so readily set up in rabbits, guinea-pigs, etc., by inoculating them with cultivations of the tubercle bacillus.

Under the head of *chronic* phthisis we have the following subvarieties:

Chronic tubercular phthisis is, as its name indicates, relatively slow in its progress; it is characterized by the development of numerous hard tuberculous nodules of various sizes, which are distributed more or less throughout the lung.

Catarrhal phthisis, or tubercular lobular pneumonia, or the chronic broncho-pneumonia, chronic lobular pneumonia, or cheesy pneumonia of Virchow, is a variety of chronic phthisis which, it is believed, develops from or is intimately associated with bronchitis, pleurisy, or pneumonia, and in which the development of tubercle may or may not play an important part. It occurs most frequently in strumous subjects.

Fibroid phthisis, or interstitial pneumonia, is a form of chronic phthisis in which the development of fibrous tissue, either in dense masses or as a diffused infiltration, is a prominent feature. This adventitious tissue rapidly contracts and constricts the tissue in which it is developed, and thereby obliterates the air-vesicles and bronchioles, and impedes the circulation of blood through the lungs.

Pneumonokoniosis, anthracosis, siderosis, chalicosis, etc., or "*dust phthisis*," is a form of fibroid phthisis or interstitial pneumonia the result of direct mechanical irritation of the lungs, and is due to the inhalation of particles of fine mineral or insoluble dust.

It is impossible to define sharply these varieties of chronic phthisis from one another; they all frequently occur in the lungs of the same individual at the same time, and they frequently follow one another at different periods of the affection.

When we speak of pulmonary phthisis in a general way, we refer to a condition which consists at first of a consolidation of lung substance, beginning almost always at the apex, due chiefly to a proliferation or increase of connective-tissue elements, with a subsequent contraction of the same sufficient to compromise their proper nutrition, resulting in tissue necrosis or caseation, putrefactive decomposition, septic absorption, the formation of cavities or of dense fibrous tissue.

All these changes may occur in the same individual in different parts of the lungs at the same time, or they may follow one another at different periods of the disease. They possess infective powers, and are disposed to spread to the contiguous tissues. They are frequently found in association with the tubercle bacillus and with tubercle, but these may play, however, only a secondary part. The disease may be purely local in its origin, or it may be constitutional. Predisposition to its development may be acquired or it may be inherited. Carefully conducted experiments give positive proof of the communicability of phthisis; clinical experience, however, does not. That so much is said and written from day to day concerning pulmonary phthisis, that so many different opinions exist among prominent observers regarding its ætiology and prognosis, and that so many widely diverse and new methods of treatment are being constantly brought to bear to arrest its progress or mitigate its ravages, are in themselves circumstances which can not fail to impress us that the subject is beset with difficulties on every hand, and that much remains to be made clear to our understanding. These difficulties will not be brushed away by the power of any sudden enthusiasm. They must be overcome by patient study and earnest work. Medical science should never confess to herself that any disease is incurable, no matter how much evidence there may be in favor of that contention, for such a confession leads to despair—a condition which, on the part of the patient, operates to prevent his co-operation with the physician, who in his turn is discouraged from all effort in behalf of his patient by the gloomy prognosis which he entertains and which he constantly keeps in view. There are at present many curable pathological conditions which in former years were regarded as incurable. Failure in the past should constitute the strongest incentive to greater efforts for success in the future. Under such circumstances there is much merit in failure, while there is certainly none in despair.

Dickens describes in his story of "Nicholas Nickleby" the terrible ravages and "certain termination" of consumption as the medical science of his time and his own observations taught him to regard them. His description represents, I regret to say, a picture which many of our profession of to-day subscribe to, and exhibit for the education and contemplation of the laity. It runs as follows:

"There is a dread disease which so prepares its victims, as it were, for death; which so refines it of its grosser aspect and throws around familiar looks unearthly indications of the coming change; a dread disease in which the struggle between soul and body is so gradual, quiet, and solemn, and the result so sure, that day by day, and grain by grain, the mortal part wastes and withers away, so that the spirit grows light and sanguine with its lightening load, and, feeling immortality at hand, deems it but a new term of mortal life; a disease in which death and life are so strangely blended that death takes the glow and hue of life, and life the gaunt and grizzly form of death; a disease which medicine never cured, wealth never warded off, or poverty could boast exemption from; which sometimes moves in giant strides and sometimes at a tardy, sluggish pace, but, slow or quick, is ever sure and certain."

It may be claimed by some that Dickens painted this picture in deference to a style in fiction for which he was distinguished, or perhaps in order to stimulate morbid sentiment for dramatic effect. However this may be, we may feel certain of the source whence his inspiration came when we consider the gloomy prognosis which many of the medical men of his time entertained regarding pulmonary consumption.

Even so distinguished a writer on medical topics as Graves,* of Dublin, who, as I will show later on, held hopeful views regarding the prognosis in pulmonary phthisis, frequently paused in his scientific consideration of the subject to contemplate it from a sentimental standpoint. I quote from one of his lectures as follows:

"Phthisis is a disease which, more than any other, demands the sympathy and excites the commiseration of the friends and acquaintances of the sufferers. Some diseases are borne in silence and concealment, because their phenomena are calculated

* "Clinical Medicine."

to excite disgust; to others, the result of vicious courses, the stigma of disgrace is attached; unsightly ravages of the human frame, or the wreck of the mental faculties, inspire us with horror rather than with sympathy; but consumption, neither effacing the lines of personal beauty nor damaging the intellectual functions, tends to exalt the moral habits and develop the amiable qualities of the patient, and from its melancholy character gives to our feelings of commiseration a more than ordinary intensity. Most persons die of consumption in the bloom of youth, at a period when the hopes are brightest and the capacities for enjoying life are in full vigor and maturity. Most of its victims are remarkable for the early unfolding and brilliancy of their mental accomplishments, and many a family has to regret that by tubercular phthisis some of the fairest and best of its members have been hurried to an early grave."

In the discussion of a paper on the "Relations of the Bacillus Tuberculosis to Pulmonary Phthisis," which was read by Dr. I. H. Platt before the Medical Society of the County of Kings, June 19, 1888, a physician of considerable ability and experience stated that he had never had a patient recover from pulmonary phthisis and that he did not believe in the curability of that affection. The opinion was based on quite a large experience, and, although his conclusion may be logical in a certain sense, it is nevertheless wrong as well as unfortunate, as I hope to be able to show. While it is true that a great many medical men still entertain unfavorable views regarding the ability of our profession to cope successfully with the morbid processes which characterize pulmonary consumption, it is, nevertheless, a fact that we find among those who hold such opinions very few who have attained eminence in the profession. These pessimistic views are, in many instances, I have no doubt, the result of prejudice, founded in a certain measure on past ignorance, present indifference, or superficial investigation. And it is a matter of common observation that while many of those who hold them make no attempt to improve our means for arresting the ravages of consumption, they frequently put themselves to considerable inconvenience to discourage in others earnest effort to that end.

Ortmann referred to this state of affairs, in his description of "Brehmer's Sanatorium for Consumptives at Göbersdorf," as follows:

"Up to the middle of the present century the scientific world, and of course the public also, were, almost without exception, in agreement as to the incurability of this disease, and the well-known facts seemed so completely to confirm these views that the incurable nature of pulmonary consumption had become a fixed tenet of the scientific creed. Of course the treatment of the malady was in accordance with this theory. . . . It was proclaimed in the lecture-rooms of the medical colleges that phthisis must of necessity end fatally, and it could accordingly be only a *subject for ridicule** were a practitioner to presume to speak of the curability of the dreaded malady by an entirely new method of treatment."

We can have no better evidence of the positive advance of medical science than that which comes out on a comparison of the gloomy views of the past with those that are held by eminent observers of the present day regarding the prognosis in pulmonary phthisis.

* Italics are mine.—G. A. E.

Weber says:*

"That any one can hold the opinion that phthisis is incurable is almost incredible, as not only older medical authors, but many of the most experienced living men, have pronounced distinctly hopeful views. The words of Carswell should be sufficient: 'Pathological anatomy,' he says, 'has perhaps never afforded more conclusive evidence in proof of the curability of a disease than it has in that of tubercular phthisis.'"

Hippocrates, whose science and skill, we are informed, made the age in which he lived memorable, believed phthisis to be curable when it occurred as a result of purulent infiltration of the lungs.

Aretæus Cappadox (50 A. D.) informs us that in early times sea-air was recommended as a *cure* for consumption.

Celsus believed that long sea voyages, and also fumigations from pine cones, would *cure* consumption.

Galen considered that recovery from consumption was by no means infrequent among those who resorted to dry-air localities.

The writings of Willis† go to show his belief in the curability of consumption. Laennec gave the histories in a number of cases in which the cicatrization of cavities had taken place.

Graves,‡ addressing his pupils, said:

"Let me now impress on you strongly the necessity of never abandoning cases of consumption as hopeless, for I have known several apparently desperate cases cured, even when puriform matter had been expectorated and cavities existed. Many remarkable cases of phthisis have occurred in my own practice and the practice of Dr. Stokes, and in which the patients recovered either temporarily or permanently in a manner quite unforeseen and unexpected."

Rokitansky# and Schüller have reported that recovery from pulmonary phthisis has frequently occurred in cases under their observation.

Gerhard,‖ writing on this subject in 1850, says: "We have direct proof of the curability of tubercle, that is, evidence derived from pathological examination." He cites a striking illustration in the case of Dr. Parish, of Philadelphia, who suffered from pulmonary consumption in early life, recovered vigorous health, lived to the age of sixty, and finally died of a disease of the kidneys. In his case there was undoubted evidence not merely of the previous existence of phthisis, but of its absolute cure, for at the apex of each lung were found cicatrices and deposits of calcareous matter, proving that some portion of the tuberculous matter had passed to the state of softening, and that another portion had become dry and indurated.

Clark△ and Bennett have recorded their testimony in favor of spontaneous recovery from tubercular phthisis, and the practical result of their observations shows that if the

* "Croonian Lectures," 1885.

† Waldenburg, "Die Tuberculose u. s. w., nach historischen und experimentellen Studien," Berlin, 1869.

‡ "Clinical Medicine."

"Respiratory Therapeutics," Oertel in von Ziemssen's "Handbook of General Therapeutics," vol. iii.

‖ "Gerhard on the Chest."

△ Aitken's "Science and Practice of Medicine," *loc. cit.*

further growth of tubercle can be arrested, the masses already existing may silently retrograde, become absorbed, or diminished in size, and the part cicatrize, or it will remain latent as a cretaceous mass in the lung.

Dr. James Henry Bennett, as quoted by Denison,* tells us that in the lungs of many women in the dead-room of the Salpêtrière, a large asylum hospital in Paris, he found evidences which proved undeniably that they had been consumptive at some antecedent period of their life, but had died at last of other disease.

Vibert, † who is connected with the Paris Morgue, has reported that among two hundred necropsies which he made on persons who died a violent death, he has in as many as 20 per cent. found evidence of old tubercular lesions in the lungs which had healed.

Koch ‡ states, in his consideration of the subject of predisposition in pulmonary phthisis, that individual cases of the disease have often shown that a person is not at all times an equally favorable subject for the development of the (tubercle bacilli) parasites, for it not infrequently happens that tubercular foci which had reached a fair size contract, cicatrize, and heal up; that means, however, that the same body which afforded a suitable soil for the tubercle bacilli on their first invasion, so that they were able to multiply, has by degrees lost the qualities favorable to them and has changed into a bad soil, thus preventing further growth of the bacilli.

Jaccoud, in his book on the curability of phthisis, warns his readers against the too widespread opinion that pulmonary phthisis is an incurable disease.

"It seems to me," he says, "that, considering the conclusions recently derived from pathological histology, it would be the greatest benefit, while this again would be a most advantageous opportunity to proclaim more earnestly than ever the curability of this disease, and therefore the necessity of an active plan of treatment. . . . Pulmonary phthisis is curable in all its stages, and in its two forms—the ordinary and the pneumonic. . . . This is the prolific notion which presides over the whole history of the disease and which should unceasingly inspire and direct all medical action.

"When the existence of tubercles in the lung is recognized, it should not be inferred from that moment that he who has them is doomed to death in consequence of their presence. Should it be found that the tubercles soften and a cavern forms, it should not be believed on this account that all is lost. It has been shown that this is not the case, and the natural tendency which tubercle has to fibrous transformation—that is, to recovery—should never be forgotten."

Tyndale ("Treatment of Consumption") says:

"Consumption is curable. In proof of this, we not only point to the results of autopsies, where the shrunken, contracted tissue processes point to the original seat of disease, but also to the complete convalescence of undoubted phthisical subjects."

Lindsay ("Climatic Treatment of Consumption"), speaking of the curability of consumption, says:

"There can be no more fatal error than to regard the disease in all its forms and stages essentially incurable. Such a view not only discourages rational treatment and stifles hope, but is in conflict with evidence which is as certain as any evidence short of mathematical demonstration can be. There are still some who explain all the alleged instances of recovery from consumption by the hypothesis of an error in diagnosis.

"According to these authorities, recovery from pulmonary disease is *ipso facto* proof that that disease was not consumption. Fortunately, another kind of evidence is available to meet this objection. The records of the post-mortem room are full of instances of persons dying of the most diverse maladies in whose lungs are found indubitable signs of former tubercular disease, which has undergone arrest, leaving the lungs more or less permanently damaged, but in many instances perfectly competent to fulfill all the needs of the organism. . . . These cases, so far from being mere curiosities of pathology, are comparatively common."

C. T. Williams (in his work on "Pulmonary Consumption") says:

"It is in chronic tubercular phthisis that the greatest triumphs of treatment have been achieved, when time, money, and perseverance are not lacking, and we can in most cases promise prolongation of life, and in others complete arrest of the disease."

Williams cites many such examples from his own practice.

Hermann Weber reports a great many cases of recovery from pulmonary phthisis which have occurred under his own observations. In his "Croonian Lectures," which were delivered in 1885, he gives a short sketch of a case in which he had the opportunity of witnessing two separate attacks of phthisis, terminating in recovery, and finding the remains of the lesions by post-mortem examinations years after the second recovery, when death had occurred from typhoid fever with perforation. Weber has recently reported the results of his own statistics of 106 cases of phthisis treated by residence at great altitudes. Of these, 38 were cured and 42 improved. He also pointed out that equally good results might be secured at lower levels under proper treatment. He has repeatedly called attention to Dettweiler's and Brehmer's statistics, which he declares are perfectly reliable. In the lectures referred to Weber states, that even the presence of a cavity does not preclude a cure more or less complete, all the best observers of England and many of the continent have proved.

Flint says in Pepper's "System of Medicine":

"If by the term (cure) be meant that all pulmonary symptoms cease, that the patient has good general health, and that the damage to the lungs is not sufficient to prevent an adequate exercise of their functions, a cure may take place before as well as after the formation of cavities."

It is only fair to state, however, that out of 640 cases which Flint recorded during a period of thirty-four years, only 44 recovered.

Loomis (in "Practical Medicine") says:

"Chronic pulmonary phthisis is not necessarily a fatal disease. Its morbid processes may be arrested in their early stage in a large proportion of cases. In the advanced stage, or stage of cavities, proper treatment will prolong life, and in some

* "Rocky Mountain Health Resorts."

† "Medical Record," *loc. cit.*, for July 28, 1888.

‡ "Investigations of Pathogenic Organisms," New Sydenham Society's Translations, 1886, p. 199.

cases permanently arrest the progress of the disease. Recovery has occurred in one sixth of my recorded cases during the past ten years."

It is hardly necessary for me to give the opinions of the many other prominent medical writers who regard phthisis as a curable affection. Suffice it to say, "their name is legion." I have been frequently requested to give a report of the results which the local antiseptic treatment of phthisis has afforded at my hands.

This I have done in a recent publication.* The results reported show that out of 154 cases, 55 recovered, 52 improved, 13 deteriorated, and 34 died.

Whenever a medical man sends a phthisical subject to a locality where the air is charged with the *odors* of pine trees, he practically admits his belief in the benefits of the local treatment of phthisis by inhalation, and yet it is a matter of common observation that many physicians who follow this practice are bitter opponents to the inhalation treatment of consumption when artificially administered, because, as they claim, it is impossible to make use of medicament by any such means of sufficient potency to destroy the tubercle bacilli in the lungs. This objection might be answered by the inquiry, What evidence is there to show that pine-tree *odors* or the attenuated air of great altitudes can accomplish such a result?

I have been frequently asked if it is possible to bring to bear, by the means I employ,† antiseptic or medicinal influences sufficiently potent to destroy the tubercle bacillus or the cause, whatever it may be, of the morbid processes going on in the lungs? My reply is: *Certainly not.* My only purpose is to overcome the patient's predisposition to phthisical degeneration in the lungs; to eradicate it, or "to render the soil bad," as Koch comprehensively puts it, "to deprive it of the qualities favorable to the existence and multiplication of the tubercle bacillus, thus preventing its further growth"; and this is accomplished in many instances, as it seems to me, by increased oxygenation of the blood, by mechanical expansion of the contracted air-vesicles, by augmenting the cubic capacity of the chest and developing its muscular energies. These results follow the inhalation of aseptic air under pressure.

The utility of inhalations of antiseptic and stimulating medicament has been forcibly emphasized by Oertel in his work on "Respiratory Therapeutics," who says:

"I consider inhalations of carbolic acid, or the analogous salicylic and boric acids, to be absolutely indispensable in the different stages of pulmonary phthisis, in chronic pneumonia, in the liquefaction of caseous infiltration, also in copiously secreting cavities filled with decomposing products, in deep-spreading laryngeal ulcerations, to the ragged, callous margins of which the decomposing bronchial and cavernous contents adhere and undergo still further decomposition, exposed to the influence of atmospheric air. Again, the widespread mycoses of the air-passages and of the lungs which I have repeatedly observed in the course of phthisis are best combated by the phenol spray, and the vegetable parasites which proliferate over the whole respiratory tract, even to the pulmonary alveoli, are in a short time destroyed by it."

Filleau and Léon Petit have demonstrated* that, in order to render the tubercle bacillus inactive, it is necessary to have recourse to ebullition, steam, or prolonged contact with antiseptic substances—such as concentrated ammonia or strong salicylic-acid solutions, absolute alcohol or a strong solution of carbolic acid, or of its analogue, creasote—Schill and Fischer having shown that "corrosive sublimate is powerless to disinfect the sputum," because an albuminate-of-mercury envelope is formed and protects the interior of the mass against disinfection.

In this connection I wish to call attention to the remarkable results which were recently obtained through the antiseptic treatment of pulmonary phthisis with creasote by inhalation in which the primitive (oro-nasal) inhaler was used, by Dr. Austin Flint, assisted by Dr. Maury, at Bellevue Hospital, and reported by the former in the "New York Medical Journal" for December 8, 1888.

Taking it all in all, the treatment which I have made use of for some time past is, as it seems to me, rational from every standpoint. I, however, neither advocate nor practice it to the exclusion of all other methods. I believe that protracted residence at great altitudes in aseptic air in suitable cases, in conjunction with the inhalation of antiseptics, where the patients are constantly under medical supervision, will give much better results than have been heretofore obtained, and I also believe that the Brehmer sanitarium system—as described and ably advocated by Dr. P. H. Kretzschmar, which has secured such remarkable results, through rational dietetic and hygienic management—would be greatly re-enforced by the addition of antiseptic inhalations such as I have alluded to.

"It is the duty of our profession," as Weber insists, "to teach the public that it is a great mistake to think that the invalid and his friends are able to manage the dietetic and hygienic treatment of consumption, or that it is enough to go for a season, or for several seasons, to a certain climatic health resort, and that the climate itself is able to cure phthisis without the assistance of local doctors. Many valuable lives are lost through this error, even under the most favorable climatic circumstances—lives which might be saved under strict medical guidance."

And I will add that it is also the duty of our profession to educate the laity to regard pulmonary phthisis as a curable disease, and thus, by inducing a hopeful view of its prognosis, secure their cheerful co-operation for their recovery whenever any of them or of those in whom they are interested contract that disease and become our patients. In conclusion, I wish to say that I fully appreciate any inability to place this matter as I see it before the profession, and that were it otherwise I should enjoy the conviction that I had contributed somewhat toward a more general recognition of the curability of pulmonary phthisis, as well as to its more successful treatment.

* "Hand-book of Historical and Geographical Phthisiology," D. Appleton & Co., 1888, page 295.

† In order to avoid any misapprehension, it should be stated that my efforts in treatment have been to secure the simultaneous local operation of compressed aseptic air, as well as and in conjunction with the topical application of stimulating and antiseptic medicament.

* "Medical Record" for January 19, 1889, *loc. cit.*

THE
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A Weekly Review of Medicine.
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Edited by FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, MARCH 30, 1889.

MR. VICTOR HORSLEY ON RABIES.

It is with great satisfaction that we have read in the "British Medical Journal" a lecture lately delivered by Mr. Victor Horsley before the Epidemiological Society of London, entitled "On Rabies: its Treatment by M. Pasteur, and on the Means of Detecting it in Suspected Cases." Our satisfaction is founded to some extent upon the fact that the data presented by Mr. Horsley, as well as the conclusions drawn from them, amount to an incontrovertible vindication of M. Pasteur's title to the credit of having robbed the dreadful disease rabies of its terrors—an accomplishment that in this country has been recognized by this journal almost alone—but it is founded still more largely on the conviction that Mr. Horsley has amply demonstrated the feasibility of stamping out the disease, and that the day can not be far distant when governments will systematically enforce the measures required to bring about this result.

It is true that rabies in the human subject is a comparatively rare disease, but in many communities, nevertheless, it recurs from time to time in what may fairly be called an epidemic form, inflicting a horrible death upon great numbers of human beings. In the year 1885 it destroyed twenty-seven lives in London alone. Before the adoption of the Pasteur treatment it was practically attended with a mortality of a hundred per cent.; that is to say, all in whom it actually declared itself perished. Even among those who were bitten by indubitably rabid animals, counting those in whom the disease failed to take place, the average mortality was about fifteen per cent., as Mr. Horsley shows from his own personal observations and from the facts recorded by Leblanc and by Dujardin-Beaumetz. Now M. Pasteur has reduced the death-rate among precisely this class of persons to between one and two per cent. When we call to mind the fact that, prior to M. Pasteur, nobody had ever proposed a plan of treatment worthy of the name, the only attempt made having been, as Mr. Horsley says, to secure euthanasia or some approach to it by empirical dosing with narcotics, thus lowering the over-excitability of the congested reflex centers—when we call this to mind, we can come somewhere near an appreciation of the magnitude of Pasteur's achievement.

Mr. Horsley justly reproaches his own country with being content thus far to accept M. Pasteur's charity, which has been freely afforded to many Englishmen, few of whom have made any return for the treatment received; he even goes further, saying: "The actual need for treatment ought not to exist in Great Britain, and it is a scandal that it does so exist." By this he means that the disease may be radically stamped out by the destruction of all stray and unclaimed dogs and cats, the muzzling of other dogs, and the employment of stringent measures to prevent the importation of the disease from other countries. All this is unquestionably true, and it is as true of the United States and other lands as it is of the United Kingdom. It is to be hoped, therefore, that governments will take immediate steps accordingly, and certainly it is to be urged by the medical profession that they take such steps.

MINOR PARAGRAPHS.

CAFFEINE IN PUERPERAL CONVULSIONS.

In a recent number of the "Practitioner," Mr. Bolton Corney writes of the value of caffeine in cases of puerperal eclampsia in which there is no interference with the function of the kidneys, and in which toxæmia has not been demonstrated, but in which there is a history of nervous irritability, peculiarities of temper, vertigo, headache, neuralgia, and other neurotic manifestations. He gives the history of a case of this sort in which the patient was *in extremis* when the use of caffeine was first resorted to. Three grains of the citrate, dissolved with two grains and a half of sodium salicylate in ten minims of distilled water, were injected, in an hour six grains more were given by the mouth, and afterward two grains were given every two hours for twelve hours. The patient began to improve at once, but lost ground again when the use of caffeine was suspended, to improve again and progress to recovery when it was resumed. Mr. Corney's idea seems to be that caffeine takes the place of an alcoholic stimulant to a certain extent, and that it tends to favor the recovery of the nervous system from the depressing effects of the sedatives that are almost always used.

DOSIMETRY.

Dr. L. A. Merriam, of Omaha, has written us a letter in which he says: "I have taken your valuable Journal for the last sixteen years, and have of late been wondering why you do not tell us something about 'dosimetry.'" If Dr. Merriam will overhaul his file of the Journal, he will find in volume xxxiv, covering the second semester of the year 1881, on page 656, a sufficiently minute account of the so-called dosimetric system of therapeutics. The career of "dosimetry" since that time (which is within the period of sixteen years during which Dr. Merriam has taken the Journal) has not brought forth anything that seems to us to call for further mention of the matter.

THE ACADEMY OF MEDICINE'S COLLECTION OF PERIODICALS.

We have received "Part I, United States and Great Britain," of a catalogue entitled "Periodicals, Transactions, and Reports in the Library of the New York Academy of Medicine," printed in Boston. It is a pamphlet of 71 large octavo pages, closely printed; but then it contains the titles of some works that we have never looked upon as either periodicals, transactions, or reports—such, for example, as von Ziemssen's "Cyclopædia of the Practice of Medicine," the same author's "Handbook of General Therapeutics," and Buck's "Reference Handbook of the Medical Sciences." We infer from what is said in the preface, however, that works issued "in successive parts" are considered as periodicals, which strikes us as an odd view to take. Under the titles statements are given of the numbers needed to make the sets complete. In the case of journals, "editorial changes are not noted, except as they may

occur in connection with change of title." Although we have noticed some inaccuracies, we think that the resident librarian, John S. Browne, Esq., is entitled to great credit for the work of making out the list. He very properly calls the periodicals the most valuable part of the Academy's library.

THE TRADE IN FACTITIOUS BRANDY

This business goes briskly on, if we may judge by an auction sale of wines, brandy, etc., that was announced to take place last week. Among the articles mentioned in the announcement was "1 hhd. brandy flavoring, in bond." Everybody knows what this stuff is intended for—to be mixed with some inferior spirit, and the compound sold as "French brandy." And this is the product obtained, at a high price, by almost everybody who buys so-called French brandy in this market.

THE EASTERN DISPENSARY.

This institution, which for many years has done most excellent work among the sick poor of New York, has now given a fair trial to the plan of maintaining a paid staff of medical officers, and we are informed that its experience in this respect has proved decidedly satisfactory. Evidence is not wanting to show also that the sick appreciate the superiority of medical services rendered by picked men, such as the system of making appointments on the basis of competitive examinations enables the dispensary to constitute its staff with. An important position on the staff is now open to competition, under terms that will be found stated in our advertising columns. It is evident from those terms that the trustees will find no difficulty in making a proper appointment to fill the vacancy.

THE SLOANE MATERNITY HOSPITAL.

The newspapers have given publicity—with more or less exaggeration, it is to be presumed—to an unpleasant occurrence that is said to have happened lately in the hospital. A member of the house staff is represented as having become angry with a patient, presumably a woman in labor, and as having dealt her a blow on the face, whereupon a medical student who was present became indignant, and subsequently sought out the house officer, with the result of a fisticuff engagement between the two men. The hospital stands on the grounds of the College of Physicians and Surgeons, and is under the government of the college faculty, and it is announced that a committee of the faculty is investigating the affair. Meantime the student is enjoying the commendation of his fellows. The disgraceful element of the occurrence lies not so much in the affray between the two young men as in the fact, if it is a fact, that, even under any provocation, a person performing the functions of a medical attendant should have lost his self-control in the matter of his behavior toward a patient. We trust that the allegation will be shown to be false, for the bare report of such an affair is likely to go far toward creating a feeling of aversion to the institution on the part of the class from which its beneficiaries are mostly drawn, and thus seriously impair its usefulness for a time.

SCOLIOTIC SCIATICA.

In an article published in the "Archiv für klinische Chirurgie," xxxviii, 1, an abstract of which is given in the "Deutsche Medizinal-Zeitung" for March 7th, Herr Hugo Schüdel, of Duisburg, sustains Kocher's theory that the scoliosis is due to an extension of the neuralgic trouble to the pelvic muscles, the tonic contraction of which (involuntarily maintained by the patient as a means of alleviating the pain in the cutaneous nerves that run through those muscles) gradually brings about a curvature of the vertebral column. The lumbar nerves, he says, are always affected, but involvement of the ischiadic plexus alone is sufficient to produce a moderate curvature. In four cases he has observed good results from nerve-stretching in conjunction with faradization, followed by massage where there was reason to suspect that the sciatic nerve was incarcerated in the scar. The patient should be kept in bed for from ten to fourteen days, even if improvement occurs earlier. Perfect cure takes place only after a long time.

THE "JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION."

The "British Medical Journal" remarks that Surgeon-General Hamilton's resumption of his duties in the Marine-Hospital Service, and his consequent withdrawal from the editorship of the "Journal of the American Medical Association," are generally regretted, as his connection with the "Journal" had been expected to develop it considerably, with a corresponding influence on the growth of the association. It is remarkable that Dr. N. S. Davis is twice called Dr. N. S. *Smith* in our contemporary's article.

QUININE FEVER.

In the "Union médicale" for March 14th M. Millot-Carpentier gives an interesting summary of an article on Tomaselli's disease (quinine fever, described by Tomaselli in 1874), by Signor Moscato, published in the "Gazzetta degli ospedali." It is a form of quinine poisoning that occurs in certain malarious subjects, causing, according to Tomaselli's statistics, a mortality of thirty-five per cent. It comes on only when quinine is given, and subsides on its withdrawal. The urine becomes blackish and is passed with difficulty; the face assumes a cadaveric aspect; and there are chills, cold sweats, and an alarming arrest of respiration. This morbid condition is to be distinguished from the ictero-hæmaturic fever of hot climates by the result of treatment and by the fact that the latter comes on with all its characteristics before any quinine has been used.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending March 26, 1889:

DISEASES	Week ending Mar. 19.		Week ending Mar. 26.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	9	3	7	2
Scarlet fever	387	46	435	61
Cerebro-spinal meningitis	1	0	3	1
Measles	189	20	184	19
Diphtheria	200	46	158	39

Professor Bardeleben.—The "British Medical Journal" announces that Sir T. Spencer Wells, Sir James Paget, Sir Joseph Lister, Mr. William Savory, Dr. Edward Sieveking, Sir Andrew Clark, Sir William MacCormac, Mr. Jonathan Hutchinson, and Mr. Ferd. Junker sent this message to Berlin on the 1st of March: "Some English friends and colleagues of Professor Bardeleben desire to join their professional brethren in Germany in the congratulations upon his seventieth birthday, and in heartily wishing that the remainder of his honorable and useful life may be long, healthy, and happy."

The Death of M. Legouest, the well-known French surgeon, is announced in the "Gazette hebdomadaire de médecine et de chirurgie" as having taken place on the 5th inst., in consequence of a septic phlegmon of the parts below the base of the tongue. Dr. Legouest was the author of a treatise on military surgery and the editor of Sédillot's "Médecine opératoire."

The Annual Meeting of the National Association of Railway Surgeons will be held at St. Louis, on Thursday and Friday, May 2d and 3d. The prospect is said to be that this will be one of the largest gatherings of medical men ever assembled in this country. Dr. W. B. Outten, of St. Louis, is the chairman of the committee of arrangements. Any information desired can be had by addressing the secretary, Dr. C. B. Stemen, of Fort Wayne, Indiana.

The American Medical Association.—The following notice to exhibitors, issued by the chairman of the committee of arrangements, Dr. Horatio R. Storer, applies to the fortieth annual meeting, to be held in Newport on the 25th, 26th, 27th, and 28th of June:

Intending exhibitors should address Dr. Charles A. Brackett, Newport, R. I., chairman of the sub-committee upon exhibits, The following classes of applications will be entertained: 1. Medical books and stationary, charts and diagrams, busts, portraits, engravings, photographs, etc. 2. Hospital and ambulance plans and models. 3. Surgical instruments and supplies, general and special (gynæcic, obstetric. orthopædic, laryngeal, otic, ophthalmic, dental, etc.). 4. Microscopes, analysis outfits, and electro-galvanic apparatus. 5. Pharmaceutic products. 6. Rubber goods applicable to medicine and surgery. 7. Invalid furniture. 8. Invalid foods. 9. Sanitary appliances, such as ventilators, filters, water-closet basins, traps, and similar necessities, and disinfectants. As a large attendance is probable, while the space available for exhibits is comparatively limited, the advantage of early application will be perceived. Choice of space will be given in accordance with the date of application. Applicants should state the character of their proposed exhibits, that they may be assigned to their respective groups. The sub-committee reserve the right of rejection, in case of apparent reason.

The Society of the Alumni of Bellevue Hospital.—The second annual address before the society will be given at the Academy of Medicine, on Wednesday evening, April 3d, at 8.30 o'clock, by Dr. William Osler, professor of medicine in the Johns Hopkins University, of Baltimore, on the subject of "Phagocytes." Members of the profession are invited to be present. At 10 o'clock on the same evening the society will hold a reception in Professor Osler's honor at the Cambridge, on the corner of Fifth Avenue and Thirty-third Street.

The Death of Professor Donders, of the University of Utrecht, is reported as having taken place on Monday, the 25th inst., in the seventy-first year of his age.

Iron and Cascara in Constipation.—Our Paris correspondent sends us a formula of Luteaud's for the constipation of women who are chlorotic and dyspeptic. It shows, he says, that iron can be very well associated with cascara: ℞ Citrate of iron and ammonium, fluid extract of cascara sagrada, each, forty parts; saccharin, one part; distilled water, four thousand parts. The dose of this preparation is a teaspoonful before each meal.

Society Meetings for the Coming Week:

Monday, *April 1st:* New York Academy of Sciences (Section in Biology); Medico-chirurgical Society of German Physicians; Morrisania Medical Society (private); Brooklyn Anatomical and Surgical Society (private); Utica Medical Library Association; Boston Society for Medical Observation; St. Albans, Vt., Medical Association (annual); Providence, R. I., Medical Association; Chicago Medical Society.

Tuesday, *April 2d:* New York Obstetrical Society (private); New York Neurological Society; Elmira Academy of Medicine; Buffalo Medical and Surgical Association (annual); Ogdensburgh Medical Association; Essex (annual—Newark), Hudson (Jersey City), and Union (annual—Elizabeth), N. J., County Medical Societies; Androscoggin, Me., County Medical Association (Lewiston); Chittenden, Vt., County Medical Society; Baltimore Academy of Medicine.

Wednesday, *April 3d:* Society of the Alumni of Bellevue Hospital; Harlem Medical Association of the City of New York; Medical Microscopical Society of Brooklyn; Medical Society of the County of Richmond (Stapleton), N. Y.; Penobscot, Me., County Medical Society (Bangor); Philadelphia County Medical Society (regular); Bridgeport, Conn., Medical Association.

Thursday, *April 4th:* New York Academy of Medicine; Brooklyn Surgical Society; Society of Physicians of the Village of Canandaigua; Boston Medico-psychological Association; Washington, Vt., County Medical Society; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington).

Friday, *April 5th:* Practitioners' Society of New York (private); Baltimore Clinical Society.

Saturday, *April 6th:* Clinical Society of the New York Post-graduate Medical School and Hospital; Manhattan Medical and Surgical Society (private); Miller's River, Mass., Medical Society.

Proceedings of Societies.

NEW YORK SURGICAL SOCIETY.

Meeting of February 13, 1889.

The President, Dr. Lewis A. Stimson, in the Chair.

Extensive Carcinoma of the Rectum.—Dr. Charles McBurney presented a patient upon whom he had operated four months previously for carcinoma of the rectum, extending from the anus higher than the finger could reach. She had been at that time extremely emaciated and cachectic, but had now quite recovered her health and flesh. Through the posterior vaginal wall the densely infiltrated and ulcerated rectum had felt like a large tumor. If he had known its extent he would not have attempted exsection of the lower bowel, but would have performed inguinal colotomy. However, he had begun by dissecting out the end of the gut, beginning with a circular incision around the anus, and passing upward with the knife on all sides until he had grasped a large tumor in his hand, the mass representing the four lower inches of the rectum. This he had withdrawn through the rectum, not without some difficulty. He had then drawn down the healthy bowel from above and had stitched its end to the skin at the perineal incision, an opening for drainage being left posteriorly. The wound had healed well, and the patient had now a small anus and good control of movements; they were not liquid. No spot of induration could now be felt at any point, or other sign of a recurrence.

Dr. Lange presented two patients upon whom he had operated for the removal of diseased portions of the intestine, with an account of the method used.

Dr. Bemmos had seen both operations performed, and wished to testify as to the extent of the difficulties encountered; also to emphasize the importance of Dr. Lange's method of treating the intestine at the inguinal outlet. A somewhat similar result he had seen obtained several times by the following plan: A loop of intestine two or more inches in length was pulled through the incision and caught by a temporary ligature passed through the mesocolon. If the incision through the skin and muscles was made longer than that through the peritonæum, the latter could then be manipulated much more easily. The adjacent sides of the loop were next united by Lembert sutures on either side of the line of contact, and the gut was returned into the abdomen till only the end of the loop projected. The parietal peritonæum was then securely sewed all around to the visceral peritonæum at the point where the loop passed through the opening in it. More space was allowed for the upper intestine through which evacuations were destined to be made than for the lower intestine. The gut was then cut through to within a quarter of an inch of the point where the peritoneal surfaces were united. The mucous membrane at both upper and lower outlet was stitched to the skin. The secretions thrown out in the lower intestine could be washed out daily. With such a spur as that thus formed, fæces never passed into the lower part of the gut, but all would be voided at the artificial outlet.

Operation for Dorsal Dislocation of the First Phalanx of the Index Finger.—The President showed a boy, eleven years old, who had suffered this dislocation in a fall upon the outstretched hand. All attempts at reduction by manipulation and traction having failed, he had opened the joint by a longitudinal incision on its palmar aspect and found, as had been expected, that the obstacle to reduction had been created by the position of the anterior or glenoid ligament. This had been torn transversely close to its insertion upon the metacarpal bone and the head of the latter had passed through the rent, and the torn edge of the ligament had been found tightly stretched across the dorsal surface of the metacarpal bone close behind the head. It had been so tense that it could not be lifted back with a tenaculum until after it had been nicked longitudinally at its center. The wound had healed under a single dressing, and now, eighteen days since the accident, the motions of the joint were almost completely restored. He added that, in his experience, these dislocations of the index finger were even more difficult to reduce than the corresponding dislocations of the thumb, which were notoriously difficult.

Dr. R. F. Weir and others had had similar cases, and remarked on the necessity which occasionally arose for a cutting operation, on account of the interposition of the edge of the glenoid or capsular ligament.

Operations for the Relief of Pain and Deformity remaining after Pott's Fracture.—Dr. Abbe presented a plaster cast of the leg and foot of a man who, for five years following an untreated Pott's fracture which had united with much deformity, had been unable to walk any distance without suffering great and persistent pain in the joint. The fracture had passed through the base of the malleolus of the tibia, and through the fibula, three inches above its articulation with the tibia. The cast showed the deformity at both points, and also considerable eversion and outward rotation of the foot. Another cast showed the same limb after the parts had been restored to their normal relations. Two horizontal sections had been made through the thick part of the internal malleolus of the tibia, and a block of bone, half an inch in thickness, had been removed. The fibula had then been refractured, and the lower fragment pried up with difficulty from the adhesions which had bound it to the tibia. By using considerable force he had then succeeded in wrenching the joint into its normal position again, the main obstacles to this having now been removed.

Dr. McBurney remarked that he had twice operated for the relief of pain felt in walking after recovery from a Pott's fracture. In one of these cases there had been a deformity, and in the other none had been discoverable. It had seemed to him in this case that a slight separation between the tibia and fibula had allowed the tibia to get into a false relation to the articular surface on the astragalus. With regard to the immediate treatment of a Pott's fracture, he considered it important to put the foot into a position of marked inversion, so as to correct the tendency to the opposite condition which was always to be dealt with in this form of fracture.

The President thought the disability after a faulty repair of a Pott's fracture was largely due to the fact that in walking the weight transmitted through the tibia fell to the inner side of the point where the heel rested on the ground, the foot being displaced outward, and thus an exceptional strain was thrown upon the internal lateral ligament. He fully agreed with what Dr. McBurney had said about the importance of dressing these fractures with the foot markedly adducted and inverted.

Dr. Abbe believed that there was a tendency to dislocation backward, and that therefore, when reduction was made, the heel should be drawn forward and kept there. Otherwise, when the fracture united, pain would result from the impact of the anterior lip of the tibia upon the astragalus.

The Proper Drainage after Suprapubic Lithotomy.—Dr. J. A. Wyeth showed a large stone with a rough trefoil-marking on either side which he had removed by a suprapubic incision from a patient forty-eight years of age. He had made drainage through the wound. Recovery had been complicated by a persistent sinus at the point of incision, which had closed, but had opened again, and he had finally been obliged to operate to cause it to heal up.

This had happened in two out of seven operations of this kind which he had done, and it seemed as if there must be some inherent reason why drainage through the wound after this operation was apt to be followed by a sinus. Whether urine leaked out along the tube, or whether imperfect drainage caused a cystitis, the inflammation of which spread to the outlet, he had not decided. The bladder was not a cavity, full or empty, owing to the tone and muscular action in its wall.

A discussion followed, in the course of which Dr. Lange remarked that he had had cases in which fistula persisted; it occurred especially in old men. He was accustomed to sew up the opening in part, so that it would barely allow the drainage-tube to pass. After a few days he withdrew the tube and sutured the opening in the bladder, unless it was necessary to wash out the latter longer. He had usually got good results. He had noticed in those who had a fistula that the urine did not escape from it unless under great pressure. Drainage by a permanent urethral catheter might in some cases be made, and the pain controlled by opium. The tube acted as a siphon, even when the patient lay on his back. It must be remembered that a fistula sometimes persisted after an opening of the bladder through the perinæum.

Dr. R. F. Weir and Dr. Willy Meyer attached all importance to the withdrawal of the tube on from the third to the fifth day. When it was left in for two weeks the danger of a fistula was much increased. The first-named gentleman had put a second tube into the bladder, and by suction ascertained that no urine had failed to be withdrawn by the drainage made from above. As to a permanent catheter, there were as many who were unable to endure it as there were who were able.

Dr. McBurney had experienced the same difficulty in getting the incision to heal after a suprapubic lithotomy and suprapubic

drainage. He thought it occurred more frequently than after drainage by a perineal incision, and that any surgeon would proceed to treat a persisting suprapubic fistula by opening the bladder from below. A permanent catheter passed through the urethra certainly often gave bad results. Drainage by an incision through the membranous urethra was without risk or inconvenience, and seemed to him to possess every advantage.

The PRESIDENT believed that it made an important difference whether the drainage-tube passed through an opening above the pubes or not, because, in his opinion, some urine always remained unexpressed when drainage was made from above. If it was attempted to make drainage by a catheter passed through the urethra into the bladder, some urine would always settle at the base of the bladder below the level of the urethral orifice. An opening through the perinæum, or the operation of external urethrotomy, had, in his experience, every advantage over the other methods. He had seen the temperature fall at once to normal when such an opening had been made. He therefore never omitted to make it.

A Large Bursa over an Exostosis.—Dr. MCBURNEY presented a specimen of exostosis removed from the outer aspect of the right femur of a young woman over which a large bursa, holding three ounces of bloody serum, had been formed.

Dr. WEIR had removed such a bursa, and the minute exostosis which had caused it, from a woman who had traveled all over Europe for the relief of what had been supposed to be a hysterical joint affection.

Dislocations of the Astragalus —The PRESIDENT showed two plaster casts of the deformity produced by the dislocation of the astragalus forward and outward, and also the fractured astragalus removed from one of the patients. The first patient, a stout woman, forty-one years old, had been admitted to the Chambers Street Hospital in December, having just fallen from a step-ladder to the floor, about eight feet, striking upon her left foot. The sole had been slightly inverted and the toes adducted, and an abrasion had been found over the external malleolus. Close below and in front of the external malleolus there could be felt a small, sharp edge of bone which could be moved slightly, with crepitus; an inch in front of this there had been a rounded mass of bone just under the skin, apparently the head of the astragalus. In front of this the parts had been deeply depressible, and the fingers had come upon the resistance of the tarsus and metatarsus. On the inner side the change of direction made by the inversion of the foot had begun an inch or more above the tip of the malleolus, the latter being masked by the swelling, but palpable on deep pressure and apparently uninjured. The bony prominences along the inner and outer borders of the foot had been recognizable in their normal relations. The prominence of the heel had appeared a little increased. Ether had been given and, reduction failing, longitudinal incision had been made in front corresponding to the interspace between the tibia and fibula, and prolonged upon the dorsum of the foot so as to expose the head of the astragalus. The astragalus had lain upon its inner side, almost wholly displaced from the tibio-fibular mortise, its head directed forward and slightly outward, its inferior surface looking outward and slightly backward. Its attachments had been completely severed except at the postero-external angle; at the postero-internal angle a small piece had been broken off and had remained attached to the capsule. The astragalus and its fragment had been removed, and the wound had been closed. The patient had made a good recovery, but was not as yet able to bear her weight upon the foot.

The second patient, a spare man, forty-four years old, had been admitted to the Chambers Street Hospital in January, having just fallen from a ladder, ten feet, striking on his left foot. As shown by the cast, the foot was inverted 30°, adducted 45°, and in plantar flexion 20°. About two inches forward and inward from the external malleolus there had been a hard, rounded prominence, evidently the head of the astragalus. Midway between this and the external malleolus a sharp edge of bone could be felt, slightly movable with the head of the astragalus. This had been thought to be either the upper or the lower outer border of the body of the astragalus. The result showed that it must have been the upper one. The internal malleolus had been completely masked by the swelling, but could be made out on deep pressure. Ether had been given, and reduction easily made by traction upon the foot in the axis of the leg, and pressure with the thumb upon the head of the astragalus; the bone had slipped into place with a distinct snap. The foot and leg had been dressed with gypsum bandages, renewed on the eleventh day and removed on the twenty-third. There was free, painless motion at the ankle, and the patient could walk easily.

Linen Thread for Sutures and Ligatures.—Dr. WILLY MEYER reported having found a substitute for other kinds of ligatures and sutures in linen thread such as was sold at the regular dry-goods shops. His experience with its use was only a short one, but confirmed the results obtained with the same article by Trendelenburg. It was serviceable, safe, cheap, and easily prepared. The only preparation necessary was to wind it on a glass rod and soak it for twelve hours in a solution of corrosive sublimate (one per cent.) and then preserve it, wound on a glass spool, in a one-to-one-thousand solution of the same. It was not necessary to boil it first in a five-per-cent. solution of carbolic acid and then preserve it in alcohol, as had once been done with silk. By soaking the thread in a ten-per-cent. solution of iodoform in ether, shortly before using it, iodoform linen thread could easily be prepared. The thread made by Marshall & Co. was sold in various sizes. No. 40 answered well for sutures and ordinary ligatures, and No. 25 for tying arteries of a larger caliber. A smaller size (about No. 50 or 60) should be used for plastic operations. Linen healed well in the wound, but should be used only where primary union was to be expected. In comparison with catgut, its only disadvantage was that it was not so slippery and therefore had to be pulled more. When moist it was stronger than when dry. Of course, catgut was the ideal article for the purposes under discussion, but its aseptic condition, even after a thorough primary disinfection, was often untrustworthy, especially in the case of a thick thread which had been preserved for some time. Linen thread was especially adapted for use in large institutions and dispensaries on account of its easy preparation and its extremely low price.

Dr. WEIR remarked that he had been using silk in all his operations of late, and had never got better results, except from the old-style carbolic catgut, which was now called unscientific.

Gangrene of the Vermiform Appendix.—Dr. MEYER presented a specimen of gangrenous vermiform appendix which was perforated by eight or ten sharply cut holes. It had been removed from a perityphlitic abscess in a woman twenty-five years of age at the German Hospital. This abscess had perforated through the fasciæ directly above Poupart's ligament, and a large superficial swelling had been formed just below the ligament. The pus having been evacuated by a free incision, a small protruding mass had been seen in the depth which had proved to be the lower end of the vermiform appendix. A gentle pull had removed it in its entire length and more pus had escaped, but no foreign body or fæcal concretion had been found. The patient had been discharged cured.

There was some discussion as to the cause of the grangrene

in such cases as the foregoing. Dr. Ann remarked that he had preserved one specimen the appearance of which had led him to infer that the appendix had been strangulated by the intensity of the inflammation which had arisen at its base, so that gangrene had resulted simply from loss of circulation.

Simultaneous Extirpation of the Spleen and a Kidney.

Dr. Weir presented a lacerated spleen and a kidney with its emulgent veins torn across which he had removed by laparotomy from a girl aged eleven, who, twenty hours previously, had fallen a distance of twenty feet and sustained abdominal injuries, most marked in the left side, and demanding surgical interference, as the patient's condition had been fairly good. The peritoneal cavity had been found filled with blood, over a pint being eventually removed. The kidney, dislocated downward to the level of the iliac crest and surrounded by a large amount of blood which had escaped into the retroperitoneal tissue, projected so much toward the middle line as to require an immediate investigation, which was made by cutting through its peritoneal covering. It had then appeared that it was held only by its artery, its emulgent veins being torn across. The artery had accordingly been tied and the kidney removed, and lumbar drainage had subsequently been made. After the renal extirpation, bleeding still going on, a rapid examination had shown that the source of the bleeding was in the spleen, which was deeply lacerated on its median aspect above the hilum. This also had been easily brought into view, its vessels clamped, and the organ removed. The stump held in the clamp had then been readily tied; the abdominal cavity had then been sponged out and the wound closed. For a few hours it had seemed as if there was a decided hope of the patient's recovering, even from such a severe surgical procedure. However, death had ensued nine hours after the operation.

Book Notices.

Therapeutics: Its Principles and Practice. By H. C. Wood, M. D., LL. D., Professor of Materia Medica and Therapeutics, and Clinical Professor of Diseases of the Nervous System, in the University of Pennsylvania. A Work on Medical Agencies, Drugs, and Poisons, with Especial Reference to the Relations between Physiology and Clinical Medicine. The Seventh Edition of a Treatise on Therapeutics, rearranged, rewritten, and enlarged. Philadelphia: J. B. Lippincott Company, 1888. Pp. 16–17 to 908. [Price, $6.]

A work that has passed through seven editions in the comparatively short period of thirteen years has the seal of the approval of the profession so strongly impressed upon it that very little is left for the reviewer save to call attention to changes from preceding editions. These consist in the present instance in a change of classification and in devoting the first part of the book, instead of the second part as heretofore, to the general considerations of therapeutics. The second part treats of drugs, and these are divided into two classes, systemic remedies and extraneous remedies. A further division is into two great classes: Class I, general remedies, drugs which affect the tissues of the body generally or such organized systems as reach all portions of the body. Under this caption are three orders: Order I, nervines, drugs which affect the nervous system; Order II, cardiants, remedies which affect the circulatory system; Order III, nutriants, medicines which influence the nutritive functions of the body.

Class II, local remedies, drugs which affect one organ or apparatus more or less isolated from the remainder of the body. The author has added much new matter to the present volume, and all new drugs, such as hydrastine, strophanthus, urethane, kawa, acetanilide, acetphenetidin, etc., receive a fair share of attention.

Some idea of the amount of work expended by the author may be gathered from the statement that in the preparation of the present edition nearly 600 memoirs had to be carefully studied. The book is somewhat larger and thicker than its predecessors and the type is larger. As in preceding editions, the physiological action of remedies receives much fuller attention than therapeutics. The latter is strikingly meager in the case of morphine, codeine, cannabis indica, and several other drugs. This at the present day may be considered rather an advantage than otherwise, for, if the physician is well grounded in the physiological action of a remedy, he ought to be able to reason out its therapeutic applications. But it must be confessed, to our shame, that as yet many drugs are administered on the basis of empiricism rather than on that of experimental research.

BOOKS AND PAMPHLETS RECEIVED.

Dictionary of Volapük. Volapük-English. English-Volapük. By M. W. Wood, M. D., Captain and Assistant Surgeon, United States Army. New York: Charles E. Sprague. London: Trübner & Co., 1889. Pp. viii–398. [The International Language Series.]

Electricity in the Diseases of Women, with Special Reference to the Application of Strong Currents. By G. Betton Massey, M. D., Physician to the Nervous Department of Howard Hospital, etc. Philadelphia: F. A. Davis, 1889. Pp. viii–210. [Price, $1.50.]

Transactions of the American Surgical Association. Volume the Sixth. Edited by J. Ewing Mears, M. D., Recorder of the Association. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. xxvii–572.

The Training of Nurses. Address before the Convention of the State Board of Charities and Corrections at Grand Rapids, Michigan. By Hal. C. Wyman, M. S., M. D., etc. [Reprinted from the "Medical Register."]

Some Clinical Experiences with Insomnia. By Edward N. Brush, M. D., etc. [Reprinted from the "Practitioner."]

Report on Medical Education, Medical Colleges, and the Regulation of the Practice of Medicine in the United States and Canada, 1765–1889. By John H. Rauch, M. D., Secretary Illinois State Board of Health.

Twentieth Annual Report and By-laws of the New York Physicians' Mutual Aid Association.

Report of Some Recent Cases of Abdominal Section for the Removal of Tumors, of Unusual Interest regarding the Character of the Tumors and the Method of Operating. By B. F. Baer, M. D., etc. [Reprinted from the "Transactions of the Obstetrical Society of Philadelphia."]

Pathology and Treatment of Alopecia Areata. By A. R. Robinson, M. B., L. R. C. P. and S. (Edin.), etc. [Reprinted from the "Transactions of the Ninth International Medical Congress."]

Descent and Disease. By R. G. Eccles, M. D. (Read before the Medical Society of the County of Kings, November 20, 1888.) [Reprinted from the "Brooklyn Medical Journal."]

Pressure Forceps *versus* the Ligature and the Suture in Vaginal Hysterectomy. By E. C. Dudley, M. D., Chicago. [Reprinted from Vol. XIII, "Gynæcological Transactions."]

Prevention of Yellow Fever in Florida and the South. (Read before the Baltimore Academy of Medicine, December 4, 1888.) By W. C. Van Bibber, A. M., M. D., etc.

Atti della terza riunione d'igienisti italiani tenuta nell' Ottobre 1888 in Bologna.

A New Procedure in Cases of Anticipated Complete Rupture of the Perinæum. By Edward B. Weston, A. M., M. D., etc., Chicago.

The Means of effecting the Unity of the Medical Profession. Being the Anniversary Discourse delivered before the New York Academy of Medicine, Thursday Evening, November 15, 1888. By D. B. St. John Roosa, M. D., LL. D.

A Contribution to the Treatment of Fractures at the Lower End of the Humerus, based on the Analysis of Fifty Consecutive Cases. By Charles A. Powers, M. D., etc. [Reprinted from the "Medical Record."]

Electrolysis in Gynæcology. By Augustin H. Goelet, M. D., New York. [Reprinted from the "North Carolina Medical Journal."]

Subacute Progressive Polymyositis. By George W. Jacoby, M. D., New York. [Reprinted from the "Journal of Nervous and Mental Disease."]

Note on Rumbold's Method of Treatment of Catarrhal Inflammations of the Upper Air-Passages. By Ely McClellan, M. D., Surgeon, United States Army. [Reprinted from the "Journal of the American Medical Association."]

Transactions of the American Dermatological Association at its Twelfth Annual Meeting, held at Washington, D. C., September 18, 19, and 20, 1888, in connection with the First Meeting of the Congress of American Physicians and Surgeons. Official Report of the Proceedings by the Secretary, G. H. Tilden, M. D.

The Physician as a Naturalist. Addresses and Memoirs bearing on the History and Progress of Medicine chiefly during the Last Hundred Years. By W. T. Gairdner, M. D., LL. D., Professor of Medicine in the University of Glasgow, etc. Glasgow: James Maclehose and Sons, 1889. Pp. x–436.

Congestive Neurasthenia, or Insomnia and Nerve Depression. By E. G. Whittle, M. D. Lond., F. R. C. S. Eng., Senior Surgeon to the Royal Alexandra Hospital for Sick Children, Brighton. London: H. K. Lewis, 1889. Pp. 95.

Hand-book for the Hospital Corps of the United States Army and State Military Forces. By Charles Smart, Major and Surgeon, United States Army. Approved by the Surgeon-General of the Army. New York: William Wood & Co. Pp. viii–577.

Transactions of the American Ophthalmological Society. Twenty-fourth Annual Meeting. New London, Conn., 1888.

Twelve Months of Abdominal and Vaginal Section. By Henry T. Byford, M. D. Presidential Address delivered at the Annual Meeting of the Gynæcological Society of Chicago, October 19, 1888. [Reprinted from the "Chicago Medical Journal and Examiner."]

The Early Recognition of Cancer of the Cervix Uteri. By Henry C. Coe, M. D., M. R. C. S., etc. [Reprinted from the "Medical News."]

A Case of Perforation of the Vermiform Appendix, General Peritonitis, Laparotomy, Accident, and Recovery. With Remarks. By Arthur M. Jacobus, M. D., etc. [Reprinted from the "Medical Record."]

A Rare Case of Adeno-myxo-sarcoma of the Cervix Uteri. By Paul F. Mundé, M. D., etc. [Reprinted from the "American Journal of Obstetrics and Diseases of Women and Children."]

Atlas of Venereal and Skin Diseases. Comprising Illustrations and Selections from the Plates of Professor M. Kaposi, of Vienna; Dr. J. Hutchinson, of London; Professor I. Neumann, of Vienna; Professors A. Fournier and A. Hardy, and Drs. Ricord, Cullerier, Besnier, and Vidal, of Paris; Professor Leloir, of Lille; Dr. P. A. Morrow, of New York; Dr. E. L. Keyes, of New York; Dr. Fessenden N. Otis, of New York; Dr. J. Nevins Hyde, of Chicago; Dr. Henry G. Piffard, of New York; and others. With Original Text by Prince A. Morrow, A. M., M. D., etc. Fasciculi XI and XII. New York: William Wood & Co., 1888.

The Principles and Practice of Dentistry. Including Anatomy, Physiology, Therapeutics, Dental Surgery, and Mechanism. By Chapin A. Harris, M. D., D. D. S., late President of the Baltimore Dental College, etc. Twelfth Edition. Revised and edited by Ferdinand J. S. Gorgas, A. M., M. D., D. D. S., etc. With One Full-page Plate and One Thousand and Twenty-eight Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1889. Pp. 38–39 to 1222. [Price, $7.]

A Manual of Instruction in the Principles of Prompt Aid to the Injured, designed for Military and Civil Use. By Alvah H. Doty, M. D., Major and Surgeon, Ninth Regiment, N. G. S. N. Y.; Attending Surgeon to Bellevue Hospital Dispensary, New York. New York: D. Appleton & Co., 1889. Pp. xiii–224. [Price, $1.25.]

The Psychic Life of Micro-organisms. A Study in Experimental Psychology. By Alfred Binet. Translated from the French by Thomas McCormack. With a Preface by the Author written especially for the American edition. Chicago: The Open Court Publishing Company, 1889. Pp. xii–120. [Price, 75 cents.]

Experimental Surgery. By Nicholas Senn, M. D., Ph. D., Attending Surgeon, Milwaukee Hospital, Professor of the Principles of Surgery and Surgical Pathology in Rush Medical College, Chicago. Chicago: W. T. Keener, 1889. Pp. xii–522. [Price, $5.]

Indigestion, Biliousness, and Gout in its Protean Aspects. Part I. Indigestion and Biliousness. By J. Milner Fothergill, M. D., Member of the Royal College of Physicians of London, etc. Chicago: W. T. Keener, 1889. Pp. viii–320. [Price, $2.25.]

Extracts from the Autobiography of a Paranoiac. Edited, with a Commentary, by Frederick Peterson, M. D., New York. [Reprinted from the "American Journal of Psychology."]

Laparotomy for Ascites. By Thomas A. Ashby, M. D., of Baltimore. (Presented to the American Gynæcological Society, September, 1888.) [Reprinted from the "American Journal of Obstetrics and Diseases of Women and Children."]

Notes on a Case of Nasal Caries, complicated with Meningitis, successfully treated by Means of the Surgical Drill. By William Chapman Jarvis, M. D., etc. [Reprinted from the "Medical Register."]

The Sixteenth Regular Report of the Medical and Surgical Staff of St. Francis Hospital, Jersey City, N. J., under Charge of the Sisters of the Poor of St. Francis. For the year 1888.

Proceedings of the Academy of Natural Sciences of Philadelphia. Part III. October–December, 1888.

Twenty-first Annual Report of the New York Orthopædic Dispensary and Hospital (for Children with Spine and Hip Diseases and other Deformities). For the Year ending September 30, 1888.

Creasote as a Remedy in Phthisis Pulmonalis. By Beverley Robinson, M. D., etc. [Reprinted from the "Transactions of the Association of American Physicians."]

The 118th Annual Report of the State of the New York Hospital and Bloomingdale Asylum. For the Year 1888.

Observations on the Digestive Ferments. Read before the Section in Pædiatrics of the New York Academy of Medicine, January 23, 1889. By R. H. Chittenden, Ph. D., etc. [Reprinted from the "Medical News."]

The Comparative Merits of Tracheotomy and Intubation in the Treatment of Croup. By George W. Gay, M. D., of Boston. Read before the American Surgical Association, September 20, 1888. [Reprinted from the "Boston Medical and Surgical Journal."]

Sixth Annual Report of the New York Skin and Cancer Hospital.

On some Mild Measures in the Treatment of Intranasal Hypertrophies and Inflammations. By W. H. Daly, M. D., Pittsburgh, Pa. [Reprinted from the "Medical and Surgical Reporter."]

1888. Eleventh Annual Report of the Presbyterian Eye, Ear, and Throat Charity Hospital, Baltimore.

Reports on the Progress of Medicine.

OBSTETRICS.

By ANDREW F. CURRIER, M. D.

Recent Investigations concerning Ergot (Kobert, "El Prog. Gin. y Ped.," March 25, 1888).—The author's recent investigations showed that ergot was composed of three active organic elements, from a physiological standpoint—namely, ergotinic acid, sphacelinic acid, and cornutine, each of them possessing a particular action. The ergotinic acid contains nitrogen, is readily decomposed, participates in the nature of a glucoside, and agglutinates *en masse*. If boiled with dilute acids, it is decomposed into a dextro-gyrate sugar and a weak base with slightly alkaline reaction. After purification, a white, irreducible hydrocarbon is separated, which is without physiological action and has a resemblance to dextrine. Ergotinic acid belongs to the group of narcotic poisons, and has no action upon the uterus.

Sphacelinic acid does not contain nitrogen, resembles the resins, and is not crystallizable. It is insoluble in water and dilute acids, but is soluble in alcohol. Its alkaline salts are soluble in water, and not in a

mixture of alcohol and ether. It operates powerfully upon the womb, and may even produce uterine tetanus.

Cornutine is of a basic nature, and the hydrochloride and nitrate dissolve readily. When it is heated in an alkaline solution, it is decomposed and quickly loses its activity. The hydrochlorate may be heated for a long time, under certain conditions, without decomposition. This alkaloid acts upon the uterus with the greater activity the more advanced the period of pregnancy.

Meunier has recently made observations which coincide with those of the author of this paper. He found that the commercial ergotines were variable preparations as to their activity, the ergotinic acid element predominating in all of them.

Wenzell's echoline seems to be only a very impure cornutine. Tanret's ergotine is an alkaloid without toxic properties and with slight action upon the uterus. Only when the extract of ergot is prepared as has been designated by the author can its action be relied upon. The inference is that the most positive effects are to be obtained from the fresh crude drug.

Shoulder-presentations and their Treatment; Embryotomy and Tarnier's Rhachidian Embryotome (Le Page, "Le concours médical," Aug. 4, 1888).—Shoulder-presentations are often fatal for the fœtus, sometimes dangerous for the mother, and always troublesome to the accoucheur. Notwithstanding increased skill in the diagnosis of fœtal presentations during gestation, and in the conversion of harmful into normal positions during the same period, the time may never come when suitable examinations before parturition will be generally considered an all-important matter by the laity. Hence the probability that malpresentations will occur indefinitely. If one is called to a case of labor, not too far advanced, in which the shoulder presents, the uterine contractions not being too strong nor too frequent, and the membranes being still intact, external version should be practiced, and either the head or the breech be brought to the superior strait. If this plan can not be carried out, combined external and internal version may be attempted. If, however, the membranes have been ruptured and the cord has prolapsed and ergot has not been given, podalic version may be practiced and the mother be saved, though the child is usually lost. The operation is contra-indicated when the uterus is rigidly contracted or when the shoulder is too firmly engaged. There would be danger of rupture of the uterus, without advantage to the fœtus, which is usually dead at such a time, the latter fact being obtainable, if it exists, by auscultation or by feeling for pulsation in the cord. To hope for spontaneous version and evolution is not giving sufficient protection to the mother, and among the destructive operations which suggest themselves, that of rhachidian embryotomy is believed to be most simple and most safe, and the rhachidian embryotome of Tarnier is regarded as the most effective instrument for performing it, as it acts without undue traction, without the necessity of changing the situation of the fœtus, and is applicable in all cases. It consists of three parts: a crotchet, a knife, and a protector. The crotchet is a rounded rod of steel which is sharply curved at its upper end, the curved portion terminating in a button about as large as a pea. The rod is pierced by a cylindrical canal, the greater diameter of which is near the handle. An attachment above the handle enables one to free the knife at will. The knife is triangular and cuts in an oblique direction, gliding tangentially upon the fœtus. When the instrument is closed, the cutting edge of the knife is lodged exactly in the curved portion of the crotchet. The protector is a quadrangular sheath, the form and dimensions of which are almost exactly those of the knife, and it becomes separated from the latter only to the extent to which the latter enters the fœtal tissues. The instrument should be made aseptic before being used, the different portions being subjected to the fire and to strong antiseptic solutions. The steps in the operation will vary according as one practices cervical or thoraco-abdominal embryotomy.

Cervical embryotomy includes the introduction of the hand, introduction and fixation of the crotchet, introduction and fixation of the knife, section of the neck, removal of the instrument, and extraction of the fœtus. The left hand of the operator is introduced between the fœtus and the pubis if the left hand of the fœtus is inferior in position, and the right hand if the right fœtal hand is inferior. The palm of the introduced hand should look toward the back of the mother, and the fingers of the operator should rest against the furrow in the child's neck. The crotchet is passed over the child's neck by the side of the operator's fingers, and the knife and protector adjusted, the vulva and vagina being sufficiently opened to admit of free play of the instrument. The arrangement is such that no harm can come to any tissues not involved in the grip of the crotchet, and, as the knife works through the fœtal tissues, there is no fear of injuring anything else. The neck having been divided, the crotchet and knife are removed together. Traction upon the projecting arm of the fœtus will usually suffice to remove the trunk, and the head may be extracted by means of a finger in the mouth, or possibly the forceps or basiotripsy will be required. In exceptional cases it is necessary to pass the crotchet from the back to the front of the fœtus, which entails difficulty in getting the instrument sufficiently vertical to obtain the required grip upon the neck. If the position of the fœtus is such that the neck is not readily accessible, traction upon the presenting arm may remedy the difficulty. If this does not suffice, the arm must be amputated. If the neck still remains out of reach, the remaining arm must be brought into position, and the neck will then be accessible. Should it be impossible to lower the arm, the trunk must be divided. This is not difficult, but two or three sections may be required. Thoraco-abdominal embryotomy with Tarnier's instrument is always possible, always easy, and never dangerous. The experiments of Potocki with this instrument show that it is applicable in the same conditions of contraction as the basiotribe, and that the limits imposed to the Cæsarean operation for longitudinal presentations should be equally imposed for trunk presentations. Clinical facts thus far have shown the efficiency of the rhachidian embryotome. In the course of three years it is known that it has been used in eighteen cases, five of which were fatal; of the latter, three experienced rupture of the uterus prior to the operation, and the other two were already septicæmic before embryotomy was performed. No maternal death has been reported which could be fairly attributed to the use of this instrument.

Delivery per Vaginam in a Case of Extra-uterine Pregnancy (Herman, "Anales de Obstetricia, Ginecopatia, y Pediatria," June, 1888).—The author's paper was read before the London Obstetrical Society at the session of November 23, 1887. It was affirmed that no rules could be laid down which would apply to all cases and all periods of extra-uterine pregnancy. Each case requires a distinct treatment, and with every period the therapeutic means will vary. Thirty-three cases have been collected in which there is a record of delivery of the elements of an extra-uterine pregnancy *per vaginam*. A study of these cases has led to the following conclusions:

1. The opening of the extra-uterine gestation sac through the vagina at the beginning of pregnancy, rupture not having occurred, is a dangerous and unscientific procedure.

2. Immediately after the sac has ruptured, when it is necessary to interfere to restrain hæmorrhage, abdominal section should be performed in preference to vaginal.

3. When rupture has taken place and the discharge of blood has been followed by fever, the indications for vaginal incision are the same as in cases of hæmatocele from other causes.

4. When it is apparent that extra-uterine pregnancy will terminate without suppuration, there are various conditions which indicate that delivery by the vagina would be preferable to abdominal section. Such conditions are:

a. A head presentation, or presentation of the opposite extremity so that extraction can be accomplished without changing the position of the fœtus.

b. When it can be accurately determined by the feel of the tissues that the placenta is not implanted between the presenting portion of the fœtus and the vagina, nor on the anterior wall of the abdomen.

5. Abdominal section should be preferred if extraction by the vagina is impossible without practicing version.

6. No attempts should be made to extract the placenta.

7. The after-treatment should consist of frequent irrigation of the sac.

8. Should suppuration occur during an extra-uterine gestation, one of the most favorable terminations which could occur is spontaneous opening of the sac into the vagina.

The Identity of Different Forms of Puerperal Infection (Widal, "El Progreso Ginecologico y Pediatria," July 25, 1888).—Between the streptococcus of puerperal infection and that of erysipelas there exists no appreciable difference, and in the present state of science it is impossible for the experimenter to distinguish one from the other. The *Streptococcus pyogenes* may produce different forms of puerperal infection, and the polymorphism of the lesions which it occasions forms one of the most interesting points in its history. It may infect puerperal women, producing suppuration—the pyæmic form; it may cause infiltration of the tissues without occasioning the least histological reaction—the septicæmic form; it may lead to the formation of false membrane—the diphtheritic form; or cause fibrinous coagula in the veins—phlebitis. In some cases a microbe different from the streptococcus may infect a parturient woman. The results obtained by the author coincided with those obtained by Doyen. Peter observed that puerperal infection had other symptoms in addition to suppuration, and that the former might be present without the latter. Cornil had observed that in the septicæmic variety there was no collection of pus, and yet it was the gravest form of all. Peter thought the pyæmic form was incurable. The streptococcus, it was said, sometimes caused suppuration, at others erysipelas, and at others puerperal septicæmia, which would seem to indicate that the fault lay with the given organism and not with the streptococcus. Cornil, in reply to the one previously mentioned, said that the most pernicious form of the disease was the pyæmic, which appeared a few days after parturition, and was preceded by the formation of deposits of pus in the pelvic cavity, which were primarily local. With respect to the suppuration, the organism supplies the white globules which enter into the process, but the primary cause of the disturbance is the entrance into the tissues of the parasite.

Gueniot had found that the most benign and curable form of this disease was the septicæmic; the suppurative or peritoneal form was fatal. Verneuil thought that in obstetrics, as in surgery, there were septicæmic affections of all grades, some being curable and others fatal.

Scarlatina during the Pregnant and Puerperal Periods (Boxall, "Anales de Obst., Ginecop. y Pediat.," Aug., 1888).—Two classes of cases are considered of those pregnant and parturient women who show a predisposition to infection from scarlatina: (1) those in which infection is received before parturition, and during or after the same; (2) those in which infection occurs only at the beginning of labor. From an experience of sixteen cases it was deduced that scarlatina among the parturient occurs almost exclusively during the first week of the puerperium, and that in exceptional cases it may occur a little before the beginning of labor.

With reference to the predisposition of a pregnant and parturient woman to scarlatinal infection, and the reciprocal influence which exists between it and parturition, it was thought that a woman who was exposed to the disease might be infected during pregnancy, during parturition, or subsequently. Also that predisposition to the disease is greater a little after parturition and during the first week of the puerperium. If infection occurs during or after parturition the period of incubation will be short. If infection occurs during pregnancy, the period of incubation will be longer than normal.

The author found that there was an apparent analogy, with reference to the appearance of scarlatina, between parturition and the menstrual periods, and drew the following conclusions:

1. That the predisposition to infection is greater a little before, during, or immediately after the menstrual period.

2. That infection which occurs a little before the menstrual period hastens the appearance of the menstrual flow.

3. That when infection occurs during or shortly after a menstrual period, the latter will be shortened.

As to the clinical course of scarlatina during pregnancy and the puerperal period it was observed:

1. That during pregnancy the pharyngeal symptoms are not modified, but after parturition angina is infrequent.

2. If scarlatina occurs after parturition, angina may not be apparent at first, and even in the later stages it may not cause great trouble; in other cases the signs of inflammation may not be alarming, or may even be absent until the second or third week of the attack. The cervical glands also may be swollen with or without any other trouble in the throat.

Concerning the influence of the scarlatinal poison upon the progress of parturition it was observed:

1. When parturition occurs during the period of incubation of scarlatina it will follow its ordinary course, but the pains will have a greater influence than usual upon the mental condition of the patient; inertia will probably be present in the last stage of labor and will give rise to characteristic phenomena.

2. If parturition occurs during an attack of scarlatina, the pains will be feeble, inertia will be present, and there will be tendency to hæmorrhage.

The following conclusions were reached as to the effect of the scarlatinal poison upon the puerperium:

1. Involution of the uterus is retarded little if at all.

2. The very slight and transitory sensibility at the fundus of the uterus which is perceptible at the beginning of an attack is almost always due to increased sensitiveness of the pelvic organs, and rarely indicates pelvic inflammation.

3. If antiseptic precautions are adhered to, fissures which may have been sustained during labor will heal satisfactorily.

4. In some cases there may be an odor which is very disagreeable.

5. The lochia will be natural in character and will cease at the proper time, but in some cases this discharge will be very abundant and scarlet in color at the beginning of the attack.

6. The mammary secretion will be diminished in almost all cases, and in some cases will be suspended, on account of the scarlatina.

7. Nursing children show a particular predisposition to contract scarlatina when their mothers have it, and this is probably due to simple contact with their mothers.

8. Should scarlatina appear spontaneously in a given case during pregnancy, the *fœtus in utero* may or may not be affected.

9. If the mother is infected shortly before parturition, the fœtus will in most cases escape at the time, though it may be infected after birth.

On the Relation between Puerperal Mania and Puerperal Infection (Hansen, "Ztschr. f. Geb. u. Gyn.," xv, 1).—The result of the author's investigation as to the ætiological significance of infection in relation to puerperal mania includes deductions from an analysis of forty-nine cases of the latter condition. Of that number there were forty-two in which there were somatic symptoms of puerperal infection, and in forty of them the psychosis progressed, and in some cases began, as an acute hallucinatory insanity; in the other two cases it could only be shown that there had been mania of short duration—so short, indeed, that it could hardly have been anything but hallucinatory. In five of the seven cases in which no puerperal infection could be demonstrated the psychic symptoms were similar in character; in four, epileptiform spasms had immediately preceded the psychic derangement, and in the fifth there was an acute infectious disease process—namely, well-marked phthisis, and possibly septicæmia also. In the two cases in which neither symptoms of acute infection had been demonstrated nor eclampsia nor epilepsy had preceded, the psychosis assumed a character quite different from that of hallucinatory insanity; in one it took the form of mania, in the other of melancholy. There is, therefore, ground for the assumption that the greater number of cases of mental disease occurring in women who have borne children a short time before the occurrence of this disease are attributable to puerperal infection, and a smaller portion to eclampsia occurring during labor. It is hardly extravagant to say that when a psychosis occurs in the first weeks of the puerperium in the form of an acute hallucinatory insanity, no other non-puerperal infectious disease being present, and no precedent eclampsia having occurred, one can be convinced that puerperal infection exists, even though fever and other somatic symptoms are not discoverable after careful investigation. Knowledge of this fact certainly has a practical significance, less in a therapeutic direction than in a prophylactic. It can be used by physician, midwife, or maternity hospital for the benefit of future cases of this disease. Puerperal mental disease is a good term if its use is limited to those psychoses which can be assumed to be in relationship with puerperal infection. Of course there are among puerpera as well as among other women mental diseases which come from other causes—for example, psychical affections,

epilepsy, alcoholism, scarlatina, etc.—but these form a minority of those who become insane during the first few weeks of the puerperium, and there is no reason for considering the relationship of these diseases to the puerperium as anything but accidental.

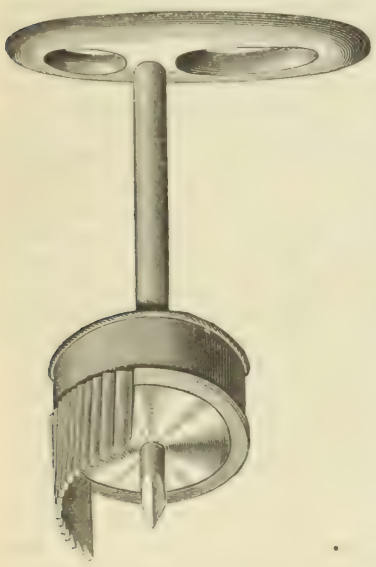
New Inventions, etc.

THE SEGMENT TREPHINE AND AN ASEPTIC TREPHINE *

By John B. Roberts, M. D.,
Professor of Anatomy and Surgery in the Philadelphia Polyclinic.

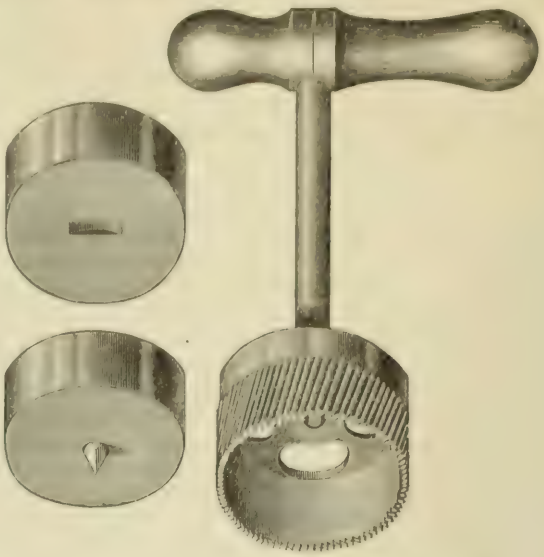
The frequency with which operations are now done upon the skull and brain has made apparent the need of improvement in our instruments for opening the skull. Seven years ago I published † an account of my experiments with the surgical engine as a means of making openings in the skull; and I still believe it an excellent and safe means of effecting entrance to the cranial contents. The chief disadvantages are the expense of the engine and its liability in ordinary hands to get out of order. This latter objection held good at least in one hospital with which I have been associated.

The ordinary trephine, either cylindrical or conical, will probably be used much more frequently, therefore, than the surgical engine; hence suggestions to improve its character are not inadmissible. The "segment trephine," described in the "Operative Surgery of the Human Brain,"‡ is, I think, a valuable instrument with which to deepen any portion of the groove surrounding the button of bone to be removed without cutting along its entire circumference. The skull is often very much thicker in some parts of the area of operation than in others, and the ordinary trephine has to be tilted to avoid injuring the cerebral membranes at the points where the skull is thinest. Tilting is not always easily done when the trephine is large and deeply imbedded in the bone. A "segment trephine" having the same radius of curvature as that with which the operation was begun enables me to cut deeper and with great care at any selected part of the groove. The accompanying illustration renders a detailed description of the instrument unnecessary. The cutting edge extends one third of the circumference, and the center-pin, not requiring retraction, may be immovably fixed to the head of the trephine. The instrument has no groove in the stem or handle to collect septic matter, and is readily cleaned.



A serious objection to the ordinary trephine is the fact that it is almost impossible to get assistants and nurses to keep the center-pin and the tubular stem in which it slides perfectly aseptic. Indeed, it is difficult, with every intention of perfect cleanliness, to keep the hollow stem of the instrument absolutely clean. I have endeavored to remedy this objection by making the stem solid, and substituting for the ordinary sliding center-pin a circular block of metal, accurately fitting into the crown of the trephine, with a point upon its lower extremity.

As soon as the surgeon has cut a groove deep enough for the teeth of the trephine to be maintained in position upon the skull, the central block is taken out of the crown of the trephine, and the operation continued as with the ordinary instrument, after retracting the center-pin. Upon the upper surface of the block is cut a shallow slot, into which



fits a slight projection from the upper part of the trephine crown. This compels the block to rotate with the rest of the trephine when the operator is making the first incision into the bone. The trephine itself is made as thin as possible, in order that the groove between the disc of bone removed and the rest of the skull may be very narrow. The button of bone, when replaced, can then be held in position more readily than if the groove is a wide one. I believe that after using a thin trephine, such as this, it at times will be well to stitch the button of bone into position by catgut sutures passed through the periosteum, which may be allowed to remain upon the surface of the disc of bone, and upon the skull adjacent to the trephine opening.

The crown of the trephine must not be too conical, because such a trephine, in cutting through the thick skull, makes the outer portion of the incision a very wide one. I am inclined to think that a surgeon of even moderate skill never needs a conical trephine to prevent his plunging the instrument into the brain; a cylindrical one should be just as safe in his hands as a conical one. An advantage in having the crown of the trephine slightly conical, when a large instrument is used, is the less liability of the instrument becoming jammed in the groove. This annoyance not infrequently occurs on account of irregularities in thickness of the skull, especially when a large surface is included in the trephine. It is more apt to take place, I think, when the groove is made by a cylindrical instrument, which does not make the external aspect of the incision wider than the internal.

The weight of the metal hand-piece can be minimized by fenestræ, or by making the handle hollow. It is best to attach the hand-piece to the stem eccentrically, as suggested by Horsley, since the hypothenar portion of the palm needs a longer lever than the thenar.

This aseptic trephine, it will be seen, is somewhat similar to the safety trephine of Hopkins,* who suggested the use of a cylindrical block instead of a center-pin, because of the possibility of the surgeon forgetting to withdraw the center-pin, and therefore wounding the dura mater. His device contained a spring to keep the block thrust forward, and was, therefore, very difficult to clean. In fact, it was not constructed with an idea to facilitate asepsis, but to prevent careless puncture of the dura.

* Read before the Philadelphia County Medical Society, February 27, 1889.

† "Philadelphia Medical Times," 1881–'82, xii, p. 206. ‡ Page 78.

INSTRUMENTS FOR MASSAGE.

Dr. William Murrell says that "massage is a scientific method of treating disease by means of systematic manipulation. The individual muscles or groups of muscles are picked out or isolated, and

* "Annals of Surgery," July, 1885.

stimulated to contraction mechanically." In order to do away with the many objectionable features of hand massage, the following-described instruments have been devised, and have, in the hands of trained *masseurs*, proved of sufficient value to warrant their presentation to the profession: Fig. 1 represents a percussor, or hard-wood mallet, which

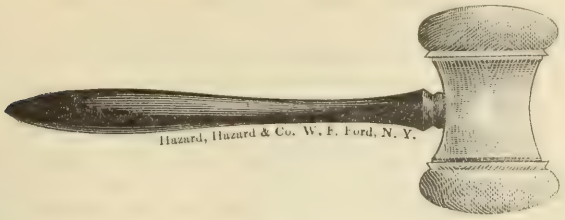


Fig. 1.

is used on superficial muscles, as of the neck, back, or extremities. These are made in three sizes, and are adapted for use on any superficial muscle or set of muscles. Fig. 2 is a set of rollers of wood, com-

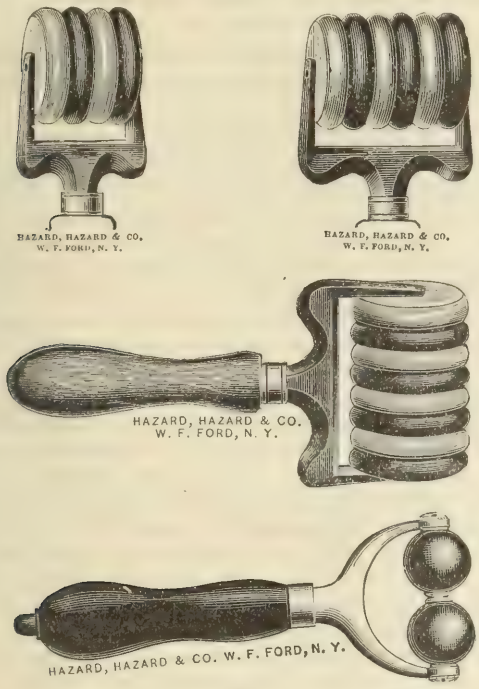


Fig. 2.

posed of from one to eight; those having one and two, respectively, are spheres covered with soft rubber; the others are discs. By means of

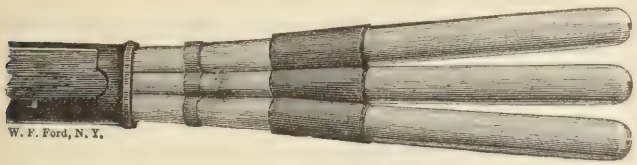


Fig. 3.

these, it is said, a softer and more equable pressure can be obtained than is possible with the finger-tips. They also fit the interstitia better.



Fig. 4.

Fig. 3 represents an elastic muscle beater—an instrument of soft rubber, of about eighteen inches in length, which is used in making percussion on the fleshy portions of the body for the purpose of stimulating the muscles or the circulation. Fig. 4 represents a broom-corn electrode, of about fourteen inches in length, which is used in connection with electricity.

In addition to the foregoing instruments, the set includes a hair flesh-brush for friction, and a tourniquet, which is applied to the extremities for the purpose of lessening the pain consequent upon massage of deep-seated sets of muscles. These instruments are manufactured by Mr. W. F. Ford, of Hazard, Hazard, & Co.

Miscellany.

Hospitals and the Tax on Alcohol.—The following correspondence concerns a matter of great importance to hospitals and dispensaries:

ROOSEVELT HOSPITAL, NEW YORK, *March 16, 1889.*

Messrs. F. O. Boyd & Company.

GENTLEMEN: In conformity to your request, I hand to you herein a copy of my letter to the Secretary of the Treasury, and his reply thereto, relative to the withdrawal of alcohol from bond without payment of the internal-revenue tax on the same.

Yours very respectfully,

JAMES R. LATHROP, *Superintendent.*

"ROOSEVELT HOSPITAL, NEW YORK, *February 23, 1889.*

"*Honorable Secretary of the Treasury, Washington, D. C.*

"DEAR SIR: At this hospital there are established clinics for the instruction of medical students. It is my understanding that alcohol used in our pathological laboratory for the preservation of specimens may, under the provisions of Section 3297 of the Revised Statutes of the United States, as explained in a circular from your department under date of Washington, D. C., January 2, 1886, be withdrawn in specified quantities from bond without payment of the internal-revenue tax on the same. If you will kindly inform me whether its use may be extended to cover the following purposes you will oblige me:

"1. In the manufacture in our chemical laboratory of tinctures, liniments, and other pharmaceutical preparations for use in the hospital wards and in the out-patient department.

"2. As a lotion for bathing affected parts of the patients under treatment in this hospital and out-patient department.

"3. As an antiseptic wash by the surgeons before and after operations in both departments.

"4. As an antiseptic solution for cleansing surgical instruments.

"5. As an antiseptic solution for preparing and preserving catgut ligatures to be used in surgical operations.

"6. For burning in spirit lamps, principally in the analysis of urine.

"I may add that this hospital in its in-door or ward service or in its out-door (or out-patient) department is an important factor in the instruction of the medical students connected with the College of Physicians and Surgeons (the medical department of Columbia College), located opposite the out-patient department of the hospital.

"Yours very respectfully,

[Signed.] "JAMES R. LATHROP, *Superintendent.*"

2750 A "TREASURY DEPARTMENT,

5 E K "OFFICE OF THE SECRETARY, WASHINGTON, D. C., *March 13, 1889.*

"*Mr. James R. Lathrop, Superintendent of Roosevelt Hospital, New York.*

"SIR: In your letter of the 23d ultimo you inquire whether alcohol when withdrawn from distillery bonded warehouse, under the provisions of Section 3297, R. S., may be used for the following purposes, viz.:

"1. In the manufacture in your chemical laboratory of tinctures, liniments, and other pharmaceutical preparations for use in the hospital wards, and in the out-patient department.

"2. As a lotion for bathing the affected parts of the patients under treatment in the hospital and out-patient department.

"3. As an antiseptic wash by the surgeons before and after operations in both departments.

"4. As an antiseptic solution for cleansing surgical instruments.

"5. As an antiseptic solution for preparing and preserving catgut ligatures to be used in surgical operations.

"6. For burning in spirit lamps, principally in the analysis of urine.

"In reply, you are informed that the ruling of the Department on each of these questions is in the affirmative, provided that the alcohol and the preparations mentioned shall be used in the manner described, and shall never be sold to any person inside or outside the hospital.

"Respectfully yours,

[Signed] "H. S. Thompson, *Acting Secretary.*"

Mortality in Cities in the United States.—The following table represents the mortality in the cities named, as reported to Dr. John B. Hamilton, Surgeon-General of the Marine Hospital Service, and published in the abstract of sanitary reports received by him during the week ending March 22d:

CITIES.	Week ending	Estimated population.	Total deaths from all causes.	DEATHS FROM										
				Cholera.	Yellow fever.	Small-pox.	Varioloid.	Varicella.	Typhoid fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y.....	March 16.	1,558,320	393	..	..	..	..	..	..	6	46	47	20	24
Philadelphia, Pa....	March 16.	1,040,245	405	..	..	..	..	..	..	8	8	6	1	1
Chicago, Ill.....	March 16.	830,000	274	..	..	..	..	..	..	4	5	31	6	5
Brooklyn, N. Y.....	March 16.	814,505	411	..	..	..	..	..	..	1	7	21	18	12
St. Louis, Mo	March 16.	440,000	165	..	..	..	..	..	..	2	1	8	12	2
San Francisco, Cal..	March 8.	330,000	124	..	..	..	..	..	..	3	..	3	..	.....
Cincinnati, Ohio....	March 16.	255,139	141	..	..	..	..	..	..	2	..	5	..	.....
New Orleans, La....	March 9.	254,000	90	..	..	1	..	..	..	..	..	1	..	1
Detroit, Mich.....	March 16.	250,000	69	..	..	..	..	..	..	..	..	1	1	1
Washington, D. C ..	March 16.	225,000	136	..	..	..	..	..	..	..	..	1	..	4
Pittsburgh, Pa.....	March 16.	.....	90	..	..	..	..	..	..	1	2	5	1	3
Louisville, Ky.....	March 16.	200,000	65	..	..	..	..	..	..	1	..	..	..	4
Newark, N. J.....	March 12.	180,245	91	..	..	..	..	..	..	3	..	9	..	.....
Kansas City, Mo....	March 16.	180,000	38	..	..	..	..	..	..	1	..	..	..	.....
Minneapolis, Minn..	March 16.	180,000	53	..	..	..	..	..	..	1	1	5	..	.....
Providence, R. I....	March 16.	127,000	53	..	..	..	..	..	..	1	..	1	..	.....
Rochester, N. Y....	March 16.	120,000	34	..	..	..	..	..	..	1	..	2	1	.....
Richmond, Va.....	March 16.	100,000	43	..	..	..	..	..	..	..	..	..	..	.....
Denver, Col.....	March 15.	100,000	25	..	..	..	..	..	..	..	1	4	..	.....
Toledo, Ohio	March 15.	80,000	27	..	..	..	..	..	..	1	..	2	..	.....
Camden, N. J.....	March 7.	70,000	25	..	..	..	..	..	..	4	..	1	..	.....
Nashville, Tenn....	March 16.	65,153	19	..	..	..	..	..	..	..	..	..	..	.....
Fall River, Mass....	March 16.	65,000	34	..	..	..	..	..	..	..	..	..	..	.....
Charleston, S. C....	March 16.	60,145	34	..	..	..	..	..	..	1	..	2	..	.....
Lynn, Mass.....	March 16.	50,000	20	..	..	..	..	..	..	..	..	1	..	.....
Manchester, N. H...	March 9.	42,000	12	..	..	..	..	..	..	..	..	..	..	.....
Portland, Me	March 16.	40,000	17	..	..	..	..	..	..	..	..	..	1	.....
Council Bluffs, Ia...	March 9.	35,000	5	..	..	..	..	..	..	..	..	..	..	.....
Davenport, Ia.....	March 16.	33,715	10	..	..	..	..	..	..	..	..	2	..	.....
E. Saginaw, Mich...	March 16.	33,000	16	..	..	..	..	..	..	2	..	..	..	.....
Auburn, N. Y.....	March 16.	26,000	13	..	..	..	..	..	..	..	..	..	..	.....
Haverhill, Mass.....	March 16.	25,000	3	..	..	..	..	..	..	..	..	..	..	.....
Newport, R. I.....	March 14.	22,000	10	..	..	..	..	..	..	..	..	1	..	.....
Keokuk, Ia.....	March 16.	16,000	4	..	..	..	..	..	..	..	..	..	..	.....

The Illinois State Board of Health.—The Governor of Illinois, in his biennial address to the General Assembly, pays a well-merited tribute to the labors of the State Board of Health. In the course of this address he wisely gives prominence to the continuance of a system of house-to-house inspection, which was inaugurated as a means of defense against cholera in 1883, and which has been maintained ever since; and he points out that the cities, towns, and villages of the State have, in consequence of this work, steadily improved in their sanitary condition, until it can now be asserted that Illinois exhibits the healthiest and most favorable circumstances, in so far as length of life is concerned, of any that are enjoyed in the Union. This we can readily understand, for in this country it has again and again been shown that house-to-house inspection by sanitary officers, under competent medical supervision, is one of the most valuable of all forms of sanitary work. Quarantine in a modified sense is said to have been of value to the State, but the Governor congratulates the Secretary of the Board for having refused help from the public treasury for the maintenance of restrictions which were unnecessary, and opposed to scientific experience. The labors of the State Board in connection with the small-pox epidemic of 1881–'82 are spoken of in terms of commendation, and it is held that through the preventive and protective measures then adopted, and since enforced, there has been no repetition of the disease in an epidemic form. We conclude that these measures aim at securing universal infantile vaccination, and the repetition of the operation later on in life; for apart from this we can not but feel that present experience is against any trust in escape from the disease; and as to the case quoted, it is perhaps somewhat early to feel any sense of security, especially in the case of a disease which has so often exhibited somewhat lengthened periods of quiescence between its epidemic appearances.—*Lancet.*

Ignipuncture of the Tonsils.—According to the "Lancet," "Dr. Wilhelm Roth, of Flunteru, finds that, in order to reduce the size of the tonsils without risk of troublesome hæmorrhage, which is not uncommon, especially in young subjects, the best plan is to employ ignipuncture, as has been recommended by Kaishaber, and more recently by Verneuil. The tonsils and neighboring parts are first brushed over with a ten-to-twenty-per-cent. solution of cocaine. The finest point of the thermo-cautery, heated to redness, is then inserted to a depth of about five millimetres in three or four spots a few millimetres apart from one another on the tonsils. The instrument is not allowed to remain more than one or two seconds in the tissue. The whole operation, including both tonsils, can be performed in a very few minutes without any bleeding, and with scarcely any pain. It must be repeated four or five times at intervals of two or three days, and this is usually sufficient to cause the tonsils to return to their ordinary condition."

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

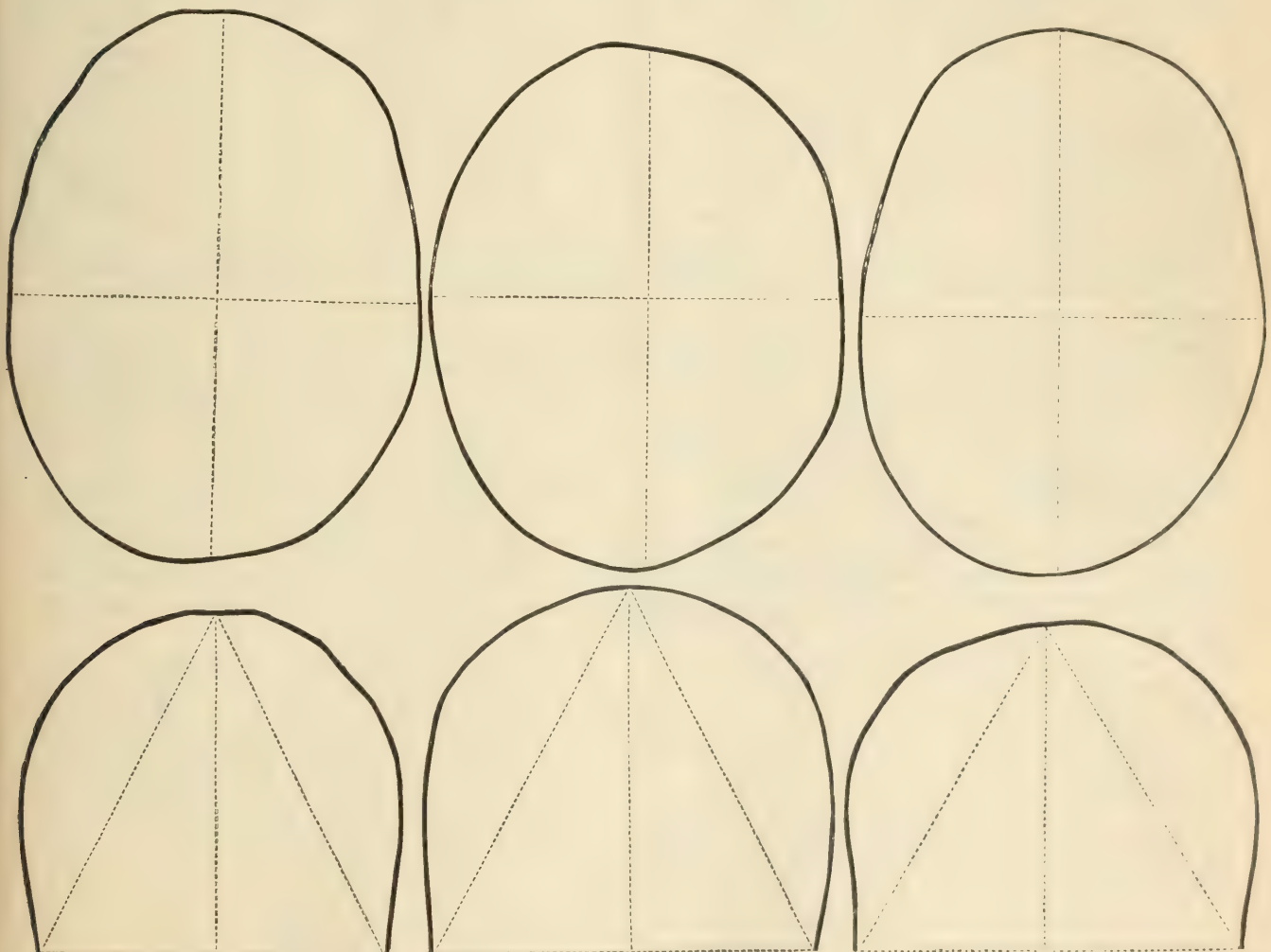
CRANIAL MEASUREMENTS
IN TWENTY CASES OF
INFANTILE CEREBRAL HEMIPLEGIA.*

BY FREDERICK PETERSON, M. D., AND
E. D. FISHER, M. D.

PART I, BY DR. PETERSON.

SOME time ago I had the honor of reading before the New York Neurological Society an article upon the subject of craniometry,† embodying some of the results of my own labors in this field for some years as well as those of the invaluable researches of other investigators. Among the tenets of this paper was one that every segment of the skull represents some particular part of the brain lying beneath it, and that though single convolutions may have no very marked influence upon the external configuration of the cranium, yet groups of convolutions do modify the shape of the skull, do possess visible representation upon its outer surface. Thus the parietal eminences correspond to the sensory-motor cortical areas; the dimensions of the forehead are directly related to the higher intellectual substrata of the frontal lobes; the sight memories of the occipital and the auditory memories of the temporo-sphenoidal lobes undoubtedly modify the curves and expanse of the cranium lying contiguous to them. Benedikt‡ showed in one case a depression of the left temple in congenital aphasia. Abnormal smallness of any part of the skull is indicative of imperfect development of brain in its neighborhood. It has long been known that deformities of the skull and brain are often produced by premature synostoses of one or more sutures, a discovery we owe to Virchow. But an arrest of development in any center of ossification, or in any part of the brain, a unilateral aplasia or hyperplasia of the skull bones or of the contents of the skull, will lead to similar malformations.

Benedikt called attention to the frequency of leptocephalus and macrocephalus in hemiplegia and paraplegia spastica infantilis, and to the frequency of asymmetry in the first-mentioned disease. On examining some of these cases of infantile spastic hemiplegia myself, I found the asymmetry mentioned by Benedikt, and saw that it was due, as a rule,



I.—J. W., male, aged 32. *Left* hemiplegia from age of 3 years; epilepsy.

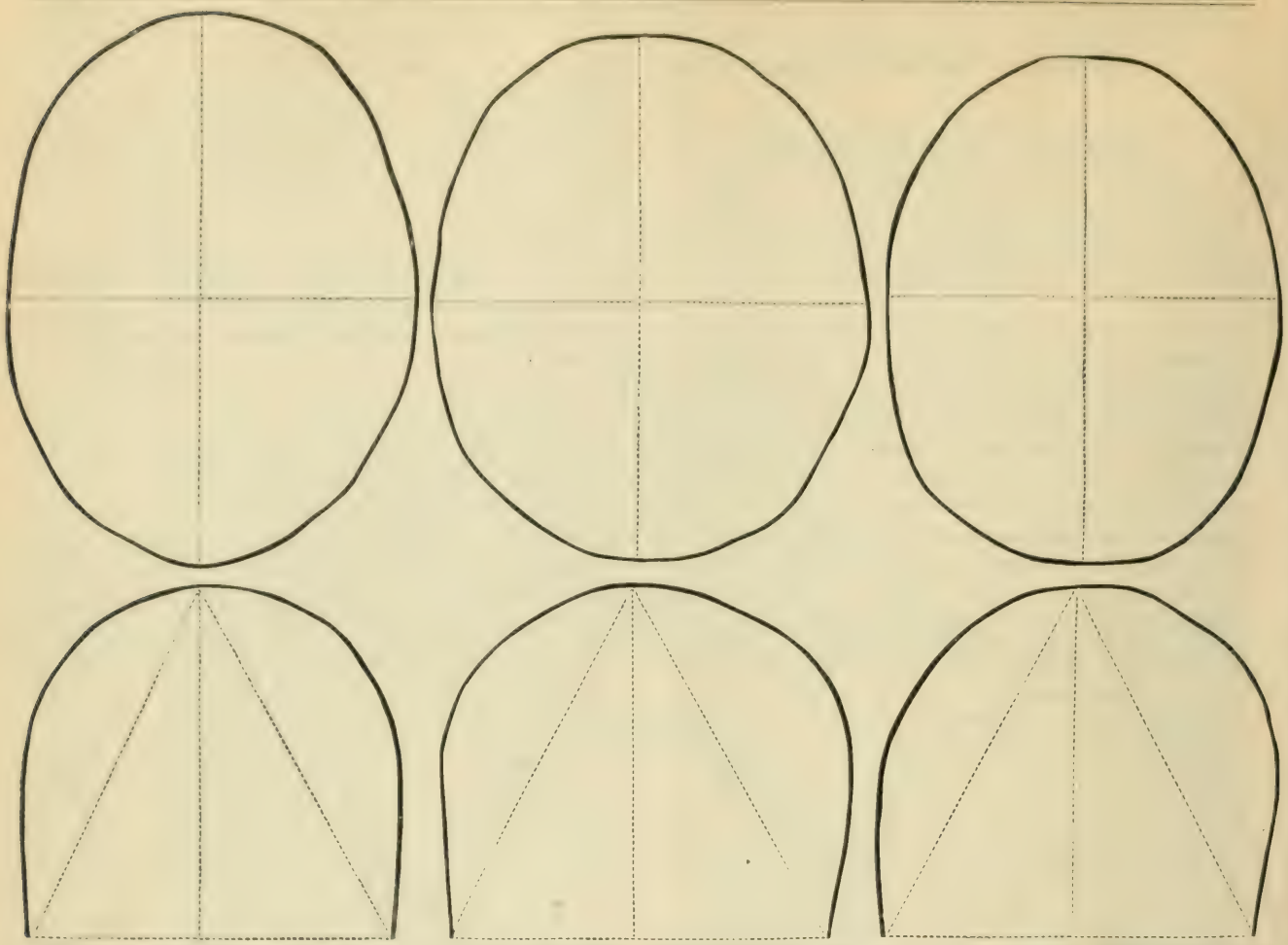
II.—M. K., male, aged 29. *Left* hemiplegia from birth; epilepsy.

III.—J. H., male, aged 36. *Right* hemiplegia from age of 3 years; epilepsy.

* Read before the Medical Society of the State of New York at its eighty-third annual meeting.

† "Some of the Principles of Craniometry," "Med. Record," June 23, 1888.

‡ "Kraniometrie und Kephalometrie," 1888.



IV.—P. D., male, aged 22. *Right* hemiplegia from birth; epilepsy to age of 9.

V.—M. M., male, aged 23. *Right* hemiplegia from age of 2 years; associated movements and athetosis.

VI.—G. Y., male, aged 23. *Right* hemiplegia from infancy; epilepsy.

to diminution of the size of the skull on the side opposite to the paralysis. I published in my paper two cephaloscopic illustrations of the horizontal and binauricular arc in such a case, where with a congenital right hemiplegia there was a very markedly diminished left side of the skull. This is here reproduced as No. XX in this collection.

Through the kindness of Dr. Fisher I have been permitted to draw upon his large material at the New York city almshouse for eighteen cases of hemiplegia, either congenital or occurring in the first two or three years of life, previous to sutural union and to the perfect evolution of the skull. They had all attained the adult age, the average being twenty-seven years.

The cranial measurements and drawings of these, together with those of two of my own, make the twenty which are here presented to-day.

The cephalometrical figures and drawings were obtained according to the methods I described in the paper already alluded to, and the series of measurements is one that I have selected and arranged in the accompanying tabular form.

I have carefully selected the above-named arcs and diameters from the immense number given by various anthropologists, and believe that they are sufficiently simple for use by any physician who desires to make a scientific cephalometrical study of any head. They are the most important measurements in the lists of Benedikt, Broca,* and Török.† At the same time I am aware that the results from a large number of measurements would be more accurate and useful, although not, I think, revealing the pathological variations better.

Of the twenty hemiplegics in this collection, eleven are adult males, eight adult females, and one a boy. Thirteen are right and seven left hemiplegics. The following is a table of the measurements of their heads as compared with the average normal male and female heads and the standards of physiological variation.

As regards the circumference, I find that all but five of the twenty—one man and four women—are below the normal averages, while two—one man and one woman—are even below the limit of physiological variation, and two women just at the lowest point of variation. It is to be borne in mind that some cases exhibit distinct macrocephalus, although that is not present in any of these. Benedikt considers it quite frequent and due to hydrocephalus. The only man in this collection presenting a circumference above the average had but three millimetres in addition, and of the four women, one was

* "Instructions craniologiques de la Société d'Anthropologie," *et al.*

† "Ueber ein Universal-Kraniometer."

COMPARATIVE MEASUREMENTS IN TABULAR FORM OF NORMAL MALE AND FEMALE HEADS AND THOSE OF TWENTY CASES OF HEMIPLEGIA SPASTICA INFANTILIS.

	NORMAL HEAD.			MEN.														WOMEN.											BOY.
	Average in adults, in centimetres.		Physiological variation.	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	Men's average.	Remarks.	XII.	XIII.	XIV.	XV.	XVI.	XVII.	XVIII.	XIX.	Women's average.	Remarks.	XX.
	Males.	Females																											
Circumference	55	53	51·5–60·4	55·3	53·5	54·0	54·0	53·0	51·0	54·0	53·0	54·5	54·5	54·0	53·7	Below normal average.	53·5	48·5	51·5	53·0	52·0	54·0	51·5	54·5	52·3	Below normal average.	47·0
Volume	1500	1300	1201–1751	1508	1460	1472	1472	1455	1390	1472	1455	1486	1486	1472	1466	Below normal average.	1310	1128	1261	1298	1274	1323	1261	1225	1281	Below normal average.	1151
Naso-occipital arc	35·0	34·0	31·0–41·0	36·5	35·0	34·0	34·0	35·0	32·0	35·0	34·5	37·5	34·0	33·0	34·5	Below normal average.	32·5	30·0	32·0	32·0	31·0	34·0	34·0	31·5	32·1	Below normal average.	31·0
Naso-bregmatic arc	12·5	12·0	10·9–14·9	12·0	13·0	12·0	11·5	12·5	12·5	13·5	13·0	13·0	13·0	13·0	12·6	Above normal average.	11·5	10·0	11·0	10·5	11·0	12·5	12·0	11·3	11·3	Below normal average.	9·7
Bregmato-lambdoid arc	12·5	11·9	9·1–14·4	12·0	13·0	13·0	12·5	13·0	10·0	10·5	11·0	12·0	15·0	13·0	12·2	Below normal average.	14·0	12·5	12·0	12·0	12·0	12·0	11·0	12·0	12·1	Above normal average.	8·6
Binauricular arc	35·0	34·0	31·4–38·0	35·5	35·0	32·0	33·0	35·0	35·0	33·0	33·5	34·5	36·0	35·0	34·3	Below normal average.	30·0	31·0	31·5	35·0	31·5	33·5	33·5	35·0	32·6	Below normal average.	29·0
Antero-posterior diameter	18·7	18·2	17·5–20·0	19·4	18·1	18·9	18·3	18·0	17·3	18·5	18·1	18·9	18·0	17·5	18·2	Below normal average.	18·6	16·8	18·0	17·5	17·9	18·7	17·9	17·9	17·9	Below normal average.	16·3
Greatest transverse diameter	15·6	15·0	14·0–17·5	14·4	14·0	14·3	14·0	15·2	13·9	14·5	13·8	14·5	15·5	15·0	14·4	Below normal average.	14·0	13·5	14·0	14·7	14·0	14·4	13·9	15·7	14·2	Below normal average.	13·1
Length-breadth index	82·2	83·8	76·1–87·0	74·2	77·3	76·0	76·5	84·4	80·3	78·3	76·2	76·7	86·1	85·7	79·2	Below normal average.	75·2	80·3	77·7	84·0	79·8	77·0	77·6	87·7	79·9	Below normal average.	80·3
Binauricular diameter	13·1	12·6	11·6–14·6	11·5	12·3	12·4	11·5	13·0	11·4	12·0	10·8	12·2	12·1	12·8	12·0	Below normal average.	11·5	11·0	11·3	11·8	12·0	11·5	11·0	11·5	11·4	Below normal average.	10·1
Height, βx	12·2	.....	10·5–13·1	13·5	12·5	12·0	12·0	12·4	12·8	12·0	12·3	12·5	13·0	13·1	12·5	Above normal average.	11·6	11·2	11·0	12·3	11·5	11·6	12·0	12·2	11·6	.....	11·1
Facial length	12·37	.....	10·5–14·4	12·0	12·0	13·0	11·6	12·0	12·1	12·5	12·2	12·2	11·4	13·0	12·1	Below normal average.	12·0	10·8	9·9	11·6	11·5	10·2	11·1	11·4	11·0	.....	9·0
Empirical greatest height	13·8	12·8	12·0–15·5	15·2	13·2	13·0	12·3	14·0	12·6	13·5	13·4	14·5	14·4	13·	13·6	Below normal average.	12·8	11·5	12·3	12·3	11·3	12·5	12·7	12·7	12·2	Below normal average.	

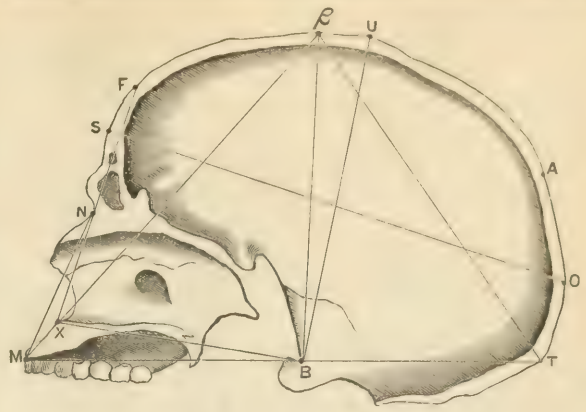


TABLE OF CRANIOMETRICAL MEASUREMENTS.

	Average in adult, in centimetres. Males.	Females	Physiological variation.	Remarks
1. Circumference	52	50	48·5–57·4	Roughly approximated, the volume is to the circumference as 1350 ccm. is to 50 cm.
2. Volume	1500	1300	1201–1751	
3. Naso-occipital arc	32	31	28–38	In figure, n to t.
4. Naso-bregmatic arc.	12·5	12	10·9–14·9	n to β.
5. Bregmato-lambdoid arc.	12·5	11·9	9·1–14·4	β to a.
6. Binauricular arc	32	31	28·4–35	
7. Antero-posterior diameter.	17·7	17·2	16·5–19	s to o.
8. Greatest transverse diameter.	14·6	14	13–16·5	The formula for the length. breadth index is Length : breadth :: 100 : x. An index below 78 is dolicocephalic, 78 to 80, mesocephalic, above 80 brachycephalic.
9. Length-breadth index.	82·2	83·8	76·1–87	
10. Binauricular diameter.	12·4	11·9	10·9–13·9	The height βx of the triangle EβE, formed by the auriculo-bregmatic radii and the binauricular diameter, averages 11·7, with a variation from 10 to 12·65.
11. Auriculo-bregmatic radii.				
12. Facial length	12·37		10·5–14·4	From root of nose, n, to lowest part of chin.
13. Empirical greatest height.	13·3	12·3	11·5–15	The empirical greatest height, $b\beta$ is obtained by measuring the sides of the triangle $m\beta l$.



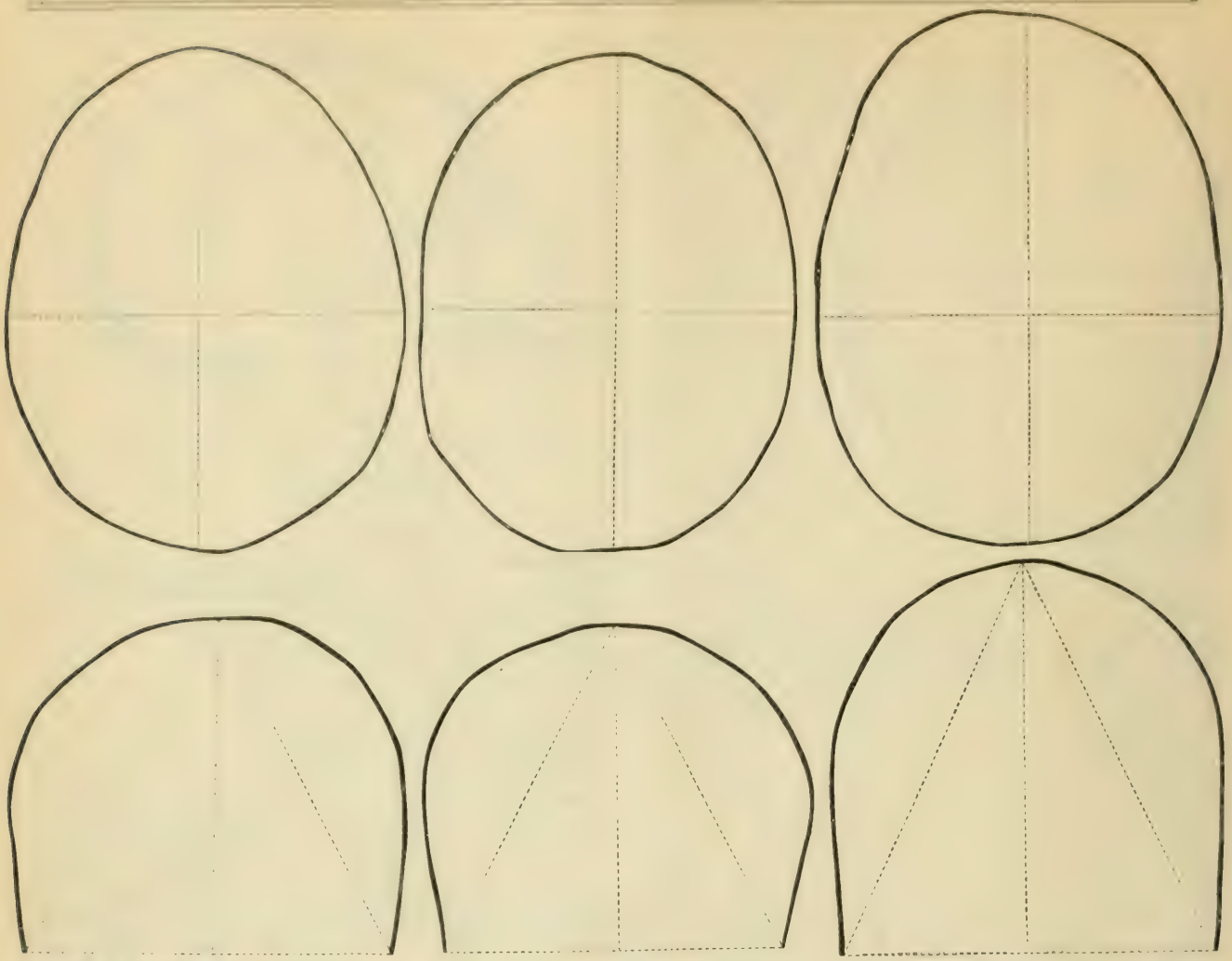
These measurements are those of the adult human skull. As the hair and scalp superadd about three cm., about six per cent. should be deducted in the head measurements Nos. 1, 3, and 6, to obtain those of the skull. In taking the diameters Nos. 7 and 8, deduct one centimetre (the scalp averaging 5 mm. in thickness), and from the shorter radii, such as Nos. 10 and 11, subtract but 7 mm.

exactly the average, and the highest excess was 1·5 ctm. Taking the averages of the eleven men and eight women, we find the aggregate below the averages of the normal male and female heads.

As the empirical determination of the *volume* depends upon the circumference, what has been said of the latter applies with equal significance to the former.

The naso-occipital arc is diminished in six men and six women, while one woman is below the physiological variation. The averages of the eleven men and eight women are under the normal averages of the two sexes.

The naso-bregmatic arc is below the normal averages in three men and five women, but the average of the eleven men is one millimetre above the normal, and that of the



VII.—W. H. T., male, aged 27. *Right* hemiplegia from infancy; epilepsy.

VIII.—F. A. F., male, aged 26. *Left* hemiplegia from infancy; epilepsy.

IX.—G. T., male, aged 26. *Left* hemiplegia from infancy; epilepsy; cranium proganæum.

eight women seven millimetres below. Two women are so low as to be outside of the physiological variation.

The bregmato-lambdoid arc is under the normal in five men. The average of the eleven men is below, and that of the eight women four millimetres above the normal sexual averages. It is this arc which Benedikt claims is diminished in cases of ordinary epilepsy, but this probably does not apply to the meta-hemiplegic variety exhibited in seventeen of these cases.

The binauricular arc is diminished in five men and six women, the total averages of each sex being also below the normal standards. Two of the women are under the extreme of physiological variation.

The antero-posterior diameter is less than the normal averages in eight men and six women, and below the physiological extreme in one man and one woman. The total average of the eleven men and eight women are below the normal sexual standards.

The greatest transverse diameter is below the normal average in all the men and all but one of the women, showing the tendency toward leptocephalus, or narrow-headedness, in this form of hemiplegia pointed out by Benedikt. Under the physiological variation are four men and two women, or more than 30 per cent.

As regards the relation of length to breadth, the length-breadth or cephalic index, eight men and six women are below the average. Six men and four women are dolichocephalic, one man and two women mesaticephalic, and four men and three women brachycephalic. Two men and one woman exhibit dolichocephaly outside of the physiological variation, while one woman presents pathological brachycephaly. Taking the average of the cephalic indices of the nineteen adults, they are all below the average brachycephalic condition and are mesaticephalic.

The binauricular diameter is under the normal standards in all the men and all the women. This being but another transverse diameter, corroborates the result of the measurements of the greatest transverse diameter—viz., the inclination to leptocephalus before mentioned. In four men and six women, or more than 50 per cent., this tendency is so marked that the binauricular diameters are actually outside of the physiological extremes.

The height bregma-x is diminished in three men and pathologically increased in one. Unfortunately, there is no normal female average as yet determined with which to compare the women.

The facial length is below the average in nine men. We have as yet no statistics as to the normal average in women.

The empirical greatest height is under normal standards in seven men and seven women, and the total averages diminished in all nineteen. Two women present pathological minima.

There are no accurate data accumulated as yet with regard to normal standards in infancy and youth; hence the measurements of the boy's head do not admit of comparison.

In many of the cases unusual prognathism is apparent in variable degree, and in some are deformities of the palate and jaws.

Now, if each case be examined singly with reference to normal cephalometrical standards, we find that pathological conditions stand out more prominently than in the aggregate analysis.

Case No. I, which in many of its measurements surpasses the normal average and which is the greatest of the twenty cases in circumference and volume, exhibits pathological variation in the cephalic index (74·2), binauricular diameter (11·5), and height (βx 13·5).

Case No. III presents pathological divergence in the cephalic index (76).

Case No. IV has a binauricular diameter outside of the physiological limits (11·5).

Case No. VI exhibits pathological variation in the antero-posterior diameter (17·3), greatest transverse diameter (13·9), and binauricular diameter (11·4).

Case No. VIII shows an abnormal divergence from the physiological limits in the greatest transverse diameter (13·8), and in the binauricular diameter (10·8).

Case No. X presents pathological excess in the bregmato-lambdoid arc.

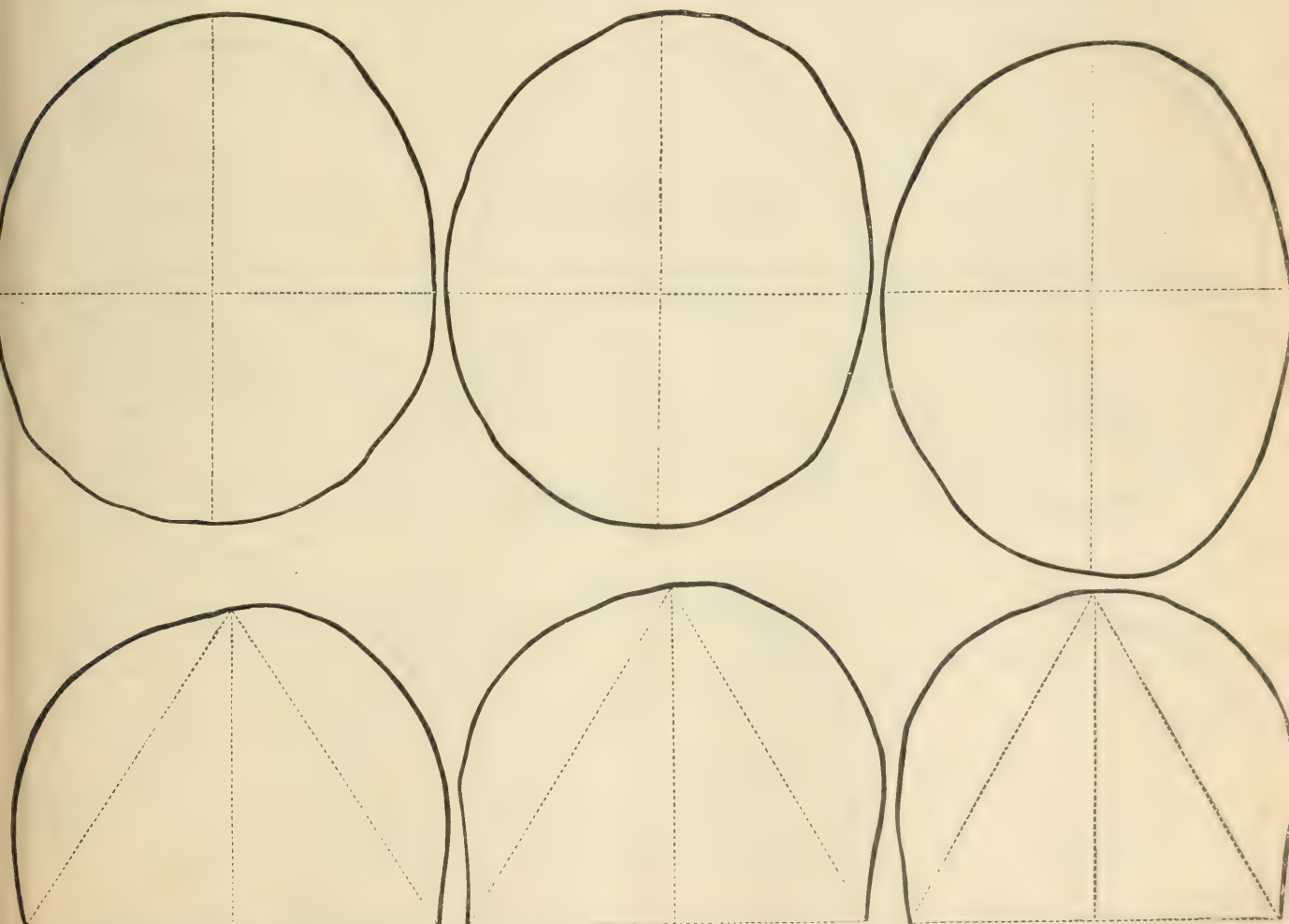
Case No. XII is pathological in its binauricular arc (30), cephalic index (75·2), and binauricular diameter (11·5).

Case No. XIII exhibits pathological variation from normal standards in circumference (48·5), volume (11·28), naso-occipital arc (30), naso-bregmatic arc (10), binauricular arc (31), antero-posterior diameter (16·8), greatest transverse diameter (13·5), binauricular diameter (11), and empirical greatest height (11·5)—in fact, most of the measurements.

Case No. XIV is pathological in its binauricular diameter (11·3) and facial length (9·9).

Case No. XV presents an abnormal minimum in the naso-bregmatic arc (10·5).

Case No. XVI is pathological in its empirical greatest height (11·3).



X.—H. H., male, aged 18. *Right* hemiplegia from age of 3; epilepsy.

XI.—J. K., male, aged 20. *Right* hemiplegia from infancy; epilepsy.

XII.—M. T. T., female, aged 20. *Right* hemiplegia since age of 3; epilepsy.

Case No. XVII shows morbid deficiency in the binauricular diameter (11·5) and facial length (10·2).

Case No. XVIII exhibits pathological variation in the greatest transverse diameter (13·9) and binauricular diameter (11).

Case No. XIX is pathologically excessive in the cephalic index (87·7) and deficient in the binauricular diameter (11·5).

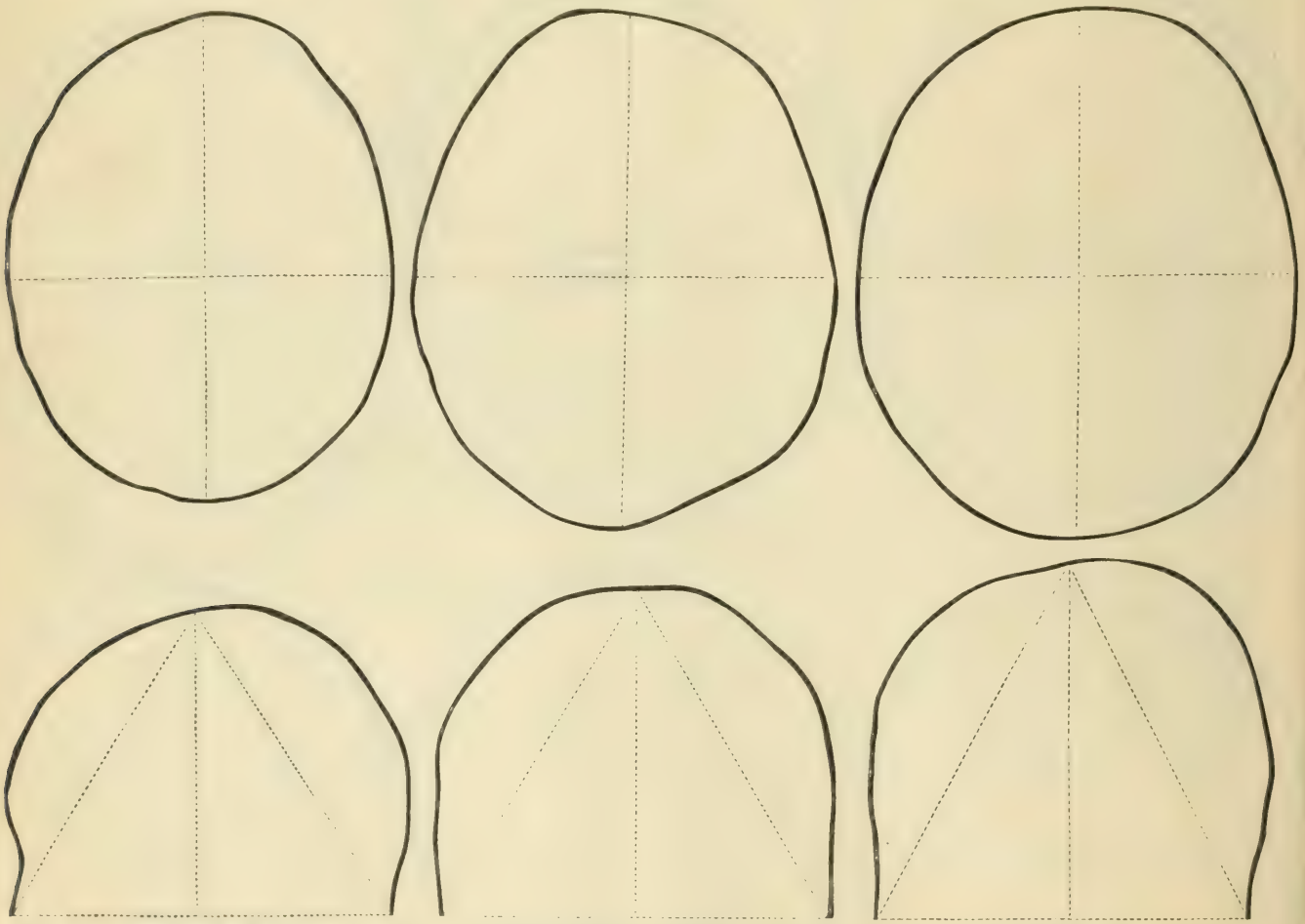
From this it will be seen that all of the cases taken in the aggregate have skulls which fall below the normal average in nearly every measurement, while in fourteen of the nineteen cases the variation is outside of the physiological limits in some of the arcs or diameters.

Besides the mathematical data, three cephaloscopic delineations were taken in each case. The naso-occipital arcs are drawn in such a manner as to give an almost composite view of this arc in each sex, and the slight deviations that exist are perceptible at a glance. Their only value is merely for comparison with normal standards, from which they differ chiefly in length, and hence they are not reproduced here.

The horizontal circumference was taken through the points which give the antero-posterior diameter — viz., around the glabella and the maximum occipital point about an inch above the occipital protuberance. Although this is somewhat below the arcs which would be described around the mid-region of the motor areas, and which would naturally better characterize the pathological change of cranial outline, yet in every one of these drawings a variation is observable between the right and left semicircles, in some slight and in others very marked, the diminution being always on the side of the lesion, and therefore opposite to the paralyzed half of the body. The fact of the existence of epilepsy in cases of hemiplegia is probably significant of an irritative and not a destructive lesion of the cortex; and hence it is natural to infer that the unilateral differences in the brain and skull would be greater in such hemiplegias without epilepsy.

The binauricular arcs were taken, as usual, between the anterior rims of the auditory meatuses, and, by their greater contiguity to the motor areas, present rather more distinctly the unilateral differences than do the right and left horizontal semicircles. Each binauricular arc exhibits a diminished quadrant on the side of the lesion. The pathological variations in the quadrants are often more marked in these cases when the arc is described behind the auditory meatuses from one mastoid process to the other, for thus the chief portions of the Rolandic areas are traversed; but the arcs taken are a sufficient demonstration of the facts stated.

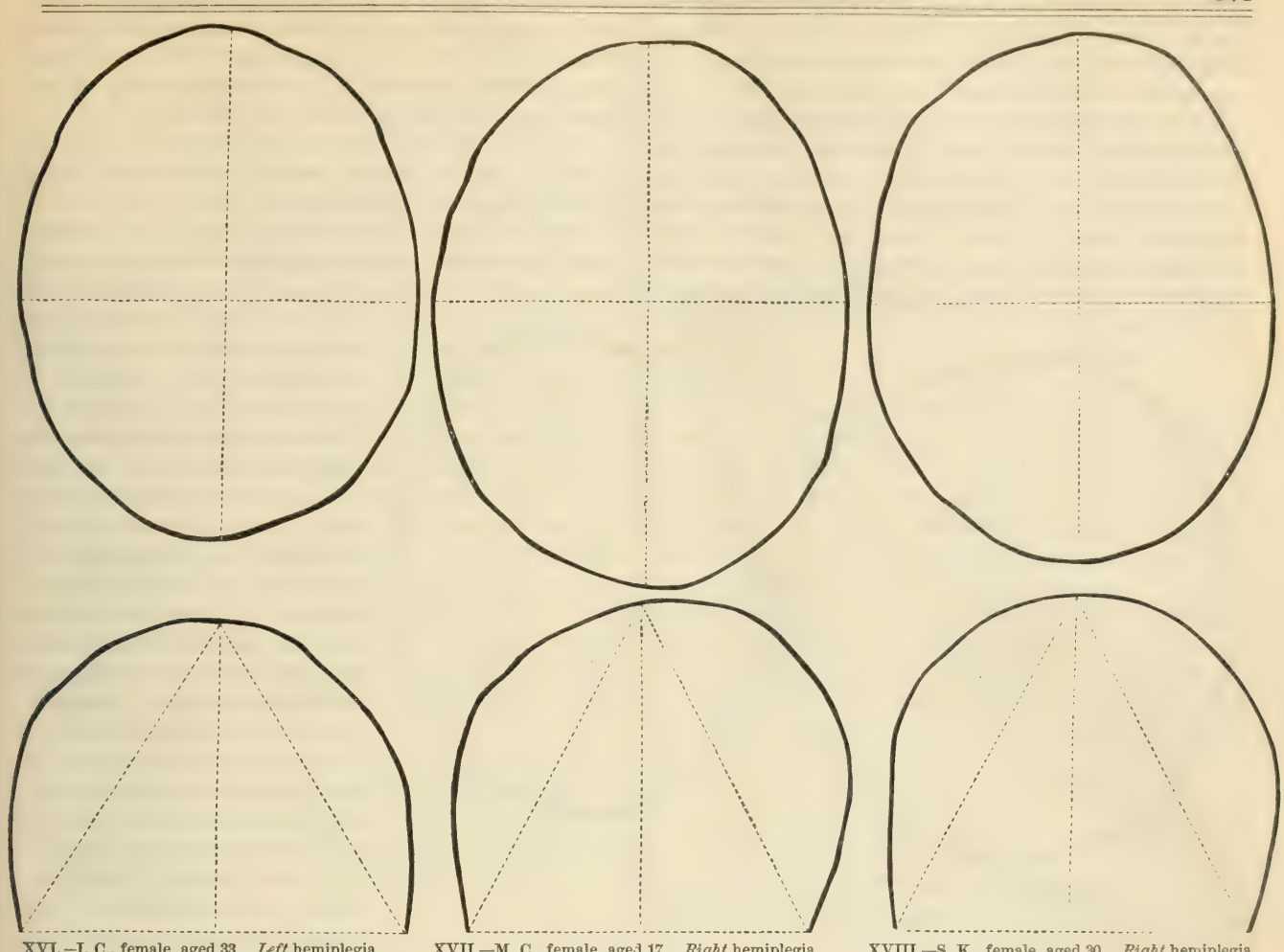
In conclusion I would make the following summary:



XIII.—M. W., female, aged 25. *Right* hemiplegia from infancy; epilepsy.

XIV.—M. G., female, aged 32. *Left* hemiplegia from infancy; no epilepsy; constant clonus of left peronei.

XV.—C. W., female, aged 28. *Right* hemiplegia from infancy; no epilepsy.



XVI.—I. C., female, aged 33. *Left* hemiplegia from infancy; epilepsy.

XVII.—M. C., female, aged 17. *Right* hemiplegia from birth; epilepsy.

XVIII.—S. K., female, aged 30. *Right* hemiplegia from infancy; epilepsy.

In all of these cases of hemiplegia spastica infantilis the skull is more or less diminished in size on the side opposite the paralysis.*

There is a pronounced tendency to diminution in all dimensions and capacity. This is so marked in the transverse diameters as to bring these heads under the class of leptocephalus.

While all of the heads are below the normal averages, more than seventy-three per cent. are actually below the lowest limit of physiological variation in some of their dimensions.

The value of this contribution to craniometric literature, then, from an anthropological point of view, lies in its determination of the intimate relationship existing between portions of brain and adjacent cranial areas; from a psychological point of view, in its proving or assisting to prove the interdependence of small-sized heads and mild degrees of feeble-mindedness, congenital or acquired in infancy.

Upon my co-worker, Dr. E. D. Fisher, now rests the burden of relating the clinical features of these cases, conjecturing as to their pathology, and drawing the practical inferences from the work which may make craniometry of interest and use to the general practitioner.

* This tendency to a depression of the cranial vault on the side of the lesion in these cases is sometimes more or less counterbalanced by a thickening of the bony parietes upon that side, as was long ago pointed out by Van der Kolk ("New Sydenham Society Transactions").

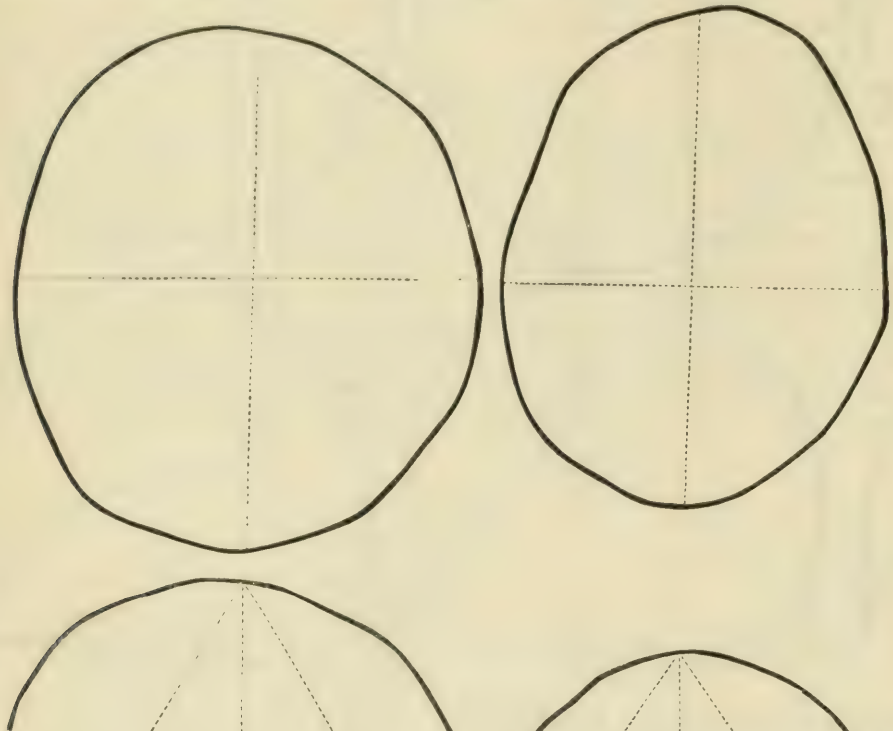
PART II, BY DR. FISHER.

The clinical aspect of these cases and the conclusions resulting from their records I shall now attempt to lay before you. They consisted, as the table below shows, of twelve males and eight females. They were all typical cases of hemiplegia spastica infantilis. The fact that all except four were associated with epilepsy is probably due to the fact that they were taken from the almshouse, where

No.	Name.	Age.	Hemiplegia.	Epilepsy.	Mental state.	Time of onset.	Jaw and palate.
I.	John W...	32	Left.	Present.	Imbecile.	At 3 yrs.	Normal.
II.	Martin K..	29	"	"	"	At birth.	"
III.	John H....	36	Right.	"	"	At 3 yrs.	"
IV.	Patrick D..	22	"	"	"	At birth.	High palate.
V.	Michael M.	23	"	Absent.	Weak-minded	At 2 yrs.	Normal.
VI.	George Y..	23	"	Present.	Imbecile.	Infancy.	"
VII.	William H.	27	"	"	"	"	"
VIII.	F. F.....	26	Left.	"	"	"	"
IX.	George T..	26	"	"	"	"	High palate.
X.	Henry H...	18	Right	"	"	"	Normal.
XI.	John K....	20	"	"	"	"	"
XII.	Mary T....	29	"	"	"	"	"
XIII.	Mary W...	26	"	"	"	"	"
XIV.	Mary G....	32	Left.	Absent.	"	"	"
XV.	Kate W....	28	Right	Present.	"	"	"
XVI.	Ida C.....	33	Left.	"	"	"	"
XVII.	Mary C....	17	Right	"	"	At birth.	"
XVIII.	Sarah K...	30	"	"	"	Infancy.	"
XIX.	Louise W..	33	Left.	"	"	At birth.	"
XX.	Frank L...	6	"	Absent.	"	"	"

for that reason they had probably been sent, as, although epilepsy is very frequent in these cases, it is not in so great a proportion as this list would seem to indicate.

It is seen that four cases date from birth, the rest from early infancy; high palate and prominent lower jaw were present in two cases; in thirteen out of twenty the right side was affected; in many, athetoid or choreiform movements with intention tremor existed; and in all imbecility or weak-mindedness. The capacity of the cranium is reduced in most of the cases; the bregmato-lambdoid arc is not, however, lessened, as I would have been led to expect from measurements reported in idiots and epileptics. (See table of cases.)



XIX.—L. W., female, aged ?. *Left* hemiplegia from birth; epilepsy.

XX.—F. S., male, aged 6. *Right* hemiplegia from birth.

(No. XX redrawn from illustration in "Medical Record," June 23, 1888, author's article "Principles of Craniometry.")

We must consider that these cases have had their origin either in the embryonal period or in infancy. In the first class we find many of the same lesions as in idiocy or imbecility without hemiplegia: porencephalus, absence of the corpus callosum, of the middle commissure, intra-uterine meningitis, meningeal hæmorrhage, sclerosis following hereditary syphilis, osteal malformations—as irregular growths of the sphenoid bone; again, emotional pathological conditions of the mother during pregnancy, injuries from blows, jars, etc., during fœtation, but limited to one side.

Richter, in Virchow's "Archiv," vol. cvi, says that in idiocy the sagittal suture is frequently very short, and that the sphenoid bones may unite at an abnormal angle, leading to malformation of the corpus callosum or to porencephalus, which is often unilateral. In porencephalus the subject rarely reaches middle life.

Biswanger, in Virchow's "Archiv," vol. cii, gives the history of such a case, the marked symptoms being right hemiplegia, epilepsy, and imbecility.

The ætiology of cases occurring at birth or in infancy is again quite varied. First in importance I would place prolonged labor, a very large proportion of children who require resuscitation becoming imbeciles, meningeal and capillary hæmorrhage being produced by pressure in the maternal passage.

It is probable, from careful investigation, that the use of the forceps has little to do with causing these cases, but, on the contrary, its delayed employment or non-use more often results in danger to the child. The falls of childhood in an hereditarily predisposed constitution—as from alcoholism, tuberculosis, hereditary syphilis, etc.—are no doubt exciting causes in many instances. We must refer to the exanthemata acting either indirectly by extension of inflammatory changes to the meninges—as in otitis from scarlet fever—or indirectly on a vitiated constitution. Encephalitis and cerebral hæmorrhage or embolism are rare at this age, while tumors present characteristic symptoms of their own.

In "Brain," April, 1888, Beach and Warner report an interesting case of chronic meningitis, probably syphilitic, the lesion being bilateral, although most marked on one side. It presented a very common symptom in idiocy—namely, viciousness—which I have not observed in any of these cases. Mr. E. Powell, in the "British Medical Journal," June 30, 1888, reports a case of cerebral atrophy and hemiplegia. He showed a specimen of brain atrophy from an imbecile woman, aged forty-six, who had been epileptic and hemiplegic on the left side since she was three years and a half old. At that age she had a "fit," was totally blind for seven weeks, when she gradually recovered her sight, but remained hemiplegic. Post-mortem examination showed complete atrophy of the right occipital lobe, considerable atrophy of the ascending convolutions, the fusiform and lingual lobules—the angular gyrus being apparently healthy.

The changes occurring in the brain as consequent upon the lesions given in the ætiology of these cases are atrophy of the cerebrum and increase of the connective

tissue, with descending degeneration extending into the spinal cord.

The sclerosis of the brain may be focal, diffuse, or multiple; the cortex cells are often degenerated, their processes ost, and their number decreased.

The association fibers are probably destroyed, leading thus to loss of judgment or reason. Many idiots possess certain talents, such as knowledge of music, drawing, etc., but the general intelligence in these cases is no greater than in the others.

Zilgerson ("Brain," July, 1887), in an examination of five cases of idiocy, was struck by the great influence which the degree of development of the great hemispheres has on the evolution of the crura cerebri, a primary severe lesion of the cortex in the embryonal period or in earliest childhood causing secondary degeneration and inhibition of evolution in certain parts of the crus. In three cases hemiatrophy of the brain was demonstrated, and in two others alteration of the crus cerebri was very evident. In four cases atrophy of the cerebellum of the opposite side was observed.

In a case presenting the usual symptoms of this class—*i. e.*, right hemiplegia, epilepsy, and imbecility—I found post mortem the left ventricle very much enlarged and filled with fluid, and macroscopically a considerable atrophy of that side of the brain.

In these cases the transverse arc was found decreased, or, in other words, they were narrow-headed, the temporal region being thus encroached upon. This might in a degree explain the slowness of comprehending questions, and also the imbecility, as lesions in the temporal convolution produce word-deafness.

I can not refrain from referring to a point of great importance in children, and this is that any interference with hearing, and therefore a clear comprehension of sounds and words, may lead to a considerable amount of mental weakness.

It will be observed that all the cases, with one exception, are adults, and that the volume of the skulls, with one exception, is reduced.

Sommer, in Virchow's "Archiv," vols. lxxxix and xc, found in the insane that the volume was increased, differing in his records from Gall and Welcker.

The cause of this difference in volume must lie either in the increase of the diameters of the skull or in its conformation. According to Virchow, it is in the latter. (See "Entwickelung des Schädelgrundes.") In the insane skull it is the inability to make the measurements conform to any standard rather than that they have any particular measurements peculiar to insanity.

We have in our cases not only the capacity of the skull affected, but opposite to the hemiplegia a constant decrease in the size and conformation. It is not forgotten by the writer that many normal cases present wide variations in cranial measurements, yet we get at an average which differs from the average in these twenty hemiplegias. Although the number of cases is not great, still, as the results are always the same, it is sufficient to draw the conclusion that congenital or infantile cerebral defect is accompanied by a corresponding cranial irregularity.

Again, in ordinary idiocy, Down has been able to refer the cases of certain types to the lower races, so that in many instances they approach the Mongolian type, even with the characteristic almond-shaped eyes. He finds also, and makes his diagnosis of the congenital origin of this condition rest on the presence of, an abnormally high or cleft palate, a prognathous jaw, etc. Now, in these twenty cases we find but two with abnormally high palates and prominent jaws. This would lead us to infer, if we agree with the theory of Down, that the cause must have been effective more often at birth or in infancy than during intra-uterine life, and in this I believe the pathology of the disease will bear us out.

An interesting point to the practitioner then arises, in these cases of one-sided affection of the cerebrum, whether or no, as the disease is one of early life, it is not possible to develop by education the opposite half of the cerebrum, and cause it to take on the functions of the undeveloped hemisphere. I would certainly try to train the hand of the opposite side to as great a degree as possible.

The kindergarten system of object-teaching should be carefully carried out, and especially should these little patients be thrown in with other children of like age in respect to intelligence. The diet should be rich and nourishing. Much can be done for the paralyzed member to improve its nutrition by massage and galvanism.

TREATMENT OF PNEUMONIC FEVER.

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(*Continued from page 341.*)

Believing that calomel acts favorably in pneumonic fever by its destructive action upon the organic cause of the disease, I have employed it by interstitial injection in two cases.

Although both these cases recovered and no untoward local effects followed the injections, yet the plan does not commend itself to my judgment. This line of treatment has been followed by Lépine,* who uses solutions of corrosive sublimate for his intrapulmonary injections.†

Emetics are indicated in adults when the stomach is filled with undigested food. In infantile cases it is well to begin the treatment with emetic doses of ipecacuanha, or some more stimulating emetic, unless thorough emesis has already occurred. Children vomit easily, and if the stomach is evacuated there is less liability of the occurrence of convulsions. Moreover, the act of vomiting promotes perspiration and is usually followed by quiet sleep. Later, when the bronchi are filled with secretions, emetics assist in their evacuation.‡

* "Med. Rec.," Oct. 24, 1885, p. 465, et "Lyon médical," 1887.

† See, also, Biggs, "N. Y. Med. Jour.," Aug. 18, 1888, p. 177; Phillips, "Med. Rec.," May 1, 1886, p. 501; Putnam-Jacobi, *ibid.*; Ransome, "Med. Chronicle," 1887; Smith, "Med. Rec.," May 1, 1886, p. 501; "Jour. of the Am. Med. Assoc.," May 7, 1887, p. 522; White, "Med. Rec.," May 22, 1886, p. 593.

‡ See Cunning, "Trans. of the Dublin Col.," vol. v.

To relieve the embarrassment of the pulmonary circulation, to control the action of the heart, and allay the general nervous excitement, are problems of the very greatest importance. Usually, the achievement of the first two objects carries with it success in the third.

The pulmonary congestion may be relieved by directly abstracting blood from the right side of the heart, by diminishing the total quantity of blood in the system, by equalizing the distribution of the sanguineous fluid, and by storing large quantities of it in parts of the body distant from the heart.

Westbrook,* Roberts,† Leuf,‡ and others, recommend cardiencentesis (of the right side) for the purpose of quickly and certainly relieving intense pulmonary congestion and impending heart failure. I am impelled to think, however, with Wyman,# Dana,‖ and others,* that this operation is too difficult and dangerous to come into general use.

Reducing the total quantity of blood in the system is best accomplished by general bloodletting.◊

The question of bloodletting in pneumonic fever is one of great importance, and has claimed the earnest attention of clinical observers from the earliest days of medicine. The practice has had its earnest advocates and, as in the case of many other useful measures, its opponents. There was a time when no case of pneumonic fever, seen by a medical practitioner, escaped being bled. Venesection in this, as well as in all other diseases, was carried to a most lamentable extreme, to the great detriment of the patient and the reputation of our art. This extreme has been followed by the opposite, and the lancet, almost entirely discarded, has become decidedly unfashionable. This result has been attained, I think, by an erroneous judgment on the part of the medical profession, inasmuch as undue weight has been given to the arguments against the measure, while those which may be adduced in its favor are ignored.*

During the second quarter of the present century a great and radical change was made in the treatment of this malady. From a heroic antiphlogistic plan the diametrically opposite one of support and stimulation was generally adopted. Many writers † contend that this universal change was not the correction of an error, but the appreciation of a change of type in the disease, while this is denied by others.‡ It is not desirable that the routine treatment of pneumonic fever by excessive bleedings should ever be restored to professional favor, yet I am of the opinion that the practitioner who wholly abstains from venesection deprives his patient of a most potent remedy. In suitable cases and employed with discretion it is one of our most valuable means of relief.

Venesection is not necessary in every case of pneumonic fever, and the patient, conditions, and time should be carefully selected. The very young and the very old, the weak and the anæmic, should not be bled, but on others, with an obstructed pulmonary circulation, the lancet should be employed.

In this condition there is an obstruction to the flow of blood through the arterioles and capillaries, which, added to that offered the circulation in the affected lung, causes a damming back of the blood in the right cardiac cavities and the general venous system. The pulse is long, full, and incompressible; there is venous congestion of the face and head; the breathing is oppressed, rapid, and laborious; the patient is alarmed and his anxiety is depicted upon his countenance.

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* "Med. Rec.," Dec. 23, 1882.

† "Med. News," Jan. 15, 1883.

‡ "Am. Jour. of the Med. Sci.," January, 1885, p. 79.

"Med. Rec.," Jan. 20, 1883.

‖ "Med. Rec.," Feb. 3, 1883.

* Cheesman, "Med. Rec.," Jan. 20, 1883; "Edinb. Med. and Surg. Jour.," March, 1884, p. 820.

◊ Adison, "Lancet," Feb. 3, 1855, p. 123; Aetius, "Opera"; Alison, "Pathology," 1844; Andral, "Med. Clinic," Philadelphia, 1843, vol. ii; Aretæus, "Opera"; Badely, "Lancet," New York, 1860, vol. i, p. 343; Billard, "Mal. des enfants"; Bonet, "Sepulchret.," Lugd., 1700; Bouillaud, "Dic. de méd."; Chambers, *op. cit.*; Chomel, "Pneumonie," S. 337; Christison, "Edinb. Med. and Surg. Jour.," July, 1858; Clark, "Med. Gaz.," 1880; Clark, "Jour. of the Am. Med. Assoc.," Nov. 28, 1885; Claiborne, *op. cit.*; Cleghorn, "Epidem. dis. minorica," London, 1761; Condie, "Am. Jour. of the Med. Sci.," January, 1871, p. 339; Cunning, *op. cit.*; Davies, "Lancet," New York, 1852, vol. i, p. 118; Davis, "Jour. of the Am. Med. Assoc.," vol. i, p. 415; Dewees, "Diseases of Children," p. iv; Dietl, "Lungenentzündung," Wien, 1848, S. 4; Evanson, "Infan. Therapeutics," p. 148; Flint, "Med. News," Nov. 28, 1885, p. 605; Frank, "Cur. hom. morb."; Gairdner, "Lancet," 1887, vol. ii, p. 247; Galen, "Opera"; Green, "Quain's Dic. of Med.," New York, 1883, p. 884; Grisolle, "Traité de la pneumonie," Paris, 1864; Hamilton, "Pneumonia," London, 1883; Hart, "Jour. of the Am. Med. Assoc.," Oct. 10, 1885, p. 395; Hartshorne, "Med. News," April 8, 1888; Hermann, "Lungenentzündung," München, 1880, S. 38; Huxham, "Epidem. Diseases," London, 1748; Jones, "Ohio Med. Recorder," October, 1878, p. 193; Judrin, "Thèse de Paris," 1824; Kemper, "Med. World," 1888, p. 260; Lawrence, "Brit. and For. Med.-chir. Rev.," July, 1858, p. 34; Lebert, "Handb. d. spec. Path.," Bd. ii, S. 80; Louis, "Rech. sur la saignée"; Luckie, "Am. Jour. of the Med. Sci.," vol. viii, p. 354; Maclachlan, "Dis. of Advanced Life," London, 1860; Mackintosh, "Brit. and For. Med.-chir. Rev.," July, 1858, p. 34; Manson, "Infant Therap.," p. 148; Markham, "Lancet," New York, 1860, vol. i, p. 520; Mauthner, "Jour. f. Kinderkrankh.," Bd. xviii, S. 852; McCulloch, "Jour. of the Am. Med. Assoc.," Aug. 18, 1883, p. 174; Moore, "London Med. Rec.," May, 1883; Morgagni, "Epist.," xx; Niemeyer, "Spec. Path.," Berlin, 1862; North, "Jour. of the Am. Med. Assoc.," Aug. 18, 1888, p. 249; Pepper, "Phila. Med. Times," April 16, 1879; Pringle, "Dis. of the Army," London, 1768; Ranking, "Ranking's Abst.," No. 6, p. 44; Rasori, "Teoria delle flogosi," Milano, 1837; Renauldin, "Bib. méd.," 1827; Rilliet et Barthez, "Mal. des enf."; Sauvages, "Nosog. Meth."; Sennert, "Prac. Med.," Witt., 1635; Strohl, "Lancet," New York, 1861, vol. i, p. 278; Swett, "Dis. of the Chest," New York, 1856, p. 108; Sydenham, "Works," London, 1788, vol. ii, p. 414; Tessier, "Rev. méd.-chir.," August, 1847; Thompson, "Ohio Med. Recorder," August, 1870, p. 97; Van Swieten, "Comment."; Watson, "Prac. of Phys.," p. 584; Weller, "Inaug. Diss.," Zürich, 1854, S. 42; Williams, "Lancet," New York, 1862, vol. ii, p. 4; Wunderlich, "Arch. f. Phys. Heilk.," 1856; Ziemssen, "Pneumonie," Berlin, 1862, S. 272; *et al.*

Objectors are Balfour, "Edinb. Jour.," 1847, p. 397; Becquerel, "Emiss. sang.," Paris, 1838; Fox, "Reynolds's Syst. of Med.," Philadelphia, 1880, vol. ii, p. 209; Gibbs, "Cin. Lan. and Obsv.," April, 1861, p. 211; Graves, "Clin. Med.," Dublin, 1838, vol. ii, p. 42; Legendre, "Arch. gén. de méd.," 1859, p. 283; McBride, *op. cit.*; Sibson, "Brit. and For. Med.-chir. Rev.," 1858; Waters, "Clin. and Prac. Med.," London, 1887; Heiss, "Inaug. Diss.," München, 1857, S. 24; *et al.*

* Here is a specimen of the arguments used against bleeding: Moore ("London Med. Rec.," May, 1883) refers to an epidemic of pneumonic fever observed by him in which every case seen in the beginning of the outbreak was bled, and died. Later cases were treated by supporting measures, and all recovered. This is apparently strong proof; but who does not know that the fatality of any epidemic disease rapidly declines as the epidemic progresses, and that to "bleed in every case" is the height of folly?

† Christison, "Edinb. Med. and Surg. Jour.," July, 1858; *et al.*

‡ Flint, "Prac. of Med.," Philadelphia, 1868, p. 114, et p. 150; *et al.*

In my experience, the relief afforded such cases by venesection has been immediate and remarkable. The measure operates in two distinct ways—by unloading the right side of the heart, and by equalizing the distribution of the remaining blood throughout the system.

Should the patient have passed into a comatose state with the first brunt of the disease, the case is evidently desperate—almost hopeless. Here everything depends upon ridding the system as quickly as possible of the poisonous matters circulating in the blood and overwhelming the central nervous system, and free bleeding is the remedy *par excellence.* In the worst cases very large quantities of blood should be removed and the loss partially replaced by transfusion, as has been successfully practiced in analogous cases.*

An apparatus for lessening the atmospheric pressure on the surface of the extremities and thus causing an intense local congestion, by which means a large quantity of blood may be temporarily withdrawn from the general circulation, has been offered as a substitute for phlebotomy by Junod,† and is recommended by some others.‡

For the control of the circulation suitable doses of a reliable preparation of veratrum viride # should be given at suitable intervals until the pulse has been reduced to from 70 to 100 a minute and maintained at this rate throughout the attack.

This remedy, a variety of which was advocated by Gessner * so early as the sixth century, and reintroduced to the profession, chiefly through the writings of Norwood † and other American physicians, is a powerful and certain cardiac sedative and tonic. By its use in this disease the irritation and excitability of the vaso-motor nervous system are reduced, the heart's action is rendered more quiet and regular, and the arterioles and capillaries are dilated. The terminal blood-vessels being now filled, there is a great diminution in the blood-pressure, and at the same time the overdistension of the right side of the heart and the congested lung are relieved. Indeed, the patient is actually bled into his own terminal blood-vessels. Although the most powerful remedy of its class, it is likewise the safest.‡ The directions which I give my patients are so simple and explicit that the dullest and most careless nurse can understand and appreciate them. The stated dose—*two* tablets, *two* pills, or *two* teaspoonfuls—is given at stated intervals until nausea or vomiting ensues, after which *one half* the dose is to be given. By this simple expedient the full effect of the drug may be obtained in a perfectly safe manner.

Aconite, with an action similar to that of veratrum viride, is preferred by some practitioners.# It is indicated in those cases with a full and hard pulse and general circulatory excitement. Under its use the pulse becomes weaker, the skin moist, and the urine free. Potent for good in the earliest stages of the disease, it must be discontinued if the heart begins to flag, for it is then no longer useful and may become positively dangerous.

The best plan for its administration is to give minute doses at very short intervals until the desired effect is obtained, afterward continuing at longer intervals or ceasing its use.

Digitalis is also an agent of considerable power in reducing the frequency of the cardiac contractions and in making them more regular when they are disturbed in rhythm. It was formerly much employed in the treatment of pneumonic fever,‖ "but is now discarded as being of very little use,"△ although it continues to have its advocates.

* Casse, "Presse méd.," 1876; Garrigues, "Med. Rec.," March 3, 1883; Halstead, "Med. News," Dec. 8, 1883, p. 622; Jürgensen, "Berliner k. Wochenschr.," 1871; Kahler, Virchow's "Arch.," 1881; König, "Deutsche Klinik," 1870; Kühne, "Ctrlbl. für Chir.," 1864, No. 9; Lühe, "Deutsche mil.-aerztl. Zeit.," 1878, S. 263; Saltzmann, "Finska Läkaresälls Kapetts Handb.," Bd. xix, S. 266; Von Ott, "Arch. f. path. Anat.," 1883, S. 114.

† "Med. Times and Gaz.," Jan. 10, 1855, p. 533.

‡ Bradley, "Cincinnati Clinic," Feb. 10, 1872, p. 62; Lépine, "Pneumonie," Wien, 1883, S. 177; Routh, "Brit. Med. Assoc. Jour.," June 8, 1855, p. 533.

Abbot, "Cin. Lan. and Obsv.," July, 1862, p. 447; Aran, "Bull. gén. de thérap.," 1853; Bland, "Cin. Lan. and Obsv.," Sept., 1864, p. 522; Collins, "Cin. Clinic," Feb. 8, 1873, p. 61; Coons, "Cin. Lan. and Obsv.," Sept., 1864, p. 522; Cutter, "Am. Jour. of the Med. Sci.," Oct., 1859; Cutter, "Lancet," N. Y., 1862, vol. ii, p. 247; Dessauer, Schmidt's "Jahrb.," 1866; Fournier, "L'Union médicale," 1855; Francis, "Med. World," 1888, p. 191; Ghiglia, "Bull. gén. de thérap.," 1860; Given, "Am. Prac.," June, 1870, p. 331; Hale, "Am. Prac.," July, 1870; Jacobi, "Am. Prac.," Nov., 1870, p. 307; Jaques, "Med. World," 1888, p. 145; Johnson, "Cin. Lan. and Obsv.," Sept., 1864, p. 523; Jones, "Lancet," New York, 1862, vol. ii, p. 282; Kiemann, "Prac.," Aug., 1868; Kocher, "Pneumonie," Würzb., 1866; Lebert, "Berliner k. Wochenschr.," 1871; Madden, "Med. Rec.," April 23, 1887, p. 475; Montgomery, "St. Louis Med. and Surg. Jour.," Feb., 1878, p. 143; Newman, "Cin. Lan. and Obsv.," Sept., 1864, p. 524; Newman, "St. Louis Med. and Surg. Jour.," Feb., 1878, p. 130; Neyman, "Cin. Lan. and Obsv.," Sept., 1862, p. 521; Osgood, "Am. Jour. of the Med. Sci.," vol. xvi, p. 296; Percy, "Am. Med. Times," July 11, 1863; Ritter, "Deutsche Klin.," 1860; Roth, "Würzb. med. Zeitschr.," Bd. i u. iii; Schrötter, "Wiener Jahresb.," 1870, S. 123; Sidlo, "Arch. f. k. Med.," Bd. xiv; Toland, "Am. Jour. of the Med. Sci.," Oct., 1858; Uhle, "Arch. f. phys. Heilk.," Bd. iii; Vogt, "Bull. gén. de thérap," Jan., 1860; Walker, "Lancet," New York, 1882, vol. i, p. 112; Wilson, "Am. Prac.," April, 1870; Woodson, *ibid.*, May, 1870; Zuber, "Bull. gén. de thérap.," 1869, p. 468; Alexander, "Med. and Surg. Rep.," 1876; Alt, "Arch. f. k. Med.," Bd. ix; Bouyer, "L'Union méd.," 1856; Drasche, "Oesterr. Zeitschr.," 1866; Nawroski, "Inaug. Diss.," Königsb., 1858; Trapenard, "Gaz. des hôp.," 1856.

* Lebert, "Berliner k. Wochenschr.," Sept. 18, 1871.

† See "Southern Med. Jour.," 1850, and other journals.

‡ Guthrie, "Jour. of the Am. Med. Assoc.," July 23, 1887, p. 125; McMechan, "Cin. Lancet and Clinic," 1884; Millard, "Jour. of the Am. Med. Assoc.," July 23, 1887, p. 125; Ringer, "Therapeutics," p. 365; Stillé, "Nat. Dispensatory," p. 1484; Waring, "Therap.," p. 600; Wood, "U. S. Dispensatory," p. 473.

Achscharnmoff, Reichert's "Archiv," 1866, S. 255; Fox, *op. cit.*, p. 312; Keating, "Med. News," April 1, 1882, p. 341; Kinsman, "Ohio Med. Recorder," Jan., 1881, p. 360; Mays, "Therap. Gaz.," April 15, 1885, p. 217; Pope, "Lancet," Nov. 26, 1887, p. 1068; Ringer, *op. cit.*; Routh, "Brit. Med. Assoc. Jour.," June 8, 1855, p. 533; Thudicum, "Lancet," 1887, vol. ii, p. 1068; Warner, *ibid.*, p. 1068; *et al.*

‖ Alix, "Bull. gén. de thérap.," May 30, 1880; Antonin, "Inaug. Diss.," Bucharest, 1887; Baginsky, "Pneumonie," Würzb., 1880, S. 72; Bartholow, "Am. Clin. Lec.," New York, Jan., 1876, p. 14; Bleuler, "Inaug. Diss.," Zürich, 1865; Cunning, *op. cit.*; Duclos, "Bull. gén. de thérap.," t. li et lxii; Joly, "Rev. méd. de Toulouse," July, 1879; Kinsman, "Ohio Med. Recorder," Jan., 1881, p. 360; Lebert, "Berliner k. Wochenschr.," Sept. 4, 1871; Petresco, "Lyon méd.," Oct., 1888; Rilliet et Barthez, *op. cit.*, p. 597; Sansom, "Lancet," 1887, vol. ii, p. 1261; Schrötter, "Sitz. d. k. k. Akad. d. Wissensch. zu Wien," Jan., 1870; Thomas, "Arch. d. Heilk.," 1865, S. 329; Traube, "Charité Ann.," Bd. i, S. 691; Wunderlich, "Arch. d. Heilkunde"; Ziemssen, "Pneumonie," Berlin, 1862, S. 287.

△ Brunton, "Therapeutics," Philadelphia, 1885, p. 850.

In the spring of 1880 I saw in consultation a boy, five years of age, on the fifth day of an attack of pneumonic fever. The entire left lung was consolidated and the attack had been a very severe one indeed. Two hours previous to my visit the dyspnœa was urgent, cyanosis marked, temperature 106°, skin cool and bathed in a profuse clammy perspiration, the mind oblivious to its surroundings, and the patient was thought to be dying. Twenty drops of tincture of digitalis was now given, and the dose repeated in one and two hours—the last immediately before my arrival. I found the child sitting up in bed, eating a bowl of soup, for which he had called. The pulse was 60, respirations 40, and temperature 101°, and mind clear. Convalescence began at once and complete recovery speedily ensued.

A young man, given to excesses of all kinds, was taken, during the night of June 9, 1880, with a severe chill, followed by the ordinary symptoms of pneumonic fever, locally affecting the entire right lung. The malady pursued a severe course and on the seventh day he was semi-comatose, with a dry and dark tongue and the teeth covered with sordes; there was no call for water, yet when it was presented to him he drank with avidity; there was anorexia and he would partake of no solid food, although liquids were readily swallowed; there was diarrhœa, with unconscious evacuation of fæces; the urine was scanty, dark, and loaded with lithates; there was a moderate cough, with infrequent but copious expectoration of dark matter; there was a low, muttering delirium, with reaching after imaginary objects and picking at the bed-clothes; the pulse was 140, respirations 68, and temperature 104°. On the following day, after profuse epistaxis, there was a marked amelioration of the symptoms, but by the next day he was worse than when I first saw him on the seventh day. One drachm of the tincture of digitalis was now given at a single dose. Defervescence began in a few hours and by the next morning he was fully convalescent.

Strophanthus,* convallaria,† lantanin,‡ strychnine,# sparteine,‖ and other heart tonics△ may be employed to meet special indications.

As a simple depressant, antimony may be prescribed,◊ although it has of late years fallen into obscurity.

Antimony, first employed by Paracelsus, was, until recently, very generally employed in the treatment of pneumonic fever, but it is now seldom prescribed.* For a long time it was used in moderate doses, when Rasori, early in the present century, advocated its employment in heroic doses. Laennec adopted this method with all the ardor of his nature, and the splendor of his name, coupled with his earnestness and the elegance of his diction, soon obtained for it a large and influential following. The excessive and indiscriminate use of so powerful a drug, however, could not long escape being followed by the most deleterious results,† and the remedy soon fell into disgrace and comparative obscurity.

Other sedatives—as, *e. g.*, acetate of lead,‡ bicarbonate of potassium,# tulipine,‖ catramine,△ etc.—have been recommended, but those already mentioned are so effective that nothing is gained by the employment of secondary or uncertain agents.

The exalted temperature should be reduced◊ to within moderate limits, and held there during the entire course of the disease. The measures heretofore mentioned will have partially brought about this result, but it is usually necessary to have recourse to more efficient and direct antipyretics. Of agents belonging to this class may be mentioned thalline,‡ kairin,‡ hydro-quinone,‡ resorcin,** acetanilide,†† antipyrine,‡‡ etc.**

* Chew, "Med. Rec.," May 7, 1887, p. 515; Fraser, "Brit. Med. Jour.," Nov., 1885; Hutchinson, *ibid.*, May 7, 1887; Smith, "Med. Rec.," Dec. 18, 1886, p. 694; *et al.*

† Logan, "Lancet," Nov. 17, 1883.

‡ "Jour. of the Am. Med. Assoc.," Dec. 11, 1886; "London Med. Rec.," Oct., 1886.

Maragliano, "Med. Presse," Nov. 21, 1883.

‖ Pawinski, "Gaz. Lekarska," 1888; Sée, "Jour. of the Am. Med. Assoc.," Oct. 30, 1886, p. 500.

△ Brunton, "St. Barth. Hosp. Rep.," 1871, p. 216; Jürgensen, Ziemssen's "Handb.," Bd. v, 1877, S. 264; Ziemssen, "Jour. of the Am. Med. Assoc.," May 4, 1887, p. 536.

◊ Blakiston, "Dis. of the Chest," London, 1848; Brendel, "Opusc. med.," Gœtt., 1769; Burghardt, "Inaug. Diss.," Berlin, 1824; Chambers, *op. cit.*; Cullen, "Prac. of Phys.," 1792; Fontaneilles, "Arch. gén. de méd.," 1824; Forbes, Laennec's "Dis. of the Chest," New York, 1830; Fuller, "Dis. of the Lungs," 1867; Gerhard, "Dis. of the Chest," Philadelphia, 1860; Guersant, "Dic. de méd.," t. viii; Hellis, "Clin. méd.," Paris, 1826; Hirschel, "Arzneiw.," Berlin, 1768; Huxham, "On Fevers," London, 1739; Jaccoud, "Med. Rec.," May 7, 1887, p. 573; Laennec (A.), "Jour. méd. de la Loire," 1825; Laennec, "Auscult. méd.," Paris, 1819, et "Rev. méd.," 1825; Lebert, *op. cit.*, Sept. 4, 1871; Lombard, "Arch. gén. de méd."; Paracelsus, "Bücher u. Schriften," Basel, 1589; Peschier, "Bib. Univ.," Geneva, 1822; Pringle, "Dis. of the Army," London, 1768; Rasori, *op. cit.*, et "Feb. petechiale." Milano, 1813; Recamier, "Gaz. méd.," 1830; Richter, "Op. med.," 1780; Riverius, "Meth. cur. feb.," 1640; Rogers, "Lancet," 1887, vol. ii, p. 1168; Rostan, "Thèse de Paris," 1830; Schrötter, "Sitz. d. Akad. Wien," 1878; Swett, "Dis. of the Chest," 1856; Thompson, "Lancet," New York, 1852, vol. i; Thorowgood, "Lancet," 1887, vol. ii, p. 1168; Tomassini, "Della nuova dott. ital.," 1816, et "Peripneum.," 1817; Trousseau, "Clin. méd."; Valentine, "Cur. triumphalis antimon."; Valentine, "Flux. sur la Poitrine," Nancy, 1815; Watson, *op. cit.*; Weller, "Inaug. Diss.," Zürich, 1854; Wesener, "Hufeland's Jour.," 1824; Wolf, *ibid.*, 1823; Williams, "Cyclp. of Prac. Med.," vol. iii.

* Opposed by Andral, "Clin. Med."; Bouillaud, "Dic. de méd.," t. xiii; Chomel, *op. cit.*, S. 372; Wagner, "Kritik d. ital. Lehre vom Contrastimulus," Berlin, 1819.

† Brunton, "Pharmacology," Philadelphia, 1885, p. 213; Peebles. "Am. Jour. of the Med. Sci.," May, 1848.

‡ Eichhorn, "Med. Ann.," 1835; Chevalier, "Berliner med. Zeit.," 1834; Leudet, "Cin. Lan. and Obsv.," October, 1864, p. 620; Richter, "Rust's Mag.," Bd. xxxix; Strohl, "Lancet," New York, 1861, vol. i, p. 278, et "L'Union méd.," Oct. 12, 1871.

Popham, "Brit. Med. Jour.," Dec. 28, 1867.

‖ Gérard, "Med. Rec.," April 2, 1887, p. 386.

△ Sasati, "Raccogliatore," March 10, 1887.

◊ See D'Espine, "Trans. of the Ninth Int. Med. Cong.," Washington, 1887.

‡ Jaccoud, "Bull. de l'acad. de méd.," No. 43, 1885; Jaksch "Wiener med. Wochenschr.," 1884, No. 48; Shoemaker, "Jour. of the Am. Med. Assoc.," July 17, 1886, p. 60; Tschistowitsch, "Ieshenedj. k. Gaz.," 1885, No. 30, *et al.* It is objected to by Weinstein, "Wiener med. Blätter," 1886, *et al.*

‡ Drasche, "Wiener med. Presse," 1883, S. 506; Filehne, "Berliner klin. Wochenschr.," 1882, No. 45, und 1883, No. 6; Halla, "Therap. Gaz.," 1884, p. 313; Hoffer, "Wiener med. Presse," 1882, No. 30 u. 31; Hutchinson, "Phila. Med. Times," Nov. 27, 1884; Jansen, "Therap. Gaz.," 1884, p. 285; Knipping, "Berliner klin. Wochenschr.," 1883; Pavlinoff, "Med. Obozrenie," 1885, S. 1203; Tangemann, "Therap. Gaz.," 1884, p. 105; Trusservitsch, "Deutsche med. Zeitschr.," 1884, No. 101; Zitker, "Therap. Gaz.," 1884, p. 153 et 254, *et al.* Objected to by Riegel, "Allg. med. Cen.-Zeit.," July 28, 1883.

‡ Kinnicutt, "Med. Rec.," May 30, 1885; Mitchell, "Therap. Gaz.," November, 1885.

** Rhigi, "Rivista intern. di med. e chir.," 1884.

†† Cahn und Heppe, "Ctrlbl. f. k. Med.," Aug. 14, 1886; Cauldwell, "Med. Rec.," April 16, 1887, p. 426; Cohen, "Med. News," Oct. 8,

Of these agents, antipyrine has attracted most attention. It causes a diminution of heat-production by a direct action upon the nervous thermogenic centers* and an increased dissipation† of heat by a dilatation of the cutaneous blood-vessels. The effect upon the general circulation and respiration, aside from that due to lessened corporeal temperature, is not marked.* The production and elimination of urea are diminished,† although the drug itself passes off through the kidneys.‡ It has been thought to act not only as an antithermic but also as a direct antipneumonic remedy.* The best results are obtained by administering small doses at frequent intervals until the desired effect has been produced, and afterward continuing it at longer intervals or suspend it altogether, according to the indications. Because of the smaller dose, I prefer acetanilide, which has a very similar action to antipyrine.

Inasmuch as disagreeable and even dangerous results have followed the administration of all these powerful antipyretics,‖ they should be used with caution.

When the skin is moist we know that the heat of the body is escaping as rapidly as possible,△ and that if the temperature requires further reduction it must be effected by agents which prevent the formation of heat.

Quinine has also been largely used ◊ as an antipyretic

1887; Hidowitz, "Jour. of the Am. Med. Assoc.," Dec. 3, 1887, p. 719; Murray, "Brit. Med. Jour.," April 23, 1887; Shoemaker, "Jour. of the Am. Med. Assoc.," July 17, 1886, p. 59; Simpson, "Med. Rec.," Dec. 3, 1887, p. 706; Van Bibber, "Jour. of the Am. Med. Assoc.," July 2, 1888, p. 117; Wilson, "Med. Rec.," June 11, 1887, p. 667, *et al.* Biro, "Lancet," 1887, vol. ii, p. 85, and others object to its use as being dangerous.

‡‡ Adams, "Jour. of the Am. Med. Assoc.," Nov. 21, 1885, p. 581; Alexander, "Breslauer arztl. Zeitschr.," 1884, No. 14; Arduin, "Bull. gén. de thérap.," March 30, 1885; Argutinsky, "Thérap. Gaz.," February, 1885, p. 130; Arzutenky, "Rev. de méd.," Aug. 8, 1885; Ball, "Med. Rec.," Feb. 27, 1886, p. 253; Bettleheim, "Med. Jahrb.," Wien, 1885; Boldt, "Med. Rec.," April 11, 1885, p. 414; Butler, "Med. Jour.," May 2, 1885; Cahn, "Jour. of the Am. Med. Assoc.," May 22, 1886, p. 575; Coppola, "Therap. Gaz.," Oct. 15, 1885; Corning, "Med. Rec.," April 11, 1885, p. 414; Davis, "Jour. of the Am. Med. Assoc.," April 23, 1886; Draper, *ibid.*, April 11, 1885, p. 411; Demme, "Fortschr. d. Med.," 1884, No. 21; Ernst, "Bull. gén. de thérap.," Oct. 30, 1884; Falkenheim, "Berliner klin. Wochenschr.," 1884, No. 20; Ferguson, "Med. News," Nov. 28, 1885, p. 605; Filehne, "Zeit. f. k. Med.," 1884, S. 641; Frankenberg, "Med. Rec.," May 22, 1886; Fruitnight, *ibid.*, June 5, 1886, p. 646; Gradle, "Jour. of the Am. Med. Assoc.," Jan. 1, 1887, p. 19; Guttmann, "Berliner k. Wochenschr.," 1884, No. 20; Holt, "Med. Rec.," Feb. 27, 1886, p. 254; Huchard, "Jour. de méd.," 1885, No. 3; Janeway, "N. Y. Med. Jour.," Jan. 25, 1885, p. 108; Kinnicutt, "Med. Rec.," April 11, 1885, p. 414; Kostyleff, "Meditz. Obozr.," Nov. 21, 1884; Landenberger, "Jour. of the Am. Med. Assoc.," vol. v, p. 628; Laure, "Rev. des mal. des enf.," February, 1886; Lenhartz, "Deutsche med. Woch.," 1884, No. 31; Lynch, "Med. Rec.," May 25, 1885, p. 581, and "Jour. of the Am. Med. Assoc.," June 18, 1887, p. 674; Maragliano, "Gaz. del osp.," No. 72, 1884; May, "Deutsche med. Woch.," 1884; McLean, "Med. Rec.," April 11, 1885, p. 414; Metropolsky, "Meditz. Obozr.," 1884, No. 21; Mingazzini, "Gaz. del. osp.," No. 104, 1884; Mitchell, "Therap. Gaz.," 1885, p. 723; Moncorvo, "Med. and Surg. Rep.," Oct. 23, 1886, p. 539; Murri, "Gaz. del. osp., Nos. 89, 91, 1884; Neumann, "Berliner k. Woch.," Sept. 15, 1885; Noorden, *ibid.*, 1884, No. 32; Paoli, "Jour. of the Am. Med. Assoc.," Jan. 1, 1887, p. 19; Patrick, *ibid.*; Peabody, "N. Y. Med. Jour.," Jan. 24, 1885, p. 107; Pavlinoff, "Med. Obz.," 1885, S. 1203; Pengoldt, "Deutsch. Med.-Zeit.," 1884, No. 101; Potter, "Lancet," April 10, 1886; Pribram, "Präger med. Woch.," October, 1884; Pushkareff, "Med. Rec.," Mar. 21, 1885, p. 323; Putnam-Jacobi, *ibid.*, Feb. 27, 1886, p. 254; Rauk, "Schmidt's Jahrb.," October, 1884, S. 127; Reihlen, "Arch. f. k. Med.," April 22, 1886; Robertson, "Med. Rec.," May 7, 1887, p. 517; Robinson, "Jour. of the Am. Med. Assoc.," Jan. 1, 1887, p. 18; Smith, "Med. Rec.," Feb. 27, 1886, p. 238; Stockton, "Jour. of the Am. Med. Assoc.," Nov. 28, 1885, p. 614; Ungar, "Ctrlbl. f. Therap.," January, 1887; Walter, "Vratsch," 1885, No. 30; Weber, "Jour. of the Am. Med. Assoc.," April 11, 1885, p. 411; Webster, *ibid.*, Jan. 1, 1887, p. 19; Wetterdal, "Lancet," 1887, vol. ii, p. 85, *et al.* Objected to by Chapin, "Med. Rec.," April 7, 1888, p. 398; Dujardin-Beaumetz, "Prog. méd.," March 7, 1885; Jusinelli, "Deutsch. med. Woch.," Mar. 5, 1885; Posadski, "Ieshenedj. k. Gaz.," No. 30, 1885; Smith, "Med. Rec.," Oct. 20, 1888, p. 469; *et al.*

Fürbringer, "Deutsche med. Wochenschr.," 1887, Nos. 11, 12, u. 13; Porter, "Med. Rec.," July 28, 1888, p. 88; Posadsky, "Deutsche med. Wochenschr.," 1886, No. 37 u. 38; Tovar, "Jour. of the Am. Med. Assoc.," July 17, 1886, p. 60; *et al.*

* Dabny, "Jour. of the Am. Med. Assoc.," vol. v, p. 441; Martin, "Therap. Gaz.," May, 1887.

† Bettleheim, "Med. Jahrb.," Wien, 1886; Beyer, "Am. Jour. of the Med. Sci.," April, 1886; Davis, "Jour. of the Am. Med. Assoc.," July 2, 1887, p. 15; Sée, "Bull. gén. de thérap.," April 20, 1887.

* Reihlen, "Arch. f. k. Med.," April 22, 1886; Wood, "Med. Rec.," June 11, 1887, p. 666.

† Umbach, "Arch. f. expm. Path.," 1886, No. 2 u. 3; Wiczkowski, "Med. Rec.," Dec. 25, 1886, p. 717.

‡ Dabney, *op. cit.*

\# Cahn, "Jour. of the Am. Med. Assoc.," May 22, 1886, p. 575; Pepper, "Med. Rec.," June 11, 1887, p. 666.

‖ Baldwin, "Med. Rec.," July 2, 1887, p. 26; Barrs, "Lancet," 1885, vol. i, p. 382; Eccles, "N. Y. Med. Jour.," Oct. 24, 1885, p. 472; Helfer, "Med. Rec.," July 2, 1887, p. 26; Janeway, "Jour. of the Am. Med. Assoc.," Aug. 14, 1886, p. 182; Quimby, "Med. Rec.," July 2, 1887, p. 26; Shoemaker, "Jour. of the Am. Med. Assoc.," July 17, 1886, p. 59; Strauss, "Berliner k. Wochensch.," Aug. 31, 1885; Whitehouse, "Med. Rec.," Dec. 3, 1887, p. 706; *et al.*

△ See Fothergill, "Med. Brief," May, 1886, p. 176.

◊ Ady, "Med. and Surg. Rep.," 1887; Atkinson, "Practitioner," 1885; Bailly, "Fiev. int.," 1825, p. 424; Balby, "Jour. de méd.," Oct. 18, 1829, p. 7; Banks, "N. W. Med. Jour.," Jan., 1885, p. 392; Bart, "Practitioner," Oct., 1887, p. 294; Bell, "Lectures," vol. ii, p. 782; Binz, "Berliner k. Wochenschr.," 1868, No. 10, 13 u. 31; Blair, quoted by La Roche, "Pneumonia," Philadelphia, 1854; Boling, "Am. Jour. of the Med. Sci.," vol. viii, p. 89; Briquet, "Thérap. du quinquinia," Paris, 1853, p. 410; Davis, "Prac. of Med.," Chicago, 1884; Desiderio, "Comp. ren. de l'acad. des sci.," t. ix, p. 509; Donaldson, "Med. Rec.," March 7, 1885, p. 267; Drake, "Dis. of the Int. Valley," vol. i, Cincinnati, 1850, p. 746; Fenner, "N. O. Med. Jour.," vol. v, p. 208; Flint, "Med. News," Nov. 28, 1885, p. 605; Geromini, "Ann. de méd.," March, 1841; Gibbs, "Cin. Lan. and Observ.," April, 1861, p. 211; Grimshaw, "Dublin Jour. of Med. Sci.," May, 1875; Guersant, "Dic. de méd.," t. xxvi, p. 564; Harper, "Jour. of the Am. Med. Assoc.," Dec. 3, 1887; Holmes, "Am. Jour. of the Med. Sci.," vol. xii, p. 304; Holt, "Med. News," Feb. 7, 1885, p. 161; Jacobi, "N. Y. Med. Jour.," 1887; Jacquot, "Arch. gén. de méd.," 1845, p. 76; Jett, "Med. World," March, 1886, p. 94; Jürgensen, Ziemssen's "Handb.," Bd. v, 1877; La Roche, *op. cit.*, p. 471; Lépine, "Pneumonie," Wien, 1883, S. 174; Lescher, "N. W. Med. Jour.," March, 1850, p. 509; Lockie, "Edinb. Med. Jour.," Nov., 1885; Loomis, "Prac. of Med.," New York, 1884; Maxinowitsch, "St. Petersb. med. Woch.," 1884; Mérat et Delens, "Dic. de mat. méd.," t. vi, p. 76; McBride, *op. cit.*; McCaw, "Stethoscope," vol. ii, p. 666; McCormick, "N. O. Med. Jour.," vol. ii, p. 175; Merrill, *ibid.*, vol. viii, p. 161; Nickles, "Cin. Clin.," July 22, 1876, p. 37; Pattee, "Med. World," 1886, p. 91; Ringer, "Therap.," 1871, p. 416; Rodman, "Med. Rec.," 1875; Schultz, "Jour. of the Am. Med. Assoc.," July 31, 1886, p. 119; Taylor, "N. Y. Med. Jour.," 1887; Upshur, "Stethoscope," vol. ii, p. 437; Waters, "Clin. and Prac. Med.," London, 1887; *et al.*

in pneumonic fever, but with, on the whole, unsatisfactory results.*

The employment of large doses of quinine as an antipyretic had its origin in Italy in the early decades of this century,† and for a time was wildly lauded, but soon sank into disrepute to be again brought forth in recent years. If there is present a malarial complication, quinine, in moderate doses, should be prescribed. It is also useful as a tonic during convalescence. The very large doses recommended by some writers should never be given.

Quinine given in pneumonic fever has a bad effect upon the appetite and digestion,‡ and frequently excites nausea and vomiting.# In large doses it is liable to cause marked cardiac weakness,‖ profuse cold perspirations, and profound nervous depression. It is a feeble and uncertain antipyretic, and I have seen no instance in which it had favorably modified the natural course of the disease.

It has been thought by some that pyrexia is salutary and that it should not be interfered with.△

Thus Loomis◊ says that it is proper to reduce the fever if it can be effected by moderate means, but he does not approve of the employment of extraordinary and perturbating measures for this purpose. Flint‡ affirms that the idea that fever is a conservative process bears the stamp of absurdity upon its face.

(To be concluded.)

A CASE OF HÆMATURIA IN THE MALE,

RESEMBLING IN ITS PERIODICAL RECURRENCE THE MENSTRUAL EPOCH.

By WARREN B. CHAPIN, A. M., M. D.

Those remarkable instances where hæmaturia in the male takes place periodically once a month, simulating menstruation in its cyclical appearance, are among the rare occurrences of medical practice. Quite a number of cases have been recorded where a periodical discharge of blood through the female urethra has supplanted the menstrual flux, but in the literature on the subject I can find but three cases recorded where the monthly discharge has occurred in the male. Rayer↕ mentions two cases—one of a Sedan butcher whose infirmity created such a feeling of disgust among his customers that they refused longer to buy meat from him.

Chopart cites the case of a young soldier who had a monthly discharge of bloody urine, accompanied by all the characteristic symptoms of menstruation. The rarity of this condition prompts me to report the following case which came under my care:

The patient, a gentleman fifty-eight years of age, weighing about two hundred pounds, married, had always enjoyed exceptionally good health. In February, 1888, he slipped on the ice and fell to the pavement, apparently without any injury beyond a slight strain. Three weeks after this fall he began to pass bloody urine, losing about an ounce of blood daily for several days, when the hæmorrhage ceased. One month later he again noticed that he was voiding blood with his urine, and since that time the hæmorrhage has returned every month. The amount of blood lost daily during these attacks was about an ounce and a half, the discharge lasting four or five days. These attacks recurred so regularly that he was always able to tell the day on which to expect his "sickness." Each period was usually preceded by nausea, dizziness, pains, and heaviness in the lumbar region, and sometimes headache.

On several occasions there were lancinating pains along the course of the ureters, radiating to the end of the penis. At the next micturition the stream would suddenly stop, and continue when he assumed the horizontal position. Soon after this a small blood-clot would pass through the urethra. The urine was normal in quantity, and he experienced no pain or difficulty in voiding it. The blood was always thoroughly mingled with the urine, was as profuse at the commencement as at the end of the flow, and never occurred independent of micturition. During the four or five days which an attack would last the amount of blood lost each day was about equal in quantity. Occasionally during the day he would pass urine which was clear, but these specimens may have contained blood-corpuscles.

Physical examination gave negative results. Although the urine was repeatedly examined, no albumin was found in it.

There was no cystitis or urethritis. Microscopical examination of the urine revealed no abnormities except the presence of blood-corpuscles, a few uric-acid crystals, and bladder cells.

The sound failed to show the presence of stone or villous tumor of the bladder, which were suspected. In September last he had an unusually severe hæmorrhage. He became somewhat anæmic and emaciated. The amount of blood he was losing caused extreme weakness. Gallic acid, in fifteen-grain doses, controlled the hæmorrhage. Ordered the gallic acid to be taken a few days before each expected return, and continued through the usual period of hæmorrhage. Since that time two months have elapsed, and the hæmorrhage has not returned.

During this last attack I was called to see him one night (December 19th), and found him suffering from some prodromal apoplectic phenomena: a full and bounding pulse, headache, dizziness, and numbness of the left arm and shoulder. His temperature was normal. Said he had had the same trouble before. These symptoms soon passed away.

The diagnosis of this case must be reached chiefly by exclusion. A careful consideration of the symptoms would point to the kidneys as the probable source of the hæmorrhage.

Accepting the hypothesis that the hæmorrhage was of renal origin, we must exclude the lesions occurring in those organs which could give rise to this condition, such as carcinoma, Bright's disease, abscess, etc., when we consider the fact that the microscope failed to show any evidence of renal disease, that at no time was there any albumin pres-

* Baldwin, "Am. Jour. of the Med. Sci.," vol. xiii, p. 299; Bennett, "Edinb. Med. Jour.," Jan., 1852; Guersant, "Dic. de méd.," t. xxvi, p. 584; Lebert, "Berliner k. Woch.," Sept. 18, 1871; Lewis, "N. O. Med. Jour.," vol. ii, p. 629, and vol. iv, p. 174; Melier, "Mém. de l'acad. de méd.," t. x, p. 722; Peters, "Med. Rec.," Feb. 21, 1885, p. 217; Ripley, *ibid.*, p. 217; Schrötter, "Sitz. d. k. k. Acad. zu Wien," Bd. lxii, Abth. ii; Smith, "Med. Rec.," Feb. 27, 1886, p. 238.

† La Roche, *op. cit.*, p. 471.

‡ Jacobi, "Jour. of the Am. Med. Assoc.," Feb. 5, 1887, p. 166.

Ripley, *ibid.*

‖ See, also, Jayne, "Med. News," Nov. 10, 1888, p. 520; Chirone, "Gaz. hebdom.," 1875.

△ Nothnagel, "N. Y. Med. Jour.," Jan. 3, 1885, p. 14; Sassetzky, Virchow's "Arch.," 1883.

◊ "Med. Rec.," Feb. 11, 1888, p. 146.

‡ "Trans. of the Ninth Int. Med. Cong.," Washington, 1887.

↕ "Mal. des reins," vol. iii.

ent, and that the urine was passed in normal quantities. In cancer of the kidney the hæmorrhage is sometimes profuse and intermittent in its occurrence, but cancer cells will be found in the urine.

No *general condition*, such as malarial poisoning, could be discovered which would be of ætiological value. The presence in the urine of the corpuscular elements of the blood, as shown by the microscope, excludes the so-called hæmoglobinuria or paroxysmal hæmaturia, a condition in which the hæmoglobin is set free from the blood and appears in the urine.

Finally, that form of hæmaturia due to the presence of a small parasite, the *Bilharzia hæmatobia*,* occurs only in warm climates and may therefore be excluded.

The fall which he had some three weeks before the hæmorrhage first appeared may have some ætiological significance. Cases mentioned by Ashhurst, Roberts, Beale, and others, show that any sudden muscular strain, a fall, or a jar, will often rupture a small renal blood-vessel, usually a capillary in the Malpighian tufts, and be followed by attacks of hæmaturia which may return at intervals. In this case the absence of blood-casts in the urine would show that the hæmorrhage came from the pelvis of the kidney, if indeed it was of renal origin.

At my visit to the patient on the night of December 19th I examined his heart and found a slight accentuation of the aortic second sound, indicating the presence of arterial degeneration. This, with the occurrence on several occasions of apoplectic symptoms, seems to have some significance. It appears to me like a case of *essential* hæmorrhage, due to a general condition of the vascular system and specially localizing itself in the kidneys, just the same as the loss of blood coincident with ovulation is essential, relieving the vascular turgescence of the generative organs present at that period. That this discharge relieves a state of vascular tension is shown by those peculiar cases of vicarious menstruation where a more or less regular escape of blood takes place from parts other than the uterus, and it does not seem impossible that the hæmorrhage which took place from this man's kidneys relieved the tension of a vascular system overburdened by fibroid changes, thus preventing the apoplectic seizures which might otherwise have occurred. Still, should this be the case, it does not explain the regular return of the discharge, which makes the case of such peculiar interest.

114 West 104th Street.

The Microbe of Diphtheria.—"The announcement of the discovery of the microbe of diphtheria by MM. Roux and Versin, of the Pasteur Laboratory, referred to by our Paris correspondent, has led somewhat prematurely to sanguine hopes that the disease will now be amenable to prophylaxis by inoculation. We may remind our readers that the micro-organism of diphtheria has been before now discovered by such investigators as Oertel, Klebs, and Loeffler. Nevertheless, but little fruit in the direction of successfully combating this highly fatal disease has yet accrued from these researches. We await with interest the full details of this latest inquiry, and shall be glad to see to what extent MM. Roux and Versin have advanced beyond the stages reached by their predecessors in this field."—*Lancet.*

* Discovered by Dr. John Harley.

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THE ASCENT OF MAN.

The upright posture has been supposed to have its disadvantages. This consideration has led some one to suggest that the fall of man consisted in his getting upon his hind-legs. The fall, then, according to such persons, was a fall upward. This, they say, has had some baneful results. Uprightness and progression demand fearful penalties. Gravity is always at work to prevent humankind from being too happy. The animal mechanism, despite weak points here and there, is a relatively perfect structure when in the horizontal posture. Once it assumes the vertical, all this is changed. The weak points are exposed, and the entire structure is strained. For an animal that goes on all-fours the valves in the veins are sufficient; but for man most of them are inadequate. Hæmorrhoids, and their frequently accompanying curse, prolapsus ani, are certain agonizing penalties paid for the pleasure of walking on two feet instead of four. The poetic assertion that men were made upright and perfect is slightly weakened by the subordinate clause: "but they have sought out many inventions." Another source of trouble is found in the scars that appear to be the remains of organs or glands that have disappeared through inactivity. These are sometimes the seat of disease and harboring-nests for pathogenetic germs. Weakness is blended with strength. The law of heredity preserves the former with as much pertinacity as the latter, leaving to the survival of the fittest the improvement of affairs by a slow process of elimination.

Our upright posture has been held to be the cause of more ills and exposure to strain than would at first thought seem possible. "Descent and Disease," a paper by R. G. Eccles, M. D., in the "Brooklyn Medical Journal," sets this forth with admirable directness and skill. The doctrine of evolution is the author's working hypothesis, the "Open, sesame!" to myriads of Nature's secrets. By its light, countless doors have been found that earlier seemed mere baffling *culs-de-sac*. To withdraw this conception from the domain of science would be about as difficult as a return to the Ptolemaic system of astronomy. If pathology follows in the wake of physiology in making use of the evolutionary doctrine of the descent—or, rather, the ascent—of man, much that is contained in works on practice, gynæcology, and even surgery may become as antiquated as the chapters on phlogiston in old books of physics and chemistry. A knowledge of how a thing grew, how it came to be as it is, constitutes an important guide to its successful management. It is necessary to search for the persistent causes of disease along the route of apparent or real development of the human race, from the unicellular amœba to

the highly differentiated Caucasian. Heredity tells the story of the experiences of the lower animals as well as of our known human progenitors. The history of our weakness and strength is thus chronicled in the human frame. The most persistent causes of disease in the *Bimana*, as Dr. Eccles conceives them to be, are the following:

1. A circulatory system that is an imperfect mechanism for an animal in the upright posture. 2. Canals or passages which mark the places of parts functionally active in animals below us. Within these, congenital cystic tumors are of frequent occurrence. B. J. Bland Sutton, F. R. C. S., in a lecture at the Royal College of Surgeons, London, enumerates them as follows: (*a*) The curious recess at the top of the pharynx, which brings the infundibulum of the third ventricle into relation with the buccal involution; (*b*) the neurenteric passage, which brings the central canal of the spinal cord and the alimentary canal into relation round the caudal end of the notochord; (*c*) the post-anal gut; (*d*) the bronchial arches; and (*e*) the developmental history of the testis, ovary, and Wolffian duct. Another one, says Dr. Eccles, is found in the fœtal tongue, running from the foramen cæcum to the origin of the middle portion of the thyreoid gland. It is a favorite place for dermoid cysts. Then there is the œsophageal cæcum of veterinarians. This is a blind pouch found in elephants, camels, hogs, etc. Dr. Albrecht, of Brussels, has traced it out as a remnant of the air-bladder of fishes. Its mark appears in the human embryo, and, although closed at birth, remains as a weak spot for the development of pharyngocele. 3. The thyreoid gland, appearing in all animals above amphibians. 4. Imperfect uterine supports for an animal that does not go upon all-fours, and a lessened antero-posterior pelvic diameter, due also to the upright posture. The pressure constantly exerted by the weight of the upper part of our bodies upon the bones of the pelvis has seemed to change the cuneiform outlet of the negro successively into the square of the Mongolian, the round of the Indian, and finally the oval of the Caucasian. The weight and volume of the pelvic organs appear to have altered the box-shaped pelvis of quadrupeds into the wedge-shaped pelvis of man. Every difference between the pelvis of a four-footed animal and that of a Caucasian is just what might be expected under an incessant strain with conditions as they are. This might be contemplated with some complacency if human heads diminished correspondingly in size. Unfortunately, the reverse is the case. The conditions of propagation seem destined to great embarrassment, and the race appears likely to become less prolific, which may not be a disadvantage. 5. The upright posture, especially in pregnant woman, has for ages put a strain upon the capillaries of the spinal region, and has tended to cut off the blood supply in the growing vertebræ. This, it is suggested, has greatly increased the liability of infants to spina bifida. It may also have helped to do away with the caudal appendage that our humbler cousins still possess, and of which the os coccygis is the rudimentary form buried in the tissues. Prolapse of the umbilical cord is also alleged to be due, when it occurs, to the upright posture of the pregnant woman; but surely this statement is open to serious doubt.

Heredity must be recognized as repetition. An animal that develops by its law must repeat the steps which produced it, wholly or in part. Blood must flow through all the old channels before it can reach the place where it can begin to develop the new ones. Pathology must seek to put itself upon a scientific basis by attempts at broad generalizations. Chemical, botanical, electrical, and physical theories have led to much substantial progress in therapeutics. Is it unreasonable to suppose that the hypothesis that originated in the brain of Herder, the speculations of Lamarck and Darwin, Wallace, Huxley and Morse, Mivart and Haeckel, together with those of Cope, Lankester, Döllinger, and Klein, may yet do as much for pathology?

THE PLACE OF EVOLUTION.

That the hypothesis of evolution has not arrived at the dignity of a theory is of very little consequence. Whether it is true or false is of comparatively slight moment. As Copernicus says: "It is not necessary that hypotheses should be true or even probable; it is sufficient that they lead to results of calculation which agree with observations." Like the x, y, z of mathematics, the doctrine of evolution holds an important place. It has led to discoveries impossible without it, and must be held in grateful remembrance always, whatever its ultimate fate. The way to find out how the universe came to exist is to study the universe. The hypothesis of evolution seems capable of proving a real vantage ground in the warfare against disease. Yet it may not prove so, and then it will be an easy thing to give it up as a working hypothesis in this particular sphere. Science labors not for the glory of a single idea. Its aim is to ennoble human life by making it healthier and happier and increasing material prosperity. When Molyneux fancied that the observations of the nutation of the earth's axis destroyed Newton's theory of gravitation, he tried to break it softly to Sir Isaac, who only answered: "It may be so; there's no arguing against facts." Such is the calm serenity of the flexible mind, ever open to conviction, above narrow prejudice or personal preference, and loving truth for truth's sake.

A word more concerning fallen man, who fell upward. Is man a degenerate animal? Is humanity doomed to early extinction? No! Pessimism has no scientific basis. It is contrary to reason. Man survives, and is likely to survive, because the fittest to live, move, and have his being in this delightful but very imperfect world. Now, the fittest is not the ideal by any means. It is simply the ideal of the situation, the creature best adapted to its surroundings, the one fittest to survive, the only one that can survive. Were absolutely perfect man a possibility, environment—which is by no means perfect—would soon be too much for him, and speedy extinction his inevitable destiny. Balance once destroyed, and harmony out of the question, humanity must go. But, like the policeman in the comic opera, it does *not* go. It stays, with all its imperfections on its head—and elsewhere. As a mechanism,

the human body is in some respects imperfect. The exposition of its alleged persistent weak points referred to in the preceding article must convince even the most arrogant of this melancholy fact. Even if not exactly poor worms, we are poorer in spots than was formerly believed. Yet there is comfort in the situation after all. It is well to remember that there are two kinds of perfection, the mathematical and the utilitarian. And the glory of the one is not the glory of the other. The first is quite outside the sphere of vital action. It is the prerogative of minerals and machinery. Man in mathematical perfection could not exist for a single instant. The proposition must be dismissed. Imperfect as it is, the human body is the best possible under the circumstances. Its imperfections are inevitable and essential, the result of the adaptation of means to the greatest number of ends.

THE POPULATION OF THE FUTURE.

What, then, of mankind in the future, according to the evolutionary idea? Civilization everywhere has had for its antecedent the increase of population. Numbers beyond the means of subsistence constitute a never-ceasing requirement for skill, intelligence, and self-control, and involve the exercise and growth of these qualities. The peaceful struggle for existence in a society that becomes ever more complex calls for an increase of the nervous centers in mass, complexity, and activity. The larger emotion needed as the source of energy for men who must hold their own and bring up families under intensifying competition is, other things being equal, the correlative of larger brain. In the original cost of construction and in subsequent cost of working, the nervous system must become a heavier tax upon the organism. This implies a diminished reserve of material for race maintenance, owing to the costliness of nerve structure and nerve function. But this greater emotional and intellectual power and activity must be understood as becoming, by small increments, organic, spontaneous, and pleasurable. The higher nervous development and greater expenditure in nervous action must not be taken to mean an intenser strain or a mentally laborious life. Even now, when relieved from the pressure of necessity, the Caucasian's passionate energy finds voluntary expression in enterprises and activities which the savage could not possibly keep up to satisfy urgent wants. In still higher degree our descendants seem destined to find the joy of living in careers entailing even greater mental expenditure. The demand for increased material to establish and carry on psychical functions will be a constitutional demand. Evolution points to a greater adjustment of man to his surroundings. In all its aspects, whether general or special, it is an advance toward equilibrium. Man, as now constituted, fails in certain matters. Failures to meet some of the outer actions to which he is exposed—actions mostly involved, remote, irregular—and failures to counteract the separate and joint forces amid which the organism exists, are the sum and substance of man's incompleteness. "Were there no changes in the environment but such as the organism has adopted changes to meet, and were it never to fail in the efficiency with which it met them, there would be eternal existence and universal knowlege."

The necessary antagonism of individuality and genesis not only fulfills with precision the *a priori* law of maintenance of race, from monad up to man, but insures final attainment of the highest form of this maintenance, in which the amount of life shall be the greatest possible, and the births and deaths the fewest possible. War is becoming unfashionable to a certain extent, accidents are fewer and fewer as civilization advances, disease in many forms is now known to be preventable, and these forms will doubtless be prevented in the future, women are becoming better instructed in regard to their place in nature and the care of their offspring, and men are learning how to value and care for women so as to afford them the best health and development. Excess of fertility has rendered the process of civilization inevitable; and the process of civilization must inevitably diminish fertility and at last destroy its excess. Pressure of population has been the proximate cause of progress, producing the original diffusion of the race, compelling men to abandon agriculture, forcing them into the social state, and making social organization inevitable. It has developed all social sentiments and stimulated to progressive improvements in production, to increased skill and intelligence, and to closer contact and more mutually dependent relationships. When the habitable parts of the globe are raised to the highest state of culture, when all processes for the satisfaction of human wants are brought to perfection, when the intellect is developed to competency for its work and the feelings are trained into complete fitness for social life, the pressure of population must gradually bring itself to an end. Humanity seems destined to excel in quality rather than in numbers. American mothers may some time share the proud position and dignity of the lioness in the fable, who, when twitted in an assemblage of other animals with the fact of producing only one at a birth, replied grimly and much to the point: "But that one is a lion." The two, three, or possibly four children in the families of the future promise to be citizens worthy of the State.

How may this further evolution, this higher life, this greater co-ordination of actions be expected to show itself? This may be answered by a review of present human needs. Numbers are no longer a prime necessity, and mechanical appliances are fast supplanting brute force. Human progress in the future points not to numbers, strength, or agility. There is still a need for increased mechanical skill—the co-ordination of complex movements—for awkwardness entails injuries and death, and the complicated tools of civilization require an increasing delicacy of manipulation. The advance in industrial and æsthetic arts implies a corresponding development in the executive and perceptive faculties of man. Advances in art and mechanical skill necessarily act and react. There is also ample room for an advance in intelligence, and a great demand for it as well. Life is shortened by ignorance. It kills more children than any disease. In attaining complete knowledge of our own nature, in ascertaining the conditions of existence to which we must conform and in discovering the means of conforming to

them, there is abundant scope for intellectual progress. In morality—the power of self regulation—there are also vast possibilities of improvement. The further cultivation of the will is an essential factor in larger and more complete living. Want of will more than want of knowledge betrays poor humanity into countless imperfections of conduct. Recognition of the proper course is not the only thing needful. There is a further prerequisite—a due impulse to pursue that course. Sentiments responding to the requirements of the social state and emotions that find their gratification in duties fulfilled must be more fully developed before the crimes, excesses, dishonesties, and cruelties that now so greatly abbreviate life can cease. Thus it will be perceived that future evolution—a more complete moving equilibrium—is likely to take the direction of higher intellectual and emotional development, together with its correlative and complement, increased mechanical skill.

MINOR PARAGRAPHS.

NATURAL AND ARTIFICIAL CARLSBAD WATER.

It seems that Mr. Carl H. Schultz, the well-known maker of artificial mineral waters, has been sued in the Circuit Court of the United States for the Southern District of New York by the "City of Carlsbad" and numerous other complainants associated in the action with the Eisner & Mendelson Company, of Philadelphia, the substance of the complaint being that the sale of Mr. Schultz's artificial Carlsbad water is an infringement of certain rights appertaining to the complainants. Of the merits of the question it is not within our province to speak pending the court's decision in the case, but we may mention that the defendant's answer to the complaint is of interest from its radical nature, inasmuch as it denies the existence of any "City of Carlsbad" and the alleged city's right to make laws, and also from its statements as to the character of the natural and pretended Carlsbad products sold for a long time, until their nature was publicly exposed, by the alleged city. Mr. Schultz charges that ancient municipality with having for years palmed off upon the credulous public ordinary Glauber's salt, worth two cents a pound, under the name of Carlsbad Sprudelsalz, at three dollars a pound. He states, also, that his artificial Carlsbad water, being made according to the best ascertainable formulæ, is in reality to be preferred to the natural water bottled for exportation, since the latter spoils in the course of a fortnight. In view of Mr. Schultz's long and honorable career in the trade in New York, his statements must carry great weight, whatever may be the outcome of this action at law.

THE MEDICAL CORPS OF THE ARMY.

It will be seen by a notice which we print in this issue that a board is soon to assemble in New York for the examination of candidates for appointment to the medical corps of the army. We learn that at present there are seven vacancies in the corps, and that another will occur in July, on the retirement of a medical officer. There is an opportunity, therefore, for eight young medical men to obtain positions in the corps during the next few months. Membership in the corps is in the highest degree honorable, and it affords facilities for the pursuit of certain branches of research that are generally beyond the reach of men who have an income to earn in civil life. It is an advantage also to have passed the strict examinations required for admission. On these accounts it is reasonably certain that the vacancies will be filled with men of such acquirements as to make them fit associates for the gentlemen now constituting the corps.

THE EASTERN DISPENSARY.

We lately commended the quality of the work done by this institution. It appears from the "Fifty-sixth Annual Report," for the year 1888, that the dispensary is also to be commended for the amount of work done by it. In the years 1886, 1887, and 1888, the numbers of patients treated were 22,396, 27,570, and 38,493, respectively; those of the prescriptions dispensed, 26,746, 39,691, and 58,659; and those of consultations and visits (not specified for 1886), 48,589 and 70,597. The total expenses for the respective years were $5,143.20, $8,460.68, and $10,584.60, *i. e.*, they were more than doubled in three years. Additional space, as a consequence, is needed, also more money, and we hope that the institution will soon be enabled to meet its enlarged necessities.

THE COMING PHARMACOPŒIAL CONVENTION.

In a little more than a year from now, as is stated in a notice to be found elsewhere in this issue, the convention of 1890 for the revision and publication of the United States Pharmacopœia will be held in Washington. It is pleasing to observe to what extent the labors of the convention—necessarily onerous—have been facilitated by the members of the convention of 1880. This is shown particularly in Dr. Robert Amory's timely and detailed notification, in the excellent character of the present pharmacopœia, and in the fact that a considerable sum of money was saved by the last convention and is now available for the purposes of the convention of 1890. It is to be hoped that the various corporations entitled to representation will send their best men to Washington, for the work is one that none others can do well.

THE ADMINISTRATION OF IRON IN CHLOROSIS.

At a recent meeting of the Obstetrical Society of London, an account of which we find in the "British Medical Journal," a paper having been read by Dr. W. Stephenson, of Aberdeen, "On the Relation between Chlorosis and Menstruation," Dr. Leith Napier supported the opinion that chlorosis depended upon climate to a certain extent; and spoke of the rarity of its coincidence with tuberculosis. As to the form of iron to be given, Blaud's pills were very useful, but the speaker preferred an old Berwickshire surgeon's prescription of a mixture of equal parts of iron filings, cream of tartar, and licorice powder, as much as would cover a shilling being given daily.

"THE AMERICAN ARMAMENTARIUM CHIRURGICUM."

We have received from Messrs. Tiemann & Co. a copy of their new catalogue of instruments, a volume of 846 pages, containing 3,414 illustrations, which include all the paraphernalia, apparatus, and instruments likely to be used or needed in any surgical operation upon the human body. Many of the instrument cuts are accompanied by descriptive text and instruction in their use, and not a few by somewhat lengthy extracts from works on surgery and articles that have appeared in medical journals. While these extracts—they might properly be classed as monographs—contain much information, we think they are out of place in a surgical catalogue, as their introduction there would seem to presuppose a lack of knowledge or of books, or a failure to keep up with the advances in surgery, as chronicled in books and journals, on the part of the surgeon. It is in keeping, however, with the American tendency to overdo, and as such calls for only passing comment. The mechanical part

of the book is very creditable, the illustrations, like the instruments made by Tiemann & Co., are excellent, and the catalogue, as a whole, is one that will prove invaluable as a book of reference to surgeons and physicians.

AN OPENING FOR A DOCTOR.

Much has been said about the overcrowded state of the medical profession in the United States. As we have often implied, the evil is more apparent than real, and there are still large districts in which there is actually a dearth of practitioners. One such region, in Tennessee, has lately been brought to our attention by Mr. James H. Cocke, a merchant of the town of Lambert. Mr. Cocke states that there is no practicing physician within a district eight miles square, including that town. He is therefore desirous of inducing one to settle in that place, where, he says, there is "a good paying practice." He prefers a married man, and says that he will supply him with a comfortable house for a small family at a merely nominal rental as an inducement to the right kind of man.

RIGGS'S DISEASE UNDER A NEW NAME.

In the "Gazette hebdomadaire de médecine et de chirurgie" for March 1st, M. David proposes the term Fauchard's disease for the affection of the dental alveoli now known as Riggs's disease. It seems that Fauchard, the "father of dental surgery," described the disease in 1728, but he called it a species of scurvy. On this account, and because Fauchard's description was meager, we think our countryman, Dr. Riggs, the better entitled of the two to any credit that the name may imply.

THE BORDEAUX POLYCLINIC.

The members of the staff of this institution, M. E. J. Moure, M. A. Pousson, and M. W. Dubreuille, have founded a semi-annual journal of general medicine, the "Annales de la polyclinique de Bordeaux." The first number, for January, 1889, an octavo of sixty-four pages, contains interesting articles by all those gentlemen, and presents a creditable appearance.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending April 3, 1889:

DISEASES.	Week ending Mar. 26.		Week ending Apr. 3.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	7	2	8	5
Scarlet fever	435	61	446	62
Cerebro-spinal meningitis	3	1	4	3
Measles	184	19	134	12
Diphtheria	158	39	171	54

Bellevue Hospital Medical College.—The following changes have occurred in the corps of teachers: Dr. E. L. Keyes has resigned the chair of genito-urinary surgery, syphilography, and dermatology, and Dr. Samuel Alexander, of the class of 1882, has been appointed to fill the chair. Dr. Carlos F. MacDonald, Superintendent of the State Asylum for Insane Criminals at Auburn, of the class of 1869, has been appointed professor of mental diseases.

An Army Medical Board.—The Surgeon-General of the army gives notice that a board will be in session in New York from May 1 to May 31, 1889, for the examination of candidates for appointment in the medical corps of the army, to fill existing vacancies. Persons desiring to present themselves for examination by the board should make application to the Secretary of War for the necessary invitation before May 1, 1889, stating the place of birth and place and State of permanent residence, and inclosing certificates based on personal knowledge from at least two persons of repute as to American citizenship, character, and moral habits. Testimonials as to professional standing from professors of the medical college from which the applicant graduated, and of service in hospital from the authorities thereof, are also desirable. The candidate must be between twenty-one and twenty-eight years of age, and a graduate from a *regular medical college*, evidence of which, his diploma, must be submitted to the board. Further information regarding the examinations and their nature may be obtained by addressing the Surgeon-General, United States Army, Washington, D. C.

A German Dermatological Society.—According to the "British Medical Journal," a meeting was recently held, in which sixty-nine dermatologists from Germany, Austria, and other countries took part, at which it was resolved to found a German Dermatological Society, to meet once a year, in Whitsun week. This year's meeting is to be held at Prague, with Professor Pick, of that city, as president.

M. Pasteur.—The "Lancet's" Paris correspondent states that the Emperor of Austria has conferred the Order of the Crown of Iron on M. Pasteur, giving him the right to the title of baron and the insignia of nobility.

The Death of Dr. George Johnston, of Dublin, is announced in the "British Medical Journal" as having taken place on the 14th of March. The deceased, who was seventy-five years old, was a well-known obstetrician, for seven years the master of the Rotunda Lying-in Hospital.

Instruments for Massage.—The instruments for massage described in our last issue, on page 362, were invented by Mr. T. Cecil, lecturer on the art of massage at the Bellevue Hospital Training School for Nurses.

An International Congress of Therapeutics and Materia Medica.—In connection with the Paris exposition of 1889, an International Congress of Therapeutics and Materia Medica will sit at the *Hôtel des sociétés savantes*, No. 28 rue Serpente, from the 1st to the 5th of August. All physicians, pharmacists, and veterinarians who register and pay the fee of 10 francs will be considered as members. The committee of organization is composed of M. Moutard-Martin, M. Dujardin-Beaumetz, M. Constantin Paul, M. P. G. Bardet, M. Labbé, and M. R. Blondel. Communications should be sent to Dr. Bardet, adjunct secretary-general of the committee, No. 119 *bis*, rue Notre-Dame-des-champs, Paris. Titles of papers to be read should be communicated to Dr. Bardet before the 15th of May. Each subscriber will be entitled to a copy of the volume of "Transactions." The following subjects of discussions are already announced: "On Analgesic Antithermics, their Chemistry and Pharmacology, their Physiological Action and Therapeutic Uses, and the Laws that point to a Relation between Chemical and Physiological Function" (reporter, M. Dujardin-Beaumetz); "On the Antiseptics suited to the Various Species of Pathogenetic Microbes, the Comparative Value and Special Action of Antiseptics, their Mode of Absorption, and the best Methods of administering them" (reporter, M. Constantin Paul); "On Cardiac Tonics, their Nature and Special Actions, and the Relative Value of Plants and their Active Principles, the Alkaloids and Glucosides" (reporter, M. Bucquoy); "On New Vegetable

Drugs" (reporter, M. Planchon); and "The Unification of the Weights and Measures used in Formulæ, and the Utility of an International Pharmacopœia."

The University of Vermont.—Dr. A. M. Phelps, of New York, has been elected to the chair of surgery. The course in surgery begins on the 15th of May.

The Beaumont Hospital Medical College, of St. Louis, held its annual commencement on Thursday, March 28th.

The New York Academy of Medicine.—We have been asked to publish the following: "The Council of the Academy, at its meeting on March 26th, appointed Dr. A. L. Loomis, Dr. A. Jacobi, Dr. E. Herrick, Dr. G. A. Peters, and Dr. F. A. Castle a Building Committee. The final payment on the lots Nos. 17, 19, and 21 West Forty-third Street must be made on the first day of May, when the transfer of the title will take place. The Academy is already in possession of sufficient means to erect the new building, but lacks several thousand dollars of the amount necessary to purchase the site. Fellows of the Academy who have not already contributed to the building fund should send their donations without delay to Dr. J. E. Janvrin, treasurer of the committee, at 191 Madison Avenue. A number of fellows have given $1,000, and the list of amounts in three numerals is already quite extended, but needs to be more than doubled. The need for prompt subscriptions is urgent."

The Medico-chirurgical College, of Philadelphia, held its annual commencement exercises on Thursday, the 4th inst. On the preceding evening Professor Thaddeus A. Reamy, of Cincinnati, delivered the annual oration before the Alumni Association, after which the association gave a dinner in honor of Dr. Reamy.

The Medical Microscopical Society of Brooklyn held a meeting on Wednesday evening, the 3d inst., at the Hoagland Laboratory, at which Dr. Heitzman gave a demonstration of the minute structure of the basis substance of bone tissue, and Dr. Jones a demonstration of ulcers on mucous surfaces.

A Medical Bill of the Olden Time.—Dr. Wiggins, of Huntington, Long Island, a century ago, had some of the "poor practice" of that town. He has left a bill against the supervisors for the treatment of an Indian maiden, Catharine by name:

	£	s.	d.
"1763, March 10, Indian Catig to visit, bleeding & drops	0	5	9
"April 1, Do to visit, pills, bleeding & drops.	0	5	0
"Do Cash po. vial, drops 2s	0	2	10
"April 30, Do to visit & med	0	8	0
"Do to Loaf Bread, 8 lb. pork, 7 lb. flour & rice	0	8	6
	£1	10	1
"Do to 2 lb. sugar & Quart rum		2	10."

From this we judge that Dr. Wiggins followed up his antiphlogistic regimen with an ample diet and stimulation.

Changes of Address.—Dr. Alfred Ludlow Carroll, from New Brighton, Staten Island, to No. 30 West Fifty-ninth Street, New York; Dr. Sherwood Dunn, formerly of New York, from No. 14 avenue de l'Opéra to No. 15 rue des Pyramides, Paris.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from March 17 to March 30, 1889:*

Newton, Richard C., Captain and Assistant Surgeon. By direction of the Secretary of War, the leave of absence granted in S. O. 272, November 21, 1888, is extended to include May 22, 1889. Par. 17, S. O. 64, A. G. O., Washington, March 19, 1889.

The resignation of Richard C. Newton, Captain and Assistant Surgeon, has been accepted by the President, to take effect May 22, 1889. Par. 18, S. O. 64, A. G. O., Washington, March 19, 1889.

Mays, Louis M., Captain and Assistant Surgeon (Fort Schuyler, New York Harbor), will proceed to Camp S. B. Luce, Fisher's Island, N. Y., with Battery K, 5th U. S. Artillery, and report to the camp commander for a tour of rifle practice. Par. 10, S. O. 158, Headquarters Division of the Atlantic, Governor's Island, New York City, Aug. 2, 1889.

Atlanta Barracks, Ga., established by G. O. 28, A. G. O., March 21, 1889.

Deaths.

Barnett, Richards, Assistant Surgeon, died March 27, 1889, at Fort Riley, Kansas.

Alexander, R. H., Lieutenant-Colonel and Surgeon, died March 29th, at Los Angeles, California, as reported by telegram from the commanding officer.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the three weeks ending March 30, 1889:*

Hesler, Frederick A., Assistant Surgeon. Detached from the Naval Hospital, New York, and ordered for examination preliminary to promotion.

Ogden, Frederick N., Assistant Surgeon. Ordered to the Receiving-ship St. Louis, Navy yard, League Island.

Bryant, Patrick H., Assistant Surgeon. Detached from the Receiving-ship St. Louis, and ordered to the Naval Hospital, Chelsea, Mass.

Farwell, W. G., Surgeon. Detached from the Receiving-ship Franklin April 1st, and ordered to the Naval Hospital, Norfolk, Va.

Marmion, R. A., Surgeon. Ordered to the Receiving-ship Franklin.

Ferebee, N. McP., Surgeon. Detached from the Naval Hospital, Norfolk, Va., and placed on waiting orders.

Berryhill, Thomas A., Assistant Surgeon. Detached from the Naval Academy, Annapolis, Md., and ordered to the Naval Hospital, New York.

Heffenger, A. C., Passed Assistant Surgeon. Ordered to appear before the Retiring Board, Washington, D. C.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the five weeks ending March 30, 1889:*

Magruder, G. M., Assistant Surgeon. To report to the Supervising Surgeon-General in person for temporary duty. March 1 and 23, 1889.

Kinyoun, J. J., Assistant Surgeon. Relieved from duty at Baltimore, Md., to rejoin his station at New York. March 18, 1889.

Perry, J. C., Assistant Surgeon. Commissioned by the President, March 21, 1889. Ordered to the Marine Hospital, Mobile, Ala., for temporary duty. March 22, 1889.

Smith, A. C., Assistant Surgeon. Commissioned by the President, March 21, 1889. Ordered to the Marine Hospital, Louisville, Ky., for temporary duty. March 22, 1889.

Bailhache, P. H., Surgeon. Relieved from duty at Philadelphia, Pa., to assume charge of the Service at San Francisco, Cal. March 28, 1889.

Sawtelle, H. W., Surgeon. When relieved at San Francisco,

Cal., to assume charge of the Service at Portland, Me. March 28, 1889.

BANKS, C. E., Passed Assistant Surgeon. When relieved at Portland, Me., to assume charge of the Service at Vineyard Haven, Mass. March 28, 1889.

AMES, R. P. M., Passed Assistant Surgeon. When relieved at Vineyard Haven, Mass., to assume temporary charge of the Service at Philadelphia, Pa. March 28, 1889.

MAGRUDER, G. M., Assistant Surgeon. When relieved at Louisville, Ky., to proceed to Memphis, Tenn., for temporary duty. March 28, 1889.

STONER, J. B., Assistant Surgeon. To proceed to Pittsburgh, Pa., for temporary duty. March 28, 1889.

Society Meetings for the Coming Week:

MONDAY, *April 8th:* Louisiana State Medical Society (New Orleans); New York Academy of Medicine (Section in Surgery); Lenox Medical and Surgical Society (private); New York Ophthalmological Society (private); New York Medico-historical Society (private); New York Academy of Sciences (Section in Chemistry and Technology); Boston Society for Medical Improvement; Gynæcological Society of Boston; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private); Baltimore Medical Association.

TUESDAY, *April 9th:* Alabama State Medical Society (Mobile); Florida State Medical Society (Key West); New York Medical Union (private); Medical Societies of the Counties of Jefferson (quarterly—Watertown), Oneida (quarterly—Utica), Ontario (quarterly), Rensselaer and Tioga (quarterly—Owego), N. Y.; Newark, N. J., and Trenton (private), N. J., Medical Associations; Bergen, N. J. (annual—Hackensack), and Cumberland, N. J. (annual), County Medical Societies; Fairfield, Conn., County Medical Association (annual); Baltimore Gynæcological and Obstetrical Society.

WEDNESDAY, *April 10th:* New York Pathological Society; New York Surgical Society; American Microscopical Society of the City of New York; Medico-legal Society; Medical Society of the County of Albany; Tri States Medical Association (Port Jervis, N. Y.); Pittsfield, Mass., Medical Association (private); Philadelphia County Medical Society.

THURSDAY, *April 11th:* New York Laryngological Society; Society of Medical Jurisprudence and State Medicine; Brooklyn Pathological Society; Medical Societies of the Counties of Cayuga and Fulton (quarterly), N. Y.; South Boston, Mass., Medical Club (private); New London, Conn., County Medical Society (annual); Pathological Society of Philadelphia.

FRIDAY, *April 12th:* New York Academy of Medicine (Section in Neurology); Yorkville Medical Association (private); Medical Society of the Town of Saugerties, N. Y.

SATURDAY, *April 13th:* Obstetrical Society of Boston (private).

Proceedings of Societies.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Meeting of February 25, 1889.

The President, Dr. A. S. HUNTER, in the Chair.

Continued Discussion on the Value of Water in Therapeutics.—Dr. A. JACOBI read a paper in which allusion was made to the fact that he had been expelled from a certain institution twenty years before on the charge of being guilty of using cold water in the treatment of sick children. Reference was made to rules as to the use of water given in papers already published by him.

Dr. S. H. DESSAU believed that a leading cause of disease in infants would be stopped when nurses and mothers were taught to give an infant water instead of milk as a means of soothing it whenever it chanced to become restless. Cold water should also be given freely in summer diarrhœa. A daily bath was an excellent tonic for infants; it should be of warm water until after the fourth or the sixth month, when the temperature might be reduced a degree each week until baths of a temperature of 70° F. were given in winter, and of still cooler water in summer. Only the precaution should be taken to immerse the child slowly. The cold bath was the best means of obviating the tendency shown by strumous children to catarrhal affections. Sponging of the chest and spinal column was a good means of checking an attack of laryngismus stridulus. Convulsions in children, accompanied by fever, could be arrested by a cold pack; where they resulted from some irritation, a hot bath at 112° F. acted as a cerebral sedative.

He had successfully used cold enemata in summer diarrhœa, hot intestinal douches for the sciatica resulting from chronic colitis, and cold sponging along the spine as a tonic in chlorosis and phthisis, and had injected water subcutaneously in hundreds of cases for the relief of local pain.

Dr. VINCENT ZOLNOWSKI read a paper in which he called attention to the importance of thoroughly studying the physiological principles involved in the use of water before attempting to make a practical application of them. The remedy was often as powerful for evil as for good, and the failures which attended the hydropathic treatment of diseases were but too often due to the method employed. Intelligent hydropathic treatment could not be learned from the text-books alone; on the contrary, good judgment and much experience were needed to enable one to make the action of water curative. In every case the condition of the kidneys, lungs, heart, and liver needed careful study. The previous life-history of each patient was to be investigated and the age taken into careful account. In the same person the treatment was to be varied each day to suit the varying condition of the circulation, temperature, and vital resistance. The atmospheric temperature must always be considered in deciding upon the degree of cold or heat required. Each individual had his own characteristics and was a law to himself. This law underlay his organism, and was to be ascertained if possible. Any mental distress lowered the vital resistance.

Water might be used as an antiphlogistic, as a sedative, as an excitant tonic, as a derivative, or as a solvent, but there were two general methods to be followed, which were: 1. The excitant. 2. The depressant.

As an excitant it should be used quickly and the degree of temperature proportioned to the degree of irritability to be overcome—that is, the less the degree of irritability the lower must be the temperature of the water used to get a reaction. The withdrawal of heat from the economy should be small in amount and correspond to the rapidity of its formation. This purpose could be attained by short washes or light sprays, combined with frictions.

In chronic diseases, with deep tissue changes and marked functional disturbances, it was necessary to increase the functional activity of most of the organs, to improve the condition of the blood, and, by improving the capillary circulation, to remove the residuum of those tissue changes. For these purposes he used hot fomentations, dry packs, or wet packs under blankets, of long duration, followed by a cold half-bath or a cold

shower bath of short duration, and then by rubbings and active movements endeavored to restore warmth quickly.

The depressant method was of two sorts, antiphlogistic and sedative. In the antiphlogistic plan the heat must be withdrawn slowly, for, if it was abstracted suddenly and rapidly, the nerves were irritated, reaction took place, and the changes in the deeper tissues were thereby increased. Here he used half baths, sitz baths, wet packs of short duration, and wet compresses frequently changed. The sedative method was of use when the nerves were greatly excited. Heat was not then considerable, and its loss was but slowly restored. In such cases moderate or tepid temperatures were to be preferred, and the application continued only a few moments. A low temperature was from 43° to 54°, a medium temperature from 54° to 65°, and a tepid temperature from 65° to 80°.

The use of the cold pack followed by massage in the treatment of anæmia he would only call attention to as showing the effect of that procedure in the way of increasing assimilation and promoting the absorption of nutritive material from the digestive canal. An increase in the elimination of urea during the hours of the packs had been demonstrated. It had also been shown that a vaso-motor neurosis was the active element in the causation of neurasthenia or of that form of anæmia dependent upon a vice of assimilation and nutrition.

The varieties in the methods, and the differences in the effects of the hydropathic processes, could be best illustrated by giving the history of a few cases.

1. A man in active business, who had all his life been subject to indigestion, acidity of the stomach, constipation, and diarrhœa, noticed during the winter of 1885–'6 that he was very susceptible to cold. Pain and stiffness appeared in the shoulders and arms and spread over the entire body. The abdomen, face, neck and eyelids, and the sclerotic membranes of the eye shared in the general hardness and rigidity. He could lie in one position only fifteen or twenty minutes at a time. The hands became so painful that they had to be carried across the chest, and could scarcely be raised to the mouth. Russian baths and the usual treatment for rheumatic gout had been thoroughly tried without benefit. The case was finally diagnosticated by Dr. Janeway, Dr. McBride, and others who were seen in consultation as one of sclerodermia. The course was supposed to be inevitably progressive to a fatal end, and that very speedily.

The weight decreased in a few months from 209 to 163 pounds. The urine was found to be highly acid and loaded with urates. The constant current was applied for three months with the effect of only increasing the pain without lessening the rigidity. Purely hydropathic treatment was then adopted, the result of which was that the man's health was now nearly restored. The weight had increased to 184 pounds; the digestion had become good, the bowels regular, the movements of the legs almost normal, and those of the hands much improved; pain had entirely ceased; the tenderness of the body had disappeared; and the hardness had become limited to the fingers. The treatment, at first daily but gradually diminished to three times a week, had consisted of hot fomentations over the rigid parts followed by half-baths at a low temperature, and then by massage with goose-grease. Afterward this had been replaced by baths at 105° F., followed by a cold falling douche lasting a minute or two, the object being to stimulate the capillary circulation. At the present time the patient was receiving full wet packs, under blankets, an hour and a half in duration, followed by half-baths of medium temperature. The massage with goose-grease had been continued throughout.

2. This patient was a physician in New York, had been a victim of the morphine habit, and had been permanently cured in three months. The treatment had consisted mainly of a cold falling douche over the head and spine, a wet bandage worn night and day around the abdomen, covered with flannel and oil-silk and changed every four hours (for the relief of the tympanites), and (as a derivative for the insomnia) wet bandages on both legs from knee to ankle, put on cold and covered with flannel. As the minimum dose of morphine was reached, wine and coffee were used to remove the intense nervous depression.

3. This case was one of chronic articular rheumatism of twenty years' standing, complicated with mitral insufficiency. The patient was obliged to use crutches. He had been treated by many leading physicians. At the end of four months he was able to return to his duties, and had remained well during the eleven years since. The treatment consisted of hot fomentations over the painful joints, and half-baths of moderate temperature. Then wet packs of an hour's duration were used, and falling douches over the joints.

4. This patient was a physician who had been in practice for some time in the city of Mexico, where, from the climate and the diet, a lithæmic state had been developed, with infra-orbital neuralgia as its direct manifestation. The latter had lasted for four years, and had unfitted him for duty of any kind. Remedies had, of course, been tried in great variety, including a change of climate to Florida, and another to Cuba. He received hydropathic treatment daily for nine months and returned to Mexico well. At first he had hot douches over the liver and kidneys, followed by full baths of moderate temperature three times a week, and on the alternate days full wet packs under blankets for an hour, followed by a wet sheet at 75°. Wet compresses of medium temperature and short duration, frequently repeated, were applied over the infra-orbital nerve, and subsequently pin-douches of moderate temperature were used.

Dr. A. Seibert illustrated one of the internal uses of water by washing out the stomach of an infant, and made some remarks on the technique of this simple operation, and also on the conditions in which it was indicated. There were three of the latter: 1. Dyspepsia from bad feeding and overfeeding, with remnants of previous meals remaining in the stomach, where, being unacted on by the gastric juice, they fermented, and so infected the food taken at the next meal. This process went on continuously from meal to meal, but could be stopped entirely by a single washing out three or four hours after a meal, and giving nothing but barley gruel for the next two days. 2. Chronic enteric catarrh, often met with in the autumn, with inability to eat, and rapid loss of strength. One washing out, together with high irrigation of the rectum, cured these cases also. 3. Cholera infantum, such as that produced by tyrotoxicon, or that in which persistent vomiting was a prominent symptom. If there were no changes in the tissue of the brain, washing out the stomach would check this vomiting, and milk could be given and retained within an hour afterward. Twenty-six out of twenty-eight children so treated for this disease during the previous summer had recovered. The action of water was here purely mechanical, and simply removed fermenting matter. He added no antiseptic or other drugs to the water used, as being unnecessary and possibly harmful. The younger the child the easier was the treatment to apply, and the more certain the benefit which would result.

Dr. R. L. Parsons reviewed some of the external uses of water in nervous diseases, and especially the prolonged application of hot water in some maniacal states. Thus, a patient suffering from violent and destructive mania might be put into a warm bath the temperature of which was slowly increased to 105° or 110°, and kept there for half an hour or an hour, or more. Complete quietude would often be the result. For this

treatment to be safe the heart and lungs must be sound, and the strength of the patient not exhausted. The head must be kept cool during its continuance, and it should be followed by a cold sponging, and the patient then put to bed with a fair amount of covering. If a maniacal patient was in an exhausted condition, he could be placed in a wet pack to advantage. This enforced rest without the employment of force by attendants, and allowed of sleep. It could be continued for one or two hours, followed by sponging with cool water, and could be repeated if necessary a number of times.

A warm bath at bedtime was an excellent preventive of aching and soreness during sleep, or of insomnia appearing after a few hours of sleep. For the latter purpose it was more effective if taken before the insomnia developed. Massage with an unguent would add to the good effect of the bath. When fever was developed from a state of mental distress or excitement, the condition must be recognized as one of low nervous tone and vital depression, and here a cool bath of short duration followed by manipulation, or, still better, a wet sheet and plenty of rubbing through the sheet, would prove the best sedative.

Dr. W. W. Van Valzah reviewed the rules which it was necessary to follow to get beneficial results from the internal use of hot water before meals. It should never be taken less than an hour or two before a meal, and should be drank very slowly. Where there was cardiac weakness the patient should lie down and take the water still more slowly, and not of a temperature sufficient to excite the heart. Otherwise, cardiac paralysis might suddenly ensue. The same caution in the use of hot water internally must be observed where there was a tendency to hæmorrhage, during the menses, and in diabetic subjects. The best test by which to ascertain when enough water was being taken was an examination of the density of the urine. When the urine was heavier than 1·016, or of a high color, more water as a diluent was certainly needed. The general effects of hot water internally were stimulating; but one peculiar effect was to be looked for, which in very nervous persons might occasion alarm. The desquamation of epithelium from the lower bowel was very much increased, so as to amount in some cases to a catarrh of the bowel. Here it was only necessary to go more slowly in the treatment for a time, and to give a simple carminative.

Book Notices.

Hunterian Lectures on Tension, as met with in Surgical Practice, Inflammation of Bone, and on Cranial and Intracranial Injuries. Delivered before the Royal College of Surgeons of England, June, 1888. By Thomas Bryant, F. R. C. S., M. Ch. (Hon.) Roy. Univ. I., etc. London: J. & A. Churchill, 1888. Pp. 146.

Tension is a word which has of late been used much and in many senses, so Mr. Bryant defines it from a surgical standpoint as "distension or stretching of parts by a force acting from within," such as the growth of a neoplasm or the effusion of fluid. It is also used to denote the stretching of tissues which have been divided and brought together by sutures, the strain on the sutures from the elasticity of the tissues being the measure of the tension. The one subjective symptom is pain, which varies with the degree of tension and the quality and quantity of the nerve-supply to the part. "No tension means little pain; severe tension severe pain." It is the cause of most pain. The effects vary as the degree; if slight, it may only tend to maintain the inflammatory process; if severe, it acts powerfully to destroy the tissue. In wounds it may originate or keep up inflammation in a degree proportionate to its severity.

The second lecture is devoted to the effects of tension in inflammation of bone and its coverings. Here the author maintains that the pain is due to tension, and that its severity is a fair measure of its intensity. In acute inflammation of bone it is the chief cause of necrosis. Its relief is imperative on account of the unyielding nature of bone, and on account of the anatomical arrangement of the vessels, which favors blood stasis.

The third lecture, on cranial and intracranial injuries, is largely devoted to concussion of the brain. This term, he thinks, really means cerebral bruising or laceration with more or less hæmorrhage, and he proposes to call it "concussion and injury" of the brain. All injuries to the head should be estimated primarily with reference to the amount of damage the brain has sustained, and secondarily with reference to the risk of its becoming involved.

These lectures are valuable to the physician as well as to the surgeon, and will repay careful perusal.

GENERAL LITERARY NOTES.

Among recent foreign publications we note the following:

F. Savy, Paris.—L. Ranvier, "Traité technique d'histologie." 2d ed. (18*fr.*)

L. Baudoin & Cie, Paris.—"Recueil de mémoires et observations sur l'hygiène et la médecine vétérinaires militaires." 2d series, vol. xii.

G. Masson, Paris.—Ad. Nicolas, "Chantiers de terrassements en pays paludéens." (10*fr.*) —— E. Follin and Simon Duplay, "Traité élémentaire de pathologie externe." Vol. vii, fasc. 3. (4*fr.*) —— P. Miquel and A. Rueff, "Traitement de la tuberculose pulmonaire par les pulvérisations biiodo-mercuriques." —— Ad. Nicolas, "La Bourboule actuelle." (3*fr.*) —— Bertillon, "Annuaire statistique de la ville de Paris pour l'année 1888."

Lecrosnier & Babé, Paris.—Schüle, "Traité clinique des maladies mentales." 3d ed., 2d fasc. (5*fr.* [Price of the complete work, 9*fr.*]) —— Auvard, "Travaux d'obstétrique." (24*fr.*) —— Baumel, "Maladies de l'appareil digestif." Vol. ii. (8*fr.* [Price of the complete work, 17*fr.*]) —— C. Bourdillon, "Psoriasis et arthropathies." (5*fr.*) —— Pauillet, "Étude médico-philosophique sur les pertes séminales involontaires, spermatorrhée." 3d ed. (3*fr.* 50.) —— H. Tappeiner, "Manuel de diagnostic chimique au lit du malade." (2*fr.*) —— M. Lamiot, "De la situation des fœtus et de la disposition des œufs dans le cas de grossesse gémellaire." (3*fr.* 50.) —— Journiac, "Recherches cliniques sur le délire hypochondriaque." (2*fr.* 50.) —— J. M. Charcot, "Œuvres complètes."

A. Bannaviant, Lyons.—F. Glénard, "De la palpation du foie par le procédé du pouce."

O. Doin, Paris.—Kuhn, "L'enseignement et l'organisation de l'art aux États-Unis." (10*fr.*) —— E. Olavide, "Du rhumatisme et des dermatoses rhumatismales." (1*fr.* 50.) —— G. Morice, "Étude descriptive des eaux de Néris-les-Bains et exposé critique de leurs indications et contre-indications." (2*fr.* 50.) —— A. Filleau and Petit, "Bulletin de la phthisie pulmonaire." (5*fr.*) —— Bédoin, "Hygiène publique à Chambéry." —— G. Bardet, "Formulaire annuel des nouveaux remèdes." (4*fr.*) —— Henri Verneuil, "Les grandes fièvres à travers les découvertes." (2*fr.* 50.) —— F. Raymond, "L'étude des maladies du système nerveux en Russie." —— Jules Rouvier, "Hygiène de la première enfance." —— O. Terrillon, "Leçons de clinique chirurgicale." (10*fr.*) —— Dujardin-Beaumetz, "Dictionnaire de thérapeutique." (100*fr.*) —— Laurent Sechyron, "Traité d'hystérotomie et d'hystérectomie par la voie vaginale." (11*fr.*) —— A. Deschamps, "Les névroses et le pessimisme." (1*fr.*) —— A. Corre, "Les criminels." (5*fr.*) —— L. Tillier, "L'instinct sexuel chez l'homme et chez les animaux." (3*fr.* 50.)

F. Alcan, Paris.—L. Pozzi, "Congrès français de chirurgie." 3d session. Paris, 1888. (14*fr.*) —— Féré, "Dégénérescence et criminalité." (2*fr.* 50.)

Rameau-Villette, Paris.—Ladier, "De la prophylaxie des maladies épidemiques et transmissibles."

J. B. Baillière & fils, Paris.—Coste, "L'inconscient." (2*fr.*) —— Ludwig Edinger, "Anatomie des centres nerveux." (8*fr.*) —— Johannès Chaumier, "Essai sur le mal de tête." (2*fr.* 50.) —— F. A. Lefèvre, "Le vitalisme en medecine ou étude des lois de la vie humaine." —— M. R. Moniez, "Les parasites de l'homme." (3*fr.* 50.) —— A. Kelsch and P. L. Kiener, "Traite des maladies des pays chauds, region rétropicale." (24*fr.*) —— A. J. C. Barthelemy, "L'examen de la vision." (3*fr.* 50.) —— "Guide Rosenwald." (3*fr.*) —— Imbert, "Les anomalies de la vision." (3*fr.* 50.) —— J. C. Félix Guyon and, F. P. Guiard, "Leçons cliniques sur les affections chirurgicales de la vessie et de la prostate." (16*fr.*) —— E. Macé, "Traité pratique de bacteriologie." (8*fr.*) —— Coste de Lagrave, "Hypnotisme. États intermédiaires entre le sommeil et la veille." (2*fr.*) —— Galezowski and Daguenet, "Diagnostic et traitement des affections oculaires." ii, 2, 3. —— G. Becavin, "L'école de Salerne et les medecins salernitains." (2*fr.* 50.) —— H. Bertoye, "Étude clinique sur la fièvre du goitre exophthalmique et comparativement sur les fièvres spéciales à quelques autres névroses." (2*fr.* 50.) ——F. Trévoux, "Des tumeurs à tissus multiples." (3*fr.*) —— F. Balons, "Étude sur les phénomènes morbides liés à l'action exercée par les maladies infectieuses sur les centres nerveux." (2*fr.* 50.) —— E. Bories, "Aperçu médical sur la maison départmentale de Nauterre." (2*fr.*) —— N. Gallois, "Douze cents formules favorites des médecins français et étrangers." (3*fr.* 50.)

G. Steinheil, Paris.—Le Gendre, Barette, and Lepage, "Traité pratique d'antisepsie appliquée à la thérapeutique et à l'hygiène." (10*fr.*) —— Aug. Ollivier, "De la prophylaxie de la rage." (1*fr.*) —— L. A. de Saint-Germain, "De la prophylaxie de la rage." (1*fr.*) —— D. Pavlides, "Des arthropathies tabétiques du pied."

A. Coccoz, Paris.—L. A. Demelin, "Documents pour servir à l'histoire anatomique et clinique du segment inférieur de l'utérus pendant la grossesse, l'accouchement et les suites de couches." (3*fr.* 50.)

O. Berthier, Paris.—A. Clopatt, "Études sur l'hystérie infantile." (3*fr.*) —— Q. Moquin-Tandon, "Cours de zoologie médicale." (7*fr.*)

Asselin & Houzeau, Paris.—A. Bouchard, "Nouveaux éléments de pathologie externe." ii. "Maladies des régions," fasc. 1. (6*fr.*)

A. Delahaye & E. Lecrosnier, Paris.—Hermann v. Zeissl, "Traité clinique et thérapeutique des maladies vénériennes." —— Gaudin, "Sur la pathogénie des accidents nerveux." (2*fr.*) —— P. Durey-Comte, "Contribution à l'étude du rétrécissement congénital de l'artère pulmonaire." (3*fr.* 50.)

F. Hayez, Brussels.—J. Crocq, "Étude sur la nature et les inconvénients de l'hypnotisme."

Bureaux du Progrès médical, Paris.—J. Glover, "Notes et schéma sur la topographie pathologique de l'axe cérébro-spinal." (2*fr.*) —— P. Love, "La mort par la décapitation." (6*fr.*) —— Legrain, "Contribution à l'étude de la folie communiquée." (1*fr.*) —— P. L. Pampoukis, "Étude expérimentale sur le vertige marin." (2*fr.* 50.)

A. Delahaye, Paris.—Fort, "Nouveau procédé pour guérir les rétrécissements de l'urèthre rapidement et sans aucun danger."

F. Enke, Stuttgart.—G. v. Antal, "Specielle chirurgische Pathologie und Therapie der Harnröhre und Harnblase." (12*M.*) —— F. Friedberger and E. Froehner, "Lehrbuch der speciellen Pathologie und Therapie der Hausthiere." (14*M.*) —— F. Hersing, "Kompendium der Augenheilkunde." (7*M.*) —— R. Kobert, "Kompendium der Arzneiverordnungslehre fur Studirende und Aerzte."

H. Laupp'sche Buchh., Tübingen.—Aubert, "Physiologische Studien über die Orientirung." (4*M.*) —— P. Bruns, "Beiträge zur klinischen Chirurgie." iii. (12*M.*)

Orell, Tuessli, & Co., Zurich.—O. Dietzsch, "Die Kuhmilch." (2*M.*)

Stahel'sche Univ.-Buchh., Würzburg.—R. A. Fick, "Ein neues Ophthalmotonometer." (2*M.*) —— F. Krämer, "Untersuchungen über die Fähigkeit des Lesens bei Gesunden und Geisteskranken." (0*M.* 80.)

Lipsius & Tischer, Kiel.—A. V. de Souza, "Zwei Fälle von juveniler Form der Muskelatrophie." (2*M.*)

Dominicus, Prague.—F. Torggler, "Bericht über die Thätigkeit der gebartshilflichgynäkologischen Klinik zu Innsbruck."

Mittler & Sohn, Berlin.—W. Roth, "Jahresbericht über die Leistungen und Fortschritte auf dem Gebiete des Militar-Sanitatswesens." (5*M.* 50.)

Halm & Goldmann, Vienna.—L. Hermann, "Universitäts-Kalender, Wiener, für das Studienjahr 1888–1889." (1*M.* 50.)

A. Felix, Leipsic.—S. Vinogradsky, "Beitrage zur Morphologie und Physiologie der Bakterien." (6*M.* 40.)

Fratelli Rechiedei, Milan.—D. L. Jullien, "Trattato pratico delle malattie veneree." (24*l.*) —— A. Nélaton, "Elementi di patologia chirurgica." (90*l.*) —— C. E. Brown-Séquard, "Lezioni cliniche sulle paraplegie e emiplegie spinale." —— Camuset and Albini, "Manuale di oftalmologia." (16*l.*) —— D. C. Zappalà, "Terapia delle piaghe e ferite." (1*l.*) —— D. Puhlman, "Trattato di terapeutica omeopatica applicata all' odierna medicina." (15*l.*)

Reports on the Progress of Medicine.

PHYSIOLOGY.

By LOUISE G. RABINOVITCH.

The Influence of Carbon Oxide on Germination.—G. Linassier ("Lyon méd.," No. 27, 1888) remarks that Claude Bernard's conclusions in his "Leçons sur les effets des substances toxiques et médicamenteuses" were that an atmosphere containing either carbon dioxide or carbon oxide in a proportion of one sixth per cent. interfered decidedly with germination. The author returned to Claude Bernard's experiments, and the following were the results: Seeds of garden cress, lettuce, and millet were introduced into bottles whose artificial atmosphere was composed of carbon oxide, nitrogen, and oxygen, so that the proportion of the latter gas equaled that of oxygen normally contained in the air, and the relative quantities of both former gases varied. The bottles were corked and inserted into a vat full of water. The author's conclusions are that germination was perfect under various temperatures, various degrees of light, and in an atmosphere which contained even 79 per cent. of carbon oxide, though, it is added, the germination was always slower in an atmosphere very rich in carbon oxide; but where the artificial atmosphere contained 50 per cent. of this gas, it was almost impossible to detect any difference between the young plants developed in the atmospheric or artificial air. The author concludes the article by saying that the carbon oxide exerts no influence upon germination, and the great physiologist's error was probably due to the admixture of carbonic-acid gas with the carbon oxide he used. The unfavorable influence of the former gas on germination was demonstrated at that time by Paul Bert, Déhérain, and Landrin.

Domestication and Function.—Dr. C. M. O'Leary ("Jour. of Compar. Med. and Surg.," No. 3, 1888) advances that the domestication of animals may be viewed as a remote and distinct step in the progress of natural selection. A comparison of the quagga of South Africa with the plodding donkey of civilized countries, the author alleges, reveals a close anatomical resemblance between them; and yet the former is fierce, fleet, and untamable, while the latter is patient, meek, and docile. It is plain, it is further said, that the difference of habit and disposition must be attributed to the effects of domestication alone; and though animals which man has made obedient to his will and surrounded by different environments do not, apparently, differ anatomically from their primitive types, yet there is to be found an organic modification of molecular nature of the nerve-cells, for, the author argues, habits and dispositions must be referred to the nervous system; and the different nervous centers which control the functions with which they are connected imply either a cessation of functional activity in the nerve-cells when lapsing instincts are the results, or a changed functional activity where the instincts have undergone a profound alteration. This implies the cessation of previous currents that existed between the optic thalamus and the psycho-motor zones of the cerebral cortex, or the establishment of new currents between these same points; these changes the author calls sympathetic, for they are the result of a law in accordance with which

all organisms adapt themselves to an atmosphere of new conditions. In time the molecular changes of the nerve-cells are supplemented by structural changes appreciable by the microscope, and the latter changes are followed by permanently altered functions. The author concludes, finally, that the law of evolution works out its results in the animal kingdom after the following formula: 1. Changed habit and disposition. 2. Change of function. 3. Structural change in nerve-cells. 4. Permanent change in bodily organs. 5. Transition of type.

The Influence of Excitations of the Brain on the Principal Organic Functions.—M. François-Franck ("Gaz. hebdom. de méd. et de chirur.," Nos. 32, 33, 1888) states that according to Damlewsky and Ch. Richet excitation of the brain produces a lowering of the respiration or stops it altogether; according to Lépine and Bochefontaine, it is an irregularity and an acceleration of the respiratory movements that is observed. Some authors deny the localization of cortical respiratory centers; others—Christiani, Newell Martin, and Booker—maintain the existence of inspiratory and expiratory centers. The author studied experimentally not only the modification of the respiratory rhythm following simple cortical excitations, but the different details which accompany the respiratory phenomena, and also the respiratory changes following upon artificially provoked epileptoid attacks. The results may be formulated as follows: (A) 1. The excitation of the motor zones provokes a simple, not epileptoid, modification of the respiratory function. 2. Other parts of the cerebral cortex, on being stimulated, do not act like this, unless there is a diffusion of the excitation toward the motor zones. 3. The respiratory effects consist in a change of their frequency; there is no relation between the regions of the motor zones excited and the acceleration or diminution of the respiratory movements; the diminution of the movements seems to be in relation with the degree of intensity of the excitation. 4. The respiratory effects consist also in a change of the amplitude of the movements; the former may vary with the frequency of the respiratory movements. 5. The thoracic walls assume the inspiratory position, dilate; the respiratory amplitude is then at its maximum, and the average pleural aspiration is exaggerated. It happens also that the expiratory attitude is assumed by the thoracic walls; then the amplitude of movements decreases, and the average pleural aspiration diminishes. 6. The elastic bronchi contract energetically, and the lungs resist to insufflation more than they do in curarized animals. 7. The glottis enlarges when there is a tendency to inspiration, and contracts in the opposite conditions. It was impossible to induce spasm of the glottis artificially during the inspiratory period. 8. It follows that there is no cortical center in connection with the glottis, which was considered to exist by Krause, Lannois, and Delavan. 9. The cortical motor zones have no special centers for the thoraco-abdominal respiration. (B) 1. In partial artificially provoked epileptoid attacks the respiration is never suspended, even during the tonic phase of the localized attack, but becomes more frequent and is of augmented amplitude; the thorax assumes an expiratory position. 2. The respiratory embarrassment during the tonic phase of a generalized fit is expressed by the participation of the thoraco-abdominal walls in the general contractions, by the immobility and rigidity of the walls, as well as by the closure of the glottis; with the addition of general muscular contractions, asphyxia is necessarily induced, which causes retardation of the heart and vascular spasms. It happens that the respiratory apparatus shows some spasmodic contractions at the time of absolute tetanus of the rest of the parts of the body. 3. During a clonic attack the irregular respiration is moderately maintained, which suffices for the non-occurrence of asphyxia; the respiration is suspended, however, when the thoraco-abdominal muscles make exception to the general convulsive shocks, and enter upon a state of tetanus. 4. During a general tonico-clonic attack the larynx presents the following conditions: *a*. The lips of the glottis separate and approach alternately with the same rapidity that the movements of the inspiratory and expiratory muscles present. Never is the glottic occlusion complete, and a sufficient current of the tracheal air through the glottis persists. *b*. During a general tonic attack the occlusion of the glottis is complete, the tracheal current is abolished, and the laryngeal muscles contract in a manner similar to the contractions of the rest of the respiratory muscles. *c*. In the clonic phase the glottidean lips relax and approach under the influence of the nervous discharge, which acts alternately on the lateral and posterior crico-arytænoids; these alternate movements are of the same rapidity as the shocks of the affected thoracic muscles; a comparative graphic examination shows a synchronism of the laryngeal and respiratory muscular shocks. The author has followed out the influence of simple and epileptoid cerebral excitation on the circulatory apparatus, and states that experimenters have usually used curarized animals to avoid voluntary movements, and this has misled them into giving false statements as regards the different vital phenomena which occurred in each individual case; for a curarized animal is in a state of internal or marked epilepsy, and simple and epileptoid fits provoked by cortical excitations are characterized by different vital manifestations. The author's conclusions may be formulated as follows: (A) 1. The circulatory modifications which accompany complete epileptoid convulsions, tonico-clonic, produced by cortical excitations, are expressed by slowing of the heart during the general tonic phase, and acceleration during the clonic convulsions. The vascular tension should be increased during the general tetanus and vascular spasm, but the slowing of the heart dominates over the tension by slowing it, while in the clonic period the tension is considerably increased. 2. The circulatory and vascular trouble in an incomplete clonic attack presents the same features as in the clonic stage. 3. In abnormal attacks, where a tonic attack occurs between two clonic, each phase presents the features enunciated above as characteristic of each individual attack. 4. A current of considerable intensity applied to a curarized animal brings the latter into a stage of a marked epileptic attack, or internal epilepsy; and the circulatory troubles correspond to the rules given above. The author was guided in identifying the statements by the pupillary dilatations, by curarizing an animal so as to avoid the poisoning of one of its limbs, and by this means he was enabled to follow out the manifestations. (B) 1. As regards the vascular and cardiac effects in provoked epilepsy, the vascular spasm is a rule for all forms and phases of attacks; there is an independence between the cardiac and vascular phenomena, an augmented vascular pressure occurring during a tonic fit, etc.; the dependence of the vascular and cardiac phenomena referred to above is true only of the terminal periods of attacks. 2. As regards the vaso-motor effects of simple, non-epileptic origin, the vaso-constrictor phenomena only were observed; the vaso-dilator occurred in insufficient manner to deduce conclusions. The vascular constriction is at its maximum when the marginal convolution is stimulated. The vascular reaction produced by the stimulation of any region in the cortex is a general one; it is no more marked even in the parts which depend functionally upon the cerebral region excited than in other parts. The true vaso-motor centers are situated in the medulla, and they only receive cerebral as well as peripheral incitations. 3. The experiments of the cardiac effects of simple, not epileptic, nature consequent upon cortical excitation, lead the author to deny the existence of cortical centers regulating the heart, for, regardless of the area excited, there occurs either acceleration or depression of the heart in a regular manner, but which can not be predicted; the excitable cerebral surface behaves as a sensory surface toward the cardiac reactions as well as to other organic reactions. (C) 1. Bilateral pupillary dilatation, which may be partial sometimes, insensibility of the iris to light, projection forward and fixation of the ocular globes, divergence of the eyelids, congestion of the fundus of the eyes and conjunctiva, is the rule for epileptoid attacks of cortical origin, however insignificant the attack may be. In localized attacks, even those affecting the face, the pupillary dilatation is absent, or at least not much marked. The pupillary symptoms are independent of the form of the attacks, the character of the heart work, and the existence or non-existence of vascular spasms. The pupils dilate in the beginning of the attack, soon reach their maximum dilatation, and become normal with the cessation of the attack. The pupillary effects are bilateral as a rule, but sometimes only the pupil opposite to the hemisphere excited is affected. 2. In the case of organic or internal epilepsy, produced by cerebral excitation of a curarized animal, the pupils give the same features as those referred to, corresponding to the manifestation of the internal, not visible, epileptoid attacks. 3. The simple non-epileptic pupillary modifications produced by cerebral stimulation are contractions. 4. There is no localized center for a special pupillary function.

The Cerebro-sensitive Visual Center in the Dog.—Alexandre N.

Vitzon ("La France méd.," No. 93, 1888) states that experimental researches to locate the cerebro-sensitive center of vision in animals do not agree with each other in the hands of different experimenters. Munk states that if Ferrier, Yeo, Luciani, and others say that the visual center exists in the angular gyrus, it is because of the contusions or inflammatory irritations induced upon the occipital lobes while operating upon the angular gyrus. In 1886 Goltz put forward the view that it was impossible to admit the existence of a visual center or center of hearing in the cerebral cortex, and sustained his opinion by exhibiting animals with cerebral lesions which, according to Munk, must have induced blindness, but which was not the case in these animals. Dr. Vitzon experimented on dogs, and the latter were kept during three months. The author took out the gray substance of the visual zone of Munk on one side. Immediately after the operation the animal was blind in the eye opposite to the lesion produced, but, it is added, the vision was not absolutely impaired after convalescence. The author produced further analogous lesions of both occipital lobes, and he concludes that in dogs the integrity of vision is in relation with the integrity of the occipital lobes; a destruction of both lobes brings about an immediate and permanent cessation of vision of both eyes. The center of visual perception in dogs must be located in the posterior halves of the first, second, and third parallel convolutions.

Lavation of the Blood.—M. Dastre and M. P. Loye ("Arch. de phys. norm. et pathol.," No. 6, 1888) have experimented on rabbits and dogs; the results here given are only those from the experiments on rabbits. The authors injected intravenously a 7-to-1,000 solution of sodium chloride at a temperature of 45° C., so as to have the injection at a temperature of about 39·5° C. after it passed through a series of tubes before it reached the general circulation. Their conclusions are: 1. A considerable quantity of the solution may be injected without provoking any apparent trouble, immediate or subsequent; in some cases the quantity injected reached two thirds of the animal's weight. 2. There is no toxic dose, but there is a toxic rapidity of injection; the quantity of solution injected must not be greater than 3 c. c. a minute, for each kilogramme of the animal's weight. 3. For the animal to survive the conditions of a moderate rapidity and an average quantity of injection must be strictly observed, and also the normal condition of the organs, and especially of the kidneys, is necessary. 4. The non-fulfillment of these conditions kills the animal, and at post-mortem a decided exudation is found in the serous cavities, with exophthalmia and sanguineous suffusions. 5. There is a moment when elimination of the injected fluid begins, and in the course of elimination there almost always is a perfect parallelism established between the quantity of fluid injected and of that excreted. 6. This points to the existence of a regulating mechanism of the quantity of water in the organism. This mechanism comes into play as soon as the quantity of water injected equals the quantity of the animal's blood before the experiment. The surplus is quickly ejected. 7. The quantity of fluid which equals that of the animal's blood before the experiment is distributed so that 25 per cent. remains in the circulatory apparatus during the course of the experiment, and is eliminated at the close of the experiment; a second part, 75 per cent., is located in the serous and other tissues, and is eliminated as before. 8. The facts show the existence of a physiological connection between the circulatory and serous systems, which regulates the aqueous equilibrium of the blood and tissues. 9. The analysis enables one to conclude that, when animals gain their normal condition after the operation, the injection of the physiological solution produces only a lavation of the blood and tissues, without altering their composition in any respect.

On the Rhythm and Physiology of the Cardiac Muscle, and on the Anatomy and Physiology of the Sympathetic Nervous System.—Dr. W. H. Gaskell (*ibid.*, No. 1, 1888) divides his researches into three parts, the conclusions of which may be represented as follows, under the appropriate headings: A. The rhythm of the heart, and the succession of contractions in its different compartments: 1. The rhythm of the heart is due to a rhythmic power of the cardiac muscle itself, and not to peripheral nervous centers. 2. The rhythmic power of any portion of the heart is in relation not with the presence of ganglionic cells, but with the persistence of a primitive stage of the cardio-muscular tube. 3. The succession of contractions is due to a peristaltic wave of contraction which originates in a part where the velocity of the wave of the rhythmic movement is at its maximum, and is diminished by the gradual passage of the contraction wave from one part of the heart to another, because of the nature and the anatomical disposition of the muscular tissues, and of the junction of these parts. B. On the action of the cardiac nerves: 1. The cardiac muscular tissue is innervated by two sets of nerves, which are opposite in character; one is of a destructive nature, chemico-nutritive, or metabolic; the other does the restorative work. 2. The inhibitory nerves may be called anabolic, for they depress function, which is followed by repair. 3. The motor nerves may be called catabolic, for they augment function, which is followed by exhaustion. Having explained the reasons for these statements, the author remarks that stimulation of an inhibitory nerve produces, in the tissues where the inhibition is manifested, an electric change opposite to that which follows the stimulation of a motor nerve. He has also made an anatomical and histological examination of the cardiac nerves, and found that the anabolic nerves enter the cardiac muscle as fine medullated fibers, while the catabolic nerves are absolutely deprived of medullary substance. C. On the nature of the sympathetic system: 1. All visceral muscles and vessels receive two nerves—one inhibitory, or anabolic, another motor, or catabolic. These nerves differ from each other in their anatomical, histological, and physiological characters. 2. All these nerves, on parting from the central nervous system, are characterized by their fine medullated nerve-fibers. 3. These fibers lose their medullary sheaths and become non-medullated in the different groups of ganglia, where their number increases. 4. The ganglia of the sympathetic system are endowed with the function of maintaining the life of the peripheral nerves, which are connected with nerve-cells of these ganglia. 5. The communicating white rami form the only connections between the cerebro-spinal and the great sympathetic systems. 6. These communicating rami are composed mostly of fine medullated fibers, and part from the cerebro-spinal system in three distinct groups: *a*, cervico-cranial; *b*, thoracic; *c*, sacral. 7. The limits of issue of these rami correspond to the limits of the nerve-cells of Clarke's column. 8. The fine medullated fibers of the visceral nerves are in intimate relation with the motor nerves, which originate in the cells of the lateral horn, or with the system of the respiratory nerves of Bell, and form with the latter a lateral or splanchnic root, so that the cranial and spinal nerves may be considered as being formed by three roots—anterior, lateral, and posterior. 9. The lateral root consists of a ganglionated and a non-ganglionated portion; the ganglia of the ganglionated portion are those of the great sympathetic system. 10. The cranial and spinal nerves are composed of two separated nervous systems, having different origins in the cerebro-spinal axis: *a*, a somatic nervous system, which constitutes the nerves of animal life; *b*, a splanchnic nervous system, constituting the nerves of organic life.

Respiratory Rhythm; Crossed Cephalic Circulation; Artificial Cephalic Circulation.—A. Bienfait and A. Hogge ("Bull. de l'acad. roy. de méd. de Belgique," No. 6, 1888) state that Rosenthal and Pflüger's theories that the respiratory movements are regulated by the composition of the blood circulating in the head were accepted in the beginning, but found in time a number of objections to some of their views on the part of Hoppe-Seyler, Mosso, Marckwald, and others. Hoppe-Seyler said that the respiratory movements were not due to the local action of the blood on the respiratory centers, but were in direct correlation with the excitation of the sensitive nerves, for the first respiratory movement of the new-born is due to the action of cold on the cutaneous nerves; and a person in syncope is animated by a sudden spray of cold water. Mosso admits a chemical and a mechanical phenomenon of respiration, the latter playing the most important rôle. Marckwald finally denies directly the influence of the carbon dioxide and oxygen in the blood on the respiratory centers; his arguments are that the respiration persists after the circulation ceases, and also after the body has been exsanguinated. The authors investigated the question by establishing a crossed cephalic circulation in two rabbits, after Léon Fredericq's method, described in the "Bull. de l'acad. sc. de Belg.," 3me sér., t. xiii. In two animals, A and B, the vertebral arteries and one of the carotids, the left, were ligated; the right carotids were cut across, and the central cardiac end of the right carotid of A was made to communicate, by means of a glass tube, with the peripheral or cephalic end

of the right carotid of B. A second tube established identically the same communication between the central end of the carotid of B and the peripheral of A. A crossed cephalic circulation was thus realized, the head of A receiving its blood-supply from B, and *vice versa*. If dyspnœa was produced in A by obliterating its trachea completely or partially, it was B that presented dyspnœic symptoms, whereas A presented no symptoms in the beginning, and afterward had a tendency to apnœa rather. The authors present the tracings which illustrate the facts; and they conclude that the explanation of the phenomena is that the blood of A became venous by the interference with its respiration, and this blood was sent to the head of B, excited the respiratory centers of the latter, and caused dyspnœa. They further arranged an artificial cephalic circulation in such a manner as to be able to change the blood-current so as to show the influence of either oxygenated blood or that saturated with carbon dioxide. Their general conclusions are that the respiratory centers are sensible to the variation of carbon dioxide in the blood. They did not observe any constant results by varying the amount of oxygen in the blood sent to bathe the respiratory tissues.

On the Rhythm of the Mammalian Heart (Presented by Dr. M. Foster).—The following are some of the results from the experiments on the cat, dog, rabbit, rat, hedgehog, and guinea-pig, performed by Dr. J. A. McWilliam ("Proc. of the Royal Soc.," No. 268, 1888): 1. Stimulation of the quiescent cardiac muscle, if it is strong enough to excite contraction at all, excites a maximal contraction. The strength of an artificially excited beat does not depend upon the strength of the stimulus; it is equally strong with maximal and minimal excitations. 2. The condition of fibrillar contraction, or heart-delirium, induced in the ventricles of excitable hearts by the application of interrupted currents and other means, may be recovered from, even after a long period, under the combined influence of artificial respiration, rhythmical compression of the ventricles, and the administration of pilocarpine. 3. The spontaneous rhythmic power possessed by the terminal parts of the great veins—the auricles and ventricles—seems to be myogenic under some conditions. 4. The auricles and ventricles, having an independent rhythm of contraction, are in obedience to impulses reaching them from the terminal or ostial parts of the great veins; the latter have a higher power of spontaneous rhythm, and dominate the rhythm of the whole heart. 5. The normal sequence of the ventricular contraction upon the auricular contraction in the intact heart is essentially determined by nervous influence. 6. The nervous influence determining the ventricular sequence is probably of an intermittent character. 7. The propagation of the contraction wave within the walls of the auricles and ventricles is not dependent on the action of the nerves lying near the surface of these parts. 8. In the auricles the ordinary beat is not the result of a simultaneous motor discharge from a nerve-center to all muscular fibers, but a progressive process passing over the auricular walls in a wave-like fashion. 9. A reversal of the normal sequence of the heart's contraction can be induced by applying to the ventricles a series of induction shocks at a rate more rapid than that of the spontaneous rhythm of the organ.

Miscellany.

The Seventh Decennial Convention for Revising the Pharmacopœia of the United States of America.—The president of the convention of 1880, Dr. Robert Amory, has issued the following circular:

Notice is hereby given that, in accordance with and by virtue of the authority vested in me by the convention of 1880, I hereby call upon the several incorporated medical societies, incorporated medical colleges, incorporated colleges of pharmacy, and incorporated pharmaceutical societies throughout the United States of America, the American Medical Association, and the American Pharmaceutical Association, to elect a number of delegates, not exceeding *three*, and upon the Surgeon-General of the army, Surgeon-General of the navy, and the Surgeon-General of the Marine-Hospital Service to appoint, each, not exceeding *three* medical officers to attend a general convention for the revision and publication of the Pharmacopœia of the United States of America, to assemble in the city of Washington, D. C., on the first Wednesday of May, 1890 (May 7th), at twelve o'clock noon. The several bodies, as well as the medical departments of the army, navy, and Marine-Hospital Service, are hereby requested to submit the Pharmacopœia to a careful revision, and to transmit the result of their labors to the committee of revision at least three months before the meeting of the general convention. The several medical and pharmaceutical bodies are hereby requested to transmit to me, as the president of the convention of 1880, the names and residences of their respective delegates as soon as they shall have been appointed; a list of these delegates shall thereupon be published under my authority, for the information of the medical public, in the newspapers and medical journals in the month of March, 1890. In the event of the death, resignation, or inability of the president of the convention of 1880 to act, these duties (in accordance with the resolution of that convention) shall devolve, successively, in the following order of precedence: Upon the vice-presidents, the secretary, the assistant secretary, and the chairman of the Committee of Revision and Publication of the Pharmacopœia. These officers are as follows: First vice-president, Samuel C. Busey, M. D., of Washington, D. C.; second vice-president, P. W. Bedford, Ph. G., of New York; secretary, Frederick A. Castle, M. D., of New York; assistant secretary, C. H. A. Kleinschmidt, M. D., of Washington, D. C.; chairman of committee of revision, Charles Rice, Ph. D., of New York; first vice-chairman of the committee of revision, Joseph P. Remington, Ph. M., of Philadelphia, Pa.; second vice-chairman of the committee of revision, C. Lewis Diehl, Ph. G., of Louisville, Ky. At the General Convention held in Washington, D. C., on the fifth day of May, 1880, the organizations and bodies enumerated in the "Abstract of the Proceedings of the National Convention of 1880," on pp. xv to xviii of the "U. S. Pharmacopœia of 1882"—a list of which will be found appended to this call—were recognized as being entitled to representation. If any body other than those admitted in 1880 shall desire a representation in the convention of 1890, it is suggested that the proof of incorporation, signed by the Secretary of State of the State which shall have issued the charter, or by properly qualified public officials of the United States, be presented with the credentials of the delegation. A blank form of certificate of appointment of delegates will be sent upon application by letter to my address, care of Dr. Edwin H. Brigham, Assistant Librarian of the Boston Medical Library, 19 Boylston Place, Boston, Mass.

List of Incorporated Bodies and of Government Departments represented in the Pharmacopœial Convention of 1880.—Connecticut Medical Society; Iowa State Medical Society; Massachusetts Medical Society; Medical Society of the State of New York; Medical Society of the State of North Carolina; College of Physicians and Surgeons in the City of New York; College of Physicians, Philadelphia; Medical and Chirurgical Faculty of Maryland; Medical Society of the District of Columbia; New York Academy of Medicine; Philadelphia County Medical Society; Albany Medical College, Med. Dept. of Union University, Albany, N. Y.; Bellevue Hospital Medical College, New York; College of Medicine, Syracuse University, Syracuse, N. Y.; College of Physicians and Surgeons, Med. Dept. of Columbia College, New York; Dartmouth Medical College, Hanover, N. H.; Department of Medicine and Surgery of the University of Michigan, Ann Arbor; Jefferson Medical College, Philadelphia, Pa.; Medical College of Indiana, Med. Dept. of Butler University, Irvington, Ind.; Medical Department of Howard University, Washington, D. C. Medical Department of Iowa State University, Iowa City; Medical Department of the University of Georgetown, Washington, D. C.; Medical Department of the University of Maryland, Baltimore; Medical Department of the University of Pennsylvania, Philadelphia, Pa.; Medical Department of the University of Virginia, Charlotteville, Va.; Miami Medical College, Cincinnati, O.; Missouri Medical College, St. Louis; National Medical College, Med. Dept. of Columbian University, Washington, D. C.; Rush Medical College, Chicago, Ill.; University of the City of New York, Med. Dept., New York; Woman's Medical College of the New York Infirmary, New York; Women's Medical College of Pennsylvania, Philadelphia, Pa.; Chicago College of Pharmacy, Chicago, Ill.; Cincinnati College of Pharmacy, Cincinnati, Ohio; College of Pharmacy of the City of New York, N. Y.; Louisville

College of Pharmacy, Louisville, Ky.; Maryland College of Pharmacy, Baltimore, Md.; Massachusetts College of Pharmacy, Boston, Mass.; National College of Pharmacy, Washington, D. C.; Pennsylvania College of Pharmacy, Philadelphia, Pa.; Philadelphia College of Pharmacy, Philadelphia, Pa.; St. Louis College of Pharmacy, St. Louis, Mo.; University of Michigan, School of Pharmacy, Ann Arbor, Mich.; Medical Department of the Army, Medical Department of the Navy; Marine-Hospital Service.

The Health of the State of New York.—According to the State Board of Health's "Monthly Bulletin" for February, the whole number of deaths reported was 8,637, including 44 from cerebro-spinal fever, 84 from typhoid fever, 19 from malarial diseases, 10 from small-pox, 239 from scarlet fever, 55 from measles, 39 from erysipelas, 49 from whooping-cough, 667 from croup and diphtheria, 85 from diarrhœal diseases, and 105 from puerperal diseases.

Mortality in Cities in the United States.—The following table represents the mortality in the cities named, as reported to Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, and published in the abstract of sanitary reports received by him during the week ending March 29th:

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—									
				Cholera.	Yellow fever.	Small-pox.	Varioloid.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y.	March 23.	1,559,092	822	..	..	..	..	..	..	5	59	42	16	17
Philadelphia, Pa.	March 23.	1,046,245	412	..	..	..	..	..	..	14	11	5	..	2
Chicago, Ill.	March 23.	830,000	279	..	..	..	..	..	..	9	2	26	5	1
Brooklyn, N. Y.	March 23.	814,505	352	..	..	..	..	..	..	3	9	21	10	14
Baltimore, Md.	March 16.	500,343	175	..	..	..	..	..	..	1	2	4	..	..
Baltimore, Md.	March 23.	500,343	160	..	..	..	..	..	..	4	3	2	1	2
San Francisco, Cal.	March 15.	330,000	121	..	..	..	..	..	..	..	..	1	..	..
Cincinnati, Ohio.	March 23.	255,139	103	..	..	..	..	..	..	2	1	3	..	2
New Orleans, La.	March 16.	254,000	119	..	..	..	..	..	..	3	..	..	..	1
Pittsburgh, Pa.	March 23.	230,000	83	..	..	..	..	..	..	3	..	2	3	3
Washington, D. C.	March 23.	225,000	110	..	..	..	..	1	..	1	1	..	..	2
Milwaukee, Wis.	March 23.	210,000	52	..	..	..	..	..	..	..	5	1	1	1
Newark, N. J.	March 19.	180,145	107	..	..	..	..	..	..	2	1	1	..	2
Minneapolis, Minn.	March 23.	180,000	52	..	..	..	..	..	..	1	1	4	..	..
Kansas City, Mo.	March 23.	180,000	30	..	..	..	..	..	..	..	1	1	..	1
St. Paul, Minn.	March 16.	180,000	31	..	..	..	..	..	..	1	3	4	..	..
St. Paul, Minn.	March 23.	180,000	41	..	..	..	..	..	..	1	1	5	..	..
Providence, R. I.	March 23.	127,000	49	..	..	..	..	..	..	1	..	2	..	3
Rochester, N. Y.	March 23.	120,000	55	..	..	..	..	..	..	..	..	2	..	2
Denver, Col.	March 22.	100,000	29	..	..	1	..	..	..	..	1	..	..	..
Nashville, Tenn.	March 23.	65,153	20	..	..	..	..	..	..	1	..	..	..	..
Fall River, Mass.	March 23.	65,000	30	..	..	..	..	..	..	..	1	..	1	..
Toledo, Ohio	March 22.	51,000	27	..	..	..	..	..	..	..	..	1	..	..
Lynn, Mass.	March 23.	50,000	12	..	..	..	..	..	..	..	..	..	..	..
Manchester, N. H.	March 16.	42,000	11	..	..	..	..	..	..	..	..	..	..	..
Portland, Me.	March 23.	42,048	8	..	..	..	..	..	..	..	..	..	..	..
Galveston, Texas.	March 8.	40,000	20	..	..	..	..	..	..	..	..	1	..	..
Galveston, Texas.	March 15.	40,000	9	..	..	..	..	..	..	..	..	..	..	..
Council Bluffs, Ia.	March 16.	35,000	10	..	..	..	..	..	..	..	..	..	..	..
E. Saginaw, Mich.	March 23.	33,000	10	..	..	..	..	..	..	1	..	..	..	..
Altoona, Pa.	March 16.	30,000	9	..	..	..	..	..	..	..	..	1	..	..
Auburn, N. Y.	March 23.	26,000	6	..	..	..	..	..	..	1	..	..	..	..
Haverhill, Mass.	March 23.	25,000	7	..	..	..	..	..	..	..	..	1	..	..
Newport, R. I.	March 21.	22,000	8	..	..	..	..	..	..	..	..	..	..	..
Newton, Mass.	March 16.	21,553	3	..	..	..	..	..	..	1	..	..	..	..
Newton, Mass.	March 23.	21,553	4	..	..	..	..	..	..	..	..	..	..	..
Pensacola, Fla.	March 16.	15,000	4	..	..	..	..	..	..	..	..	..	..	..

The New York Academy of Medicine.—At the next meeting of the Section in Surgery, on Monday evening, the 8th inst., Dr. Parker Syms will report "Cases of Femoral Aneurysm cured by Ligation and Excision," and show patients; and a specimen of simple fracture of the carpal scaphoid bone will be presented.

At the next meeting of the Section in Pædiatrics, on Thursday evening, the 11th inst., Dr. A. Jacobi will reply to Dr. O'Dwyer's question, "By what Force is a Collapsed Lung inflated while freely exposed to Atmospheric Pressure through an Opening in the Pleural Cavity?"; Dr. J. H. Holgate will read a paper entitled "Nævus: Treatment by a New Method, with Cases"; Dr. M. Putnam Jacobi will read a paper on "Cirrhosis of the Liver"; and Dr. W. E. Forest will read a paper on "Retropharyngeal Abscess."

At the next meeting of the Section in Neurology, on Friday evening, the 12th inst., there will be a discussion on "Nervous Symptoms arising from Ovarian Disease, and their Treatment," to be opened by Dr. C. L. Dana and Dr. W. Gill Wylie, and continued by Dr. W. M. Polk, Dr. John Byrne, Dr. P. F. Mundé, Dr. J. B. Hunter, Dr. H. T. Hanks, Dr. A. J. C. Skene, Dr. C. C. Lee, Dr. B. McE. Emmet, Dr. A. H. Buckmaster, Dr. E. C. Spitzka, Dr. W. R. Birdsall, Dr. G. M. Hammond, Dr. B. Sachs, and Dr. M. A. Starr.

At the next meeting of the Section in Ophthalmology and Otology, on Monday evening, the 15th inst., Dr. D. C. Cocks will report a case of "Sarcomatous Tumor of the Orbit" and a case of "Melanotic Tumor of the Orbit," and Dr. J. O. Tansley will report "Two Corneal Transplantations."

Eseridine: a New Alkaloid.—Besides physostigmine, or eserine, and the less known calabarine, there is, it is stated, yet another base in Calabar bean, for which the name "eseridine" is proposed. This is a white, crystalline powder which, however, can be got in large, transparent crystals; the fusing point is 132° C. (270·6° F.), and it is only slightly soluble in ether. According to Dr. Eber, eseridine is far less actively poisonous than eserine, but (in this respect resembling calabarine rather closely) it exercises a tetanic action upon the spinal cord, and acts powerfully upon the intestinal system, inducing very abundant mucous discharges. The formula of the new base is given as $C_{15}H_{23}N_3O_3$, and it therefore differs from eserine by the elements of an additional molecule of water only. This is given up when the base is heated with a mineral acid, and physostigmine is the result of the reaction.—*Lancet.*

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Lectures and Addresses.

ON PHAGOCYTES.

AN ADDRESS DELIVERED BEFORE THE SOCIETY OF THE ALUMNI OF BELLEVUE HOSPITAL,

April 3, 1889.

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THERE are in the body groups of tissues possessing cells, which either normally display amœboid changes, or are capable, under certain conditions, of assuming them. By amœboid properties we mean not only the capability of free movement, but the possession of a power which enables a cell to take foreign particles into its interior. Tissues containing such cells are derived from the mesoderm, the type of which, phylogenetically, is a free wandering cell (Minot). In the development of this layer, epithelial and non-epithelial portions may be distinguished. For the former Minot has suggested the term mesothelium, and the latter His calls mesenchym. The distinction between the two is, however, largely artificial, as the epithelium may be, and in places is, in development changed into connective tissue. And, thirdly, there are in the mesoderm, at all stages of its development, certain cells which are free and independent—mesamœboids (Minot), and which persist subsequently as leucocytes.

These mesodermic cells in the adult body, which are capable either of free amœboid movements or of taking into their protoplasm solid particles of various sorts, are met with:

(1) As the colorless corpuscles of blood and mucus.

(2) The connective-tissue cells, free and fixed, within the connective tissue proper, or forming the supporting framework of the solid organs.

(3) Cells of the spleen, bone, marrow, and lymph glands.

(4) The vascular and lymphatic endothelium.

(5) The alveolar epithelium of the lungs.

All of these cells possess, in a greater or less degree, the power of taking solid particles into their interior, virtually, as we say, of eating them.

On account of the possession of this property, Metschnikoff has suggested for these groups of cells the term *phagocytes*, as expressive of their most distinctive feature, and for the process in general the term phagocytosis.

He regards this function as a property handed down from the primitive unicellular organism, and traces in an interesting manner the evolution of cells possessing it throughout the animal kingdom; attempting to show a genetic relation, physiologically at least, between the free living rhizopods and the cells of the middle germinal layer of the higher animals. Not a little of the attractiveness of Metschnikoff's views is derived from the glamour of evolution thrown over them, by thus attributing the retention in certain cells of an atavic property in the highest degree useful to the organism.

I shall consider first the action of these phagocytes as normal physiological factors in the work of the body; and, secondly, take up the theory that these bodies play an essential *rôle* in the protection of the organism from the invasion of specific germs.

And, first, two illustrations from comparative physiology to indicate the important part assigned to phagocytes in certain transformations which animals undergo. In the development of the frog, the removal of the tail of the tadpole, and of the gills, by gradual atrophy, is effected, according to Metschnikoff, by the activity of the amœboid cells. At a time when the hind legs begin to bud, the leucocytes migrate into the tail, and by their phagocytic action remove the tissue, fragments of which, as muscle, bits of nerve fibers, etc., may be seen in the interior of their protoplasm. The gills are absorbed by an identical process. In the transformation of the larva into the fly, Kowalewsky * has shown that the large masses of muscle tissues, so abundant in the larva, and other parts unnecessary in the matured condition, are removed by the activity of the phagocytes.

It has long been known that foreign bodies, such as ligatures, portions of dead bone, and other substances, may be completely removed by leucocytes. Interesting as is this, and bearing directly upon the question, I propose to limit myself entirely to the consideration of the two aspects above referred to.

Nowhere in the body do we have such a facility for studying the action of phagocytes as in the organs of respiration, in which, with the cilia of the bronchial mucosa, they share in the work of cleansing the air passages; and of these two important agencies it is hard to say which plays the more important part in the expulsion of those particles of foreign matter which, in cities at least, we constantly inhale. There are several groups of cells engaged in this work: the ordinary mucous corpuscles, the alveolar epithelium, the connective-tissue elements of the pulmonary stroma, and the leucocytes of the lymph tissue in the bronchial, tracheal, and mediastinal glands.

The mucus corpuscles, which in health are derived largely from the muciparous glands, and in inflammatory states from the general bronchial mucosa, are actively concerned in attacking the dust which reaches, in ordinary inspiration, as far at least as the medium-sized tubes.

The examination of the morning sputa of a cigarette smoker, or of a person who has been exposed to a dusty atmosphere, shows very clearly that no small proportion of the carbon grains is included within protoplasm. The free granules are abundant, but almost every leucocyte has its little load which it has picked up on its road from the finer tubes to the trachea. I have always thought this represented a neat bit of economy of labor, as there can be no question that it is easier for the cilia to sweep half a dozen angular particles, when inclosed in a cell, than to work at the same when free. In all probability, the finer particles which fall upon the tracheal or the bronchial membranes

* "Zeitschrift für wissenschaftliche Zoologie," Bd. xlv.

are got rid of almost entirely by cells and cilia. There does not appear to be, to any great extent, penetration of pigment granules between the ciliated epithelium. It is unusual to see beneath the tracheal mucosa any collection of carbon grains. We do meet with it in the submucous bronchial tissue, but the active vibratile lining seems to afford a tolerably sure protection. The lymph vessels open on the surface in the pseudo-stomata, and in the experimental work of Arnold* and others leucocytes carrying black grains have been seen in the submucous lymph vessels; yet the process does not seem to go on to any great degree.

The particles which reach the air cells find no active current to sweep them from the spots on which they fall. It is possible to conceive, under certain conditions, of the air cells gradually filling, were it not for the activity of phagocytes, derived largely from the alveolar epithelium, which stands, as it were, at the gateway of the lymphatic circulation.

The cells lining the air cells, seen, for instance, by scraping gently the cut surface of an œdematous lung, look as flattened, desiccated, and lifeless as do the scales of the scarf-skin. But appearances are deceptive in this case, and the protoplasm of these cells is not only active but probably varies much in shape with the distension or contraction of the alveoli. When in contact with liquids and in pathological conditions, they change so much in form that I find it often a difficult lesson to teach students, familiar with normal histology only, to recognize in the large, swollen ovoid cells so common in sputa, alveolar epithelium. Moreover, from the rapid way in which they may be desquamated, there must be ample provision for their rapid restitution. How far in a normal state these cells take part in the work of cleansing the lungs is not yet definitely settled. In the young they do not often appear in the sputa, except when there are indications of catarrhal changes, but in the adult their presence is very common. It is rare to see one in the sputa of a hospital patient, which has not brought with it a load of carbon, all of which may not have been derived from the air cells, as these bodies can undergo amœboid changes, and, like the leucocytes, are probably not above picking up a grain or two in their course toward the larynx. In cases of bronchial catarrh, and in phthisis, these pigmented cells of the alveoli may be very abundant, producing the blackish streaks which may be seen with the naked eye. When these cells have undergone the myelin degeneration they seem no longer capable of performing scavenger work.

In coal miners, or even in stokers and coal heavers, these pigment-laden cells may be extraordinarily abundant. It is not only when the patient comes direct from the mines, or from the coal yards, but the old *poitrinaires* which haunt in such numbers our city hospitals, expectorate for months, or even longer, sputa containing the pigment-laden alveolar cells, staining the entire expectoration. So persistent may this be that the process may be regarded, not simply as an extrusion of the daily dole of carbon, but as a definite excretion, if we may so use the term, of particles which have been stored up in pulmonary parenchyma.

A certain proportion of the inhaled dust particles escapes the mucous cells and the alveolar epithelium and penetrates the substance of the lung, entering at the *Kittsubstanz* between the cells, or through the pseudo-stomata existing in the alveolar wall. The particles of coal-dust have such sharp angles that we may suppose them capable of mechanically lacerating the delicate alveolar cells.

In dwellers in the country, as well as in wild animals, breathing an air comparatively pure, the cilia and the phagocytes in the air passages appear quite able to prevent access of the carbon grains to the lung tissue; whereas in the dwellers in the cities, and in animals kept in confinement, the impurities in the air are so abundant that these agents are insufficient, and sooner or later the grains penetrate the air cells, aided, no doubt, by the movements of inspiration and expiration; and we have the well-known marbled or carbonized organs which we see every day upon the post-mortem table.

When the particles reach the lymph spaces, the fixed and free connective-tissue cells of the stroma join actively in the work. On section, we see in the alveolar septa large numbers of round protoplasmic bodies, two or three times the size of colorless blood-corpuscles, which are usually packed full of dark grains. A certain proportion is seen within the ordinary connective-tissue corpuscles, and, in addition, there are, in variable numbers, ordinary leucocytes. But even these forces are insufficient to meet the constantly advancing stream of dust particles. The destiny of those which escape the phagocytes in the alveolar stroma has been accurately followed in the investigations of Arnold and others.* Entering the lymph stream, they are carried first into the lymph nodules, which, in the lungs, surround the bronchi and blood-vessels, and a large number become fixed in the cells of the follicular cords or are permanently imbedded in the stroma.

As they pass along the lymph channels into the interlobular septa beneath the pleura, a still further number lodge and become permanently inclosed in the stroma cells, and, finally, the remnant pass into the larger lymph channels and ultimately lodge in the bronchial and tracheal glands. Here the lymph and stroma cells of the follicular cords dispose of them permanently. That this is effected in great part by the phagocytes is, I think, unquestioned. A scraping from any moderately pigmented lymph gland shows that the chief part of its carbon load is warehoused (so to speak) in protoplasm; the granules lie for the most part imbedded free in a connective-tissue matrix. Here the struggle is practically over, and though not a victory, yet the compromise which has been made is the best which could possibly be effected. The sharp irritating particles have been placed in position in which they could do the least harm, and, though not expelled, have been safely imprisoned.

Once in the lymph glands of the bronchi, it is thought they never reach the general circulation, but it has been shown of late years that, under certain circumstances, the

* "Untersuchungen über Staubinhalation und Staubmetastase," Leipzig, 1885.

* See a recent work of Fleiner's, Virchow's "Archiv," Bd. cxii.

carbon particles may pass the bronchial filters and spread far and wide throughout the system. Soyka's remarkable case, in which undoubted coal particles were found in the tissue of the spleen and of the liver, illustrates what really may occur. Weigert,* in particular, has called attention to the frequency with which, in the spleen and in the liver, carbonization of the connective tissue occurs. He states that it results whenever densely pigmented bronchial glands form close adhesion to the pulmonary veins, through the walls of which the carbon particles pass and so reach the general circulation. I would not call the condition common, but I have seen at least three instances at the Philadelphia Hospital in which the irregularly distributed pigment in the spleen and in the liver (in the latter chiefly along the portal canals) was undoubtedly of extraneous, not of hæmic origin.

The steps in this process described may be followed in the lungs of any town dweller, but to see in perfection the remarkable activity of the pulmonary phagocytes, one must study the early stages of anthracosis, particularly in those exceptional cases which we see occasionally when a miner has been killed by accident or dies of acute disease. It is not, I think, too much to say that the larger part of the pigment contained in the lungs, almost if not quite black, is inclosed in protoplasmic cells. Here, too, the invading particles are more formidable and not so readily dealt with; yet one frequently finds long, irregular bits completely encircled by a film of protoplasm which the phagocyte has stretched to the utmost, just as we may see an amœba extend along the whole length of one of the short, rod-like diatoms.

I know of nothing which illustrates better the remarkable amœboid properties of human protoplasm than a slide prepared from the scraping of such a lung, or of the black juice pressed therefrom. Scarcely a leucocyte can be seen which has not been at work, and many of the larger cells have the protoplasm stuffed to the full with carbon grains. Only in the work of the pond amœbæ, preying among desmids, diatoms, and algæ, can we see such better illustrations of active work. There is, of course, this difference: that the amœba eats to live, and, so far as I know, never loads its protoplasm with useless stuff. The body phagocytes take anything, never exercising selective powers. The particles which gain entrance to the lungs may be far too large for a single phagocyte to attack successfully. I have sketches showing rod-like particles, the ends of which appear inclosed in protoplasm of a dumb-bell shape; while in one instance not only were the ends inclosed, but the central portion was completely enveloped by the third leucocyte.

A physiological process in which phagocytes play a leading *rôle* is the removal and disintegration of the red blood-corpuscles which have lived their life and are no longer fit for work. The cells containing the red blood-corpuscles, which are found in the bone marrow and in the spleen, however much opinion may differ as to their mode of origin, can not, I think, be regarded in any other light than as phagocytic elements with this definite function. They exist normally in the red marrow and in the spleen, and we may recognize (1) cells which appear to be, from their size and shape, elements of the pulp; (2) cells which belong to or are derived from the endothelium of the capillaries; and (3) the cells of the stroma. The gradual production of the pigment in this way has been so often described, and is so well known, that I need not now dwell upon it. In certain morbid conditions we see this process widely extended, and we find cells containing red blood-corpuscles in the liver, in the lymph glands, even in the blood itself; and particularly is this the case in those states associated with rapid blood deterioration and destruction, as in acute fevers, when these bodies may be enormously increased. In certain forms of anæmia so abundant are they in the bone marrow and in the spleen that they have been regarded as directly concerned in the widespread hæmo-phthisis.

The observations of Quincke* and his pupils have shown that the liver is the chief seat of blood destruction in pernicious anæmia, but the totally different appearance presented by this organ, even in long-standing cases, to that met with in malaria, shows a radical difference in the nature, possibly in the seat of the hæmolytic action. In the former case the pigment is chiefly in the liver cells; in the latter, in the stroma and about the blood-vessels. We can not from this regard pernicious anæmia as a hepatic disorder. The liver, probably, makes the best disposal it can of an abnormally large amount of coloring matter, which is, I should suppose, not brought to it in the same form as in malaria, but rather in a form similar to the raw material of the bile pigment, which would account for the active participation of the liver cells. The deep beefy-red color of the muscles in pernicious anæmia also tells of an abnormally large quantity of coloring matter at the disposal of the tissues.

In chronic emphysema, in mitral obstruction, and in all affections in which the circulation within the lungs is permanently embarrassed, the condition of brown induration which ensues affords a very beautiful illustration of the same process. The blood-corpuscles by diapedesis reach the stroma of the air cells, where they are seized upon, just as are coal particles, by the connective-tissue cells, and are gradually converted into a pigment which retains for a long time its brownish tint, but which may ultimately become black.

Neumann, in a recent paper,† doubts whether the brown induration of the lungs is really the result of the ingestion of the red blood-corpuscles by the stroma cells. He holds that in many instances, at least, structures within the corpuscles, which resemble so closely the red blood-discs, are in reality only pigment forms having the size and color of the red blood cells. We certainly see structures within the cells which can not possibly be mistaken for anything but red blood-corpuscles, and, I think, the expert eye can usually discriminate between such and the round aggregations of pigment, however deceptive may be their form and color.

* "Fortschritte der Medicin," Bd. i.

* "Deutsches Archiv f. klin. Med.," Bdr. xxv, xxvii, xxxii, xxxiii.

† Virchow's "Archiv," Bd. cx.

Phagocytosis has been studied in the process associated with absorption of extravasated blood. Langhans was the first to show that blood effused into the tissue did not simply disintegrate and disappear, but that the connective-tissue elements were actively at work, and that no small proportion of the colored corpuscles was ultimately taken into the interior of their protoplasm. This has been amply confirmed, and I think there can be no question as to the fact, but observers are by no means unanimous, however, whether the phagocytes are essential in the process. Probably in large extravasations only the peripheral parts are dealt with in this way. The fixed connective-tissue cells with migrated leucocytes all share, I believe, in the process. It must not be forgotten, as Neumann has pointed out, that pigment granules in the interior of the cells may resemble blood-corpuscles very closely. However this may be, there can be no doubt that the cells are concerned in the transformation of the hæmoglobin, whether they take it up with the corpuscles or after it is diffused from them.

Remarkable differences exist in the final transformation of the hæmoglobin, resulting in the formation of two pigments—hæmatod, inwhich develops chiefly in the central parts of the extravasation, and an albuminate of iron, hæmosiderin (Neumann), which is formed at the boundaries of the clot and wherever the coloring matter comes in contact with the tissues. That this difference is related in some way to the influence of the cells is in the highest degree probable, though Neumann is not inclined, from his observations, to attribute an important action in this respect to either the fixed or wandering connective-tissue elements. The question is one to which a few years ago I gave some study in connection with development of cells containing red blood-corpuscles, and I was much impressed with the truth of Langhans's statement as to the frequency and numbers of these structures in the vicinity of extravasations of all kinds.

In the intestinal canal the leucocytes assist, to some extent at least, in the absorption of fat. Schaefer's observations upon this point* show very clearly that during digestion the amœboid cells of the mucous coat become filled with fat globules. How these are obtained we do not as yet know clearly. Whether the fat penetrates between the epithelial cells, or whether the leucocytes pass up between the cells, reaching to the surface and here securing the fat, has not been definitely determined; though from the presence of an occasional cell, or even a nest of cells between the cylinders, the latter view is probably the correct one. The leucocytes pass to the central lymph-vessels, where they disintegrate and discharge their load of fat granules, which has meanwhile, in the protoplasm of the cell, been broken up into finer particles, which form the so-called molecular base of the chyle. Possibly, too, the leucocytes may take up other ingredients. It is interesting to note that in many of the lower animals the amœboid cells of the endoderm possess an active digestive function. The observations of Parker and Lankester appear to confirm fully the researches of Metschnikoff on the phenomena of intercellular digestion in invertebrates.

So far, we have been dealing exclusively with the action of phagocytes under normal conditions. And it is clear that these mesodermic cells have important functions throughout the life history of the organism. Not only in the early steps in the development of the blastoderm do we see them actively at work, but in various stages of development, particularly in that of the bone, their action is of the first importance. In the mature body we have seen that in the lungs, in the intestines, and in the blood-making organs, the phagocytes have most essential functions, but the question of chief interest to-day relates not so much to this normal process about which there has been so much doubt as to the supposed part which these cells take in protecting the body against the invasion of parasites.

The theory elaborated by Metschnikoff had been hinted at by many previous observers, but to him is undoubtedly due the credit of bringing it into prominence, and of doing in connection with it a very large amount of interesting work. It must be allowed that he came to his task well prepared. Many of us can look back with pleasure to his brilliant investigations upon the intracellular digestion in the *Planariæ* and in sponges, carried on largely at the Naples Marine Station, investigations the truth of which, so far as I know, has not been controverted. Following these studies, directly in the same line, was his interesting research into the method of the absorption of the tail of the tadpole, already referred to, in which he appears to have demonstrated that the atrophy of this organ results in reality from the active removal of the fragments of the tissue by leucocytes.

So far the work was biological, and had no direct bearing upon the phenomena of disease further than that, in the latter illustration, it bore out the well-known fact of the absorption by leucocytes of foreign bodies placed within the tissues. In 1884, in the ninety-sixth volume of Virchow's "Archiv," he published a paper,* which arrested the immediate attention of students in parasitology. It is now too old a story to narrate at length; it will be sufficient to remark that in the daphnia, the common water-flea of the aquarium, he had studied the relation of the leucocytes to a fungus with which these insects are prone to be infected. The phagocytes attack the fungi which enter the body cavity from the intestines, and practically eat them, inclosing them in protoplasm. Where one cell is insufficient, several combine to inclose the spores in large plasmodia-like aggregations—giant cells. If the invasion was in such large numbers, and the activity of the fungus so great that conidia were formed, the resisting forces were insufficient; victory remained with the enemy, which meant the death of the daphnia. Of 100 insects studied, 73 became infected, of which 59 recovered and 14 died.

Following this line, Metschnikoff proceeded to study the relation of leucocytes to anthrax bacilli, to the micro-organisms of erysipelas, and to those various other affections. He likened specific inflammation to a warfare in

* "Monthly International Journal of Anatomy and Physiology," 1885.

* "Ueber eine Sprosspilzkrankheit der Daphnien."

which the invading army is represented by micro-organisms, and the resisting forces by the leucocytes. Even in details the analogy was maintained. Notice of the arrival of the invaders was telegraphed, so to speak, by the vaso-motor nerves; the line of communication, the avenues of mobilization, were represented by the blood-vessels. The aim of the invader is to secure the territory, to rapidly multiply, to live at the expense of his host, and to manufacture and circulate substances injurious to him. The aim of the resisting forces is to encircle the enemy, inclose him, digest him, and render him inert in battle. Many phagocytes die in the process, and, if in large numbers, the heaps of the slain represent pus; an abscess is a battle-ground densely packed with dead bodies. If victory remains with the invaders, the organisms pervade the affected part, multiply, and induce conditions incompatible with the life of the part, or perhaps with the life of the entire organism. If the battle is with the host, the parasites are destroyed, perhaps not without loss, but the normal state is gradually restored. Practically, on this theory each organism is regarded as possessing a standing army composed of mesoblastic cells, capable of rapid reproduction and rapid concentration, one important function of which is to protect the organism against destructive agencies invading it from without. Certainly a most attractive theory, fully deserving the attention which it has aroused. On the one hand widely accepted, on the other bitterly assailed, the question is as yet far from settled, and to the position in which it stands I propose briefly to refer, and then to offer some results of my own observations upon a disease in which special facilities exist for the study of the problem.

Metschnikoff has studied a number of diseases—erysipelas, anthrax, relapsing fever, and tuberculosis—with a view of finding facts in support of this theory, and his communications within the past four years have been numerous and elaborate.* They have been so widely abstracted and so often referred to that I shall not occupy your time by entering into details, but will briefly indicate the chief points upon which he lays special stress in these different affections, and note certain of the observations which have been made by other workers.

In erysipelas the cocci are attacked first by the leucocytes filling the lymph spaces, which rapidly proliferate, and actively eat the micro-organisms. Not alone do the colorless corpuscles act as phagocytes, but the fixed connective-tissue cells assist in an important manner. In cases of recovery he found that behind the advancing cocci the leucocytes were crowded with parasites, which showed evidences of digestion and destruction. The connective-tissue cells do not appear to attack the cocci, but are chiefly concerned with the absorption of the inflammatory exudate, even taking up the leucocytes which have died. In fatal cases there was enormous development of micrococci, the majority of which lay free in the tissues not inclosed in the phagocytes. Inoculations with erysipelas cocci in white rats confirm these observations made in man. The leucocytes attack the parasites, which undergo rapid degeneration in the protoplasm. The larger connective-tissue cells, macrophages, did not attack the cocci. Metschnikoff recommends experiments upon these animals with the erysipelas cocci as an especially favorable field in which to study the struggle between the cells and bacteria.

In anthrax Metschnikoff has studied the relation of the phagocytes to bacilli introduced into frogs, which, as is well known, possess immunity at the ordinary temperature, but succumb when the temperature is raised. A graft of a piece of anthrax tissue under the skin of a frog is within from fifteen to twenty hours surrounded by leucocytes, which take up many bacilli. According to Koch, they may grow inside the cells and even burst them, but Metschnikoff holds that the anthrax filaments do not develop within the cell, but are gradually destroyed by them, and that this is the reason why the frog at an ordinary temperature recovers. In the heated frog the bacilli rapidly develop and, the efforts of the leucocytes proving insufficient, the animal dies; not, it is asserted, from any inactivity on the part of the leucocytes, but because the bacilli secrete a liquid which protects them from attack.

In Baumgarten's criticism * he relates some experiments with the anthrax bacilli which directly antagonize these observations. Pigeons do not die when inoculated with anthrax, and he has found that the bacilli injected degenerate in precisely the same way in these creatures as when in distilled water; only here and there did the leucocytes contain the rods.

He has found that in frogs, though the bacilli are eaten by the leucocytes inversely to a degree of heat to which the animal is exposed, there is never total destruction of the bacilli by the phagocytes.

Hess (Virchow's "Archiv," Bd. 109) has performed experiments which bear directly upon these points. Anthrax cultures in Zeigler's glass chamber, inserted beneath the skin in animals not very susceptible to the disease, as dogs and birds, showed active migration of the leucocytes into the chamber which appear to attack the bacilli and to destroy them. These very striking experiments certainly indicate what, of course, is well known, a high degree of activity on the part of the leucocytes, finding their way, as they do, into the chamber closed at all points except one narrow orifice. But, as Hess says, it is a question whether the disintegration in the cells necessarily means destruction by the cells.

In relapsing fever Metschnikoff states that the spirilli are not attacked by the leucocytes in the blood, but are destroyed only in the spleen. In the artificially produced disease in monkeys he finds abundant inclusion of the spirilli in the phagocytes of the spleen during the period of the rise in temperature before the crisis. This, however, may simply mean that the spirilli, most of which gradually disappear from the blood at the crisis, have lived their life and are about to die, and in this state are taken up by the normal splenic phagocytes, just as are the effete red blood-corpuscles. He explains the recurrence of the second, or even of the third, attack of the fever by supposing that certain

* Published chiefly in Virchow's "Archiv."

* "Zeitschrift f. klin. Medicin," Bd. xv, Hft. 1 u. 2.

spirilli remain alive after the crisis and start afresh a new generation, which is not retarded in its growth, as the phagocytes are too busy in digesting the spirilli which they had eaten during the former attack.

An interesting study of phagocytosis has been made by Laehr,* a pupil of Ribbert, who has studied the effect of injection into the lungs of rabbits, through the trachea, of *Staphylococcus pyogenes aureus*. Within a few hours the cocci are almost all to be seen within the alveolar epithelium, and in the leucocytes, which latter, in the course of a few days, disappear from the alveoli and pass into the bronchi. Meanwhile, the alveolar epithelium proliferates, causing a catarrhal inflammation. Within the first week the cells contain many cocci, which gradually become less numerous, and in the second week entirely disappear. He looks upon this as a confirmation of Metschnikoff's views.

In a second investigation, Hess † has studied, in rabbits and in cats, the relation of the leucocytes to the *Staphylococcus aureus* inoculated in the cornea. At first there is marked increase, which leads to an acute inflammatory process in the neighborhood of the cocci. The leucocytes increase rapidly, and within two or three days almost all of the cocci are within cells. In cases which recover by the sixth day, no cocci are found. When the process does not result in healing, the phagocytosis is slight.

Baumgarten ‡ states that experiments made in his laboratory do not confirm these results of Hess.

Ribbert, in his study on the destruction of pathogenetic bacteria in the body,# supports Metschnikoff's views. He found, after injection of the spores of *Aspergillus* and *Mucor*, that they collected in the organs of the experimental animals, particularly in the liver and lungs, and that within a few hours after injection they were surrounded by leucocytes, which either completely prevented or restricted the growth of the germs. Injections in very large quantities might not be sufficient to hinder the growth of the parasites, and the animal died. In the lungs and in the liver the phagocytes are much more active than in the kidneys. Precisely similar occurrences were found where the spores were injected into the anterior chamber, and it is worthy of note that he found on the anterior surface of the iris, in the neighborhood of the pupil, the phagocytes much more active and the disintegration of the spores much more marked than in the posterior part of the iris in contact with the lens. Ribbert holds that the destructive influence of the leucocytes is exercised chiefly by their preventing access of nourishment to the spores (particularly of oxygen), and in favoring also an accumulation about them of destructive metabolic products. He regards the fixed connective-tissue cells of the liver, and the giant cells which develop in the liver and in the lungs, as the most important agents in the final destruction of the spores.

As we might suppose, the views of Metschnikoff have met with sharp criticism in many quarters, and from no one more ably or at greater length than from Baumgarten.* While not denying that the leucocytes eat the bacteria, he claims that the process is by no means universal, and is carried on so unequally that we can scarcely speak of an active warfare waged against the parasites.

As a specially weak point, he alludes to the powerlessness of the phagocytes in the *Daphnia* disease so soon as the conidia are formed from the spores.

In relapsing fever, the freedom from attack which the spirilli enjoy in the blood is urged strongly against the phagocytic theory. The fact that spirilli are found in a number of cells of the spleen toward the crisis simply means that the phagocytes of this organ behave to them as to other foreign bodies. Probably, too, the spirilli begin at this time to lose their vitality, as is shown by their less active movements, and are then readily taken up by the splenic leucocytes in a manner precisely similar to effete blood-corpuscles.

In erysipelas, Baumgarten criticises the position in which Metschnikoff finds the parasites—namely, in the second zone, behind the advancing cocci, as conclusively showing that they are not fighters of the battle—not, as he expresses it, "the heroes of the day, but the hyenas of the field."

The observations of Christmas-Dircknick-Holmfeld † are also directly opposed to the theory of phagocytosis. He finds in anthrax experiments that very few of the bacilli are taken up by the leucocytes. In rats they degenerate within two or three days after inoculation, and for the most part outside of the cells. He holds that pus formation is a conservative reaction against the penetration of the bacterial germs, but that the neutralization of the action of microorganisms depends much more on the chemico-biological relations of the tissues than on any property of the cells to destroy them by inclusion. His view, in fact, approaches that of Ribbert, already referred to, in ascribing the limitation of bacterial growth to nutritive changes, particularly to the restriction of oxygen, rather than to any phagocytic action of the cells.

In Flügge's laboratory, observations have been made by Bitter and by Nuttall,‡ of San Francisco, which directly contradict those of Metschnikoff. Nuttall's elaborate experiments appear to show conclusively that the destruction of the bacilli in the living body is not effected by the phagocytic action alone.

And, lastly, in tuberculosis, the question of the relation of the cells to the bacilli is being carefully studied. In his recent paper on the subject,# Metschnikoff maintains that the degeneration of the bacilli, which has long been known to occur within the giant cells, results directly from their phagocytic action, and is not a natural decay. Baumgarten, on the other hand, regards the relation of the giant cells to the bacilli as one of the strongest evidences against the theory of phagocytosis.

* Abstracted by Bitter, "Zeitschrift f. Hygiene," Bd. iv.

† Virchow's "Archiv," Bd. cx.

‡ "Jahresbericht," Bd. iii.

Abstracted by Bitter, "Zeitschrift für Hygiene," Bd. iv.

* *Loc. cit.*

† "Fortschritte der Medicin," 1887.

‡ "Archiv für Hygiene," Bd. iv. I would particularly recommend the summary of Bitter's to those wishing further details, and, for a striking series of experiments, the paper of Nuttall's.

Virchow's "Archiv," Bd. cxiii.

With the relations of phagocytes to bacteria I have had so little practical experience that I hesitate to express any positive conviction on the question, but I have for nearly three years been working at a problem identical in all its relations, but in which the parasitic bodies belong to a higher class of organisms. I refer to malaria and to the hæmatozoa which occur in the blood of this disease. A skeptical attitude in these days of hasty observation and of still hastier conclusions is peculiarly appropriate. I complain of no one who, without ample opportunities for personal study, claims the right to question the full significance of Laveran's important discoveries. Perhaps better than any one else I am in a position to extend sympathy to the skeptic, as, until ample material came to hand in 1886, I was among those who looked upon the work of Laveran with extreme incredulity. The corroboration in almost every detail which his studies have received during the past three years is in all respects remarkable. Working as he did, alone in Algiers, under circumstances the reverse of favorable, without proper laboratory equipment, without the stimulus to be found in the association of men in large cities, it is not only in the highest degree creditable, but most encouraging, that an army surgeon, actively engaged in the duties pertaining to his battalion, could accomplish so thorough a piece of work, requiring but little subsequent correction, and receiving at all hands ample confirmation.

Richard, in France; Marchiafava and Celli, Golgi and his pupils, in Italy; Sternberg, Councilman, James, Shattuck, and myself in this country; and Vandyke Carter, in India, working far apart, have all practically confirmed, with minor modifications and amplifications, Laveran's observations.

While the invariable association of these parasites with malaria would appear to be settled, their precise morphological relations are still a matter of discussion. I have urged, from their resemblance to other hæmatozoa, that they should be classed with the genus of *Hæmatomonas* (Metrophanow), which includes all forms of monads parasitic in the blood, of which a considerable number is known among the lower animals. Briefly, to refresh your memory, I may refer to the forms which occur in ordinary malaria. In the acute cases there exist in the red blood-corpuscles hyaline and pigmented bodies which undergo amœboid changes, and which gradually destroy the corpuscles, converting the hæmoglobin into a black pigment. Under certain circumstances, more particularly during the paroxysms, these bodies increase in size and undergo segmentation, breaking up into a number of small free spherical bodies. In smaller numbers in the blood, but more constantly in the spleen, are the remarkable flagellate organisms. Lastly, in more chronic cases there are the still more extraordinary crescentic forms. Practically, the unanimity which exists in the statements of the observers above named regarding these bodies, places the question of their existence in malaria (and I may say, based upon the number of negative observations, in malaria only) beyond any reasonable doubt.

That they truly constitute the actual germ of the disease is, however, a point upon which opinions may differ. The constancy of their presence, their absence in other individuals in malarial regions, their abundance in the graver forms of disease, the destructive influence they exert upon the blood-corpuscles, are urged by Laveran in evidence of their pathogenetic nature.

However this may be, the question which here concerns us relates to the relation between the phagocytes and these bodies. Surely one might suppose that here, if anywhere, the theory of phagocytosis might receive confirmation or rebuttal. What but phagocytes are the amœboid forms of these parasites which exist in the red blood-corpuscles, gradually destroying the stroma and the hæmoglobin until nothing but a shell remains? Here, indeed, are foemen worthy of the steel, or, rather, of the plasma, of the leucocytes. What, then, are the facts? How far can we say that in the blood in malaria, the seat most assuredly of the chief pathological changes, in acute cases, that there are evidences of a struggle between the phagocytes and the hæmatozoa? It has long been known that the leucocytes in this disease (particularly in chronic cases) contain pigment granules. There is no other affection in which melanæmia is so constant a feature, though it is now and then met with in other conditions. The leucocytes obtain the pigment either in the blood itself, or in the liver, spleen, or marrow, where the red corpuscles undergo their final destructive changes. In an examination of nearly 150 cases of all forms of malarial affections, I have looked carefully at this point with a view of determining the exact mode in which the leucocytes obtain their pigment, and in my observations of the past two years the question of their relation to the various forms of the hæmatozoa has engaged my special attention. It may be remarked, in the first place, that there is certainly an increase in the number of white blood-corpuscles, an increase not associated, so far as I know, with any special change in the character of these bodies.

The result of my work in this direction may be stated in a few words. In the blood, at least, there is very slight evidence of the existence of phagocytosis. Here and there, it is true, we meet with leucocytes which have included the amœboid forms of the parasite, either free or still surrounded with the shell of a red blood-corpuscle. I have but three or four sketches in a whole series illustrating this fact. Occasionally a crescent may be seen within the white blood-corpuscle, more frequently the smaller free bodies which result from the segmentation. I have in my paper on this subject given a sketch of a leucocyte which was watched for an hour and a half and had included one pigment body, and was about to take a second, behaving identically though more deliberately than its great prototype, the pond amœboid. I confess myself disappointed in this respect. It may be urged that in a blood drop after withdrawal the conditions are not favorable for study. But the absence of any great number of leucocytes containing parasites in a comparatively unaltered state shows that certainly in the circulating blood the leucocytes do not actively attack and eat the parasites. More probably, I think, they pick up the pigment granule after the disintegration of the parasite, or in such regions of the circulation as the spleen or the bone marrow, where the conditions are more favorable to phagocytic action. Even on the warm stage, with

the leucocytes displaying for hours amœboid movements, and in specimens which contained "foes" innumerable, it was exceptional to see evidence of active warfare.

It is, of course, more difficult to obtain evidence of the relation of the supposed contestants in the spleen, liver, and marrow, the organs in which regressive and progressive blood changes are constantly going on. I have not myself practiced puncture of the spleen in these cases, as has been done extensively by Councilman. Fatal cases of malaria are not now very common. I have only had opportunities of examining two, both of chronic paludal cachexia, the result of prolonged exposure in Panama—one, an old man, admitted under my colleague, Dr. Musser, whose blood presented many of the characteristic forms; the other, a profoundly anæmic man, with a greatly enlarged spleen, but in whose blood very few of the parasites were found. In both instances the liver, spleen, and bone marrow showed characteristic melanotic changes. In the spleen the pigment in various shades, from brown to deep black, was chiefly in the thickened trabecular tissues and about the vessels. Teased portions showed:

(1) Large numbers of leucocytes containing brownish-black pigment grains. A few of the leucocytes contained the small amœboid forms which had been noticed to be very abundant during life.

(2) Larger cells, containing red blood-corpuscles in all stages of degeneration. These cells were of various sizes, and contained a variable number of corpuscles—from eight to ten, or even more. Some of the red corpuscles contained amœboid parasites, but by far the larger portion of them presented the usual appearance met with in cells of this character in the spleen.

(3) Large, irregular, flattened cells, probably derived from the epithelium of the spleen capillaries, which contained granular black pigment, and occasionally red blood-corpuscles.

(4) Spindle or branch cells of the reticular tissue inclosing brownish or black pigment grains.

(5) Free pigment.

Practically the condition was similar, though more extensive in degree, to that met with in this organ and in other febrile states associated with extensive blood destruction. I really could not say that the splenic phagocytes exercised any selective power in picking out for attack those corpuscles which contained parasites or crescentric forms, which in one of these cases existed in considerable numbers. The bone marrow in both cases presented microscopic changes characteristic of the lymphoid tissue, and had a grayish-brown color, due to excess of pigment. There were in it in large numbers marrow cells and ordinary leucocytes containing irregular pigment, and occasionally free amœboid forms of the parasites. The cells containing red blood-corpuscles were very abundant, but here, as in the spleen, it was particularly noted that the red corpuscles not containing the parasites were as frequently, or even more frequently, inclosed in the cells. In the liver the pigment existed in three elements:

(1) In leucocytes, which seemed numerous in the lobular capillaries, particularly at the periphery.

(2) In the walls of the capillaries, in all probability in the endothelial cells.

(3) In the stroma cells, particularly of the interlobular tissue about the portal canals, where in places it was sufficiently abundant to cause ordinary diffuse pigmentation, a part of which was due to grains lying free in the interstices of the tissue.

Metschnikoff states that in malaria the parasites are attacked chiefly in the spleen and the liver by the larger phagocytes existing in these organs, and to a much less extent by the leucocytes in the circulating blood.

We see, then, in malaria very little evidence in the blood favoring a theory of phagocytosis; certainly no such campaigning on the part of the leucocytes as might be expected from the presence, in such numbers, of foes so destructive to the red corpuscles. In the spleen, bone marrow, and liver, the organs in which the dead or dying blood discs are normally cremated, to use Weigert's expression, we have, as might be expected, an activity proportionate to the increased amount of material to be consumed, but scarcely such heightened phagocytic action as would indicate, on the part of the leucocytes, an aggressive warfare.

Into the interesting theory that to the action of phagocytes is due the immunity against certain diseases or against a second attack I can not now enter. In the present unsettled state of our knowledge it would be premature.

To conclude: While phagocytosis is a widespread and important physiological process throughout the animal kingdom, and while it undoubtedly plays a most important part in many pathological conditions, the question of an active destructive warfare waged by the body cells against the micro-organisms of disease must still be considered an open one.

Original Communications.

ON THE VALUE OF FREQUENTLY REPEATED DOSES OF ARSENIC IN THE TREATMENT OF BULLOUS DISEASES OF THE SKIN, ESPECIALLY IN CHILDREN.*

By L. DUNCAN BULKLEY, A. M., M. D.

Arsenic is perhaps the most frequently used and the most commonly abused of all the remedies employed in the treatment of diseases of the skin, and it is safe to say that a large share of all patients with eruptions have this drug administered to them by some one at some time during their course; and yet the experience of every one will testify that it is by no means the specific which could be wished for in these affections when they are taken as a whole. The cause of disappointment in the use of this therapeutic agent will be found unquestionably, as in the

* Read before the Section in Dermatology and Syphilography of the American Medical Association, May 10, 1888.

case of all therapeutic agents, in the failure to adjust the remedy to the particular diseased state for which it is valuable, and to use it in proper and sufficient doses with, if necessary, such other adjuvants to treatment as may be required. It is needless to add that in this lies the secret of the successful practice of medicine.

Arsenic is not an indifferent therapeutical agent, and there is no question in regard to its power to influence the skin; but there is also no question but that it is useless, or even harmful, in many of the diseased states to which this organ is liable.

It is not the purpose of the present paper to enter into the general subject of the use and value of arsenic in the treatment of diseases of the skin, nor to dwell on the necessity of an absolutely correct diagnosis and sound therapeutical indications in its administration; this subject was fully discussed by the writer twelve years ago,* and the literature of the subject presented, with also clinical records and illustrations, and later experience has further confirmed the statements there made. The aim of the present communication is to call especial attention to the undoubted and almost specific action of arsenic in one certain form or variety of skin disease, and to place on record a few cases illustrative of the same; also further to show not only the harmlessness but the value of frequently repeated and seemingly large doses of the drug in proper cases, especially in children.

The most notable and striking of all bullous diseases, in which arsenic seems at times to exert almost a specific influence, is pemphigus vulgaris. My attention was first called to the value of efficient doses of arsenic in this affection by the writings of that brilliant, versatile, and indefatigable worker, Mr. Jonathan Hutchinson, who, in 1854, reported a number of cases of pemphigus, some of which had been treated successfully with arsenic; this report was followed by subsequent records of cases by himself and others; and in 1877 the present writer† reviewed the literature of the subject and reported on five cases of pemphigus treated successfully with arsenic in free doses, in one of which cases the drug had twice appeared to save life. As this latter case was a most important one, demonstrating the specific action of arsenic in pemphigus in an absolute manner, I shall take the liberty of again briefly alluding to it; the other cases here mentioned have been treated since:

Case I.—Annie S., aged sixteen years, had had an eruption of bullæ, especially on the limbs, coming and going for a year previous to the date of my first seeing her; it had never given great trouble until a few weeks previously, when it increased with severity, the bases of the lesions taking on a diphtheroid character, and she rapidly sinking. When first seen there was every appearance of extreme exhaustion, with rapid and feeble pulse, and death was expected shortly by three physicians who had seen her. The eruption had affected the mouth, and the tongue and buccal cavity, as far as could be seen, were covered with ulcerating lesions, rendering speech and deglutition almost impossible; there were some large and distinct bullæ on the elbows and lower legs, but most of the lesions consisted of ulcerated surfaces, many of them covered with a pultaceous diphtheroid membrane, and some of them were horribly offensive.

All other medicine was stopped, and Fowler's solution was given, well diluted, four times daily, in doses beginning with four drops and increasing by half a drop at a dose until eight drops were taken four times daily. The results surpassed anything I had seen in other cases; within twenty-four hours improvement was very visible, and after three or four days all the lesions assumed a decidedly healthier appearance; a load seemed lifted from the system, the patient was cheerful, could talk easily, and no new bullæ had formed. Within a week or two most of the lesions had healed, no other remedy being used except a little carbolated zinc ointment to a few of the more offensive sores.

Some two months and a half after the first visit she had a relapse, owing to a neglect of the medicine, and once more she was in bed, prostrated and sinking. Again the eruption yielded to the arsenic alone in full doses, and she kept it at bay for some months, until she sank and finally died from tubercular disease of the lungs, which was aggravated if not induced by her most unsanitary surroundings in a room kept continually damp with laundry work.

Case II.—Mrs. L., aged twenty-two, had been married five years, and had had several miscarriages before and after the birth of a child, two years and a half previous to the commencement of her eruption; this child was perfectly healthy, and lived four months and a half, dying of some lung difficulty. About three months previous to the date when she was first seen, March 8, 1881, she began to suffer from chills with fever, and an eruption on the forehead, which was followed in three or four days by lesions on the back. The disease increased in intensity until she was shortly confined to the bed, and was more or less helpless up to the time of her admission to Mount Sinai Hospital, on March 3d, where I saw her in consultation with Dr. W. H. Fluhrer.

When seen she was in a pitiable condition; the face was largely covered with crusts, and the arms and legs were also thickly sprinkled with the results of past lesions, in the form of crusted masses, with sharply cut, ulcerated surfaces beneath, scattered among bullæ with more or less purulent contents; there were also a number of lesions on the chest and back. Her temperature on admission was 103° F. and her pulse 104 and weak, and she was emaciated and feeble. From the history and other reasons, syphilis had been suspected, and antisyphilitic treatment had been instituted, under which the eruption had grown worse; she complained of burning pain in all the lesions.

All other treatment was discontinued, and she was given three drops of Fowler's solution, every two hours, well diluted, and a mild carbolic ointment applied to some of the worst sores. The hospital records of March 9th, the next day, show that the eruption had begun to improve at once under the arsenic; and three days later it was recorded that many of the lesions had healed; the dose was then increased to four drops of Fowler's solution every two hours. For some reason, after the eruption had almost disappeared, she began to get worse, failing in health and strength, and I was asked to see her again on April 8th, the temperature having again run up to 103° at times, with occasional drops to 99°. I found that there had been considerable return of the disease, but the diagnosis of pemphigus was again confirmed, and the arsenic continued in free doses, with attention to the bowels and other details. To be brief, the patient again improved under the arsenic, and was discharged cured on June 17, 1881.

Case III.—Mr. T., a large, strong man, forty-nine years of age, who had always enjoyed good health, was first seen in

* "New York Medical Journal," August, 1876, p. 113.

† "American Journal of the Medical Sciences," October, 1877, p. 408.

consultation with Dr. Klotz and Dr. Scheider, July 28, 1887. He had had pneumonia in January, which was followed very shortly by an eruption of bullæ on the front of the chest; this increased rather slowly, and early in May bullæ existed all over the chest, on the scalp, and within the mouth. After that time the disease developed more rapidly, and he had been confined to bed for three or four weeks previous to the first consultation, spending also part of each day in a water bath, as much relief was obtained thereby.

When first seen much of the surface was covered with the eruption, which exhibited pemphigus lesions in various stages and conditions. The mouth was a mass of raw ulcerative lesions with ragged edges, and the lips were painful to use in any way. The arms, legs, feet, and hands, also the trunk, were the seat of bullous lesions, large and small, with raw surfaces caused by their rupture; the region of the sacrum was entirely bereft of epidermis, as also part of the feet and other portions, so that the suffering was intense.

He was given the liquor sodii arseniatis in doses of two drops, to be increased slowly to ten drops every two hours, in Vichy water, a few drops of laudanum to be added if diarrhœa was produced; a carbolized mouth-wash was prescribed, a calamine-and-zinc lotion applied to some of the inflamed portions, and the raw surfaces were dressed with cotton batting. The effect of the arsenic was seen shortly, and in a week it was recorded that the eruption had improved in every way; some of the sores had healed, and there was much less discomfort; but there had also been some new development of vesicles, especially on the left upper thigh, where there were dozens of clear, distinct bullæ of small size. The dose of the arsenic had then reached eight drops, but had not been taken as frequently in the twenty-four hours as was desired. One week later there was still improvement in the eruption, and there had been manifest gain in the general condition of the patient, who seemed reasonably comfortable and cheerful. Shortly after this time lung symptoms set in, apparently due to an extension of the disease downward from the mouth, which, however, had greatly improved in condition.

Soon after this the arsenic was discontinued for a day or two, and the change in the character of the eruption and the feelings of the patient was so apparent to every one that it was quickly resumed, and continued to the end. But it seemed finally unable to cope with the disease, for, although it held the eruption in check to a very considerable measure, the patient sank from intestinal complications, with occasional recurrence of his cough, both seemingly from a development of the disease on the mucous surfaces, and finally died on September 10, 1887.

Occasionally during the course of eczema, especially in elderly people, the nature of the process will appear to be changed, and lesions of a pemphigoid character will occur which may prove very distressing. These will continue to be formed in spite of the ordinary treatment employed for eczema, but will be found to yield promptly to the free use of arsenic alone, as in the following two cases:

Case IV.—Mr. O., aged seventy-seven, was seen in consultation with Dr. J. R. Conway, on February 12, 1884, on account of a very general eczema with which he had been confined to bed for a week. The attack had begun one month previously, and when he was first seen it covered the entire body and limbs, in the form of erythematous and papular eczema; there were no vesicular lesions, but some moist surfaces existed here and there from scratching. The eruption did very well under an acid, magnesia, and iron treatment, together with mild external measures, so that in three weeks he was very comfortable, and by the end of a month he had been out of doors, and seemed almost well again.

He then became careless in eating, and possibly relaxed treatment too much, and on March 28th it was recorded that he had had severe very general itching, with the production of many large and small erythematous patches, upon which were many grouped vesicles, and three days later there developed on the left wrist a pemphigoid blister, large and tense, nearly an inch in diameter. He was placed on an alkali after eating, and given ten drops of the liquor sodii arseniatis between meals, well diluted. A few days later more of the bullous lesions appeared, one of them three quarters of an inch long, on the front of the right tibia, and other smaller ones elsewhere on the legs. The arsenic drops were increased to twelve, three times daily, and very shortly the production of bullæ ceased. The arsenic was continued until May 10th, and, as he had had no bullæ for some time, they were stopped; but on May 15th they reappeared upon the legs, and he was given the arsenic alone, in ten-drop doses, four times daily, and the bullæ again promptly disappeared. The arsenic was continued for a month longer, and he went to the country apparently well.

In December the eczema recurred, and shortly after the bullæ reappeared, which, however, were again controlled by the arsenic; but his eczema remained more or less troublesome for some months later, although it finally yielded in the spring.

Case V.—The next case resembled the preceding one very completely, except that the eczema element was less severe and less general; it need, therefore, be but briefly detailed. The patient, Mrs. C., aged seventy-one, was referred to me by Dr. Leaming, February 5, 1877. The eruption had existed some months, and formed eczematous patches over the body and thighs, some of them erythematous and papular, some of them moist. During the course of the eruption pemphigoid blisters developed, mainly on the abdomen, which yielded promptly to the free administration of arsenic.

Arsenic is also found to be of very great service in controlling the bullous eruptions sometimes excited by the internal use of iodide and bromide salts, especially those of potassium. A single illustration of this will suffice:

Case VI.—Miss E., aged thirty-five, had been under treatment for syphilis, which was contracted nearly four years previously. As she lived some distance from the city, and neither she nor her family physician could be made to appreciate fully the requirements of the case, her treatment was carried out somewhat irregularly and with interruptions. One year before the occurrence of the eruption to be described, or early in the fourth year of her syphilis, she had a strange attack of partial paralysis, presumably syphilitic, from which she recovered under the treatment of her family physician, who understood her case; but after this date she had more frequent recurrences of epileptic seizures, to which she had been subject occasionally during the period of her syphilis, though unbeknown to me, and possibly once or twice during previous years. These epileptic seizures had increased during the year previous to my visit to be referred to, and she had been under the care of some irregular physician in another city for this trouble, and had also taken an advertised nostrum for epilepsy. By the latter part of April a bullous eruption appeared on the nose, and then on other portions of the face. This medicine was stopped on April 30th, but her own family physician, thinking the eruption to be syphilitic, had been giving her increasing doses of iodide of potassium, with the effect of daily increasing the eruption until seen by me, May 30, 1880.

When first seen the whole face was covered with a thick, black crust, the results of former lesions, with also much crust-

ing on the scalp. On the chest and back nearly a quarter of the surface was covered with new and old lesions, many being also on the extremities. Here and there could be seen bullæ, rounded on top, up to half an inch in diameter, with apparently clear contents, giving exit to serum and blood when punctured. Some of these were recorded as seated on healthy skin, with almost no surrounding inflammation. Much of the eruption was composed of the crusted and ulcerated surfaces occupied by previous bullæ, and, to render the diagnosis more obscure, they were largely arranged in circular and serpentine forms. She was extremely exhausted. Pulse, 120; temperature, 101·4° F. in the mouth. The bowels were acting twice daily.

All other medication being discontinued, she was placed upon Fowler's solution, five drops every two hours, to be increased by a portion of a drop if necessary. She was also given a pill containing a third of a grain of opium, with two grains of quinine at bed-time, and locally carbolized oil (1 to 50) to be brushed over the lesions, some of which were very offensive.

The results from the arsenic were even more than could have been expected. Almost immediately the patient began to improve, and three weeks later the eruption had almost entirely vanished. The crusts fell off very shortly after beginning the arsenic, no new bullæ formed, and healing progressed very rapidly. Several months later she was given mild mixed treatment, with a moderate quantity of iodide of potassium, but never again was she troubled with such an eruption.

While arsenic proves of such signal advantage in the conditions already described in adults, its effects in some of the bullous eruptions in children are, if anything, even more marked in proper cases, and if given in efficient doses, as may be judged from the following cases:

Case VII.—Rosalie B., aged ten years, was sent to me by Dr. J. Ackerman Coles, of Scotch Plains, N. J., May 25, 1887. The child then presented a typical herpes iris, and her condition was then as follows: The eruption was confined to the hands and forearms, feet, and lower legs, with a few spots on the thighs and also about the mouth and on the lips, likewise within the buccal cavity. The feet and lower legs were pretty thickly covered with new and old lesions, and on the backs of the hands and wrists some were most typically characteristic, with a single bleb of some size and a circle of vesicles around, seated on a reddened base; in one or two instances there was a second circle outside of this. In some places the blebs were of very considerable size, and were recorded as about an inch in diameter; in other places they had ruptured, and the surface was either raw or covered with dried membrane or secretions. She suffered very considerably, more especially with the lesions on the lips and mouth, so that she could scarcely talk or take any nourishment.

The history of the case was that in January, four months previous, she had a first attack, which lasted about a week. A second attack came some few weeks later, and was even milder. The present attack had begun three weeks previous to her visit, and had increased steadily until the time she was seen. At the first visit she was given Fowler's solution, with an equal quantity of water, of which she was to take five drops every two hours, increasing the dose gradually to ten drops if necessary and if there were no unpleasant symptoms.

The next day, May 26th, there was already some improvement noted; many of the lesions seemed less inflamed, and the child seemed more comfortable. A little castor-oil was then ordered, as there had been some constipation, and the drops were ordered to be increased. Five days later very marked improvement was noted; the bullæ and vesicles were flattened, and most of the lesions were gone from the mouth, she having used also a lotion of borax, carbolic acid, and honey. A week later the eruption had disappeared, leaving only stains. She was then taking seven drops of the mixture, or three drops and a half of Fowler's solution every two hours.

On two subsequent occasions, when the arsenic was neglected, she had a recurrence of the eruption, which was promptly checked by a return to the frequent doses of the arsenic. The remedy was then taken at longer intervals until finally it was discontinued, and she remained free from eruption.

Case VIII.—Edward D., aged four years and a half, was brought to me in his mother's arms, October 29, 1887, so severely affected with herpes iris that he could not walk. The eruption began on the foot, four weeks previously, apparently from injury, the toe having been stepped on. The eruption had spread rapidly, with the development of new lesions, until, when first seen, much of the body was the seat of the disease, it being especially severe upon the extremities. The hands and arms were almost covered with old or new lesions, and the feet and legs so badly affected that they were only wrapped up in bandages, it being impossible to put on shoes or stockings. Much of the eruption consisted of abraded surfaces in various stages of inflammation, some covered with crusts, some raw, and between them, on healthy skin, were some characteristic bullæ of herpes iris, with clustered vesicles around; a new crop had appeared on the backs of the hands and feet the day before the visit, each fresh outburst being preceded by fever. There had been considerable itching, and the child was much pulled down by the disease.

He was given Fowler's solution, diluted one half with water, five drops to be taken every three hours, and a lotion of calamine to be applied freely to the diseased surfaces.

Three days later it was recorded that there had been very great improvement; most of the inflamed surfaces had dried up, but a few new blisters had appeared here and there, with clear contents. The arsenic drops were increased to seven or eight, equaling three or four of Fowler's solution, every three hours, no other treatment being given.

A week later he walked to the office, appearing almost well. There were, however, still a few new blisters developing from time to time, the largest one being on the left wrist, which measured half an inch by a quarter of an inch. It was found that his diet, which had been purposely neglected in order to test the remedy, was very faulty, he taking tea three times daily. These matters were corrected, milk was freely given, and the arsenic continued at six drops, every three hours, as he had shown a little diarrhœa from the drug. The case then progressed satisfactorily to the end, and the mother, seen a year after the last date, reports that all traces of the eruption vanished very shortly, and that it has never reappeared.

Case IX.—T., a previously healthy boy, aged two years, was seen in consultation with Dr. Packard, January 31, 1885, on account of what then appeared to be a dermatitis, beginning ten days previously on the left foot, from the irritation of rubber boots. It had increased and extended until much of the left foot and ankle were covered with a raw exuding surface, causing much pain. It was learned later, however, that the eruption had begun with blisters like those seen later in the disease. This first attack passed away very shortly under an ointment of oxide of zinc and a calamine lotion, with a little calomel and soda every other morning, and an iron-and-arsenic mixture.

He remained well until the middle of July, when, after a bath in the ocean, an eruption of blisters appeared on the hands and feet and then over much of the body. This passed away in three or four weeks, but returned shortly after on the left leg and buttock; the eruption kept recurring here until the patient

was seen again on September 22d, when the hands and face were found to be swollen also, but with no eruption. He was given an alkaline and arsenic mixture with a laxative, and in ten or twelve days the eruption disappeared, and remained absent for a year or more.

When nearly four years old, after bathing daily in the ocean for a month, he had an eruption on the left arm which remained confined there for a month, when it developed on the body and left leg the day before he was next seen, October 2, 1886. There were then found three large bullæ, sharply defined on the left knee, something over an inch in diameter, with perfectly clear contents, with smaller vesico-bullæ on the body, and the remains of others on the left arm; all were seated on a more or less erythematous base, and there was considerable itching before the bullæ developed. As there was evidence of very bad liver action, he was given a mixture of rhubarb and soda with arsenic, and in a week the eruption had pretty much disappeared, but this was followed by a fresh outburst only a week or two later.

These repeated developments of the disease recurred several times until, on November 11, 1887, he was given Fowler's solution, diluted one half, to take from four to eight drops every two or three hours. At this time the eruption was more pemphigoid in character, the bullæ rising quite suddenly from an almost healthy skin, with little or no inflammatory base; the bullæ, some of which were at least half an inch in diameter, were seated on the buttocks, left thigh, and root of the neck. Six days later it was recorded that the lesions had all dried up and that no new ones had appeared, he then taking six drops of the mixture or three of Fowler's solution every three hours. Since that time he has remained free from eruption, and, although he has had disturbances of health requiring attention from time to time, he has never had any return of the bullous disease up to the date of writing.

In looking at these cases, we see that arsenic has proved of signal advantage in several different forms or conditions of bullous eruption, occurring in patients of both sexes and of very diverse ages; the oldest patient was seventy-seven years and the youngest three years of age; four of the patients here mentioned were males and five females. There is seen to be little in common in these cases except the fact that each of them presented bullæ, and that they were mostly of a chronic character, with repeated accessions of eruption until checked by the action of the arsenic. Of the three adults with true pemphigus, two died; but in these instances the drug was commenced very late in the disease, and one of them died, probably from tubercular lung trouble. From the manner in which the remedy controlled the eruption and benefited the patient's condition, from the results in the other cases of pemphigus previously referred to, and from what has been reported by others, there is little doubt but that in efficient doses, with proper adjuvants occasionally, arsenic may be counted on as a specific in pemphigus.

It is especially, however, with regard to its free administration in children, in proper cases, that particular attention is drawn at the present time. Children bear arsenic remarkably well, and, although I have given it freely in a very considerable number of cases, both such as these and in eczema, I have never seen untoward results, or any which caused me uneasiness. As a rule, arsenic acts with them as a purgative before it manifests its other physiological effects, and it may generally be safely given in bullous eruptions in increasing doses; if the disease does not yield, until it purges; then the dose should be slackened to a point where it is perfectly borne.

In many cases, of course, its effect will be more or less increased by the proper use of such other measures of diet and medication as circumstances may indicate; in the first case of a child here mentioned, castor-oil was given, and afterward the hypophosphites were added; and in the last child it was necessary to give occasional doses of calomel, and also an alkali and rhubarb and soda, and finally an iron-and-arsenic tonic; but in each instance it was the arsenic, used independently and in relatively large and frequent doses, which alone checked and controlled the eruption, while in the second case of a child only arsenic was used from first to last.

In regard to the mode of action of the arsenic, it has to be acknowledged that we know little or nothing in reference to the manner in which it operates in controlling the disease. To say that these lesions are neurotic in character and that the arsenic acts through the agency of the nerves, as it is beneficial in chorea and neuralgia, is only bringing the question one point nearer and not answering it completely. Writing upon this subject some time ago, Mr. Hutchinson * uses the following language, which expresses briefly about all we now know of the matter:

"Arsenic does not merely repress the eruption, but remedies the unknown constitutional causes on which that symptom depends, always very much benefiting the general health of the patient. Arsenic does not prevent the liability to subsequent attacks, but such attacks are always much less severe than the original one, and tend, if treated by the same remedy, to diminish in intensity on each successive occasion."

A single word may be added in regard to the mode of administration of the arsenic. The preparation used in all these cases was either the arsenite of potassium or the arseniate of sodium in solution. These are undoubtedly the most appropriate preparations, and are those most commonly employed. It is well to prescribe them diluted with a definite quantity of water, both in order that the increasing dose may be more gradually augmented, and that there may be a lessened chance of error in dropping out each dose.

In giving the remedy every two hours it very often or generally comes apart from a meal; it is necessary, therefore, to direct that the dose be administered in a considerable quantity of water—at least a third of a tumblerful. It is often better borne by the stomach when it is given in Vichy water, which is often also otherwise indicated in these bullous affections.

4 East Thirty-seventh Street.

Pigott's Brain.—"The Madrid physician who made the post-mortem examination of the body of Pigott, the defaulting and self-confessed perjured witness for the 'London Times' in the great political trial now going on in London, and who committed suicide in Spain, declares he never saw such a well-formed skull and brain, the latter indicating a man of superior force of character and imagination."—*Boston Medical and Surgical Journal.*

* Hutchinson, "Medical Times and Gazette," 1854, vol. i, p. 131.

THE RELATION OF BACTERIA TO DIARRHŒAL DISEASES IN INFANCY.*

By L. EMMETT HOLT, M. D.

The study of intestinal bacteria is yet in its infancy. With our present limited knowledge it is manifestly unsafe to make sweeping generalizations or deductions. All that will be attempted here will be to consider the bearing of what now appears to be well established upon our notions of the pathology, prevention, and treatment of gastro-intestinal diseases in infancy.

In the study of the effects of micro-organisms upon the human body, under all circumstances, three factors must be kept constantly in mind:

1. The nature of the micro-organisms.
2. The dose, or numbers in which they enter the body.
3. The vulnerability of the patient.

It is nowhere more important to consider *all* the factors than in diarrhœal diseases.

I. *The Normal Conditions present in Infants on Milk Diet.*—For these we are indebted mainly to the work of Escherich. Those which are important in the present connection are:

1. That the small intestine is acid throughout the upper two thirds of its course.
2. The source of the acid is the decomposition of milk-sugar, which is present here, though not in large amount.
3. There is no decomposition of casein.
4. All the casein and the greater part of the milk-sugar appear to be absorbed soon after they enter the intestine.
5. Oxygen is absent, with the possible exception of a very small amount next the mucous membrane.
6. Thus far there have been isolated and studied but two varieties of bacteria which are constantly found in the intestines of nursing infants—the *Bacterium lactis aerogenes*, which is found in great abundance in the upper portion of the small intestine and diminishes in numbers as we descend, and the *Bacterium coli commune* (Brieger's bacillus), which exists in great numbers in the colon and in the stools. The *Bacterium lactis aerogenes* decomposes milk-sugar, with the production chiefly of lactic acid (Escherich) or acetic acid (Baginsky), and to one of these the acidity of the intestine here is due.

This bacterium also produces carbon dioxide and hydrogen in considerable amount, but has very little effect either upon albumin or fat.

The *Bacterium coli commune* acts but very slightly upon either casein, fat, or sugar.

An explanation of the small number of varieties constantly present is to be looked for in certain conditions which prevail in the intestine which limit bacterial growth. These are the exclusive diet, the absence of oxygen, and the rapid absorption of both casein and milk-sugar. Bile does not act as an intestinal antiseptic, since Booker and others have found that almost all intestinal bacteria grow well in a ten-per-cent. solution of bile. Its influence in diminishing intestinal putrefaction, then, must be due to its action in digestion and absorption. When bile is absent these processes are imperfect, and decomposition takes place in the unabsorbed residuum.

The acidity of the stomach is no protection to the intestines against the entrance of living bacteria. The acidity is not great except when the digestive process is at its height. Miller found that unless it reached 1·6 per cent. of hydrochloric acid it did not stop bacterial growth. Van Puteren examined the contents of the stomach in eight infants, and never found an acidity exceeding 0·8 per cent., and, finally, MacFadyen demonstrated that in dogs, by giving at the same time large draughts of water, almost any variety of bacteria could be made to pass the stomach without being destroyed.

It has not yet been established that bacteria have any essential part to perform in the physiology either of gastric or intestinal digestion. Nor does the theory advanced by Baginsky—that the function of the bacteria constantly present under normal conditions is to prevent the development there of abnormal species—find any adequate support either from the observed facts or from analogy in other parts of the body.

II. *How may these Normal Conditions be altered?*—1. The varieties of bacteria which develop anywhere are dependent, among other conditions, on the food present. Escherich found that the species existing in the intestines when the diet was exclusively milk disappeared and gave place to different species when milk was excluded and a meat diet substituted. The conditions are also altered in infancy by anything which increases the amount of unabsorbed materials in the intestine.

Practically, we find that this may occur in three ways:

First. There is a failure of digestion, the character and quantity of food being normal. This failure may be a sudden one, as in the invasion of acute disease; it may be habitual, from constitutional debility; it may be the result of many nervous influences, as depression from high atmospheric temperature.

Secondly. The quantity of food given is too large, so that, even though its character is proper, normal digestive powers can not take care of it.

Thirdly. Food so improper for infantile digestion is taken that it is not acted on at all, or but very slightly.

In all these cases the result is essentially the same—viz., there are present in the intestines masses which, at the temperature of the body, readily undergo putrefaction. If the active cause is only a transient one, as soon as the decomposing substances have been eliminated, proper feeding and the re-establishment of healthy digestion soon restore normal conditions.

If the cause continues operative, other results follow which will be detailed hereafter.

The conditions considered thus far may be looked upon as furnishing a favorable soil for abnormal bacterial growth in the intestines, the regulating mechanism being in all cases a normal healthy digestion.

2. There may be introduced into the intestine, with the food generally, pathogenic germs. Their effect will depend

* Read before the New York Clinical Society, February 22, 1889.

upon their nature, the number which gain entrance, and the conditions they find there.

Regarding specific germs as a cause of diarrhœal disease we know as yet nothing positively, if we except the observations of Lesage and Hayem upon the bacillus of green diarrhœa, which lack confirmation so far, and which have not been generally accepted by bacteriologists.

The toxic dose of bacteria must vary with each individual. The number which can be taken into the intestine of a strong infant with healthy organs without any unfavorable result is undoubtedly pretty large. A much smaller number in a delicate infant of feeble constitution is sufficient to set up the most active decomposition with serious results.

This constitutional factor is an important one, and one which has not been usually sufficiently considered.

The most important condition, however, is that of the digestive organs. While healthy organs are able to withstand the action of bacteria unless their number is very great, imperfect digestion, with its consequences—a mild catarrh and the presence of undigested materials in the intestine—furnishes the conditions most favorable to decomposition. Now the entrance of a comparatively small number of bacteria may become dangerous.

3. Poisonous ptomaines may be formed in the food outside the body, the introduction of which may produce toxic symptoms independent of any previously abnormal conditions being present, these requiring only absorption. These toxic symptoms may be the same as if the ptomaines had been produced by decomposition in the intestine.

III. *Results of Abnormal Bacterial Growth in the Intestines.*—The continued presence of undigested or indigestible food may produce effects mechanically, or more commonly by the decomposition from bacteria. Catarrhal inflammation of the mucous membrane is set up by the irritating products, acids and ptomaines, which the bacteria produce. This intestinal catarrh may be at first of a very low grade, but, as a consequence of it, mucus and serum are added to the intestinal contents, and probably oxygen also from the hyperæmia, all these new conditions tending to increased activity of bacterial growth, which in turn aggravates these lesions. It can not be positively affirmed, but it seems altogether probable, that such a catarrh interferes with the secretion of normal gastric and intestinal fluids.

Given, then, impaired digestive force and an intestinal condition such as has just been described, and it is not difficult to understand how pathogenic germs may develop with great rapidity which under normal conditions could not find a foothold.

That this is exactly what takes place seems to be borne out by clinical experience. It is a matter of every-day observation that the severe types of intestinal disease are almost invariably preceded by the symptoms of a mild disorder for some days.

Another injurious effect of the bacteria is that they set up decomposition in the food in the stomach and intestines, so that the patient suffers from innutrition. This effect is produced in another way: the increased peristalsis which accompanies the catarrh hurries the food along before absorption can take place, and in this way also adds to the bulk of the decomposing mass lower in the bowel.

The final results in every case are:

1. Innutrition of the patient.

2. Catarrhal, croupous, or follicular inflammation of the mucous membrane.

3. Toxic symptoms from the absorption of ptomaines.

With our present knowledge it is not possible to say certainly whether the development of abnormal bacteria is to be regarded as the primary cause of digestive derangements or the result of it. The facts, as we now understand them, seem to be most easily reconciled with the latter view.

In what, then, consists the peculiar susceptibility of children under two years? We may not attribute it to the milk diet, for this food is taken almost as freely during the third as during the second year without any such injurious results. We do not yet know of any anatomical or physiological differences in the intestinal tract in later childhood sufficient to explain the fact, and we must fall back to the view that there is then increased power of resistance to bacteria; that in children over two years the intestinal tract almost ceases to be a vulnerable point for bacterial attack.

The comparative immunity of children in the country, and of the better classes in the city, is to be explained in the same way.

Breast-fed children escape by reason of the fact that their digestive organs are usually healthy and their food is free from germs.

Hand-fed children suffer most—first, because they are almost always overfed; secondly, because many of them suffer a large part of the time from a mild type of catarrh; thirdly, because in summer their food contains germs in abundance. In the absence of the third condition the two others are not usually potent enough to produce serious consequences. But the union of all three gives us our worst cases.

To summarize:

1. We accept, then, the doctrine that we are concerned most of all, in the gastro-intestinal disorders of infancy, with the development of abnormal bacteria, but as the first step there is a failure of complete digestion and perfect absorption.

2. Mechanical diarrhœa from the presence of foreign bodies, or food which acts as such to infantile digestion, and that resulting from the ingestion of poisonous ptomaines, are probably the only varieties to be excluded from this class.

3. The anatomical changes are those of inflammation of the gastro-intestinal mucous membrane; but the lesions are the results, either directly or indirectly, of the micro-organisms. Since micro-organisms are found in numbers only superficially, except where ulcers exist, it seems most likely that their action is an indirect one through their ptomaines.

4. As to the exact nature of the processes of putrefaction which take place in the intestine, and the bacteria which produce the different forms, we are as yet almost in entire ignorance.

5. One clinical form of diarrhœal disease—viz., true cholera infantum—has many features which point to a specific germ as a probable cause.

To what views of prophylaxis and treatment of intestinal disease does the foregoing discussion lead us? Time will not permit here more than an outline.

Two things are essential to active bacterial growth—the entrance of living germs in numbers, and a proper soil for their development. Prophylaxis must have regard to both these conditions.

Germs are to be excluded by sterilizing milk for all children under two years, by absolute cleanliness of bottles and everything with which the milk comes in contact, and by securing pure air. Tompkins found in Leicester, England, that in one section of the town where diarrhœal diseases were very prevalent there were from three to six times as many bacteria in the air as in other sections. The water supply was the same for all, and the food not essentially different.

Equally important is cleanliness of the mouth. Van Puteren found in infants suffering from thrush that the number of bacteria in the stomach was forty times as great as when this condition was absent.

To secure a soil unfavorable for bacteria we must have healthy digestion and absorption. This means a great deal. To secure it we must, in the first place, build up the infant's constitution; secondly, food suited to the powers of the digestive organs should be given; thirdly, regularity in feeding must be insisted on, and night nursing and feeding stopped as early as possible; fourthly, the stools should be inspected to see whether what is given is properly absorbed; fifthly, all minor derangements should be attended to; sixthly, during the hot summer season the amount of food should be materially reduced, and infants should be allowed water freely.*

As to treatment, three distinct indications present themselves:

1. To nourish the patient.
2. To combat the abnormal bacterial growth.
3. To treat the lesions.

All these indications must be considered if success is to be the result of our efforts. The force of the different indications may vary in different stages of the morbid process; thus, early in the disease the second indication may be the most important, while later on the third indication comes into great prominence.

In all stages we have to deal with a very complex process, and its management will never, I think, be reduced to so simple a thing as the discovery of a pathogenic microbe and the giving of its appropriate germicide.

15 East Fifty-fourth Street.

* Under this last point I wish to call attention to an experience of Dr. David Little, of Rochester, N. Y., which he published in "The Transactions of the Medical Society of the State of New York" in 1884.

In an orphan asylum in his city where every previous summer had witnessed a number of deaths from diarrhœal disease, he directed that infants should be fed at three-hour intervals during the day and should have nothing at night. Water was allowed freely at all times.

The season passed without a fatal case from diarrhœal disease. At the close of the season he remarked to the sister in charge that the new rules of feeding had proved beneficial. She replied: "*Yes, but it did seem rather cruel to feed the infants only three times a day.*" These were the directions as she had understood them and as they had been rigorously carried out. The moral is plain.

PRIMARY CARCINOMA OF THE PANCREAS.*

By W. GILMAN THOMPSON, M. D.

The patient, J. S., female, aged fifty-five years, married, German, and a dressmaker by trade, was admitted to the New York Cancer Hospital, September 15, 1888. There was no pertinent family history. The patient had been in average health until two years previous to her admission, when she had occasional digestive disturbance, consisting of vomiting, slight epigastric pain, and discomfort. No decided symptoms were observed, however, until six months before admission, when she noticed a small nodule deeply seated in the lower epigastric region toward the left. This mass had grown steadily and rapidly. During this period there had been considerable vomiting at intervals, especially after meals, but no constipation at any time. Physical examination showed the patient greatly emaciated, the height five feet three inches, and the weight only one hundred and ten pounds. She was very anæmic, but not jaundiced. The blood contained 40 per cent. of the normal amount of hæmoglobin. There was a pulmonic systolic bruit and a venous hum in the neck. The lungs, liver, and spleen were apparently normal. A large, solid mass larger than the adult fist was felt situated at the junction of the epigastric and left hypogastric regions, and extending into the umbilical region. The tumor elevated the surface of the abdomen about half an inch, and the larger portion of it was below the umbilicus. It was hard, movable, gave no sense of fluctuation, and no pain or nausea on deep pressure. The percussion note over the mass was distinctly dull. The patient was put upon symptomatic treatment, with careful regulation of the diet. Lavage was employed and the food was fairly digested. I examined the tumor from time to time and found it altered considerably in position, and also in the character of its percussion note, which on one occasion became distinctly tympanitic. This circumstance, together with the fact that so large a tumor had at no time occasioned very severe gastric symptoms, led me to suspect the possible presence of a pancreatic cyst. I ordered a large dose of cod-liver oil, in order to see if it would be voided in the stools. None appeared, however, and as there was no jaundice, I inferred that there was enough bile present in the duodenum to emulsify the fat and replace the pancreatic juice. As the diagnosis was far from certain, I had the contents of the stomach tested with great care for the presence of hydrochloric acid. None was found at any time during a period of ten days —a fact which seems to throw additional discredit on the phloroglucin test.

Emaciation continued, the tumor increased slightly in size, and about six weeks before death a copious diarrhœa began, which was with difficulty controlled. The patient died January 7, 1889, or sixteen weeks after admission. I omit unimportant details of the autopsy, and will merely refer to the tumor. Dr. Freeborn, pathologist to the New York Cancer Hospital, kindly gives me the following data: A hard scirrhous mass occupied the entire head of the pancreas. Connected with this was a cyst which might have held a couple of quarts of fluid, when dis-

* Reported at the New York Clinical Society, February 22, 1889.

tended. The cyst had two large openings—one into the duodenum and one into the transverse colon. There were no secondary deposits found anywhere in the body. The mesenteric and other glands were not enlarged. The stomach was normal except for a hypersecretion of mucus, the duodenum was congested, the tail of the pancreas was normal, and there were two ulcers at the upper portion of the rectum and one in the descending colon.

The features of special interest in the case seem to me to be: 1. The fact that the growth was a primary carcinoma of the pancreas with no carcinomatous foci elsewhere. This situation is believed to be a very rare one for primary carcinoma, but, upon recently consulting statistics, I have been surprised to find so many cases reported.* 2. The variations in the size and in the percussion note were an indication that the cyst was at times emptied or filled with gas through one of its communications with the intestines. 3. The absence of jaundice, which is said to invariably accompany carcinoma of the head of the pancreas. The stools were clay-colored, and the common orifice of the bile and pancreatic ducts appeared to be completely involved in the scirrhous mass. 4. The failure of the oil test and the hydrochloric-acid test to give the results one would naturally expect from the state of things revealed by the autopsy.

Early in the history of the case I asked several of the members of the staff to examine the woman to see if it was advisable to aspirate, but the signs of a cyst were obscure, and it was generally supposed to be a carcinoma of the stomach. Since the cyst opened freely into the intestine, aspiration would in any event have proved useless. There was nothing in the character of the stools prior to death which suggested cystic fluid.

TEMPERATURE IN FEVERS.

By CUVIER R. MARSHALL, A. M., M. D.,
PHILADELPHIA.

My attention has been attracted by Dr. J. Elliot Langstaff's article in the "New York Medical Journal" for March 16th on "Temperature in Fevers," in which he shows "the absurdity of the general impression that a temperature of 104° must be energetically combated." It is an indisputable fact that the temperature is the first symptom attacked by many practitioners in their treatment of any form of fever. A great deal has been written lately upon the subject of the cause of the febrile rise and the effect of the same upon the various tissues of the body, and we have come to believe that the temperature is really not a dangerous symptom which must be suppressed or modified, but that it is evidence that the waste matter with which the system is charged is being oxidized, and thus prepared for elimination from the body through the natural channel, the kidneys. The higher the temperature ranges, the greater is the amount of toxic matter to be oxidized, and in like proportion is that process actively increased. Now give an antipyretic, such as quinine, antipyrine, or acetanilide, and what is the result? The temperature may fall and the physician be accordingly gratified, but the oxidation of toxic matter having been retarded, its elimination by the kidneys is interfered with. This is partly shown in the notes of the case which Dr. Langstaff presents to our consideration. The administration of the calomel stimulated the liver, resulting in a temporary increase in the oxidation of the poisonous matter in the blood, followed by an abatement of the symptoms. The administration of the acetanilide and quinine, afterward, was followed by nausea and a rise of temperature and pulse-rate. All medicines being set aside, the daily temperature remained stationary for sixteen days without any direct serious consequence. Still further on it is observed that the administration of a dose of calomel was followed by an improvement in the symptoms; a less generous use of peptonoids, with the substitution of skimmed milk for sweet milk, might have rendered the labor of the digestive apparatus less embarrassing. It is true that quinine retards disintegration of tissue, but at the same time it diminishes oxidation and consequent elimination of waste matter through the kidneys. Professor Welch, of Baltimore, has called attention to the fact that there is a less general acceptance of the old ideas respecting the dangerous character of even a moderate rise of temperature. From the foregoing facts we should naturally conclude that in the treatment of fevers we should not only avoid interference with Nature's attempt to dispose of the poisonous matter, but, on the other hand, should use every agency to assist her to accomplish that very end. The oxidation of waste matter takes place in the liver. When the liver is irritated by the specific poison of any disease or by an excess of albuminoid matters in the blood or by fats which have undergone the butyric-acid change, it becomes incapable of performing this function, and hence an accumulation of toxic matter takes place. The irritated liver should be relieved by cutting down the supply of albuminoid foods, substituting for them starchy substances—such as arrow-root, corn starch, or rice flour—which may be predigested by means of malt or pancreatic extract. A very excellent pabulum is a recent modification of Liebig's food known as malted milk. Milk is usually the basis of the die in fevers, and when it is found to disagree with the patient, on account of the butyric-acid fermentation, a trial should be made of skimmed milk, which contains only substances that are digested in the stomach. The feeding with peptonoids in fevers should be very sparingly indulged in, as their presence increases the amount of work to be done by an already lame liver. Hepatic stimulants are indicated, and among the best of these are the acid salts of potassium, such as exist in oranges and lemons. Small doses of calomel at stated intervals would be of decided value, and I am in the habit of prescribing large doses of water at frequent periods, for water, as we all know, is a natural diuretic, and it thus aids in the elimination of toxic substances. Daily washing out of the rectum by simple water enemata is a practice to be highly commended in such cases as the one which Dr. Langstaff has presented.

1631 Diamond Street.

* Senn, Wood's "Reference Handbook of the Medical Sciences," v, pp. 456 *et seq.*, art. "Pancreas, Diseases and Injuries of."

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THE MEDICINAL TREATMENT OF INTESTINAL OBSTRUCTION.

HOFRATH PROFESSOR NOTHNAGEL recently made a notable contribution to the discussion of the pathology of ileus and of its treatment by other measures than laparotomy, at a meeting of the *medicinisches Doktoren-Collegium* of Vienna, a stenographic report of which was published in the "Internationale klinische Rundschau" for March 17th. So far as the pathology was concerned, his remarks related chiefly to the phenomena observed when artificial intestinal stenosis was established by means of a ligature in experiments upon the lower animals. In such experiments the animal is kept anæsthetized for a number of hours, with the body immersed in a blood-warm half-per-cent. solution of common salt. The effect of the ligature upon peristalsis varies according to whether it is applied to a quiescent portion of intestine or to one in which a peristaltic wave is already in progress. In the former case it does not give rise to tempestuous peristalsis; in the latter it does. When the ligature is tight enough to cause effectual obstruction, violent peristalsis sets in in the portion of intestine above the constriction, the contents are forced down against the stricture, and the intestine just above the ligature becomes overdistended and at length paretic; but no antiperistalsis is observed. Fæcal vomiting is accounted for by the fact that it is in the direction of the stomach that the least resistance is encountered. The intense pressure at the seat of stricture, brought on by the stormy peristaltic action set up above it, gives rise not only to paresis and distension, but also to ulceration or gangrene in some cases; and, independently of either of these occurrences, collapse and death may take place as the direct consequence of intense irritation of the nerves, especially of the splanchnic nerve.

As regards the treatment, therefore, every indication points to measures capable of soothing the irritation and calming the intensified peristaltic action. Above all things, purgatives should be avoided. In cases of simple fæcal accumulation they may be used with advantage, but they are worse than useless in cases of mechanical obstruction. No food of any sort should be taken into the stomach, but the patient may be allowed to take a little liquid food into the mouth occasionally and then reject it. Although peristalsis above the stricture is to be restrained, it may be encouraged below that point without harm and sometimes with benefit; occasionally it seems to relax the constriction and admit of the passage of some fæcal matter. This is best accomplished by employing enemata of warm salt and water. Opium should be given in large doses, preferably in the form of the crude drug, but, if that is not well borne by the stomach, morphine may be used subcutaneously. Opium not only restrains peristalsis, but tends to sustain the patient's vital power. Nothnagel thinks that Kussmaul's method of treatment by washing out the stomach has been overestimated. He thinks that most of the successful cases reported have not been well marked, and that the unsuccessful ones have been largely withheld from publication. Little more value is attached to the use of large enemata, electricity, belladonna, nicotine, or mercury.

THE FACTS IN THE CASE OF GENERAL BOULANGER.

A FEW months since we called attention to the alleged vagaries which some of the physiological functions necessary to the existence and well-being of General Boulanger presented for discussion, and expressed the deep sympathy we felt for him in the very disagreeable trials to which he was daily subjected by reason of the anomalous arrangement and the unique action of his anatomical plant. We are heartily rejoiced at his escape from the hydropneumonic disaster of "suffocation from hæmaturia into the respiratory passages," with which he was menaced during his convalescence from the wound he received in his recent duel, if we may credit the statement of a correspondent of the New York "Sun." We have marveled much at the indomitable will and superhuman energy of the man who, although heavily handicapped by the eccentricities of amphibious lungs and a fossa navicularis laryngis, has succeeded in his ambitious attempt to represent in the Chamber of Deputies several senatorial districts at the same time. We have sympathized and rejoiced with, as well as marveled at and almost worshiped, the "Man of Destiny," and only to be informed at last that he is not the brilliant genius we thought him, but a debased and degraded "morphomaniac"! This hideous allegation is sired by an iconoclastic correspondent of the New York "World," who has evidently published it in consequence of an overweening desire to promulgate a Rowland for the Oliver of his fellow scribe, and to offset in his own paper the prestige gained for its bitter rival in the struggle for journalistic pre-eminence by the "hæmaturia" masterpiece to which allusion was just now made. We can easily imagine how that *chef-d'œuvre* of the latter *littérateur* has been a thorn in the flesh of the "World" correspondent, rankling in the most sensitive precinct of his reportorial soul, until the moment when his trenchant pen traced the esoteric word "morphomaniac"; and then the fierce joy which replaced the smart of the thorn and was as spikenard of great price to his wounded spirit must have polarized the battery temporarily as it was accompanied by the correspondent to the telegraph office.

But, in our humble opinion, it seems difficult to understand how the distinguished general could be other than a morphomaniac under the circumstances. His is not the conventional type of plumber's handiwork, for we must not forget the danger of asphyxiation from hæmaturia to which he was exposed at the time his wound was healing. The careless or superficial reader might form the opinion that the term "morphomaniac" was but a euphemism for the accusation that

Boulanger is a modern Narcissus, morbidly vain of the perfection of his own figure—or, as they say, "*Il voyage sur sa forme*"—posing in picturesque attire on the Tribune or the boulevard. This hypothesis might be of some explanatory value were it not for the known abnormity of the relations of the gentleman's ureters, and for the fact that mention is made of his use of morphine hypodermatically. These two facts, however, powerfully illuminate the obscure parts of the subject, and indicate the true mental condition of General Boulanger. His mania is not objective, if we may so term it, but subjective—that is, he has no concern as to the ratio existent between his bust and his waist measures, but he broods over his hard lot as the possessor of mediastinal ureters and a prostatic thyreoid gland. And why should he not feel discomfort at this thought? How would the correspondent feel were he constructed in like manner and obliged to look in the face the prospect of possible dilating tracheotomy or of intubation of the larynx after each occasion on which he had imprudently sat upon a cool door-step of a summer evening? Would he, after the vigorous prime of life had passed, and the harvest time of declining years had come upon him, enjoy the contemplation of an incipient goître in his own person, and the steady growth of the same from day to day?

The truth of the matter is that the afflicted warrior-statesman has been making an attempt to rectify his *ectopia ureteris* by some system of massage, gymnastics, or Swedish movements, and has, in consequence, induced such intense ureteralgia that he has perforce had recourse to morphine. At least this is the only theory that will explain the facts as reported, and it is certainly plausible and practical. Flippant and shallow speculations of frivolous persons have been advanced: that the mental state of the patient is one of inordinate fondness for the contemplation of the female form divine, and that the correspondent actually wrote the word "morphinomania" in his dispatch, but that the fierce joy already mentioned caused the second syllable to fade and slough away as it streamed from the writer's eyes when he read over the message while waiting for the depolarization of the battery. We need make no comment on these puerile absurdities; for who ever heard of an amorous French statesman or of a newspaper man who erred in the use of a medical technical term?

The general's *bas-fond* has simply become irritated from the superacidity of recent oratorical efforts, or from the labor of canvassing his district, with its necessary indiscretions, prior to the late election; and possibly he has viewed with alarm that there was a too copious brick-dust deposit on the floor of the chamber circumjacent to his own desk, which may have caused the expression of covert sarcasm by the supporters of the Government. In his simplicity, the general took the advice of some lay friend, and undertook to remodel the general arrangement of his internal works—hoping to coax his ureters from their thoracic bearings to a new gearing in the pelvis by means of violent mechanical measures—instead of adopting the rational method of employing alkaline salts and a restricted diet.

He can never succeed in his foolish attempt, and, unless he can bring his mind to the conviction that ureters are placed by nature as permanent fixtures in the locality they affect, he will only bring pain, chagrin, and despair on himself, if indeed he does not by his efforts cause volvulus of the ureter or entangle that duct with the phrenic nerve or the thoracic aorta. If he does not disabuse his mind of this vain hope of ultimate success in his preposterous plan of self-improvement, we fear that the destiny of which he is the man will be that of a gibbering lunatic.

MINOR PARAGRAPHS.

A JUDICIAL VIEW OF MEDICAL SECTARIANISM.

Our homœopathic friends ought to be interested in a correspondence published in the April number of the "New York Medical Times," for it touches upon a point as to which they are frequent offenders. It seems that the editors of the "Times" asked Judge George C. Barrett, of the New York Supreme Court, this question: "Has a physician designating himself a 'homœopathist,' and called as such to a patient, any legal or moral right to adopt other than homœopathic means in the treatment of the case?" In his reply, Judge Barrett appears to have written rather as a moralist than as a jurist. The gist of what he says seems to lie in the following passage:

"An honest 'homœopath' who has not succeeded, after doing his best with the appropriate homœopathic remedies administered on homœopathic principles, should undoubtedly try anything else which he believes may save or relieve his patient. But, when he reaches that point, the duty of taking the patient into his confidence becomes imperative. The patient may refuse to submit to the other system or he may agree, but prefers a physician whose life has been specially devoted to practice under that other system. He may say to the 'homœopathist,' You have failed, but I prefer to try another gentleman of your own school before resorting to a system that I have long since turned my back upon. Or he may say, Well, if homœopathy can not save me, I prefer to go to headquarters for allopathic treatment."

It seems pertinent to ask what Judge Barrett or any other layman of a judicial turn of mind would say if he were aware of the extent to which so-called "homœopathists" resort to other than homœopathic measures even in the cases of patients who do well under their ministrations—if, for instance, he were to take a look at homœopathists' prescriptions as they are to be found on record at the apothecaries'. If the stigma attaching to homœopathists rested only on their confessed failures, the case would not be so pronounced against them; it is their constant and clandestine recourse to what they are pleased to term "allopathy" that fastens on them a disgrace well understood in the profession, but one of which the public is studiously kept in ignorance.

A NEW OPERATION FOR EMPYEMA.

A Russian surgeon, Dr. M. Ssubbotin, describes in "Wratsch," 1888, No. 45, a new thoracoplastic operation. From a summary given in the "Centralblatt für Chirurgie" for March 16th it appears that the author's operation, which he has done once with success, is as follows: A segment from two to three inches long is first resected from the seventh rib, as usual, the pleural cavity being opened and washed out. This opening is then plugged with gauze to prevent infection of the wounds still to be made. A vertical incision about five centimetres long is next made along the outer border of the pecto-

ralis major muscle. Through this the sixth, fifth, and fourth ribs are exposed without being denuded of periosteum, and from each of them a little wedge is removed by means of Liston's bone-scissors, so that the rib is made movable. A similar vertical incision is then made in the posterior axillary line, serving for the exposure and division of the same ribs in this situation. These two incisions, not opening into the pleural cavity, are sutured without drainage. The portions of ribs lying between the two points of section are thus enabled to sink in, and, when healing has taken place, they protect the thoracic cavity and at the same time serve as supports to the vertebral column.

SENILE CHOREA.

According to Dr. J. M. Anders, who lately read a paper before the Philadelphia County Medical Society, in which he gave the history of a case in a man sixty years old, chorea in aged persons is generally believed to be rare. Not many years ago writers on the subject of chorea held that old age was of itself conclusive evidence that this disease did not exist in any given case. But since the collection and publication of twelve cases by Robert Saundby, in 1884, the fact that senile chorea is a distinct affection can no longer be doubted. From ordinary chorea, which usually occurs during the period of approaching puberty, it differs widely as to ætiology, and, probably, pathology as well.

THE NEW YORK HOSPITAL LIBRARY.

The library has recently received a legacy which materially augments the value of its already remarkable collection. The late Professor T. T. Sabine left about five hundred bound volumes and two hundred and fifty pamphlets, monographs, theses, etc., to the institution, and these have lately been arranged in a separate case placed in a conspicuous part of the library and surmounted by a panel, upon which may be seen in gilt lettering the name of the donor and the date of the gift. More than this, the books, which are largely upon anatomy and kindred branches, have been catalogued and indexed by Mr. J. Vandervoort, the son of the venerable librarian, who has classified the works by title, by subject, and by author, and has had this catalogue excellently type-written and neatly bound in a separate and convenient volume of reference. On the 4th inst. word was received at the library that the late Professor John Call Dalton also had bequeathed about a hundred and fifty volumes to the library, consisting mostly of works on physiology. They thus supplement admirably the collection of volumes given by Professor Sabine. The library as a whole has become so valuable that the steps recently taken by the governors of the hospital to provide for its establishment in a new fire-proof building to be constructed on the adjacent lot on the east side of the one it now occupies on West Sixteenth Street will be watched with solicitude by all interested in the safety of this invaluable collection.

MEDICAL PRACTICE IN MONTANA.

We have received a copy of a bill that has been introduced into the Legislative Assembly of the Territory of Montana by Dr. H. D. Pickman, member for Beaverhead County, to regulate the practice of medicine in the Territory. It provides for the appointment of an examining board by the Governor, to consist of seven "learned, skilled, and capable physicians." This board is to certify to the genuineness of diplomas, and to examine applicants who have no diploma and have not been in continuous practice in the Territory for ten years or more. A certificate granting the right to practice can be issued only with the consent of not fewer than four members of the board, and it may be refused or revoked for unprofessional, dishonorable, or immoral conduct. Every applicant who receives the board's certificate must have it registered in the office of the Recorder of his or her county within sixty days of its date. The act does not apply to skilled midwives, to medical officers of the army or navy in the discharge of their official duties, to consulting practice by physicians living out of the Territory, to practice by students under the direct supervision of a preceptor, to gratuitous services in cases of emergency, nor to the practice of dentistry.

THE AMERICAN PUBLIC HEALTH ASSOCIATION.

The local committee of this association is making preparations already for the Brooklyn meeting in October next. It has been decided to introduce, for the first time in many years, an annex for the exhibition of sanitary appliances, life-saving apparatus, and improved food products. One excursion only will probably be provided—namely, an inspection of the Quarantine establishment in New York harbor. The chairman of the committee is Dr. J. H. Raymond, of the Hoagland Laboratory, Brooklyn. A large influx of new members from the metropolitan district is invited and expected.

THE OCCASIONAL OCCURRENCE OF SCURVY.

Scurvy is so little known in modern times that a naval surgeon of the writer's acquaintance was ten years in the service before he encountered a well-marked case. It will occur, however, under a display of gross negligence. A scurvy-laden vessel was recently discharged at Brooklyn which had been five months in making the voyage from Calcutta. After the first thirty days the crew had only salted food, and they all became affected with scurvy of the dropsical variety; one death was in part attributable to this cause. The greatest difficulty was experienced during the latter part of the passage, and the ship and cargo were in jeopardy more than once, because only a small number of the sailors could stand upon their feet long enough to do duty.

THE CONTAGIOUS DISEASE HOSPITAL IN BROOKLYN.

Brooklyn has hitherto been peculiarly deficient in accommodations for cases of contagious disease. The county buildings included one wretched structure for the reception of persons with small-pox, familiarly known as the "pest-house," and this was outside the city limits, at Flatbush. The Board of Health has at last obtained a grant which will admit of the construction of three pavilion wards—one for small-pox, one for scarlet fever, and one for diphtheria. The appropriation for buildings amounts to $65,000. Private apartments for the reception of those sick with infectious disease, and desiring to pay for special privileges, form a part of the plan.

THE AGNEW MEMORIAL FUND.

In another part of this number of the Journal we print a statement concerning the enterprise of adding to the capacity and field of work of the Manhattan Eye and Ear Hospital by means of a fund to be raised and to be known as the Agnew Memorial Fund. In view of the late Dr. Agnew's great services to the community, in a large measure unrequited save by the consciousness of doing good, it is surely to be expected that those from whom subscriptions may be looked for will be more than commonly ready to respond handsomely from the consideration that, besides increasing the capabilities of an excellent institution, they are contributing to perpetuate the memory of

a man who deserved to be remembered alike for his professional achievements and for his worthiness as a citizen.

THE NEW YORK ACADEMY OF MEDICINE.

We lately published a statement setting forth the fact that the Academy was still in need of some thousands of dollars to enable it to acquire the title to the property decided upon for the site of its proposed new building. We learn that $25,000 more are still required to pay for the land and to put up a fire-proof building. Subscriptions to meet this amount are in progress, and we would urge those of our readers who take an interest in the matter to take part in making up the sum. The purchase of neighboring lots by the Century Club and the prospect that other societies will buy land in the same block make the Academy's choice of locality more advantageous than was at first supposed and the investment proportionally better.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending April 9, 1889:

DISEASES.	Week ending Apr. 3.		Week ending Apr. 9	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	8	5	8	0
Scarlet fever	446	62	442	59
Cerebro-spinal meningitis	4	3	4	4
Measles	134	12	171	15
Diphtheria	171	54	210	50

The Health of New York City.—During the four weeks ending Tuesday, April 9th, the following numbers of cases and deaths from infectious diseases were reported to the Sanitary Bureau of the Health Department: Typhoid fever, 32 cases and 10 deaths; scarlet fever, 1,710 cases and 228 deaths; cerebro-spinal meningitis, 12 cases and 8 deaths; measles, 678 cases and 66 deaths; diphtheria, 739 cases and 189 deaths; small-pox, 1 death.

The Contagiousness of Tuberculosis in Man.—At a recent meeting of the Board of Health of the Health Department of the City of New York the following resolution was passed: *Resolved*, That Dr. T. M. Prudden, Dr. H. M. Biggs, and Dr. H. P. Loomis, the pathologists of this department, be and are hereby requested to formulate a brief and comprehensive statement regarding the contagiousness of tuberculosis in man, stating therein the evidence of the same, and recommending in the briefest possible manner practicable the simplest means of protection from its influence.

A Portrait of Dr. Abraham Jacobi was presented to the New York Academy of Medicine on the 4th inst. The presentation speech, on behalf of the subscribers, was made by Dr. Augustus Caillé.

The Brooklyn Hospital.—A competitive examination to fill two positions on the resident staff will be held at the hospital on Saturday, April 20th, at 2 P. M. The terms of service will begin at once and expire on March 31 and September 30, 1890, respectively.

The Philadelphia Maternity Hospital.—Dr. Louise G. Rabinovitch has been appointed resident physician to the hospital.

Dr. Prince A. Morrow, who has been absent for some weeks in Mexico and the Sandwich Islands, for the purpose of making personal observations of leprosy, to serve as the basis of a report before the International Congress of Dermatology and Syphilography, to be held in Paris, August 5 to 10, 1889, has returned to New York.

The Medical and Chirurgical Faculty of Maryland will hold its ninety first annual session in Baltimore on the 23d, 24th, 25th, and 26th inst. Professor William Osler, of the Johns Hopkins University, will deliver the annual address, on "The License to Practice, with special reference to State Boards."

Dr. L. Harrison Mettler, lecturer on mental and nervous diseases and electro therapeutics in the Medico-chirurgical College, of Philadelphia, sailed for Europe on Wednesday, the 10th inst., to pursue a course of special study.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from March 31 to April 6, 1889:*

ALDEN, CHARLES H., Lieutenant-Colonel and Surgeon; MCELDERRY, HENRY, Major and Surgeon; MATTHEWS, WASHINGTON, Captain and Assistant Surgeon; and MERRILL, JAMES C., Captain and Assistant Surgeon, are detailed as members of the Army Medical Board to meet in New York city, May 1, 1889. Par. 5, S. O. 74, A. G. O., March 30, 1889.

By direction of the Secretary of War, the following changes in the stations and duties of officers of the Medical Department are ordered:

GIBSON, JOSEPH R., Major and Surgeon. Relieved from duty at Fort Lyon, Colorado, and ordered to Fort Sheridan, Illinois.

APPEL, A. H., Captain and Assistant Surgeon. Relieved from duty at Fort Sheridan, Illinois, and ordered to duty at Fort D. A. Russell, Wyoming.

TORNEY, GEORGE H., Captain and Assistant Surgeon. Relieved from duty at Fort Monroe, Virgina, and ordered for duty to Fort Brown, Texas.

ROBINSON, SAMUEL Q., Captain and Assistant Surgeon. Relieved from duty at Fort Brown, Texas, and ordered to Fort Hamilton, New York, for duty. Par. 11, S. O. 77, A. G. O., Washington, April 3, 1889.

BLACK, CHARLES S., Captain and Assistant Surgeon, is, by direction of the Secretary of War, granted leave of absence for six months, to take effect after the arrival at Fort Sidney, Nebraska, of Acting Assistant Surgeon Robert P. Finley. Par. 14, S. O. 78, A. G. O., Washington, April 4, 1889.

BALL, R. R., Assistant Surgeon. Ordered to Fort Riley, Kansas, for duty. S. O. 36, Headquarters Department of the Missouri.

JOHNSON, R. W., Assistant Surgeon, reports departure for Whipple Barracks, Arizona Territory, March 25, 1889.

Society Meetings for the Coming Week:

MONDAY, *April 15th:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Medico-chirurgical Society of German Physicians; Hartford, Conn., City Medical Association; Chicago Medical Society.

TUESDAY, *April 16th:* Medical Society of the State of North Carolina (Elizabeth City); New York Academy of Medicine (Section in Theory and Practice of Medicine); New York Obstetrical Society (private); Medical Societies of the Counties of Kings and Westchester, N. Y.; Ogdensburgh Medical Association; Passaic, N. J., County Medical Society (annual); Baltimore Academy of Medicine.

WEDNESDAY, *April 17th:* Medical Society of the State of California (San Francisco); Medical Association of Georgia (Macon); Medical Society of Mississippi (Jackson); Northwestern Medical and Surgical Society of New York (private); Harlem Medical Association of the City of New York; New

Jersey Academy of Medicine (Newark); Windham, Conn., County Medical Society (annual—Plainfield); Middlesex, Mass., South District Medical Society (annual—Waltham); Philadelphia County Medical Society.

THURSDAY, *April 18th:* New York Academy of Medicine; New Bedford, Mass., Society for Medical Improvement (private); Tolland, Conn., County Medical Society (annual).

FRIDAY, *April 19th:* Chicago Gynæcological Society; Baltimore Clinical Society.

SATURDAY, *April 20th:* Clinical Society of the New York Post-graduate Medical School and Hospital.

Letters to the Editor.

A CASE OF PROLONGED GESTATION.

WEST BAY CITY, MICH., *March 24, 1889.*

To the Editor of the New York Medical Journal:

SIR: I take the liberty of reporting a case of prolonged gestation, thinking it may be of interest to some of your many readers.

Mrs. B., aged twenty-six years, in excellent health, was married on the 28th day of March, 1888. Excitement brought on the menstrual flow on the same day, one week earlier than expected. She had always been regular. The flow continued for five days. On the 14th of April she consulted me regarding her condition, relating her symptoms as dizziness, faintness, and squeamishness of the stomach, more particularly on first arising in the morning, but she did not vomit food till the latter part of June. She felt a sense of numbness in the upper and lower extremities. I diagnosticated the case as one of pregnancy. She did not menstruate again. She felt life on the 22d of August, and gave birth to a girl, weighing 12½ pounds, on the 18th of February, 1889, at 10 P.M. The os had been dilated to the size of a 25-cent piece for two weeks previous to her confinement, and she suffered a great deal of pain in the back and anteriorly for two months previous.

Reckoning her period of gestation from the advent of the symptoms, April 7th, to February 18th, both included, makes 318 days.

D. A. MCTAVISH.

Proceedings of Societies.

NEW YORK NEUROLOGICAL SOCIETY.

Meeting of March 5, 1889.

The President, Dr. GEORGE W. JACOBY, in the Chair.

Hemiplegia with Unusual Associated Movements.—Dr. B. SACHS presented Case No. II, occurring in a child, which he had described at the last meeting of the society. The associated movements of the paralyzed hand in this case were remarkably similar to the voluntary movements made by the sound side, even to the minute reproduction of the process of buttoning the clothes, etc.

Focal Lesions of the Temporo-sphenoidal Lobe, with Symptoms of Forced Movements.—Dr. CHARLES L. DANA reported two cases. The first was a case of abscess of the right temporal lobe, occurring in a woman of thirty-two years. It resulted from a fall on the head, and developed slowly in the course of two years. The notable symptom, aside from headache and a hysterical mental state, was sudden forced movements, causing the patient to fall backward and to the right. She was continually falling out of bed on the right side, and would sometimes perform *manége* movements. She had died suddenly. The autopsy had shown an old circumscribed abscess of the third and fourth right temporal convolutions, with a recent hæmorrhage into the cavity, bursting into the lateral ventricle.

The second case was one of focal meningo-encephalitis, causing deep and extensive softening of the second and third right temporal convolutions. The patient, a man of forty, had been brought into the hospital in a condition of delirium. A history had been obtained of an apoplectic stroke a year before. Since then he had had frequent attacks of dizziness and muscular twitchings, during which he would fall always forward and to the right.

A third case of abscess of the right temporal lobe, recently reported in the "Provincial Medical Journal," was cited, in which the patient had frequently staggered to the right.

Physiologists had found a number of parts of the brain irritation of which caused forced movements—*e.g.*, the cortex cerebri, the basal ganglia, the cerebellar peduncles, etc. Pathologists had found in cases of forced movements lesions chiefly in the cerebellar peduncles, especially in the middle; but there were a few observations showing such disturbances from lesions of the parietal lobes. It had been suggested that the temporal lobes contained representations of our sense of space and appreciation of changes in bodily position. It might be that the right lobe was especially concerned. There was some *a priori* probability that the vestibular or space-sense root of the eighth nerve and the cochlear or auditory root were connected with neighboring areas in the brain cortex. Anatomically it was known also that the temporo-occipital lobe was connected by a bundle of fibers with the pons nuclei and the cerebellum.

Dr. L. C. GRAY said it was true that the auditory nerve subserved the senses of hearing and space, and it was quite true that deaf-mutes were never seasick, yet lesions of the temporal lobe thus far had produced only word-deafness. These were lesions of the first and second convolutions. We now knew that the auditory nerve had connections with the cerebellum. Such profound disturbances as existed in the speaker's cases were generally due to disease of the cerebellar peduncles or of the semicircular canals. Autopsies seemed to have excluded cerebellar lesion, but no mention was made of any examination of the internal ear to see if the canals were normal. The speaker referred to a case of his own with lesion of the temporal lobe with neither word-deafness nor loss of equilibrium. If his conclusions were correct, he had opened up a new field in brain pathology.

Dr. FISHER described some of his recent experiments on dogs. Injury to the parietal or temporal lobes he had found to cause rotation to the side of the lesion quite as much as if the cerebellum was involved. These movements would last for several days. His researches, therefore, in an experimental direction would tend to corroborate Dr. Dana's clinical deductions. His operations were excision of the cortex in places, with more or less laceration.

Dr. SACHS thought the most important fact that Dr. Dana had sought to establish was the termination of the vestibular branch of the nerve in the fourth and fifth temporal convolutions, whereas other authors had located all auditory terminations within the first and second temporal convolutions.

Dr. DANA stated that he had made a gross examination of

the internal ear, but had found no sign of inflammatory change. The cortical area for the cochlear branch would remain the same, but the district for the vestibular branch he believed to be lower down in the temporal lobe.

Localized Basal Meningitis and Double Optic Neuritis.—Dr. W. M. Leszynsky then read a paper on this subject, and presented the patient (who had recovered) that had formed the basis of his article. He spoke at some length upon the value of ophthalmoscopic examination, and emphasized the importance of determining the presence or absence of optic neuritis in every case where headache and vomiting were of doubtful or obscure origin.

Dr. David Webster had seen the case detailed by Dr. Leszynsky a great many times, and had assisted in making most of the measurements. An important point in the case was that the patient never complained of his eyes, but of headache, and the double optic neuritis was only found upon examination. It was very rare to see such cases without complaint of the eyes on the part of the patients. He had seen many cases where vision had been and had remained perfect throughout the course of an optic neuritis, and others with partial or total blindness, but recovery of vision with the decline of the disease. Many patients did not know that their vision was defective. In this case vision had gone down at times to $\frac{2}{7}$ in each eye. It varied. He thought all patients with head and stomach symptoms ought to be submitted to an ophthalmoscopic examination.

Dr. Gruening said that it was exceptional for a case of double neuritis to take the course that this had done. The termination was seldom so favorable. The prognosis was always bad. We could not be hopeful when we saw a case of optic neuritis. He had observed many cases in young people where the swelling had been enormous and yet it had disappeared. There was particularly great swelling in hydrocephalus internus. We might say that where there was a sudden and great increase of intracranial pressure there would be marked swelling of the optic disc. Recovery was not so rare in the optic neuritis at puberty or in the form sometimes occurring in septic fevers. He had recently seen a case of optic neuritis in a little girl who had suffered from scarlatina, diphtheria, and pertussis in succession, the eye disease following the pertussis. Recovery had taken place in a short time.

Dr. Birdsall had seen in several cases a decided degree of optic neuritis, yet with vision well preserved. These cases had been particularly in children. He felt with Dr. Gruening that the prognosis should be very guarded. He described in some detail a case of his own where optic neuritis had followed a blow upon the head, and where recovery had taken place. There had been no loss of vision.

Dr. Gray thought it was impossible as a rule, in such a case as Dr. Leszynsky's, to make a diagnosis between a neoplasm and a meningitis. There was quite a number of cases where optic neuritis had appeared after exanthemata, and at the autopsy a tumor had been found. The fact of the occurrence of scarlet fever in this particular case would therefore give additional evidence in favor of a neoplasm. One should be very cautious in the prognosis.

Dr. J. E. Weeks believed there were certain conditions of the discs which might lead to a favorable prognosis. If there was no hæmorrhage present and the discs were pale, the prognosis was much more favorable. He mentioned a case of Dr. Knapp's where there had been choked discs, and three neurologists in the city had diagnosticated tumor. The patient had, however, made a perfect recovery. He had observed optic neuritis after diphtheria, dysentery, measles, scarlet fever, etc. There were only three or four cases on record following diphtheria.

Dr. Webster asked the reader of the paper how long after scarlet fever the optic neuritis had appeared.

The President said that the diagnosis of a circumscribed basal meningitis by Dr. Leszynsky in his case was unwarranted. He had seen Dr. Gruening's case of slight whooping-cough followed by optic neuritis with perfect recovery. In such a case a diagnosis of an intracranial growth could not be made. Another case that had come under his observation was that of a ten-year-old boy, in whom sudden blindness had developed while he was in apparently good health. There had been headache and optic neuritis, and two neurologists had made the diagnosis of a tumor. The patient had recovered. In the case that had just been detailed it was not justifiable to make a diagnosis of either meningitis or a tumor.

Dr. Leszynsky remarked that the causes of intracranial tumor in children could easily be summed up as syphilis, tubercle, and traumatism, of which there had been no history in his case. When the young man came to him he had typical cerebral vomiting and constant headache. The attack of scarlet fever had occurred fourteen months previously.

NEW YORK CLINICAL SOCIETY.

Meeting of February 22, 1889.

Dr. W. H. Flint in the Chair.

Sporadic Cretinism.—Dr. L. Emmett Holt presented a boy aged four years, born in this country, who showed almost all the symptoms typical of the disease. The parents were Swedes, healthy, well developed, and intelligent; no trace of any such condition in the family history upon either side could be learned of. The father was an artisan in comfortable circumstances. In the family there were two other children, one older and one younger than the patient, both of whom were reported to be in good health and well developed.

The patient was very short, measuring only thirty-one inches, and had a large head, open fontanelle, flat nose, thick lips, and open mouth. The hair was light, coarse, and straight. Behind the clavicle at the outer border of the sterno-cleido-mastoid muscles the characteristic fatty tumors were seen, nearly as large as a hen's egg. Fatty growths of a small size were also seen below the axilla on either side, and in the calves. The belly was pendulous, the ribs were slightly beaded, the epiphyses of the different bones were not enlarged, and the upper and lower extremities were very short, with stubby fingers and toes, but were straight. The thyreoid gland could not be felt. The boy could stand with assistance, but had never walked. When excited he made a peculiar crowing sound, somewhat resembling that heard in laryngismus stridulus, but without any dyspnœa. He was good-natured, but very backward in mental development, and seemed rather imbecile; he was just beginning to say a few words. He was well nourished, but suffered from habitual constipation.

There had never been any acute illness which could have any relation to the disease. The hair in early infancy had been dark and curly; when the boy was about a year old it had gradually become light and straight. The first teeth had appeared at the age of sixteen months. The cervical tumors had first appeared at eighteen months, and those in the axilla soon after. The former had grown slowly, but were now stationary. The axillary tumors seemed to be diminishing. The case was of interest from its rarity, from its typical symptoms, and from the absence of any ætiological factors which could be discovered.

The speaker remarked that the fatty tumors were not seen in endemic cretinism, and that the thyreoid gland was never enlarged in the sporadic variety.

The Relations of Bacteria to Gastro-intestinal Diseases, especially in Infancy.—Dr. HOLT read a paper with this title. (See page 405.)

Dr. J. S. THACHER thought that experience had taught us more, on the whole, in relation to diet and treatment in intestinal fermentation than the results of bacteriological study had. Perhaps in the future some practical improvements might arise from the latter.

Dr. J. H. EMERSON suggested that some of the old-fashioned remedies, such as the evacuants, were having their value explained by the modern studies on bacteria.

Dr. W. G. THOMPSON considered the science of intestinal medication as in great measure yet to be developed. The antiseptics given by the mouth were probably changed before reaching the intestine by the chemical action of the digestive fluids, besides being diluted to an extent we could not estimate with any accuracy by the volume of those fluids poured out in the successive stages of digestion.

Dr. M. A. STARR and Dr. THACHER had supposed that naphthaline was being used to counteract fermentation in the intestine, or, at least, that it caused some disappearance of bacteria from the fæces.

Dr. HOLT said that he had abandoned the use of naphthaline about a year previously, on clinical grounds. Moreover, it had been found inert as regarded any power to check the growth of bacteria in cultivation fluids by both Vaughan and Baginsky.

Dr. H. M. BIGGS agreed with the previous speakers that no direct light had been thrown as yet on the exact nature of the bacteriological activities which went on in the intestine; but still the general study of bacteria had given us many explanations of what might and in all probability did occur in the intestine in certain cases in consequence of the presence of bacteria. It seemed at least probable that there were three forms of disease arising in the intestine due, directly or indirectly, to the action of bacteria. In the first class of cases the disorder arose from the absorption of ptomaines formed outside the body and taken in with the food. In the second class it was due to saprophytic bacteria taken in with the food and causing it to ferment. In the third class it was caused by specific germs, which acted directly on the mucous membrane of the alimentary tract. In a certain asylum recently two thirds of the inmates had suddenly been seized with vomiting and diarrhœa, which had lasted from six to forty-eight hours. The weather at the time was very warm. Investigation had revealed that a certain quantity of meat afterward eaten by those who had been sick had by mistake been left outside the ice-house for two or three days, and had become badly tainted. This illustrated the first class of disorders. In the second and third classes the results represented the ratio between the tolerance (or resistance) of the individual and the dose of bacteria he took in; and, if the germs were taken in together with an excess of food, or with indigestible food, still more marked results would follow. As an apparent illustration of the former statement he would mention a case of sporadic cholera of peculiar causation which he and Dr. Prudden had studied together. A man who sold provisions to the Italians working on the Croton Aqueduct, who had previously been well, had been suddenly seized in the night with vomiting and purging, and had died in collapse in about twenty-four hours. There had been nothing in the history, so far as food was concerned, to account for the attack. The case had been reported to the Board of Health by competent physicians who were in attendance as Asiatic cholera. As this had been just after the epidemic of cholera among the Italian immigrants detained at quarantine in 1888, and after the release of these immigrants, additional significance had been attached to any symptoms suggesting cholera as strongly as they did in this case. At the autopsy the intestines had been found full of rice-water fluid similar to that which had been discharged, and in this fluid had been found almost pure cultivations of the *Bacterium coli commune*, but none of Koch's comma bacilli had been present. Apparently, then, this saprophytic bacillus, although normally present in the colon, might under certain unknown conditions become a cause of fatal disease.

He would give another excellent illustration of the relation of bacteria to intestinal diseases which had come under his notice during his service in the Almshouse Hospital on Blackwell's Island. During June and the first two weeks of July there had been an epidemic of dysentery among these adult patients, in which about a hundred cases had occurred and thirty deaths. He had been told that they always had dysentery there during the hot season. For that reason, apparently, nothing had been done toward preventing it. He had next discovered that the water-closet, or rather privy-vault, had not been cleaned out for a year, and at the time was four feet deep with semisolid fæcal matter, and that the outlet of the drain was almost choked with old clothes that had been thrown into the vault. He had had the vault emptied and cleaned, and thereafter flushed out daily, with the surprisingly good result of not having another case of fatal dysentery so long as these sanitary measures were kept up. In about ten days the disease had almost entirely disappeared. However, they had stopped flushing the vault, he had learned, after his term of service had expired, and in September dysentery had again appeared in the wards.

Dr. HOLT remarked that the experiments of Baginsky seemed to show that the fermentation caused by the *Bacterium lactis aerogenes* might become pathological if it exceeded normal limits. The *Bacterium coli commune* had been found by Booker to be less abundant in diarrhœal than in healthy stools, while in dysenteric stools it was absent altogether. The speaker had purposely omitted all reference to the use of antiseptic drugs; the subject was a complex one, and too large to be considered within the limits of the paper. He considered that at present the most scientific treatment, and the one most successful in practice, was that directed against the bacteriological processes going on in the intestines. This must be carried out in its fullest and widest sense, reference being always had to the conditions of soil present. Failure in the past had resulted largely because lesions had not been taken into account. These were sometimes produced with great rapidity.

Dr. W. H. FLINT took a favorable view of the value of internal antiseptics, both in the stomach and in the intestines. His experience had been chiefly among adults.

A Review of Several Obscure Cases of Illness.—Dr. J. E. WINTERS read a paper thus entitled. (It will be published hereafter.)

Primary Carcinoma of the Pancreas.—Dr. W. GILMAN THOMPSON read a report of such a case. (See page 407.)

Knots at the Bottom of Deep Cavities.—Dr. C. D. SCUDDER exhibited a simple instrument designed to facilitate the tying of a knot at the bottom of a deep and narrow wound. It consisted of a slender metal rod, forked at the end into two flaring branches, whose smooth ends were turned outward and contained eyelets. A knot being made around the shank of an artery forceps, the ends of the ligature were to be passed through these eyelets and retained in the fingers of the operator while the knot was slid down the shank of the forceps and on to the tissue in its grasp. By pulling on the ends the knot could then be drawn as tight as might be desired. The prong of the fork could be held so as to tie a knot as accurately as if the fingers were at the bottom of the cavity and unencumbered.

JEFFERSON COUNTY, ALABAMA, MEDICAL SOCIETY.

Meeting held at Birmingham, March 15, 1889.

Dr. W. E. B. Davis in the Chair;

Dr. George S. Brown, Secretary.

Epicystotomy for the Establishment of Permanent Epicystic Fistulæ.—Dr. J. D. S. Davis reported the histories of two cases, as follows:

Case I. *Prostatic Vesical Calculus; Hypertrophy of the Prostate; Chronic Vesical Catarrh; Suprapubic Lithotomy.*—H. H., a very large man, fifty-seven years of age, a watchmaker by trade, an American, had been a sufferer from enlarged prostate for seven years. For five years he had had a frequent desire to urinate, and for the past two years frequent painful priapisms, and had been obliged to draw his urine every hour or two. About December 1st he had applied to the speaker for treatment for enlarged prostate. Thorough examination had revealed an enlarged prostate, which pressed out the perinæum and also against the rectum. Analysis of the urine had revealed evidences of vesical catarrh. His urethra had admitted a No. 32 French sound to the prostate; the prostatic urethra had admitted a No. 11 French sound. An examination had been made for stone with negative results. Afterward electrolysis had been employed four times with good results, as the prostate had been wonderfully reduced.

On January 20th, during the use of electrolysis, a stone had been detected with the electrode. Examination with the searcher in the bladder had given negative results; but when the end of the searcher had been applied to the prostatic urethra, as the electrode in the use of electrolysis, a stone had again been felt. From this the speaker had concluded that he had a prostatic stone to deal with, and he had advised epicystotomy with the view of creating an epicystic surgical fistula for the relief of the prostate and the vesical catarrh.

He had operated February 3, 1889, after the plan of Dr. Hunter McGuire, of Richmond, Va.—viz.: The rectum had been inflated by means of a rectal colpeurynter, which pushed the bladder up above the pelvic brim; the bladder washed out by the injection of sterilized water, and then filled with two ounces and a half of water, secured by a rubber tube at the base of the penis. A three-inch-and-a-half incision through the skin and superficial fascia had then been made above the symphysis pubis after shaving and thoroughly washing the parts. The recti muscles had then been separated with the handle of the knife. The transversalis fascia had been divided on a grooved director, from the symphysis to within an inch of the upper margin of the superficial wound. The bladder had been caught through the prevesical fat with a tenaculum on a line with the pubes and the bladder, and by one smooth incision he had cut through the prevesical fat, to prevent extravasation of urine. He had found a phosphate-of-lime calculus weighing five hundred and twenty grains lying securely in its prostatic nest, between the prostatic urethra and the rectum, and slightly protruding into the viscus, which had been extracted and the bladder thoroughly washed out with sterilized water.

The superficial wound had been so closed by two stitches at the lower margin and one at the upper as to leave a fistulous tract of equal size, extending from the bladder to the juncture of the middle and upper thirds of the superficial wound. The wound had been kept dressed by repeated applications of absorbent cotton to catch the outflowing urine. The patient, who was shown to the society, had entirely recovered. The urine was normal in every respect. The bladder was perfectly under the control of the patient, and there was no dripping of urine. He could throw his urine several feet from his body when standing up, or eighteen to twenty inches from the abdomen when lying down. The painful priapism was replaced by an occasional sexual desire which was in every respect normal.

The best eulogy the speaker could pay to the results of the fistula in this case was the presence of the man who had been operated upon, whose bladder was capable of retaining sixteen ounces of urine, and who could carry his urine for five or six hours with no inconvenience.

Case II. *Chronic Vesical Catarrh; Epicystotomy; Recovery.*—T. H. N., aged forty-two years, a traveling man, an American, gave a history of having had cystitis for twenty-two years. He had been operated on for stricture by Dr. Mastin, of Mobile, in 1886, with good results, so far as relief of the stricture was concerned. The urethra admitted a No. 36 French sound. The urine had to be drawn every twenty or thirty minutes with a catheter. The capacity of the bladder without an anæsthetic was two ounces and a half. Urine sediment, 75 per cent. mucus. Constant vesical tenesmus. The patient was in the habit of taking ten grains of morphine daily, hypodermatically.

When the speaker had first seen the patient he had a temperature of 104° F., his pulse was 140, and his general aspect was that of a man rapidly sinking. His extremities had been literally covered with abscesses, due to repeated hypodermatic injections of morphine. Epicystotomy had been advised by the speaker with the promise of a permanent epicystic fistula for constant and permanent drainage. He had operated February 13, 1889, in presence of Dr. W. E. B. Davis, Dr. Ransom, Dr. Brown, Dr. Pouncy, Dr. Abenathy, and Dr. Douglass, by perpendicular incision as in the case of Mr. H. Intravesical exploration through the opening had revealed a small abscess in the trigonum, which had been opened and the pus evacuated. The bladder had been washed out with sterilized water, and the wound closed and dressed as described in the previous case.

The patient had experienced immediate and complete relief from the day of the operation. The bladder had been washed out daily with sterilized water by means of a fountain syringe with the nozzle in the urethra and the water escaping through the fistula. No more abscesses, fever, or tenesmus had occurred, and the bladder capacity was now twelve ounces. The amount of morphine taken had been reduced to a quarter of a grain every four to seven hours.

This case illustrated what drainage would do in an inflamed paretic bladder when the urethra was in itself complete.

Dr. Chew said that this was the first operation of the kind he had ever seen. The question had arisen in his mind as to whether or not this had been a prostatic stone, owing to its large size. He had also noticed, from rubbing a portion of this stone between his fingers, that it was principally *mineral matter*, when it seemed to him that such stones should be animal matter. He thought thorough drainage a most scientific procedure. He agreed with Dr. Davis that the suprapubic was the best operation.

Dr. Griggs asked Dr. Davis if he would perform the high operation for stone or cystitis in a woman.

The Chairman said he thought the operation the ideal one for thorough drainage of the bladder, and that, aside from the formation of a permanent fistula, he thought in a few years suprapubic lithotomy would be the accepted operation. He had seen the suprapubic operation done several times, had performed it himself, and considered it simple in execution and almost devoid of danger.

Dr. Davis said, in reply to Dr. Parke, that he would always perform the medio-lateral operation for stone in the bladder when there was but little catarrh and no paresis. In reply to Dr. Chew, he said it was a fact that analysis of the stone had

revealed its true nature, as described. The stone was secondary phosphate of lime, the result, no doubt, of a preceding prostatic fissure or abscess. In reply to Dr. Griggs, he said he would not perform suprapubic cystotomy for stone in women, as the vagina afforded every advantage. In reply to the chairman, he said he did not agree with him as to the final and early adoption of the high operation for stone. It was not the ideal operation for stone in the bladder where permanent after-drainage was unnecessary, but only in cases where intravesical treatment and drainage were necessary to complete comfort and relief.

The dangers of the operation, with ordinary care, were *nil*. It provided an opening into the bladder for cystoscopic exploration in after-troubles. With the endoscope through the epicystic fistula, the surgical electric light could be made to illuminate the entire intravesical wall while a current of clear fluid might be passing through. It secured permanent drainage in prostatic hypertrophy, as shown by Dr. Hunter McGuire, in serious vesical catarrh, in vesical resection, and in malignant tumors, and, in fact, was the best method of draining the bladder for any cause. He had made frequent incisions into the bladder for drainage of the prostate and bladder, but in no instance had he been rewarded with such good results as he had attained by the epicystic surgical fistula. There was no doubt, in his opinion, that epicystic surgical fistula had a great future for cystoscopic explorations, intravesical treatment, and drainage.

Idiopathic Erysipelas.—The CHAIRMAN reported the history of a case occurring in a woman ten days after the removal of an ovarian tumor. The patient was forty-eight years of age, and had been operated upon in the pay wards of the Birmingham Hospital soon after the opening of the hospital, and before there had been any cases of contagious disease in the wards. The inflammation had begun in the face and had extended over the entire body, the wound in the abdomen being the last part involved. The operation had been done antiseptically, and a dressing of iodoform, boric acid, and absorbent cotton applied. The patient had given a history of having had five or six attacks of facial erysipelas when a girl. He thought the disease in this instance had had no connection with the abdominal section; as the wound in the abdomen had entirely closed, without a trace of pus, before the erysipelas appeared on the face, and since the wound had been the last place attacked by the disease, there could be no doubt about his diagnosis. The patient had made a rapid recovery, and had left the hospital a month after the operation.

Book Notices.

Diseases of the Heart and Circulation in Infancy and Adolescence. By JOHN M. KEATING, M. D., Obstetrician to the Philadelphia Hospital, etc., and WILLIAM A. EDWARDS, M. D., Instructor in Clinical Medicine and Physician to the Medical Dispensary in the University of Pennsylvania, etc. Illustrated with Photographs and Wood Engravings. Philadelphia: P. Blakiston, Son, & Co, 1888. Pp. 9 to 215. [Price, $1.50.]

THIS is a collection of papers that have appeared in the "Archives of Pædiatrics" for the past year. As they treat of a subject that receives but scanty attention in the text-books on diseases of children, the profession ought to feel grateful to the authors for presenting them in book form and thus putting them within easy reach of every practitioner.

The authors recognize the difficulty of a scientific classification of malformations. They have adopted the plan of placing them under two great headings: (1) The primary malformations; (2) their secondary effects.

Paracentesis in pericardial effusions is recommended in rare cases only. There are two points at which tapping may safely be done. One point is in the left costo-xiphoid angle, the needle to be pushed upward to the heart. The second point is at the fifth intercostal space, about where the apex should normally be situated.

Extensive rules are laid down for the administration of digitalis. The cumulative action of the drug, so long a bugbear to the profession, is not feared by the authors. They have never met with any instances of it in their experience. The infusion is given preference over all other preparations. The authors say nothing of the value of combining digitalis with a bitter tonic and a laxative, although most young subjects with cardiac affections requiring the use of digitalis suffer from gastric disturbances to a considerable degree.

The three concluding chapters are devoted to aneurysm, cardiac neuroses, and diseases of the blood. Two valuable photographs—one showing mitral insufficiency and the other mitral stenosis—are included in the book. Although the monograph is fairly comprehensive, the subject-matter is mostly of a practical nature, and not much space is allotted to questions of mere speculation. We can heartily commend the book to the profession and congratulate the authors upon the result of their efforts.

BOOKS AND PAMPHLETS RECEIVED.

Surgical Bacteriology. By Nicholas Senn, M. D., Ph. D., Professor of Principles of Surgery and Surgical Pathology, Rush Medical College, Chicago, Ill. Philadelphia: Lea Brothers & Co., 1889. Pp. 17 to 270. [Price, $1.75.]

Massotherapeutics, or Massage as a Mode of Treatment. By William Murrell, M. D., F. R. C. P., Lecturer on Pharmacology and Therapeutics at the Westminster Hospital, London, etc. Fourth Edition. Philadelphia: P. Blakiston, Son, & Co., 1889. Pp. vi–236. [Price, $1.50.]

A Hand-book of Therapeutics. By Sidney Ringer, M. D., Professor of the Principles and Practice of Medicine in University College, etc. Twelfth Edition. New York: William Wood & Company, 1889. Pp. xi–524.

Hand-book of Physiology. By W. Morrant Baker, F. R. C. S., Surgeon to St. Bartholomew's Hospital, etc., and Vincent Dormer Harris, M. D. Lond., Fellow of the Royal College of Physicians, etc. Twelfth Edition. Rearranged, revised, and rewritten, and with Five Hundred Illustrations. New York: William Wood & Company, 1889. Pp. xi–784. [Kirke's "Hand-book of Physiology."]

Neurasthenia and its Treatment. By Dr. H. von Ziemssen. Antipyresis and Antipyretic Methods of Treatment. By Dr. H. von Ziemssen. The Tongue as an Indication of Disease. By Dr. W. H. Dickinson. On the Treatment of Cystic Goître. By T. M. Hovell, F. R. C. S. New Remedies for 1878 to 1888. By Dr. C. Cauquil. [Wood's "Medical and Surgical Monographs."]

Les maladies qui guérissent aux eaux d'Aix-les-Bains, et comment ils guérissent. Par le docteur J. Monard, de la Faculté de Paris, etc. Paris: A. Maloine, 1889. Pp. vi–7 to 86.

Lectures on the Errors of Refraction and their Correction with Glasses. Delivered at the New York Post-graduate Medical School, with Illustrative Cases from Practice, both Private and Clinical. By Francis Valk, M. D., Lecturer on Diseases of the Eye, New York Post-graduate Medical School, etc. New York and London: G. P. Putnam's Sons, 1889. Pp. xii–241. [Price, $3.]

The International Medical Annual and Practitioner's Index: a Work of Reference for Medical Practitioners. Edited by Alfred G. Bateman, M. B., R. S., Fancourt Barnes, M. D., N. Whitelaw Bourns, M. D., Alexander Collie, M. D., Hy. Dwight Chapin, M. D., Charles L. Dana, M. D., W. Radford Dakin, M. D., T. Stretch Dowse, M. D., W. H. Elam, F. R. C. S., E. Hurry Fenwick, F. R. C. S., J. Dundas Grant, M. D., J. Hutchinson, Jr., F. R. C. S., Robert Jones, M. D., W. Lang, F. R. C. S., James R. Leaming, M. D., Sir Morell Mackenzie, M. D., Kenneth Milli-

cen, M. R. C. S., A. W. Mayo Robson, F. R. C. S., Robert Saundby, M. D., J. W. Taylor, F. R. C. S., W. Walter, M. D., Watson Williams, M. B., Lionel Weatherly, M. D., Graham Wills, M. B., and Percy Wilde, M. D. Seventh Year. New York: E. B. Treat & Co., 1889. Pp. xv-520. [Price, $2.75.]

The same. Bristol, England: John Wright & Co.

Lectures on Nervous Diseases, from the Standpoint of Cerebral and Spinal Localization, and the Later Methods employed in the Diagnosis and Treatment of these Affections. By Ambrose L. Ranney, A. M., M. D., Professor of the Anatomy and Physiology of the Nervous System in the New York Post-graduate Medical School and Hospital, etc. Profusely Illustrated with Original Diagrams and Sketches in Color by the Author; carefully selected Woodcuts and Reproduced Photographs of Typical Cases. Philadelphia: F. A. Davis, 1888. Pp. xiv–778. [Price, $5.50.]

Du Lavage de la vessie sans sonde à l'aide de la pression atmosphérique: ses usages—son application au traitement des cystites douloureuses. Par le Docteur J. M. Lavaux, ancien interne des hôpitaux de Paris, etc. Paris: G. Steinheil, 1888. Pp. 5 to 146.

De l'hémiplegie dans quelques affections nerveuses (ataxie locomotrice progressive, sclérose en plaques, hystérie, paralysie agitante). Par Mlle. Blanche A. Edwards, Docteur en médecine de la Faculté de Paris, etc. Paris: Lecrosnier et Babé. Pp. 7 to 168. [Publications du "Progrès médical."]

Handbuch der physiologischen Optik. Von H. von Helmholtz. Zweite umgearbeitete Auflage, mit zahlreichen in den Text eingedruckten Holzschnitten. Fünfte Lieferung. Hamburg und Leipzig: Leopold Voss, 1889. Pp. 321 to 400.

Report of a Case of Hystero-epilepsy in a Man. By Lewis H. Adler, Jr., M. D., Philadelphia. [Reprinted from the "Medical News."]

Report of a Case of Hysteria simulating Laryngismus Stridulus. By Lewis H. Adler, Jr., M. D., Philadelphia. [Reprinted from the "University Medical Magazine."]

Concerning Reflex Neuroses due to Eye-strain. I. Three Remarkable Cases of Reflex Neuroses due to Eye-strain. II. The Influence of Sexualism in Reflex Ocular Neuroses. By George M. Gould, M. D., Philadelphia. [Reprinted from the "Medical and Surgical Reporter."]

Address of Albert R. Baker, M. D., at the Opening of the Medical Department of Wooster University, Cleveland, Ohio, Wednesday, February 27, 1889.

The Insane in Foreign Countries. By William P. Letchworth, President of the New York State Board of Charities. New York and London: G. P. Putnam's Sons, 1889. Pp. xii–374. [Price, $3.]

Dreams, Sleep, and Consciousness. A Psychological Study. By George M. Gould, M. D. [Reprinted from the "Open Court."]

The Science of Successful Surgery. By John B. Roberts, M. D., Professor of Anatomy and Surgery in the Philadelphia Polyclinic, etc. (The Annual Address of the Philadelphia Academy of Surgery.) [Reprinted from the "Journal of the American Medical Association."]

Die neueren Methoden der Magenuntersuchung. Von Dr. Max Einhorn, Arzt am Deutschen Dispensary, New York. [Aus der "Medicinischen Monatsschrift."]

A Case of Dysphagia with Dilatation of the Œsophagus. By Max Einhorn, M. D., New York. [Reprinted from the "Medical Record."]

The Babies' Hospital. A Summer's Work. By Sarah J. McNutt, M. D., New York. [Reprinted from the "Medical Record."]

Transactions of the Dental Society of the State of New York. Twentieth Annual Meeting, Albany, N. Y., May, 1888.

The Relation of the Abdominal Surgeon to the Obstetrician and Gynæcologist. By A. Vander Veer, M. D., Albany, N. Y. [Reprinted from "Gaillard's Medical Journal."]

Nuevo proceder para la resección del cuerpo del maxilar inferior. Comunicación presentada al congreso médico de Barcelona de 1888. Por O. Rodolfo del Castillo-Quartiellerz, Doctor en medicina y cirujía, etc. Cordoba: Libreria y litografia del Diario, 1889.

Medicine in the Middle Ages. Extracts from "Le moyen age medical" of Dr. Edmond Dupouy. Translated by T. C. Minor, M. D. [Reprinted from the Cincinnati "Lancet-Clinic."]

New Inventions, etc.

RECENT IMPROVEMENTS IN URETHROSCOPIC APPARATUS.*

By William K. Otis, M. D.

Since the invention of the original urethroscope by Bozzini, of Frankfort, in 1805, insufficient illumination has been the obstacle toward the obviation of which the principal modifications of this instrument have been directed.

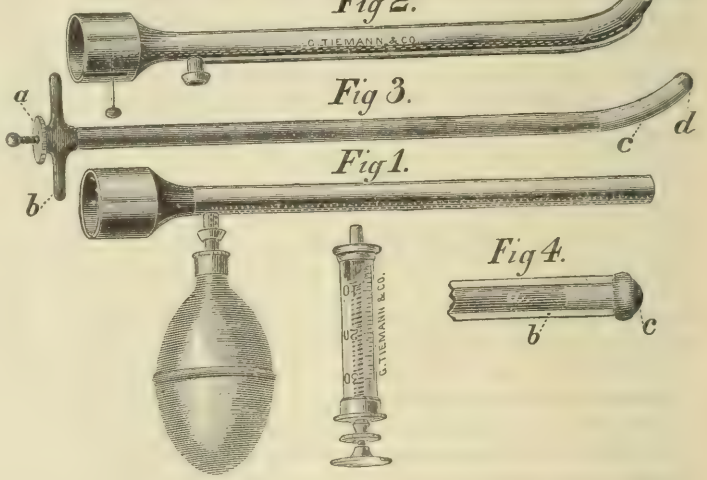
It is only recently, however, that this difficulty has been entirely overcome by the introduction of the electric light, and we now have an illumination of the urethroscopic field which is all that can be desired.

This advance has been largely due to the efforts of Josef Leiter, of Vienna, who has designed an instrument simple in construction, light and easily handled, inexpensive, and with the perfect illumination obtained by reflected electric light.

During all this time, from the invention of the original illuminating apparatus, little if any change has been made in urethroscopic tubes, though they have been constructed of various materials and borne various names. Glass, from its transparency, seemed especially adapted to this purpose, but, owing to the reflections from its surface and the changes produced by pressure on the mucous membrane, it is without practical value.

The discovery in 1870 of the great underestimation of the normal urethral caliber permitted the use of much larger tubes, with a corresponding increase in the size of the field; but the urethroscopic tube remained, and still remains, a simple straight tube.

Within the past year an ingenious instrument has been devised by von Antal, of Buda-Pesth, by means of which the urethra is seen distended with air. As the field is not greatly increased, and as an assistant is necessary, to make pressure in the rectum, thus preventing the entrance of air into the bladder, and as no applications can be made through this instrument, its practical use will probably be limited.



My own attempts to overcome some of the minor difficulties of urethroscopy have been directed, first, to avoiding the constant swabbing necessary, particularly when discharge or bleeding is present. To effect this, I have placed a small tube along the side of the urethroscopic tube to within an eighth of an inch of its lower end (Fig. 1). This tube pierces the urethroscopic tube at its upper end at a right

* Read before the Surgical Section of the New York Academy of Medicine, November 12, 1888.

angle, and ends in a socket. The small size of the inner tube prevent any practical interference with the size of the field. By attaching a small rubber bulb, which fits by a socket or sliding joint to the upper end of the small tube, pressure on the bulb (which is filled with fluid) covers the field with fluid, and a relaxation of the bulb sucks it perfectly dry, this being repeated until the field is seen to be washed clean. By substituting a hypodermatic syringe for the bulb, a graduated amount of a medicated solution may be placed with exactness on a cleansed surface. By this means the field is always under observation, which is not the case when the applications are made with the swab.

The deep urethra is frequently the seat of pathological changes which seem particularly adapted to treatment by means of the urethroscope, but, owing to the pain and discomfort to the patient occasioned by the passage of a straight instrument, and the inconvenience experienced by the surgeon in obtaining a satisfactory examination, also on account of the position of the instrument, a neglect of a visual inspection of this portion of the canal often results. To overcome this difficulty I have devised a tube having a curve on the lower end corresponding to that of the ordinary sound (Fig. 2). Upon withdrawing the obturator, a mirror fastened to a wire is slid down into the angle and a very excellent image of the end of the tube obtained. As it often happens that the mirror (if cold when first introduced) becomes clouded by the moisture of the urethra, it is well to warm it over a lamp, or wipe it over with a little glycerin, before introducing it.

Obturators constructed of rigid materials of necessity possess one of two faults. Either the edge of the tube is so thick that it forms a ridge about the end of the obturator, or, this ridge being removed to render the instrument perfect of introduction, the edges of the tube are left too sharp when the obturator is removed. Either of these conditions, while perhaps of not great importance in the examination of comparatively healthy urethræ, nevertheless often cause pain and, what is more important as regards the success of the examination, bleeding.

I have had constructed an obturator (Fig. 3) which consists of a hard-rubber shaft with a cross-bar (*b*) at the upper end, to prevent its slipping through the urethroscopic tube. Through this shaft runs a steel rod having a smooth hard-rubber tip (*d*) firmly fastened to its lower end, which loosely fits the urethroscopic tube. Between the tip and the hard-rubber shaft about half an inch of soft rubber is inserted (*c*), which is vulcanized to the hard rubber so that there is no inequality at the juncture. At the upper end of the central steel rod a screw thread is cut, on which runs a thumb-screw (*a*), which impinges on the cross-bar of the hard-rubber shaft. This obturator being introduced into the urethroscopic tube, a few turns of the thumb-screw approximate the tip and the lower end of the shaft, causing the soft-rubber interval between them to swell out over the edge of the urethroscopic tube and obliterate it. This obturator in position is shown in Fig. 4. I have also been able to adapt it to the curved instrument, where a well-fitting obturator is almost an essential for easy introduction.

In spite of the many and decided advances made in the urethroscope, its use has never been very general, nor is it ever likely to become so. In the treatment of gleet by means of the urethroscope the spots of granulation are easily observable and easily medicated, and frequently disappear under the use of the applications. But they almost inevitably lie behind strictures, are dependent for their existence on this fact, may be almost as definitely located with the bougie à boule as with the urethroscope, and are quite sure to return, sooner or later, unless the exciting cause is removed.

As regards the diagnosis of stricture, for which purpose some authors have given this instrument great credit, it is without value.

We judge a urethra is strictured simply because the tube will not pass some point in the canal; it gives no more information as to the caliber of the stricture, the extent of the stricture, its resiliency, or the existence of other contractions below it, than can be obtained by the use of its obturator alone.

False passages may occasionally be observed and avoided by its use. Foreign bodies, impacted stone, etc., are often more easily removed by this than by any other means. It is valuable in the detection and treatment of urethral chancroids, and invaluable in the removal of urethral neoplasms. But its successful use requires considerable technical skill, and a knowledge of the slight differences exhibited by pathological conditions of the urethral mucous membrane, only obtainable by long, careful, and patient study. So that, in spite of the very great improvements recently made in the urethroscope, it will probably continue to remain for the most part an instrument for the use of the specialist alone.

48 West Forty-ninth Street.

Miscellany.

The Health of Michigan.—According to the State Board of Health's Report for the four weeks ending March 30, 1889, diphtheria was reported from twenty-nine places, scarlet fever from thirty-two places, typhoid fever from eight places, measles from twelve places, and small-pox from five places.

Mortality in Cities in the United States.—The following table represents the mortality in the cities named, as reported to Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, and published in the abstract of sanitary reports received by him during the week ending April 5th:

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—									
				Cholera.	Yellow fever.	Small-pox.	Varioloid.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y.....	March 30.	1,559,964	860	..	..	..	..	..	..	5	57	47	13	14
Philadelphia, Pa....	March 30.	1,040,245	389	..	..	..	..	..	..	18	10	9	1	2
Brooklyn, N. Y.....	March 30.	814,505	390	..	..	..	..	..	..	..	10	29	8	10
Baltimore, Md.....	March 30.	500,343	156	..	..	..	..	..	..	4	5	4	..	....
San Francisco, Cal..	March 22.	330,000	106	..	..	..	..	..	..	1	2	1	..	....
Cincinnati, Ohio....	March 30.	255,139	134	..	..	..	..	..	..	3	..	3	2	..
Detroit, Mich.....	March 23.	250,000	61	..	..	..	..	..	..	..	1	2	..	1
New Orleans, La....	.....	.....	.....	..	..	..	..	..	..	..	..	..	..	....
Newark, N. J.....	March 26.	180,000	75	..	..	..	..	..	..	..	1	6	..	....
Providence, R. I....	March 30.	127,000	44	..	..	..	..	..	..	1	..	1	..	....
Rochester, N. Y.....	March 30.	125,000	42	..	..	..	..	..	..	..	..	1	..	2
Richmond, Va.....	March 23.	100,000	40	..	..	..	..	..	..	..	..	..	..	....
Denver, Col.....	March 29.	100,000	20	..	..	..	..	..	..	1	..	..	..	....
Toledo, Ohio	March 29.	80,000	23	..	..	..	..	..	..	..	..	1	..	....
Nashville, Tenn.....	March 30.	65,153	24	..	..	..	..	..	..	..	..	..	..	....
Fall River, Mass....	March 30.	65,000	23	..	..	..	..	..	..	..	1	1	..	....
Lynn, Mass.....	March 30.	50,000	17	..	..	..	..	..	..	..	..	1	..	....
Manchester, N. H...	March 23.	42,000	12	..	..	..	..	..	..	..	..	..	..	....
Portland, Me	March 30.	42,000	13	..	..	..	..	..	..	..	..	..	..	....
Davenport, Ia.....	March 23.	33,715	9	..	..	..	..	..	..	..	..	1	..	....
E. Saginaw, Mich...	March 30.	33,000	13	..	..	..	..	..	..	..	..	..	..	....
Altoona, Pa.....	March 23.	30,000	14	..	..	..	..	..	..	..	..	1	..	....
Newport, R. I.....	March 29.	22,000	5	..	..	..	..	..	..	..	..	..	..	....
Newton, Mass.....	March 30.	21,553	8	..	..	..	..	..	..	..	..	1	..	....
Keokuk, Ia.....	March 23.	16,000	2	..	..	..	..	..	..	..	..	1	..	....
Pensacola, Fla.....	March 23.	15,000	4	..	..	..	..	..	..	..	..	..	..	....

The Agnew Memorial Fund.—The committee on the C. R. Agnew Memorial Fund of the Manhattan Eye and Ear Hospital have issued the following circular:

The suffering which the Manhattan Eye and Ear Hospital relieves can only be dealt with by skill and care under the most favorable circumstances. The usefulness of the institution is widely recognized. In the death of Dr. C. R. Agnew it lost its earliest and best friend, who gave to it, besides his marvelous professional skill, every possible form of needed service. The directors propose, as a fitting memorial of Dr. Agnew, to extend the capacity of the hospital for usefulness by raising an endowment fund, to be called the "C. R. Agnew Memorial Fund," the income of which shall be applied to the running expenses of the hospital. Could any monument more fittingly recall his unselfish services to his fellow-men? If he could be consulted, is there any expression of affectionate regard that he would so much appreciate? It is believed that there are many of his friends who would gladly contribute to this fund, to mark their sense of his own generous nature, and to aid an institution which he founded and cherished with self-denying care. It is hoped that a sum of $100,000 may be secured, which would not only be a fitting memorial of him, but also go far toward enabling the hospital to carry on with ease its constantly increasing work.

It was for many years the anxious wish of Dr. Agnew that the hospital should, for its own protection, and as a means of extension in the future, purchase the property immediately in its rear, now used as a

livery stable, and which is liable to become very objectionable and detrimental to the health of the inmates of the hospital. The directors feel that the time has now come for fulfilling Dr. Agnew's long-cherished desire, and have decided to make the purchase, and to apply so much of the "C. R. Agnew Memorial Fund" as may be required in paying for its cost. It is confidently believed that the investment will yield a net income of five per cent. per annum, until such time as the needs and means of the hospital may justify the employment of the property for hospital purposes.

The directors suggest that small subscriptions will be acceptable as well as large, and that all payments can be made to suit the convenience of subscribers. A form of bequest accompanies this circular, to guide those who prefer this mode of giving.

Contributions may be sent to Mr. Charles Lanier, Treasurer, 17 Nassau Street, New York.

THERAPEUTICAL NOTES.

Hydrastis Canadensis.—In a recent number of the "Lancet," Dr. Felsenburg, of Vienna, is said to recommend highly the local use of the fluid extract of *Hydrastis canadensis* in chronic pharyngitis, whether accompanied with enlargement of the tonsils or not, and also to suggest that similar treatment might prove successful in chronic inflammatory affections of other mucous membranes. [That it has thus proved successful is abundantly set forth in Bartholow's "Materia Medica and Therapeutics."]

Peppermint-water in Pruritus Pudendi.—In an article published in the "British Medical Journal" for April 14, 1888, and quoted in a recent number of the "Medical Chronicle," Dr. Amand Routh advocates the employment of peppermint-water as a lotion in pruritus pudendi. He suggests that for the sake of convenience the aqua menthæ piperitæ of the British Pharmacopœia, which is somewhat bulky, be concentrated, an object best attained by borax, in itself soothing and antiseptic. Patients can make their own lotion by putting a teaspoonful of borax into a pint bottle of hot water, adding five drops of oil of peppermint, and shaking well. The parts affected are to be bathed with a soft sponge. If the skin is unbroken, this lotion will remove the itching; otherwise, a preparation made of olive-oil and five grains of iodoform to the ounce should be used in its place. Peppermint-water gives the most permanent relief in the neurosal form, especially in the reflex pruritus of pregnancy. It is also efficacious in the pruritus which occurs at the climacteric or in elderly women, in whom it may be only part of a general pruritus, besides those cases of women of all ages when the urine becomes of a very low specific gravity without any evidence of their having a gouty or granular kidney as a remote cause. Peppermint excels all other drugs, cocaine not excepted, in cases due to pediculi, ascarides, an irritable urethral caruncle, an intracervical polypus, cancer of the cervix, distension of Bartholin's ducts or glands, the leucorrhœa of elytritis, endotrachelitis, and metritis, the irritating discharges of advanced carcinoma uteri, or a gouty or diabetic diathesis.

Ball's Purgative Pills.—The following formula, quoted from the "Répertoire de pharmacie," appears in the "Progrès médical" for February 23d:

Socotrine aloes		15⅝ grains;
Resin of scammony, Resin of jalap,	each	7 3/16 "
Calomel		4½ "
Extract of belladonna, Extract of hyoscyamus,	each	3¾ "

Almond-oil soap, a sufficient quantity.

Divide into fifty pills. Dose, three to five pills a day.

The Use of Yeast in Medicine.—The "Union médicale" asserts that the idea of employing yeast in therapeutics is not new but merely revived by Dr. Herr, in an article which came out in the "Deutsche Medizinal-Zeitung" for September 27, 1888, with this exception, that Dr. Herr recommends large doses. Yeast was first used among prisoners and workmen as a cure for scurvy. The author attributes to it a controlling action upon fever.

An Ointment for Burns.—A recent number of the "Union médicale" gives Wendt's formula for a dressing intended to assuage the pain of burns of the first and second degrees, made of 30¾ grains of hydrochloride of cocaine, 261⅝ grains each of lanolin and distilled water, and 61¼ grains of spermaceti. In such cases one may also paint the parts affected with a two-per-cent. solution of cocaine, and then smear them with an ointment containing 76¾ grains of carbolic acid for every 1460⅝ grains of lanolin.

A Santonin Idiosyncrasy.—The "Practitioner" for February alludes to the observations made by Dr. Underwood, of Bombay, India, which were recorded in the "British Medical Journal," 1888, ii, p. 817, in regard to a general measles-like eruption and intense punctiform rash on the buccal and pharyngeal mucous membranes following within three hours after he had administered a five-grain dose of chemically pure santonin. No catarrhal or febrile phenomena were present. All the physiological symptoms characteristic of santonin subsided under alkaline treatment in forty-eight hours after their development.

ANSWERS TO CORRESPONDENTS.

No. 259.—Our impression is that it has been done by Dr. Paul F. Mundé. Mr. Lawson Tait did it four times in his second thousand laparotomies, and one of the patients recovered.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

ON THE TREATMENT OF RUPTURE OF THE TENDON OF THE QUADRICEPS FEMORIS.*

BY WILLIAM T. BULL, M. D.,
SURGEON TO THE NEW YORK HOSPITAL AND ST. LUKE'S HOSPITAL.

AT a meeting of the society four years ago I presented a patient who had been treated by Dr. C. A. Jersey at the Chambers Street Hospital for ruptured quadriceps tendon by means of the gypsum bandage. Three months and a half after the accident the functions of the limb were practically restored, though flexion of the knee was possible only through three fourths its normal extent. Since then this deficiency has disappeared and the result is perfect. To-night I present a patient who has suffered a precisely similar injury, but in whom the separated ends of the tendon were united by suture. The following is a brief history:

J. H. W., aged fifty-nine, expressman. While backing a wagon, patient fell with the leg flexed. He felt something give way. Suffered extreme pain and was unable to walk. Was treated by rest and a posterior splint for three days, when he was admitted to St. Luke's Hospital, December 6, 1888.

Examination showed a depression above right patella admitting finger easily. Absolute loss of extension. Slight effusion into joint. Unnatural mobility of patella.

December 14th.—Patient etherized and an incision three inches long made from upper border of patella upward. Tendon found to be ruptured transversely a quarter of an inch above its insertion. The direction of the rupture was from behind forward and above downward, and the upper end, beveled in this way, was curled up on itself, leaving a gap half an inch wide on the surface. The rupture extended into the muscular fibers on either side of the tendon for a distance of two inches; the synovial capsule was freely opened, and a slight amount of bloody synovia found in the joint. The ends of the tendon were brought together with four catgut sutures, drainage was established, and the wound was closed. The parts were freely irrigated with 1-to-5,000 solution of mercury bichloride. An antiseptic dressing was applied and the limb immobilized by a plaster-of-Paris splint. The drains were removed on the seventh day and the splint was renewed. The wound healed with a trifling amount of suppuration about the superficial sutures.

January 15th.—Patient allowed to walk about on crutches. All splints removed.

24th.—Walks without crutches. Rheumatism has developed, affecting the foot of injured leg and the elbow of the opposite side.

31st.—He left the hospital. The contour of the ligament was natural, the patella movable, but the joint stiff, flexion being only possible to trifling degree. The ankle was swollen and slightly painful, which indisposed him to walk.

Nine weeks after the operation I examined him and found that he could flex the limb about thirty degrees, and from this point extend it completely and strongly. The ankle was slightly swollen and painful on walking, and has been a serious drawback in his efforts to move the knee, which presents no signs of rheumatic inflammation. There is reason to believe that the power of flexion will gradually increase.*

These experiences have excited my interest in the proper management of this injury, and especially in the question whether they should be treated by the older method of immovable apparatus and compressing bandages, or by prompt suture of the tendon by means of surgical operation. I have, with the kind assistance of Dr. Albert H. Leyton, late house-surgeon at Bellevue Hospital, made a careful search through the literature of the subject, and I hope that the information thus obtained, though to me unsatisfactory, may serve as a basis for discussion if not for the formulation of any definite conclusions.

The most complete study is an elaborate article by Maydl ("Ueber subcutane Muskel- und Sehnenzerreissungen," "Deutsche Zeitschrift für Chirurgie," xvii and xviii), who in 1883 collected sixty-one cases of this injury in connection with fractures of the patella and rupture of its ligament, all of which had been treated without operation. Of the sixty-one cases, twelve were ruptures confined to the muscular substance, and it is not clear which of these two classes of cases has contributed to the final statement of the result. There were, of these sixty-one cases, twenty-eight instances of complete healing—that is, with restoration of the functions of the muscle; in thirteen the recovery was incomplete; in thirteen it was not given; and the remainder, seven in number, were old cases. These data as to the outcome of the injury are certainly unsatisfactory, but they may be fairly said to prove that complete recovery occurs in about half the cases.

The same conclusion is reached by a consideration of the cases reported since 1883, or omitted from Maydl's table. Dr. Leyton has found fifteen instances of single and five of double rupture. Of the single ruptures, complete recovery took place in nine, in four it was incomplete, and the result was not stated in two. Of the five double ruptures, making ten in all, the result was not given in five; in four recovery was stated to be incomplete, and complete in one. It should be stated that under "complete recovery" are counted the cases which are so reported, or those in which "good recovery" is noted, as well as those accompanied by the definite statement that all the functions were perfect. Under the head of "incomplete recovery" are all those so expressed and those in which defects in flexion and extension were noted, and, moreover, those of patients who are said to be able to walk well on a level, but unable to go up and down stairs; and, finally, those described as "improved."

The time which has intervened between the injury and the statement of the results has varied so much that it has seemed wise to disregard it. It has varied from a few weeks to a year, and even more, and it should be mentioned that in several cases which have been examined at later intervals than three or six months there has been found a marked improvement in function. This is especially true as regards the stiffness of the joint, which limits the power

* Read before the New York Surgical Society, February 27, 1889.

* Inspected three months after the operation; flexion to a right angle.

RUPTURE OF QUADRICEPS EXTENSOR TENDON.

No	Reporter	Sex and age	Date	Manner of injury.	Lesion.	Treatment.	Result.
1	Stimson, "Medical News," 1883, xlii, p. 501.*	M., 58.	1883	1873, slipped and fell; 1876, similar accident.	Rupture of right tendon at junction with patella; rupture of left tendon; loss of extension.	Posterior splint.	1883, Jan., right knee joint suppurated; joint opened and drained; 6th month, motion good; left leg, 6th month, stiff.
2	Hartman, "Med and Surg Reporter," 1881, xlv, p 81.	M., 50.	1880	Fell carrying heavy weight, which struck left knee, and attempting to save himself, fell backward.	Rupture of both tendons.	Posterior splints.	16th week, "nearly as well as ever."
3	Essenbeck, Schmidt's "Jahrb.," 1880, vol. clxxxvi.	M., 50.	....	Fall.	Rupture of both tendons.	Splint for three months.	
4	Blanc, "Lyon méd.," 1886, liii, p. 271.	M., 51.	1883	Fell backward, carrying heavy weight; similar accident one year later.	Rupture of right tendon; rupture of left tendon.		
5	Phelps.	M., 75.	1887	1882, fell; 1887, fell and struck side of left knee while leg was flexed.	Rupture of right tendon; rupture of left tendon; inner expans'n of crurœus intact.	Posterior splint; 12th day, plaster of Paris.	26th day, flexion to 20°, but painful.
6	Jersey; reported by Bull, "N. Y. Med. Jour.," 1884, xxix, p. 367, and "Medical News," 1884, xliv, p. 367.	M.	1883	Left leg forcibly flexed.	Rupture of left tendon.	Plaster of Paris, two months; rubber bandage.	3½ months; flexion to three quarters its normal extent; extension perfect and strong; 1889, Jan., function absolutely perfect in every respect.
7	F. H. Markoe.	M., 43.	1888	Struck just above patella.	Rupture of left tendon; lateral expansion intact; loss of extens'n.	Three weeks, posterior splint; four weeks, plaster of Paris.	Function almost completely restored; 1889, Jan., flexion and extension perfect.
8	Poore, "Med. Rec.," 1882, xxi, p. 579.	M., 65.	1881	Fell down stairs.	Rupture of tendon at attachment to patella.	Splint.	Flexion to three quarters its normal extent: 2½ in. of new tendon formed; 1889, Jan., flexion and extension perfect.
9	Keyes, "Med. Rec.," 1882, xxi, p. 579.	M., 78.	....	Slipped and fell.	Rupture of tendon; lateral expansions not torn; loss of extension.	Elastic knee-cap.	Treated as a sprain for one month; walks perfectly, but can not raise himself with injured limb on going up stairs.
10	Devars, "Lyon méd.," 1887, liv, p. 499.	M., 56.	1886	Slipped and fell.	Rupture of left tendon.	Silicate splint for one month.	4th month, flexion and extension good.
11	Michael, "Maryland Med. J.," 1884–'5, xii, p. 96.	M., 19.	....	Fell from train and leg struck by car six or seven weeks previously.	Rupture of tendon; loss of extension.	.....	Operation refused.
12	Bull.	M., 60.	1886	Tripped on stairs; felt something give way in knee, and fell down.	Rupture of right tendon; loss of extension.	Inclined plane; 10th day, plaster of Paris.	2½ years later, flexion and extension perfect.
13	Bull.	M., 41.	1884	Fell down stairs.	Partial rupture of right tendon.	Posterior splint 9th day; plaster of Paris; used crutches 9 mos.	7th week, some weakness; motion somewhat limited; 5½ years later, limb strong function good, except very extreme extension; thighs ½ to 1 inch smaller.
14	Bull.	M., 39.	1876	Fell down stairs.	Rupture of tendon.	Posterior splint 3 weeks, plaster of Paris.	Loss of extension; 1874, ruptured quadriceps tendon; wore silicate splint for 6 wks.
15	Gibbon, "Lancet," 1888, i, p. 1274.	M., 22.	1887	Kicked at foot-ball game; two wks. later stumbled and fell; walked two to three miles.	Rupture of tendon at its insertion.	Splint, 14 days; starch bandage, 6 weeks.	Good union, but some weakness.
16	Beck, "Lancet," 1880, i, p. 937.	M., 60.	1880	Slipped and heard a loud snap, and fell.	Rupture of right tendon just above patella; lateral expansions intact; slight extension of flexed knee.	Inclined plane; plaster, followed by posterior splint.	56th day, ⅜ inch interval between patella and ligament.
17	Rivington, "Med. Times and Gaz.," 1877, i, p. 613.	M., 62.	1876	Fell with leg flexed.	Rupture of left tendon.	Splint and knee-cap.	Good recovery.
18	Hulke, "Trans. London Clin. Soc.," 1879, xii, p. 1.	M., 36.	1876	Caught in turning machine, leg striking ceiling and floor.	Rupt. of tendon above patella, left; fracture of humeri, etc.	Extension and splint.	3 months later, walked firmly and with but a slight limp.
19	Mason, "American Med. Times," 1861, ii, p. 226.	M., 51.	1860	Slipped, and felt something give way in knee.	Rupture of left tendon; loss of flexion and extension.	Splint.	8th week, walked; 1 year later, no difference in two limbs, except some stiffness and pain after unusual exertion.
20	Johnson, "American Med. Times," 1861, ii, p. 388.	M., 46.	1860	Fell six feet three months previously; continued to work.	Rupture of left tendon; lateral expansions intact.	No treatment.	Good use of limb, except on going up or down stairs; depression above patella, and tendon had formed a new attachment to skin; partial ankylosis, so that leg could be only semiflexed.

* Dr. Gibney reports the same case in "N. Y. Med. Jour.," 1888, xxviii, p. 714.

SUTURE OF QUADRICEPS TENDON.

No.	Reporter.	Sex and age.	Date.	Manner of injury.	Lesion.	Treatment.	Result.
1	McBurney, "Annals of Surgery," 1887, vi, p. 170.	M., 50.	1885	Struck by a heavy basket of linen.	Rupture near insertion, right leg.	Suture of tendon with catgut; retention suture of wire.	11th week, walks with ease; flexion to right angle; 1 year later, function perfect.
2	Lüning, "Correspondenzblatt für schweizer Aerzte," 1881, ii, p. 689.	M., 18.	1880	Butcher's chopper fell on knee.	Tendon cut at insertion into upper border of patella; fracture of patella, right.	Suture of tendon with catgut.	5th month, flexion to 120°.
3	Wilkin, "N. Y. Med. Jour.," 1887, xxix, p. 378.	M.	1887	Incised wound of thigh.	Dividing tendon; joint opened; right leg.	Suture of tendon with silkworm gut.	3d month, flexion almost perfect; functions good.
4	Hartley.	M., 34.	1888	Slipped and fell.	Rupture of tendon; joint opened; left leg; fragment of patella ($\frac{3}{4}$ by $\frac{1}{2}$ in.) contained in ligament.	Suture of tendon; wiring of patella fragment.	3d month, adhesion of patella to femur broken up by raspatory; 4th month, only slight power of extension.
5	Bull; reported in this article.						

of flexion, and equally so of the general strength of the limb, which is undoubtedly increased as the leg has freer motion at the knee and the exercise of the extensor muscle is promoted. The situation and extent of the rupture have not been given with such definiteness that one could tell what influence these features had on the final recovery, and we may accept Maydl's conclusion that the prognosis is more unfavorable the nearer the point of rupture to the patella. It is a matter of regret that only such general statements as to the final result can be given by even careful study of these twenty cases. The reports are too imperfect; and this further investigation leaves us where Maydl's tables did, six years ago, with the conviction, already expressed, that in about half the cases an imperfect result may be expected.

It would be advantageous for purposes of comparison if we had an equally large number of ruptures which had been treated by suture. But the operation has been rarely done. The first case I find recorded was reported to this society by McBurney in 1887 ("Annals of Surgery," vi, 170). The injury was caused by a heavy basket falling on the thigh. The tendon was ruptured near its insertion, and the capsule of the joint torn. The tendon was sutured with catgut and the joint cavity drained. Prompt healing of the wound followed, and at the end of three months the patient walked with ease and strength, but flexion was imperfect. At the end of a year the functions were completely restored (Case I, table). A second case has been reported to me by Dr. Hartley (Case IV of the table). Here the injury was caused by a fall. The tendon was ruptured at its insertion, a small fragment of the patella being found in its torn end. The joint capsule was torn. Suture of the tendon with wire was followed by satisfactory healing, but the patella became adherent to the femur, and the joint was stiff. At the end of the third month the adhesions were separated with the raspatory and forced motion was made. At the end of the fourth month there was good flexion, but the power of extension was deficient. It is, however, improving. The third case (Case V, table) is the one I have reported in full. Besides these there are two cases in which suture of the tendon has been done with catgut, for incised wound penetrating the joint, by Lüning and Wilkin (Cases II and III of the table). In Wilkin's case the result was reported at the end of the third month as "almost perfect," the only defect being a slight limitation of flexion. In Lüning's case, at the end of the fifth month it is said that the leg could be flexed to 120°, a result little short of perfect. In both these cases it may be assumed that further time would better the result.

These cases are too few to warrant our forming any conclusions as to the probable result of the immediate suture. But they demonstrate that the procedure has been thus far attended with no serious complications, such as suppurative synovitis. In one instance the recovery has been complete (McBurney's), and in the two others there is every prospect of improvement; while the suture in open wounds—a rather more complicated condition to manage, since there is more danger of infection from the instrument inflicting the injury as well as foreign matters from the clothing and the exposure to the air—has been wholly satisfactory.

In view, then, of the uncertain functional results of the older methods of treatment and the encouragement offered by these few cases, I should certainly deem it justifiable and desirable to resort to the suture at once in many cases of rupture of this tendon. Where the ends are widely separated—say, by an interval admitting two fingers—one might naturally expect a diminished power of extension caused by the elongation of the tendon. Where the joint capsule is distended, one may properly assume that extravasated blood is present, and its absorption and the accompanying synovitis may lead to fibrous ankylosis and lessened power of flexion. Cases that present either one or both of these conditions (and they will often co-exist) should be treated with suture at once. On the other hand, ruptures in which there is a trifling separation of the ends of the tendon—let us say up to the width of an inch, or a finger's breadth—as well as those in which there is no effusion into the joint, should be treated by fixing the limb on a posterior splint, or incasing it in plaster of Paris, after drawing down the muscle and fixing it by bandaging from above downward. The patient may begin to walk at the end of four weeks. If the stiffness or lessened flexion continues, it may be overcome by passive motion. If the power of extension is found defective after the quadriceps muscle has regained

its activity, it will be due to elongation of the tendon, and a secondary suture of the tendon may then be undertaken.

DYSPEPSIA

AS REFLECTED IN THE MUCOUS MEMBRANE OF THE UPPER AIR-PASSAGES.*

By BEVERLEY ROBINSON, M. D.

It has long been a view to which I have clung with great tenacity, that affections of the upper air-passages can not be cured unless attention be directed to adjacent or remote organs, so that they may be made to exercise their functions properly. No amount of mere local treatment, whether it be medical or surgical, will produce this desired result unless the heart, lungs, liver, and kidneys are all doing their share toward helping the general weal. Whilst all these organs are important to the preservation of a healthy upper air-tract, they all sink into relative littleness as compared with the immediate influence of the stomach. Let this organ perform its work well, and the nose, pharynx, and larynx are not apt to be great sufferers from catarrhal inflammation. Let the stomach be disturbed acutely or in a chronic manner by an attack of acute dyspepsia or habitual indigestion, and immediately there is evident morbid response on the part of the pituitary, pharyngeal, or laryngeal mucous membrane. I have seen children repeatedly who, whenever their stomach became upset by errors of diet or indiscretions of cake, candy, or soda-water, had febrile excitement accompanied by more or less marked pharyngeal inflammation. This pharyngeal inflammation is ordinarily one of two distinct types. Either there is a markedly red, swollen aspect, with sensations of dryness, soreness, and pain in deglutition, or there is less of these symptoms, while the tonsils on either side show a considerable number already of white exudations, situated over or near the mouths of the follicles, and which, so far as I have been able to observe, differ in no respect from similar deposits that indicate a contagious disorder with which we are all familiar. In many children, each time they are attacked with acute dyspepsia, gastric catarrh, or "biliousness," they also have within twenty-four or forty-eight hours subsequently an attack of this membranous amygdalitis. It shows itself sometimes indeed concomitantly with the evidences of disordered digestion, and again, as I have said, we may be obliged to wait a day or longer before the throat deposits are visible. Seemingly in the latter cases there can be little doubt that the disturbance of the stomachal digestion was the original factor in the development of the throat ailment. Now, this affection of the tonsils would not come under the heading, properly speaking, of the subject of our discussion were it not accompanied almost invariably with an extension of inflammation to the upper air-tract in one or other or both directions. Frequently the nasal passages become more or less occluded from swelling and infiltration of the turbinated bodies and the mucous membrane lining the naso-pharynx. Accompanying this condition there is a nasal intonation of voice, and when the tongue is depressed to look at the throat a mass of thick white or yellowish mucus fills up the interval between the pharyngeal wall and the margin of the soft palate. Immediately an effort of hawking takes place, so that the patient is enabled to expectorate the mass and afford himself relief. At times the pharyngeal wall is for a day or more covered with a continuous coating of viscid, sticky, adherent mucus. As this mucus drops down the pharyngeal wall some of it is prone to enter the larynx and produce a slight momentary sensation of suffocation or frequent harsh cough, until it is expelled by an effort of expectoration. Whenever, as will also occur, these attacks are accompanied by considerable hoarseness, it is the generally received impression that the child has in some unexplained manner taken cold. Now, although I believe that a not dissimilar state may occasionally occur from "catching cold," yet I am of the opinion that the digestive organs, and particularly the stomach, are, as a rule, directly responsible for these effects, always admitting that a check of perspiration, or sitting in a draught, or getting a wetting, may in a sensitive child produce acute indigestion, even though there has been no evident error in diet. To strengthen my interpretation of the cases referred to, I would lay emphasis on the fact that the best medication of a similar condition is active purgation and low diet for several days. Local medication of the nose, fauces, pharynx, or larynx is of far less importance.

Having considered the effects of acute dyspepsia in children, I would direct your attention to chronic digestive disturbances. To locate precisely in small children the seat of their suffering is frequently difficult. This statement is nowhere truer than of the stomach and bowels. There are some children, frequently sons or daughters of poor parents, not rarely of well-to-do people, who have coated, flabby, indented tongues; habitual foul breath; yellowish conjunctivæ; thick, sallow-looking skin of face; small or capricious appetite; distended abdomen; confined or loose bowels. These same children are constantly having vomiting attacks, stomachal or abdominal pains, and are ordinarily listless, peevish, fretful, and ill disposed to play or be amused. Here, then, is a clear picture of dyspepsia, which might, of course, readily be enlarged or elaborated. How frequently in just such cases do we hear parents state that their child is unable to rest at night because it can not breathe through its nose; that, even when it goes finally to sleep, it is restless and uncomfortable, and awakens with a start, frightened and crying out! Such children are liable to croupy attacks, in which hoarseness and spasmodic dyspnœa are very pronounced. Now, if we examine the nose and throat, we are apt to find some of the following conditions: In the nose the turbinated bodies are swollen and pale-looking, and frequently on one or both sides almost touch the nasal septum in more or less extensive areas; often, indeed, there is no interval between these organs. The post-nasal space habitually contains a quantity of thick mucus, which the child can not detach by its own effort, but which spontaneously dislodges itself from time to time, and which, when it reaches the lower pharynx, is usually swallowed, thus helping much

* Read before the American Laryngological Association at its tenth annual congress.

to increase the dyspepsia which already exists. The pharynx, fauces, palate, tonsils, and larynx are all more or less pale-looking and relaxed. The uvula is apt to be elongated and somewhat infiltrated. The tonsils are sometimes considerably enlarged, but not in the majority of instances. Cough is a very frequent symptom. Occasionally it is a distressing, paroxysmal cough, caused by local irritation of the larynx from the presence of mucus, or by nerve irritation, or as a reflex from the elongated uvula tickling the base of the tongue or epiglottis. When we inquire into the efficient causation of such a condition, we are obliged to confess that great ignorance of or inattention to the most ordinary dietary requirements is the source from which so much trouble arises. It is interesting to observe in this connection how absolutely regardless many people are as to whether a child's bowels are moved every day regularly, as to the amount of sugar, or butter, or rich sauce a child may get at separate meals or at odd intervals during the twenty-four hours. And yet the great importance of proper care in these respects can not be a matter of reasonable doubt to any one who has closely observed the effects of the simplest remedial measures in restoring perfect equilibrium to the system. The remedial measure may not consist necessarily in doing something actively; it may merely be essential to eliminate or get rid of that which causes the outbreak of trouble.

Taking away an undue amount of sugar from the dietary of some children will enable them to pass restful nights when, previous to this exercise of care, they would have attacks of stridulous cough which would alarm a household. The free use of lime-water, in one instance I recall, broke up very rapidly spasmodic attacks of cough and hoarseness very distressing in character, accompanied by an eruption of urticaria on the face and neck. These attacks occurred in a little girl who for two years was unable to drink a glass of simple milk without causing such an attack. If she ate a small slice of bread with the milk, the attacks referred to did not occur.

I can only explain such an occurrence by supposing that the small amount of bread helped to divide the milk curd in such a way as to prevent stomachal dyspepsia.

In adults we are able to get, of course, clear descriptions in regard to digestive ailments if manifestly present, and to trace the connection more accurately between them and affections of the mucous membrane of the upper air-tract. In many cases it is difficult accurately to determine, however, which is the occasion of most distress—the dyspepsia on the one hand, or the catarrhal inflammation of the upper air-passages on the other. Not only is the statement true, so closely correlated are the two conditions, that when one is better the other improves, and if one grows worse the other immediately follows the same march, but it is also often evident that dyspepsia preceded for a long while, in a more or less pronounced manner, the advent of disordered function of the upper air-tract. This is not, however, always the case. No matter how closely we interrogate our patients at times, we can form no definite opinion as to which disease manifested itself at first. What I have said in regard to the effect of acute dyspepsia in children is only in part true, as a rule, of adults. Men and women are far less exposed to have the *follicular* form of amygdalitis accompanying the blocking up of the nose from pituitary thickening and catarrh of the naso-pharynx. Still, such cases do occasionally occur. Among dyspeptic adults there are several familiar types of reflected inflammatory or other disturbances of the mucous membrane of the upper air-passages. These depend much upon the character or underlying causes of the dyspepsia. In women, especially those who are pale, careworn victims of nervousness, palpitations, leucorrhœa, and menstrual derangements, we shall, in my experience, often discover atrophic conditions present in the nose and throat. I am inclined to believe at present, mainly from analogy, that just as the glandular apparatus seems insufficient in the stomach to furnish a healthy and adequate amount of digestive fluids, so the pale, contracted, improperly nourished pituitary membrane, which is only an accompaniment here of gland atrophy, explains in some degree the presence of those hard, scaly, adherent, bad-smelling deposits which, under these circumstances, we are apt to notice in the nasal passages, upon the septum or turbinated bodies, or lodged high up in the naso-pharynx.

This analogy is apparently strengthened by the curative effects obtained by Shurly, Delavan, and others from the prolonged use of galvanism in those parts which can be readily reached. Occasionally in such women, just as the flatulent dyspepsia is accompanied by gastralgia more or less intense in its manifestations, so the atrophic rhinitis, or the pharyngitis sicca, may be accompanied by sharp neuralgic pains radiating in different directions to the eye, ear, temple, vertex, larynx, etc., or that continued burning or throbbing which, when it exists, is so distressing. In some of these women the atrophic rhinitis and pharyngitis, though quite evident if we consider the obviously thin, transparent-looking mucous membrane, are not accompanied by any increased or abnormal formation of inspissated mucus. What we notice in addition to the moderate or considerable atrophy is a marked augmentation in the number and size of the follicles in the naso-pharynx and extending downward over the lower and median pharyngeal wall. Between these various follicles the veins are oftentimes enlarged, tortuous, and filled with blood. The digestive disturbance of the nature of flatulent dyspepsia, accompanied by more or less pain and distress, usually after food and sometimes before or between meals, is frequently relieved most by an appropriate cardiac tonic like strophanthus or strychnine. Not infrequently this same cardiac tonic will be the means of neutralizing to a considerable degree the distressed feelings in the throat, and the glistening, irritated aspect which previously existed will notably improve, the enlarged veins become less prominent, and all the various abnormal painful sensations become very much less, or disappear entirely. What I have described as being true in many instances in which the heart shows only that degree of weakness which is distinctly evident to the ear of the expert auscultator when he discovers a distant, muffled, irregular first sound, may be more easily allowed when the systole of the heart is accompanied by a blowing murmur which is heard more or less intensely over the entire precordial area.

The dyspeptic student, the overworked, somewhat "bilious" professional man who has no time for physical exercise or out-door pastimes, those persons closely confined in all sedentary pursuits, know full well, when their attention is directed in that way by their well-wisher and professional adviser, that they suffer at the same time and almost invariably from *slow*, difficult digestion, and from *catarrhal secretions* in excess from the upper air-passages. As an absolute antithesis to the class of individuals just referred to we should place the corpulent, plethoric individual with much adipose tissue everywhere, and who becomes easily congested. His face shows it by the flushed, engorged appearance; his liver shows it by transcending its normal limits, especially in the downward direction; his kidneys are not backward in demonstrating it by the high specific gravity, the intense acidity, the considerable deposit of urates, which are revealed in his urine. He is short-winded, has palpitations when he goes up-stairs, and his heart-action is often labored after slight exertion, although beating, as a rule, when he is in repose, forcibly and regularly. There may be some enlargement of this organ, but none which of itself appears serious as regards the outlook for the patient. Such an individual is often a dyspeptic; he eats heartily, but his satisfaction is marred afterward by feelings of weight and distension in the epigastric region, which the full use of Vichy water temporarily relieves.

If we inspect this man's nasal passages they are occluded, very red, and often the turbinated bodies fill up the choanæ so much that free nasal respiration is absolutely impossible. The mucous membranes of the naso-pharynx, pharynx, fauces, palate, and larynx, all show more or less the same thickened, engorged appearance. Now, all means at our command, locally applied, are in such a case of little real utility until the portal circulation is thoroughly relieved. These are the instances in which Carlsbad water at home or abroad is of great service. Together with the water, the regimen instituted at the Carlsbad Springs is of much advantage, and helps largely to complete the cure of the dyspepsia (result of the general and local plethora) and the intercurrent catarrhal congestion of the mucous membrane of the upper air-passages. After this treatment has been faithfully carried out, unless the morbid condition had previously been allowed to continue much too long without interference, there is usually no need for the use of the knife, the saw, or the drill to open up the nasal passages and establish satisfactory drainage. Another category of patient is one who without very pronounced dyspeptic symptoms yet has a constantly coated tongue and is always somewhat torpid after too abundant and varied meals. The urine of such a patient may or may not show an excess of urates, a few hyaline casts, and a trace of albumin. He is possibly a club man, who takes at least several drinks of whisky or beer each day, and has a slight mucopurulent discharge from the naso-pharyngeal space, with a subjective unpleasant odor and taste, which is a source of considerable annoyance. Such persons are perfectly willing to have local applications made to their nasal passages, under the form of sprays, pulverizations, douches, etc., during successive weeks and months. If these fail to afford relief, they are willing to submit to repeated cauterizations of the moderately hypertrophied turbinated bodies, in the hope of obtaining a more or less permanent cure.

All is vain, however, until, by strict dieting and the continued use during some time of a pill of podophyllin, or other pill appropriate to their condition, they are enabled to affect the hepatic function favorably. In order that the torpid state of the liver (due to its obstructed circulation and brought on by excesses of the table) may rapidly improve, certain hygienic rules must be enforced. Alcohol should be given up for a time, the amount of food should be diminished, and tobacco proscribed. In their place substitute much out-door exercise and early hours for retiring. If these rules be carried out effectively, improvement in health will soon be manifest. The tongue is less coated in the morning, bad taste and smell disappear, and these patients feel better in every way, readier to go about and attend to their affairs, and the catarrhal secretions from the nose diminish to such an extent that they are almost unnoticed. Such patients are really dyspeptics without being aware of it until sensible treatment makes them conscious of the fact by relieving all unpleasant symptoms. Why does dyspepsia act thus to produce various morbid conditions of the mucous membrane of the upper air-passages? The reply in many instances seems very simple; in others difficult. In certain cases of dyspepsia there is developed a fermentation or putrefaction of the ingesta which gives rise to the formation of certain organic acids in excess, such as butyric, acetic, or lactic acid, or again to the formation of irritating gases, such as sulphureted hydrogen, hydrogen, or carbonic acid. The acids are brought up into the throat by involuntary efforts of regurgitation, and thus cause pronounced and manifest local irritation. Gases may rise up in the same way and produce analogous effects. Occasionally, however, one is not conscious of acid eructations into the throat, or the rise of malodorous gases. Despite this fact, it is fair to assume that the latter, at least, *do* come up from the stomach, and, by contact with the mucous membrane of the upper air-passages, occasion the unpleasant effects to which we have previously referred. In some instances, doubtless, we shall be obliged to regard malassimilation, general depression of nervous force, reflex irritation from a chronically disturbed organ or system, as explanations either of which will be partly or wholly true. Once the catarrhal inflammation of the upper air-passages has taken place, it is certain that it frequently aggravates very much the pre-existing dyspepsia. Indeed, it is no uncommon thing to hear a patient say that it is the violent hawking and constant spitting from which he suffers every morning on rising that unsettles his stomach at that time, and may continue to cause inappetence or disgust for food during several hours of the day.

If this is true, we must get the nasal passages and pharynx in better shape if we can reasonably hope really to improve the condition of our patient. I would also state as an observed fact, not very infrequent, that patients who have never previously suffered in the smallest degree from any evidence whatever of one of the recognized forms of dyspepsia have developed this condition in a distinct

form subsequent to the appearance of a catarrhal inflammation of the nose, naso-pharynx, or the pharynx and larynx. It is probable in such cases that some of the secreted mucus from these organs works its way down the back of the throat and is swallowed, thus starting gastric disturbance. It is also clear that the current of inspired air, or rather the air which is swallowed, after passing over masses of mucus or mucopus, more or less in a state of putrefaction, must be very injurious to the healthy functions of the stomach, or stomach and bowels. In these latter cases, again, there should be little hope of favorably modifying the patient's condition unless the catarrhal disease of the upper air-passages be efficiently treated. I do not consider it as within my province at this time to consider the possibility of dyspepsia acting as an efficient or remote cause in the production of various neoplasms in the upper air-passages. Seemingly this study is one that future observation can alone settle on anything like a satisfactory basis. In conclusion, I would remark that in speaking of dyspepsia I have simply used the term as applied to difficult or disturbed digestion, dependent mainly upon functional trouble, with, no doubt in many cases, an intercurrent state of gastric inflammation, more or less intense and extensive. It is obvious that in all cases in which these conditions are present to any degree whatever a suitable and judicious dietary is equally important for a return to a normal state of the nose, throat, and stomach.

CASES ILLUSTRATING THE INFLUENCE OF CONVEX GLASSES IN CORRECTING THE CONVERGENT SQUINT OF YOUNG CHILDREN, MOSTLY WITHOUT TENOTOMY.*

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The following cases are reported, not on account of a pretense of anything novel, but because it is thought that the experience is of some value, and that the result of treatment is more favorable than might have been expected or than is found to exist in the experience of some others:

Case I.—Martin J., aged four, applied November 13, 1885, for treatment on account of a periodic squint, in which the convergence was about $2\frac{1}{2}$ lines. This had been in existence for two years and a half. Under atropine, and by the aid of the ophthalmoscope, the hypermetropia was found to be $+\frac{1}{8}$. Glasses in accordance with this refraction were ordered to be worn constantly. A few days subsequent to this he returned with the squint nearly corrected. No further record.

Case II.—Lillie M., aged five, on March 19, 1886, was found to have a convergent squint of 3 lines, which had existed for two years. She usually fixed with the left, but occasionally with the right eye. By means of atropine and the ophthalmoscope the hypermetropia was found to be $\frac{1}{6}$. This correction was accordingly prescribed to be worn constantly. Nine months subsequently there was scarcely any squint while wearing the glasses, but without them the squint was worse than ever. An operation was not deemed necessary.

Case III.—William R. R., aged eight, has periodic convergent strabismus of about 3 lines. His hypermetropia was $\frac{1}{12}$. Glasses in accordance with this were prescribed on July 20, 1888. After wearing these with perfect comfort for six months the squint was cured. The eyes returned only gradually to the proper position, it requiring most of the six months to correct the faulty position of the eyes.

Case IV.—Annie J., aged four, had $2\frac{1}{2}$ lines of convergent squint. Her hypermetropia was found by atropine and the ophthalmoscope to be $\frac{1}{10}$. Glasses in accordance with this were prescribed, which at a subsequent period seemed likely to correct the strabismus.

Case V.—Martha C., aged fifteen, applied on September 5, 1888, with a periodic convergent squint. V., R. $\frac{20}{30}$ and L. $\frac{20}{30}$. The hypermetropia was found by atropine and the ophthalmoscope to be about $\frac{1}{14}$. Glasses in accordance with this were ordered. The squint was entirely corrected by wearing these glasses, and no complaint was made of pain or fatigue being caused by the full correction.

Case VI.—Edmond W., aged ten, has a convergent squint of 2 lines; fixes with right eye. August 24, 1888, under atropine, the V. R. with $+\frac{1}{8}$ is $\frac{20}{30}$. V. L. with $+\frac{1}{8}\frac{1}{3} = \frac{20}{20}$. $+\frac{1}{7}$ was ordered for each and there is no further squint.

Case VII.—Max L., aged seven. Periodic squint of $2\frac{1}{2}$ lines since three years of age. Fixes with right eye. Ordered $+\frac{1}{8}$ in each, being his hypermetropia under atropine, the ophthalmoscope being used for the diagnosis. Squints now very little.

Case VIII.—Jennie T., aged seven. Periodic squint for a few weeks. July 16, 1888, vision not tested on account of extreme youth. By the ophthalmoscope, under atropine, the hypermetropia was found to be about $\frac{1}{8}$. $+\frac{1}{10}$ was ordered to be worn constantly. While the glasses are worn there is no squint, but if they are left off for a few minutes the strabismus returns. There is no complaint about the spectacles worrying the eyes.

Case IX.—Joseph B., aged eight. Convergent strabismus of a few weeks' duration. V. R. $\frac{20}{30}$ with $+\frac{1}{20}$. V. L. $\frac{20}{30}$ with $+\frac{1}{20}$. Fixes with the perfect eye. By the ophthalmoscope the hypermetropia, without atropine, is $\frac{1}{16}$. Patient ordered $+\frac{1}{20}$ to be worn constantly. The squint is completely cured without tenotomy. The patient is under observation, however, for no great length of time.

One or two cases of this kind have relapsed and required an operation; this may have been one of them, though there is no record of it.

Case X.—Lillie M., aged five, has convergent strabismus. The hypermetropia is $+\frac{1}{8}$, which she was ordered to wear constantly. Since this time there has been no squint unless the glasses are discarded, when it makes its appearance after a few minutes.

Case XI.—Lillie K., aged six. Convergent strabismus since two years of age. Divided internal rectus of non-fixing eye; still some squint, and $+\frac{1}{10}$ was ordered, which completely corrects the hypermetropia. Eyes remain in proper position while glasses are worn, but on abandoning them there is a return of the strabismus. These glasses are continued for about six months, much against the prejudices of the parents. Occasionally the glasses are left off a while to see whether the eyes will remain straight. After six months the parents find that the eyes remain in position after the glasses are removed. They are consequently abandoned, with the permission of the operator, as no asthenopic symptoms seem to exist.

Case XII.—Josephine V., aged eleven. Strabismus convergens. One internus divided; imperfect correction. Her hyper-

* Read before the Medical Society of the State of New York at its eighty-third annual meeting.

metropia of $+\frac{1}{4}$ was corrected. One week later squint nearly disappeared. No further record.

Case XIII.—Cornelius E. M., aged six. Convergent strabismus. Hypermetropia $\frac{1}{12}$. Glasses in accordance with this were ordered. At first there was no effect, but in a week the eyes deviated much less. This was the usual form of squint, the non-fixing eye being amblyopic. No further record.

Case XIV.—Lizzie D., aged eleven, has squinted with the right eye for five years. V., R. $\frac{20}{70}$ and L. $\frac{20}{20}$. Manifest hypermetropia $+\frac{1}{14}$. No binocular vision. A year and a half since her manifest hypermetropia was corrected. The glasses were worn constantly, and in two or three months the squint had ceased to exist. On November 14, 1888, she came again to me with this report. If spectacles are removed for a few minutes the squint returns, although there is no appearance of it when the glasses are worn. She complains that her correction for the far point, although comfortable, does not suit for reading. On inspection I find $+\frac{1}{14}$ the most comfortable, and accordingly prescribe it. There is some conjunctivitis in lower lids. The refraction on the nerves is by the ophthalmoscope $+\frac{1}{8}$ for R. and $+\frac{1}{10}$ for L.

Case XV.—William G., aged five, has squinted one week in left eye. The right has perfect vision, but the left is considerably lowered. At times the left eye squints nearly three lines. Occasionally the eyes are straight. Under atropine there is no squint. Too young to test the sight with glasses, as he does not read and the intelligence is slow. By the ophthalmoscope, while under the influence of atropine, the hypermetropia is from $\frac{1}{8}$ to $\frac{1}{6}$. Ordered $+\frac{1}{6}$ to be worn constantly. Naturally he does not see well at the far point with this correction. The squint is entirely arrested while the glasses are worn. So far, only three months have elapsed since correcting the ametropia, but the eyes remain in proper position. Where these children have attended school I have found it necessary to discard glasses while using the eyes for distance, blackboard work, etc., or to correct the manifest hypermetropia.

Case XVI.—Otto M., aged two, convergent squint; fixes with left eye. Has been operated on previously by another surgeon; $+\frac{1}{16}$ was ordered, which he had worn constantly. On September 28, 1888, I divided the left internal rectus. He was ordered to continue wearing his glasses. After a few weeks, the eye still squinting, the refraction was investigated and found by the ophthalmoscope and atropine to be $+\frac{1}{8}$, which was ordered to be worn constantly.

The patient has been inspected from time to time, and now (January, 1889) the eyes are in perfect position and no complaint is made of the strong glasses.

Case XVII.—Elizabeth E., aged six. Convergent squint; fixes with left eye. On May 9th, under atropine and with the ophthalmoscope, the hypermetropia was found to be $+\frac{1}{12}$. The squint being excessive, both interni were divided on April 25, 1888. On October 29th the eyes still converged and $+\frac{1}{12}$ was ordered. Since this time the eyes are parallel.

On the previous May, record was made that the eyes were *nearly* straight; so this case seems to be somewhat of the nature of a periodic squint.

The cases are briefly tabulated as follows:

No.	Age.	
1	4	Periodic squint; H. $\frac{1}{8}$ ordered; record incomplete.
2	5	Squint of 3″ since two years; ordered $+\frac{1}{6}$, which mostly relieves the squint.
3	8	Periodic squint of 3″; wore $+\frac{1}{12}$ for two months, when cured; continued glasses.
4	4	Squint, $2\frac{1}{2}$″; H. $\frac{1}{16}$ ordered; squint probably corrected.
5	15	Periodic squint cured by wearing $+\frac{1}{16}$.
6	10	H. of $\frac{1}{8}$; complete correction; cured the squint.
7	7	Periodic squint of $2\frac{1}{2}$″ since three years; nearly cured by wearing $+\frac{1}{8}$.
8	7	Periodic squint of a few weeks' standing; squint cured by wearing $+\frac{1}{10}$.
9	8	Squint of a few weeks cured by wearing $+\frac{1}{10}$; not observed very long.
10	5	H. $+\frac{1}{8}$; cured by correction; squints with glasses off.
11	6	Squint since two years; divided int. rect.; still squinted, but was cured by wearing $+\frac{1}{10}$ for six months, when it was found that the eyes remained perfect when glasses were abandoned.
12	11	Operated on one rectus; eyes not parallel, but rendered so by wearing $+\frac{1}{10}$.
13	6	H. $\frac{1}{12}$ worn one week; eyes deviate much less.
14	11	Squinted five years; ordered $+\frac{1}{14}$, her manifest H.; in three months squint cured; worn comfortably, but in a year and a half complained that reading was painful, so a $+\frac{1}{11}$, her total H., was worn for reading with comfort.
15	5	Squinted for one week excessively (3″), periodic; H. $\frac{1}{8}$; these are worn with cure of squint; observed for three months.
16	2	Operated on by another surgeon, and manifest H. corrected; when applied to me, still squinted; did tenotomy, and glasses continued without correction of squint; ordered complete neutralization of H. ($\frac{1}{8}$), and eyes are straight.
17	6	H. $\frac{1}{12}$; both interni divided; eye still squinting; $+\frac{1}{12}$ ordered, which complete the cure.

Note.—In nearly all these cases full correction was made; anything less seemed inoperative.

As to the question of amblyopia from disuse of the squinting eye. This proposition could not be intelligently entertained in cases of such extreme youth, even if it were true, which seems to the writer doubtful; but early correction of a squint would be serviceable in improving the sight of an eye dependent on non-use. Any special means to be used in the restoration of binocular single vision in such cases seems contra-indicated as not being likely to often succeed.

The questions raised in this paper are few and simple. The old notion that during accommodation the interni are more or less strongly contracted is adopted in this place. Where there is hypermetropia, naturally a greater strain falls upon the interni, and, in a certain number of cases, develops convergent strabismus. Whether this condition would often result where the patient had a previous condition of binocular single vision is open to question, such conditions not having been known, so far as I can learn. It is, of course, well known that a patient with binocular single vision is very likely to keep his eyes in position, in spite of preponderating muscles, by an excessive innervation of the weaker opponents, in order to obviate diplopia. It will be seen by these reported cases that, as a rule, *all* the hypermetropia was corrected. Case XVI, which was not restored to a proper balance until the complete neutralization of the hypermetropia was done, seems to furnish evidence of the truth of this proposition. I have had no satisfactory success with atropine in the correction of strabismus, as Dr. John Green, in the "Transactions of the American Ophthalmological Society," seems to have had, although I am unable to satisfactorily explain why the persistent use of atropine to arrest the action of the accommodation should not at least temporarily relieve the squint, as well as the correction of the ametropia by glasses. In my experience it has not often done so. In some of my cases it will be seen that,

owing to their extreme youth, the ophthalmoscope and atropine were necessary in determining the state of the refraction. In nearly all of these cases there was naturally overcorrection for the far point, and, where it was necessary to see distant objects perfectly, the glasses were temporarily removed.

So far I have not found that this overcorrection caused discomfort, which surprised me, inasmuch as some hypermetropes are pained by wearing glasses constantly which only neutralize their manifest hypermetropia.

Tests for binocular vision in these cases were not made, partly on account of the extreme youth of most of the patients, and partly because it was believed that in most of them it did not exist, and that it was not likely to be brought about by even correcting the faulty position of the eyes.

Perhaps this explanation of the tolerance to the overcorrection may be offered: There was no binocular vision, and the question of relative accommodation entered less into the subject than in other cases.

I have heard from one of these patients, who made some trouble by not looking through the glasses, but over them. This may be obviated by using a lens of greater diameter than usual.

HISTORY OF A REMARKABLE CASE OF POLYARTHRITIS DEFORMANS.

By HENRY S. STARK, A. B., M. D.

The history of this case is interesting, firstly because such an aggravated type of so common a disease is rarely encountered, and secondly because there is a suspicion that a morbid condition of the spinal cord, causing trophoneurotic disturbances of nutrition, co-exists with the primary lesion. Senator recognizes two varieties of this affection, the "senile" and the "peripheric," the former attacking the large joints, as the hip joint, while the latter attacks by preference the small joints of the fingers and toes and primarily the large toe. It is difficult to decide from the history of this case with what variety we are here dealing.

Recently Remak, Benedikt, and Charcot have directed attention to the nervous system as the original seat of arthropathia, and their researches led them to believe that the peripheric variety especially of this affection was of neurotic origin, resulting from irritative states of the spinal marrow. Remak therefore called this variety "arthritis myelitica."

Another element which would point to a neuropathic origin in my case is the rapid and extensive muscular atrophy, which might not be satisfactorily explained by the immobility of the articulations and consequent muscular inaction, but might reasonably be supposed to be due to lesions somewhere in the nervous apparatus. According to the patient's statements, he was confined to bed thirty years before this symptom developed, and it ran a complete course in three years and a half, leaving him almost a living skeleton.

Still a third symptom which points to a neurotic lesion is the occurrence of the attacks in symmetrical joints.

The history of the case is a typical one of "arthritis deformans" as is described in such familiar text-books as those of von Ziemssen, Eichhorst, and Flint.

Mr. B., aged fifty-nine, single, farmer, native of New York State. There is no family history of tubercular, specific, malignant, or nervous diseases, but a marked rheumatic diathesis characterizes the family through several generations. The patient himself denies a venereal history, but confesses to a slight alcoholic and tobacco habit. He had none of the exanthemata common to childhood, but enjoyed the best of health until he was seven years old, when he had a swelling of the right ankle which only lasted a few days. Two years after he was attacked with what his physician called "inflammatory rheumatism" of the right hip joint. This attack rapidly spread to both knees and ankles, and was attended by swelling and a high fever. This lasted six weeks, when he entirely recovered. He remained well until 1847, when he became subject to attacks of pain in the region of the heart, which he believed were due to overexertion, from which attacks he soon recovered without ever a recurrence.

It was in 1848, when he was eighteen years of age, that the present affliction first manifested itself. At about this time he occasionally complained of stiffness of the joints, especially the hips, on rising in the morning. During the course of the day this symptom would disappear. One morning in July of this year, while out walking, the ball of the right toe suddenly became painful, "as though a nail were being driven into the bone." This continued the next day, when both ankles and knees became greatly swollen, and the skin reddened. He suffered great pain and had a high fever. He was attended by a local physician, who prescribed large and frequent doses of calomel, and later on iodide of potassium, with local applications of setons, blistering plaster, and dry cups. Soon the knees became distended with "water," as his physician styled it, which gradually disappeared without surgical assistance. With the absorption of the fluid the fever abated, and in the autumn of the year he left his bed and walked about with the aid of a cane or crutches. During this attack his hair fell out, but rapidly regrew.

The patient states that from this time on his knees and hips gradually became stiffened, that this symptom continually increased in severity until the year 1855, when his joints were so rigid and immovable that he was entirely deprived of all power of locomotion, and he was forced to take to bed, where he has remained to the present time, a period of thirty-four years, during which time he has never been on his feet.

In 1860 he had an inflammation of the left eye, which soon disappeared; in 1869 he had a recurrence of the inflammation, but in both eyes. From this latter date his sight gradually failed him, and in the course of ten weeks was entirely destroyed.

Four years ago he weighed 155 pounds; now his weight is 68 pounds. This loss in weight, the patient states, only occurred within the last four years. There are no disturbances of the bladder or rectum. He states that he never had a bedsore, although his attendants used no further precautions than ordinary cleanliness.

Since 1855 he has been subject to muscular twitchings, which he is conscious of whenever he lies quiet; he states that this twitching is perambulatory, no part of his body being exempt. His appetite for venery has not diminished. He considers himself perfectly well, except that he is "crippled," and boasts that for more than twenty-five years he has never taken medicine in any form.

In the physical examination of this patient I was kindly assisted by Dr. A. Caille and Dr. G. W. Jacoby.

The patient is of medium height, weighs sixty-eight pounds, and is very intelligent. His appetite is good, his bowels are regular, his temperature is normal, but his pulse beats only 48



to the minute. He counts his pulse daily and states that it fluctuates between 45 and 55 in a minute. He looks decidedly anæmic, and is emaciated to a degree. Almost his entire voluntary muscular system has atrophied. There is complete ankylosis of the following articulations: elbows, wrists, hips, knees, ankles, all of the vertebral articulations ("spondylitis deformans"), and the temporo-maxillary joint. There is partial ankylosis of the shoulder joints and of some of the phalangeal joints. The only movements the patient is capable of are slight abduction and adduction at the shoulder joints; otherwise he is completely incapable of moving. There is marked ossification of the ligaments and capsules of the hips and knee joints and of the joints of the feet. There is eburnation of the epiphyseal ends of the tibiæ and fibulæ and femoral bones. The carpal bones are ankylosed in a position of subluxation, and there is here slight bone proliferation. In other joints there is a reverse process at work—namely, absorption of bone and of all structures that enter into the formation of joints. This process is seen in the fingers, where some phalanges have entirely disappeared, while others lie loose beneath the integument. His finger-nails are seven and eight inches long, and curled like a feather. The tendons on the wrist are ossified. The general appearance of the hands is that of the *main en griffe* of Duchenne, characteristic of degeneration of the ganglion cells of the anterior horns, as in progressive muscular atrophy. In some of the interphalangeal articulations the synovial membranes are so extensively hypertrophied as to form *culs-de-sac*. The toes are completely ankylosed and deflected laterally, lying over each other like the tiles of a roof. The femoral bones have been partially rotated inward, and this has caused the inner aspects of the lower portions of the thighs to lie in apposition. In this position they have remained, strange to say, for years without producing the slightest abrasion of the skin.

The physical examination revealed the following: The area of liver dullness increased anteriorly; breathing was "puerile" posteriorly; a systolic murmur heard loudest at the apex; otherwise the examination of the internal organs gave negative results. Palpation of the abdominal aorta, carotid, femoral, and radial arteries revealed arterial sclerosis. These vessels appeared thickened and to have lost their elasticity. The arteries reached their full expansion and emptied very slowly; the blood-pressure, as approximately estimated by finger-pressure, was quite tense, while the pulse-beats did not arrive synchronously, those on the right side coming ahead.

On testing the reflexes, it was learned that the superficial—*e. g.*, cremasteric and abdominal—responded promptly, while the deep reflexes, such as the knee-jerk and ankle-clonus, could of course not be ascertained, on account of the rigidity of the parts affected by the test. There were no disturbances of sensation. The cartilages of the larynx could not be seen on account of the immobility of the jaw. The os hyoides was normal, apparently. An examination of the eyes disclosed extensive posterior synechiæ and patches of iritic discoloration, while the lenses were so cataractous as to suggest to the mind pieces of chalk. The macroscopic and microscopic examination of the urine revealed no pathological products.

In order to feed the patient, some of his front teeth have been extracted, and through the spaces thus left finely minced food is passed by an attendant. By rubbing the food against the palate with his tongue, the patient is enabled to masticate it. The remaining upper and lower teeth have become displaced and permanently fixed against each other, dovetail fashion.

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REMARKS ON THE EFFECTS OF ELECTRICITY IN PERIPHERAL NERVE LESIONS.

By A. D. ROCKWELL, M.D.

Electricity has wrought its best results neither in central nor peripheral nerve lesions, but in the variety of nerve disease that in our ignorance we have termed functional. Limited, however, as its value is in the graver forms of structural disease of the central and peripheral nervous system, it not infrequently acts with extraordinary efficiency and gives rise to expectations in succeeding cases that are too often far from being fulfilled.

These discrepancies in results open up a field of inquiry which in itself might usefully occupy an evening for consideration. Facial paralysis is among the more important peripheral nervous diseases, and, from an experience in the electrical treatment of a very large number of cases, it has always seemed to me that such treatment very materially hastened the progress toward cure in many of these cases, although in others no especial benefit seemed to be derived. Based perhaps on experience only in unfavorable cases, it has been denied that electricity has any influence over the process of nerve degeneration or recovery. It is interesting, therefore, to consider the questions: 1. Does electricity sensibly hasten recovery in cases of peripheral facial paralysis? 2. In what class of cases is it especially serviceable?

A case briefly stated, one of many which form the aggregated text of these remarks, will emphasize my meaning:

A short time ago I saw a woman suffering from typical facial paralysis of the right side. Seven weeks before, she awoke in the morning only to find her face paralyzed. She immediately went to her physician, who applied the faradaic current, and repeated the application daily, Sundays included, for seven weeks. At the end of that time there was no improvement. He then came with her to my office, when I found no reaction to faradism, but, on the contrary, a greatly *increased* reaction to galvanism. The uninterrupted galvanic current was substituted for the faradaic, and in a few days a decided improvement was manifest. It required a decreasing strength of galvanism to produce contractions of the facial muscles, and on the sixth day farado-muscular contractility appeared, and within a month the muscles contracted normally to both currents, and the paralysis had approximately disappeared.

Such a case as this not only helps to answer in the affirmative the first question, Does electricity sensibly hasten recovery in peripheral paralysis? but also gives a clew as to the class of cases that most appreciate the beneficial influence of the current. The faradaic current causes contractions through its action on the intramuscular nerves, and not on the muscular fiber, while the galvanic acts powerfully on muscular fiber and less vigorously on intramuscular nerves. When, therefore, a muscle is deprived of its nerve influence in any way, the faradaic current is powerless to contract it, while galvanism not only causes contractions, but calls them forth even more vigorously than in health, and this in proportion to the strength of the current and the slowness of the interruptions. In cases similar to the one to which allusion has been made the intramuscular nerves are undoubtedly paralyzed from the beginning, but the muscular fiber is intact, and, through checks to inhibition or faulty nutrition, we see a remarkable increase of galvano-muscular contractility. While the cases, according to my observation, that respond most promptly to electrical treatment are those that present this anomalous reversal of muscular contractility to galvanic interrogation, rather than those where there exists an impaired reaction to both currents, we yet find many cases of lost farado-muscular contractility associated with increased galvano-muscular contractility that show little tendency to progress rapidly under electrical treatment. Such are the cases that we might naturally suppose to be dependent upon a neuritis within the Falloppian canal.

I can not indeed see how electricity can be of much use in cases of facial paralysis caused by a neuritis within the bony canal and the consequent swelling and compression of the nerve fibers; but it is not difficult to understand how it can be of service if the nerve terminals alone, or that portion of the nerve external to the Falloppian canal, are mainly affected. Gowers, in his great and conservative work on nervous diseases, insists that there is no evidence that cold ever paralyzes the intramuscular nerves, and doubts whether inflammation ever affects the nerve after its emergence from the canal. If this is true, then it is difficult to account for some of the rapid recoveries that have taken place in cases that were apparently stationary, when subjected to the proper current.

While admitting that electricity possesses only a limited range of usefulness in severe lesions of either the central or peripheral nervous system, I think it is one of the most efficient remedies we possess for the relief of the various symptoms associated with these lesions, while for the removal of the finer nutritive disturbances that underlie many persistent neuralgias the galvanic current is certainly a remedy of the greatest value.

But whatever good is accomplished by the current in arresting degenerative processes in nerve and muscle, it must be through attention to the details of methods of application.

Years ago my attention was called to the irreparable injury that may accrue from sudden galvanic shocks in certain cases of paralysis.

These observations were made more especially in the essential paralysis of childhood, but are equally applicable in cases of peripheral paralysis; and therefore in any case of this type where there exists either marked decrease or increase of electro-muscular contractility or irritability, and especially where we have associated the characteristic "reactions of degeneration," it is far better treatment to avoid frequent interruptions of the current, the effects of which are undue stimulation, and in their relation to nutrition destructive rather than reconstructive.

The continuous passage of the galvanic current, while in a certain sense stimulating, combines influences that are sedative and tonic and pre-eminently reconstructive; and whatever power this agent possesses in resisting progressive degenerative changes in nerve and muscle, it is more by its continuous passage and the induction of those cumulative effects that come from current reversal without shock than the ordinary method of slow or rapid interruption.

If time had permitted, I should have been glad to dwell upon the altered electrical reactions following nerve lesions, and among special forms of peripheral paralysis to devote a few moments to the discussion of the effects of electricity in diphtheritic paralysis. As in facial paralysis, its ultimate tendency to recovery renders it a matter of no little difficulty to ascertain the influence of methods of treatment; but if electricity is powerless to neutralize the early stages of the morbid process or prevent the spread of the paralysis, the records of experience have unmistakably demonstrated its beneficial influence in many an old case of altered nutrition of nerve and muscle.

Correspondence.

LETTER FROM PARIS.

M. Roussy on the Pathogenesis of Fever.—Linear Electrolysis in the Treatment of Stricture of the Œsophagus.—The Use of Forceps in Occipito-posterior Positions, before Rotation of the Fœtal Head.—The Baptism of Unborn Infants.—Anæsthesia in Labor.—Naphthol in the Treatment of Tuberculous Ulcerations.—A New Drug; Exalgine.

PARIS, *March 25, 1889.*

M. ROUSSY, *chef de laboratoire* to Professor Hayem, professor of therapeutics at the Paris faculty, presents some clinical and experimental researches on the pathogenesis of fever that, if found correct, will cause quite a revolution in our theories,

while it will establish the nature, with the physiological and pathological action, of the diastases or soluble ferments. First, as to clinical observation, M. Roussy has been struck with the fact that intense fever will arise in a man after the ingestion of stale beer, spoiled meats, or stagnant water, and even after excessive fatigue. These facts led him to think that fever was caused by soluble chemical substances rather than by micro-organisms. For the past three years he has been testing this idea on animals by hypodermatic injections of putrid matters, such as a maceration of hay, stale meat solutions, bad beer, etc., and in some six hundred cases (in dogs only) a fever was produced almost instantaneously, the temperature rising rapidly to 42° C. (107.6° F.), and death occurred in all the cases. The rapidity and intensity of this action are a proof that it is caused by chemical substances rather than microbes. Injection of the same substances into the stomach gave no serious results, which seems to indicate that they are modified by the intestinal secretions, or it may be that they are destroyed in the digestive tube. These are probably theories that have occurred to others, but the most remarkable portion of M. Roussy's communication to the Academy is that he has been able to isolate some of these soluble chemical substances from the micro-organisms. One of them he proposes to call *pyrétogénine*. It is a white substance, granular, homogeneous, of the odor of yeast, and in fact it is extracted from yeast cells. This substance, given to dogs in extremely small doses, produces an intense fever. Another of the substances is called *algogénine* or *frigorigénine*. It is extracted from animal matter that has been destroyed by fermentation caused by micro-organisms. This substance produces a most extraordinary fall of temperature of over four degrees. The pyretogenic substance is very probably a base of special organic origin, and it is also a diastatic ferment of most remarkable power, as less than a milligramme introduced into the organism of a dog puts it into a state of intense fermentation or acute fever. This new fact, if proved to be true, is one of the highest importance to general pathology. If all cells or all micro-organisms—that is to say, all the biological units—elaborate soluble ferments with which they attack and transform animal matter, a new and simple pathology has been created by M. Roussy's demonstrations.

M. Dujardin-Beaumetz has presented to the Academy a patient suffering from stricture of the œsophagus who had been operated upon by Dr. J. A. Fort with his new process of linear electrolysis; the opening before the operation was only five millimetres in diameter, and the unfortunate patient was dying of inanition, being hardly able to take a few drops of liquid in the course of a day. Since the operation the passage is at least fourteen millimetres in diameter, and he can now take all sorts of food, and, while he weighed one hundred and fourteen pounds before treatment, he now weighs one hundred and twenty-three pounds, only a week after the operation. This is the first time that linear electrolysis has been applied to the œsophageal tube, but Dr. Fort has frequently employed it in the treatment of stricture of the urethra with great benefit.

M. Budin calls attention to the fact that sometimes the fœtal head, when in an occipito-posterior position, will perform rotation so rapidly that the occiput will come under the pubic symphysis while the limbs and body have not yet turned, so that the back of the head faces the anterior portion of the body of the fœtus. In one case given, where version was intended, the hand introduced into the uterus to search for the mouth found it only by following the posterior plane of the body. M. Ribemont made sections of frozen fœtuses, which had first been put into a state of forced rotation as above described, and he found that the rotation took place not only in all the cervical column, but also in the dorsal region down to the seventh dorsal vertebra. On account of this known action, it was proposed to employ the forceps in occipito-posterior positions when the head arrived at the perinæum and the rotation was not accomplished. Dr. Budin was lately able to make this new application of the forceps with complete success for the mother and child, and thus to give a practical demonstration that there may be a considerable degree of rotation of the fœtal head, and that an accoucheur can bring about this movement in certain cases, without fear of a dislocation of the cervical column and death of the fœtus.

While upon obstetrics, I must speak of an extraordinary pamphlet that has just been published by the Abbé Moureau, entitled "The Administration of Baptism, for the use of Physicians and Accoucheurs." It sets forth, in the form of a catechism, the duty of all doctors in regard to baptizing unborn infants who may be in danger of imminent death. It is much too long for entire quotation, but some extracts may be given. The accoucheur's duty, it seems, is to baptize the child the moment he knows that its life is in danger, *in utero* or not, in instances, of course, where a clergyman can not be sent for in time. Full instructions are given as to the method to be followed and the kind of water to be used, which should be pure and not contain more than a thousandth of any antiseptic substance. It is to be poured on the head of the infant when possible; otherwise on any other presenting part, while the physician says aloud, "I baptize thee in the name of the Father," etc. The bag of waters must be first broken, and when the doctor is not sure that the child is living and he intends doing an operation (craniotomy, etc.) that will destroy it, he should then preface his usual formula by saying, "If thou art alive I," etc. This curious little book was prepared at the request of certain religious societies.

I can not resist speaking of a question of obstetrical science that was treated lately by a writer in a daily paper, "Le Temps." It is in regard to anæsthesia during labor. From a religious point of view, a woman has no right to endanger her own life and that of her child to escape pain, and she is enjoined to remember the verse that says "Thou shalt bring forth in pain," etc. A lady replies to this with much spirit and wit, if but little faith. She says: "You just make me yawn with your verses that oblige poor woman to support the pains of labor without trying to remedy them in any way. There was a man, once upon a time, who brought forth, but he was put to sleep to do it. Open your good book again and you will see that the Creator, having to take a rib from Adam to create Eve, executed this operation while our great ancestor was asleep."

Dr. Fernet has been using camphorated naphthol in the topical treatment of tuberculous ulcerations, and has met with considerable success. Cases of tuberculosis of the tongue which had been treated with energetic cauterization without any relief were rapidly modified by the camphorated naphthol, applied only once a day for a week. If we accept the opinion that tuberculosis may commence in certain cases by a local peripheral malady, which is afterward followed by general infection, the importance of curing the local manifestations is evident, and, even if we think that lingual and other symptoms are secondary to lung and other trouble, a means of treating them with success is much to be desired, and seems to be found in *naphthol camphré*. It may be mentioned also that naphthol is coming into use very much in the Paris hospitals in the treatment of boils, ten parts of naphthol being used to twenty of glycerin for local application.

The Academy of Sciences presents a report on a new drug, exalgine, or orthomethylacetanilide, which has an analgesic action much superior to that of antipyrine.

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THE TABETIC EYE.

Before the Société de médecine de Paris, M. Trousseau lately read an interesting paper upon this subject that appears in the "Union médicale" for March 9, 1889. The ocular symptoms of tabes, he says, are important in exact proportion to a knowledge of their special characteristics and relations to the disease that causes them. Whether they serve to trace the malady or to confirm a doubtful diagnosis, they are equally valuable, and should receive the most careful study.

Fournier has noted eye troubles in thirty-four out of two hundred and twenty-four cases. This proportion is probably smaller than actually exists, for many patients present ocular phenomena perceptible only to the physician, and of which they themselves do not complain. These insidious manifestations are especially helpful in discovering the disease during its early stages. Certain conditions belonging to the pre-ataxic state have been set down to syphilis pure and simple, owing to ignorance concerning ataxia, and to the fact that so frequently an antecedent history of syphilis is given. According to Galezowski, in nine cases out of ten, tabetic affections of vision are due to syphilis alone. Of thirty cases investigated by the author, twenty-five presented unmistakable evidences of this disease, two were doubtful, and in the three others the patients had never been inoculated.

The eye muscles, the iris, and the optic nerve are the tracts most apt to be affected, but they are not the only ones. In 1886 Pétrolacci, of Montpellier, wrote a thesis on ataxic lacrymation. Feré had under observation a patient in whom attacks of circumorbital pains of lightning-like character and unilateral lacrymation appeared and disappeared with equal suddenness, and in ataxic subjects disseminated circumorbital anæsthesia is of frequent occurrence. Berger has called attention to the diminished ocular tension during the paralytic stage.

Ophthalmic migraine, with its scotoma and hemianopsia, the author thinks may be allied to tabes, for he has observed two patients in whom frequent attacks of this sort accompanied the pretabetic period. One of the unfortunates retained this inconvenient symptom. As a general thing, not enough importance is attached to ophthalmic migraine as a precursory sign of ataxia.

The eye muscles are often paralyzed during the course of the disease, sometimes at the beginning and sometimes toward the end. This seems to have no clinical connection with optic atrophy. In other words, it is unreasonable to conclude from the presence of muscular paralysis that the patient is predisposed to optic atrophy. In six hundred cases of atrophy, Galezowski has encountered, before or during the course of profound ataxias, two hundred in which muscular paralysis existed. This simply illustrates a certain relative frequency, but can not be looked upon as bearing a very close relation. The lesions are of a different order. The prognosis is of a fatal nature in papillary atrophy, while muscular paralyses are curable. When, however, such paralyses are joined to pupillary disturbances, it is safe to affirm the probability of tabes. In the pre-ataxic stage, when the diagnosis is doubtful, the presence of these united signs is of chief importance. Ocular paralyses vary in character according to the stage of the spinal-cord affection. At the onset they are for the most part simple forms of paresis (diplopia without strabismus), developing and disappearing readily enough, sometimes instantaneously and without treatment, and returning suddenly at times. They may affect one or several muscles at the same time or in succession. These are the peculiar phenomena formerly considered distinctive of syphilis. But they are certainly rare except in the syphilitic patient who is a candidate for ataxia.

The muscles that move the ball may be attacked, and also those of the lid, causing the slight narrowing of the palpebral fissure that Berger notes in ataxic subjects. The ptosis that exists in other cases has a similar origin, as well as the paralysis of the levators of both sides seen by Déjérine. It is impossible to fathom the cause of phenomena so *bizarre* in any brief survey of the subject. They may be due to irritation simply; to nuclear scleroses; to sclerosis of the vertebral artery and its branches, as Schmeichler suggests; or to peripheral neuritis, according to Déjérine's theory; or, let us say with Brown-Séquard, considering the flitting character of these motor paralyses, they have a cause as yet indefinite.

The pupil of the tabetic eye is a source of much valuable information. There may be single or double myosis of the pin-hole variety, rendering an examination of the fundus extremely difficult; or mydriasis may exist, most frequently on one side only. Sometimes there is paralysis of accommodation without mydriasis, in which case Galezowski has noticed circumorbital anæsthesia. In some cases light does not affect the pupil, but its reaction in accommodation is normal. In others, on the contrary, the Argyll-Robertson pupil in itself is a guide to a correct diagnosis. Berger calls attention to an elliptic deformity of the pupil. The tabetic eye is also subject to an affection of the gravest moment, to wit, atrophy of the papilla. Erb notes it in twelve out of a hundred cases; Mæli, in thirteen in a hundred; and Schmeichler finds it forty times in a hundred cases. Its chief characteristics are steady progress and the well-known appearance that the ophthalmoscope reveals. The grayish color of the papilla has been alleged as a pathognomonic sign of ataxia. Clinically, this fine distinction can not be admitted. It is not rare to come across ataxic papillæ that are very white. While the papilla is progressively losing its normal color—indeed, before there is any change in the tint—there is narrowing of the field of vision, which is preceded by a diminution of color perception according to the following order: green, red, blue. At the same time there are lacunæ and sco-

tomata in the visual field. Abadie finds this a characteristic picture of ataxic atrophy. Charcot points out the fact that sclerosis of the optic nerve may precede typical ataxic phenomena and betoken them a long time in advance. Whatever the period of its appearance, it condemns the unhappy victim to a certain and total blindness that can not be delayed or relieved.

LABORATORY WORK AND MEDICAL PRACTICE.

It is in the matter of the building, equipment, and maintenance of laboratories that our means for furthering medical study are mainly advancing in this country. Almost every one of our large schools now has laboratories for the study of chemistry, embryology, histology, physiology, bacteriology, and other special branches of knowledge that should underlie the pursuit of medical learning in its strict sense; and the prominence with which they figure in college announcements has almost come to eclipse that with which the clinical facilities of the schools are set forth. Moreover, the laboratory teachers are accorded a far more exalted station than their prototypes, the old demonstrators of anatomy, were in times gone by. In short, this is the age of laboratories. The reason of this state of things is not difficult to perceive. Laboratory work is not a mere "fad," nor are the laboratories of the present day simply manifestations of the evolution of the old dissecting-room. So many of the questions on which the medical doctrine, and consequently the medical practice, of the period turns are of a nature to be settled only by laboratory study that laboratories are established and kept up as a matter of necessity. That they have before them many a problem of prime importance to struggle with can not be doubted; the medicine of the future is unquestionably to be founded in great measure on laboratory research. It is not to be wondered at that the brightest of our young men, perceiving this state of things, are in many cases ambitious of distinction in laboratory work rather than in the clinics.

Yet it must be confessed, we think, that laboratory work, while it calls for acuteness and for methodical ways, makes no such demands upon the intellect as are encountered in the pursuit of pure excellence in medical practice—in the diagnosis, prognosis, and treatment of disease. It is true that the art of diagnosis is largely reached by proficiency in chemical and microscopical examinations and by skill in other ways of detecting objective signs; it is also true that the treatment of disease calls for a considerable development of precision in the use of the senses and of means that must be regarded only as their adjuncts; but in the matter of prognosis, which Trousseau held to be the truest test of medical skill, the problems are such as tax the understanding and the judgment almost exclusively, and their solution is not to be furthered in any great degree by mere technics. But all kinds of knowledge are useful, and knowledge obtained by his own laboratory study is far from superfluous in the physician's every-day work. Still, those who occupy themselves for the most part in such study labor chiefly to bring forth material that is afterward to be fashioned into useful shape by the clinicians, and must be content if it conduces in but slight degree to their own excellence as practitioners. Hence some self-abnegation is involved in the devotion of one's life to laboratory work, though there are doubtless compensations of no mean magnitude. It is not unfair, therefore, that laboratory workers should be accorded the dignity to which allusion was made at the outset, but it should not be forgotten that, as one star differeth from another star in glory, credit is to be attained both in the fundamental research of the laboratories and in the vivification of bare facts by applying them in medical practice; the one is complementary to the other, and neither exceeds the other in importance.

MINOR PARAGRAPHS.

PRENATAL BAPTISM.

Probably there are few physicians of much experience in the practice of obstetrics who have not occasionally been asked to baptize an unborn child. As it is not always possible to make out the child's sex at the time of the baptism, it has happened that the name of John or Thomas or some other equally decided masculine appellative has been given to a girl, and in some instances the girl so named has survived. This has led to the device of pronouncing a name that may afterward be written either Francis or Frances, as the exigencies of the case may require. We trust that in the Abbé Moureau's pamphlet on "The Administration of Baptism, for the Use of Physicians and Accoucheurs," mentioned by our Paris correspondent, there may be found set forth some way savoring less of quibbling than this clumsy refuge. The Abbé's sanction of baptism as a preliminary to craniotomy is remarkable, for it might be interpreted as sanctioning craniotomy itself, whereas the Church of Rome has heretofore set itself steadfastly against that operation, and its teaching has doubtless had a material influence in bringing about such life-saving devices as the improved Cæsarean section, laparo-elytrotomy, and Porro's operation.

GROSSER'S THERAPEUTICAL NOTES.

One of the liveliest of our German contemporaries, the "Deutsche Medizinal-Zeitung," is edited by Dr. Julius Grosser. Dr. Grosser is doing a service to all physicians who read German by the publication, in the form of a free supplement to his journal, of an alphabetical arrangement in book-form of the *therapeutische Notizen* that have appeared in the "Zeitung" from 1880 to 1889, the first part of which, a pamphlet of eighty pages, carries the headings as far as *Gelenkentzündung*.

THE DEMONSTRATION OF SOLUBLE PATHOGENIC SUBSTANCES IN BACTERIOLOGY.

Three years ago we spoke at some length of a communication made to the Biological Society of Washington by Dr. D. E. Salmon and Dr. Theobald Smith, crediting those gentlemen with having taken an early and prominent part in the discovery of soluble pathogenic substances in bacteriological cultivation liquids. That communication and others made by Dr. Salmon on the same subject seem to have been denied their true importance by certain French writers, who give the credit of substantial priority to the workers in M. Pasteur's laboratory. A review of those criticisms, by Dr. Salmon, is published in volume xxxvii of the "Proceedings of the American Association for the Advancement of Science." They rest chiefly on the

allegations that Dr. Salmon's accounts of his experiments were practically unknown and inaccessible in France and that they were not convincing. Dr. Salmon seems to us to have met both these allegations successfully, and to be justified in still laying claim to priority in the discovery.

A SOURCE OF ERROR IN THE DIAGNOSIS OF RENAL CALCULUS.

At a recent meeting of the Philadelphia County Medical Society Dr. W. W. Keen gave an interesting history of a case in which nephrectomy had had to be abandoned after being attempted by the lumbar incision. At the necroscopy some calcareous vessels were found in the kidney and one or two points of calcification of the other tissues, and it was against one of these that a needle inserted for diagnostic purposes during the operation was supposed to have struck and given rise to the conclusion that the kidney contained a calculus. Dr. Keen states that it gave precisely the sensation that a stone would have given, and that he does not remember ever to have seen such a source of error noticed. The impossibility of removing the kidney was imputed to its inflammatory attachments. It was found to be the seat of a primary sarcoma.

THE WEIGERT TREATMENT OF CONSUMPTION.

More or less has been written of late about the germicidal treatment of consumption by means of inhalations of hot air, and a circular has been distributed in New York giving a translation of a report published in the "Internationale klinische Rundschau" of certain remarks on the use of Weigert's apparatus for the purpose, made before a medical society of Halle by Dr. Kohlschütter. In our issue for March 23d we gave the substance of an article on a matter bearing upon the subject, but without special reference to Weigert's apparatus, by Herr Halter, who recommended both the inhalation of heated air and the use of hot-air baths, but gave a caution against the employment of the latter in the cases of patients who were feverish or affected with hæmoptysis. Herr Kohlschütter speaks very favorably of Dr. Weigert's apparatus, and considers it well worthy of trial.

NATURAL AND ARTIFICIAL CARLSBAD PRODUCTS.

In our issue for April 6th we mentioned a suit at law brought by the Eisner & Mendelson Company against Mr. Carl H. Schultz, and alluded to Mr. Schultz's statement as to a former fraudulent practice by the municipality of Carlsbad in the matter of Sprudelsalz. We do not understand Mr. Schultz to have charged that any such practice was continued at the present time, and we have no reason to doubt that the Sprudelsalz now furnished from Carlsbad is really made by evaporating the natural waters. As to the statement that the Carlsbad waters soon spoil after being bottled for exportation, and that therefore the artificial waters are to be preferred, the question involved seems to be one that the chemists ought to be able to settle beyond cavil.

RANDOM DISCUSSIONS IN MEDICAL MEETINGS.

The tendency to stray from the point in medical discussions is still far too often manifested. Occasionally the individual whose remarks gave rise to the discussion has the good sense to rebuke the random talk that has passed under that name. Dr. G. Betton Massey did so at a recent meeting of the Philadelphia County Medical Society. He had shown an elastic intra-uterine electrode, whereupon a number of gentlemen made more or less wandering remarks on the general utility and dangers of treating various conditions by means of electricity, but said hardly a word as to the quality of the instrument shown. Dr. Massey seems to have shown no annoyance or displeasure, but simply to have remarked that he had had no idea that the presentation of his electrode would lead to such a discursive discussion.

ANOTHER "SURE CURE" EXPOSED.

The "Western Druggist" makes an *exposé* of a nostrum, known as Haine's golden specific for drunkenness. The advertisement of this arrant fraud has been accepted by certain reputable periodicals in New York State, without due inquiry. The nostrum is composed of red pepper, ginger, and the root-bark of bayberry, and it is alleged that it can be added to the coffee or tea of the inebriate, without his knowledge, and that he will never know what cured him. As these catchpenny concoctions dread the light of medical publicity, this exposure may serve a good purpose.

EXPERT TESTIMONY AS TO DEATH BY POISON.

The Supreme Court of Wisconsin has recently formulated a rule of testimony according to which, when a trial for murder by poisoning is on, any physician whose only knowledge of poisons is that which has come to him from books and college training is not competent to give an opinion relative to the symptoms of the final illness of the deceased with regard to their probable causation by poisoning. This is probably the first time that any court has prescribed such a regulation, but it has so much in its favor that we count upon its gradual extension from court to court as questions arise in regard to poisoning cases. No person may justly be put in jeopardy of his life on the quasi-expert testimony of a witness who has gleaned all that he knows of the subject from the printed page or half-remembered lecture.

HYPERIDROSIS AMONG SOLDIERS.

An official circular, addressed to Prussian army surgeons respecting excessive sweating of the feet and other parts among the soldiers as an affection demanding treatment, advises the use of chromic acid as an efficient and economical application; of the strength of one part in ten of water. In cases of hyperidrosis of the feet such a ten-per-cent. solution, applied at intervals of three, four, or six weeks, has proved sufficiently strong to remedy this source of disability. From the point of view of military hygiene, the prophylaxis of this affection is not merely a question of discomfort and inconvenience, but has its relations to the efficiency of the service, since all soldiers having hyperidrosis will be more or less prone to recurrent catarrhal troubles and to the evils attendant thereon. Hyperidrosis of the feet, moreover, will impair the marching capabilities of the men having that infirmity.

ITEMS, ETC.

The Clinical Society of the New York Post-graduate Medical School and Hospital.—The seventy-fourth regular meeting of this society will be held in the old amphitheatre of the school this (Saturday) evening at 8.15 o'clock. Dr. James K. Crook will read a paper on the subject of "Cough and Cough Remedies," to be discussed by Dr. Fowler, Dr. Satterthwaite, Dr. Burt, Dr. Shufelt, and others. Dr. Andrew H. Smith will preside.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending April 16, 1889:

DISEASES	Week ending Apr. 9		Week ending Apr. 16	
	Cases.	Deaths	Cases	Deaths
Typhoid fever	8	0	10	2
Scarlet fever	112	59	478	54
Cerebro-spinal meningitis	4	4	1	1
Measles	171	15	184	19
Diphtheria	210	50	197	56

Baron Pasteur has already been decorated not fewer than fifteen times, and of these decorations only one came from his own countrymen. All the others are testimonials from foreign rulers to the value of his scientific achievements to the world at large. He is one of the very few great benefactors who have been honored according to their deserts during their lifetime.

The College of Pharmacy of the City of New York held its fifty-ninth annual commencement exercises on Tuesday evening, the 16th inst., at Steinway Hall.

St. Elizabeth Hospital.—The trustees announce to the medical profession that they have re-opened the hospital and are prepared to receive patients. The medical branch of the institution will be under the supervision of Dr. H. Marion-Sims. Patients will be nursed by the Sisters of the Third Order of St. Francis of Assisium. As yet no provision has been made for the care of male patients who are *confined to bed*, but physicians are at liberty to place men in charge of such patients. Any physician in good standing may send patients to this institution, but the trustees, through the superintendent and medical director, Dr. Sims, reserve to themselves the privilege of refusing admittance to the patients of any physician not acceptable to the trustees. Unless known to the medical director, or indorsed by one of the consulting board, physicians desirous of sending patients here must make application through the medical director. Otherwise, arrangements may be made directly with the superintendent at the hospital, 223 and 225 West Thirty-first Street. The reason for these limitations is to prevent abuse of the broad privileges of the hospital. Patients coming to the hospital, and having no physician, will be placed under the care of the house physician, Dr. W. R. Pryor. The following gentlemen have consented to lend their indorsement to the hospital, and act as its consulting board: Dr. E. L. Keyes, Dr. F. N. Otis, Dr. James B. Hunter, Dr. J. E. Janvrin, Dr. E. G. Janeway, Dr. R. C. M. Page, Dr. John A. Wyeth, Dr. H. Marion-Sims, Dr. C. C. Lee, and Dr. R. F. Weir. Patients suffering from contagious diseases and insane or otherwise violent patients will not be received.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from April 7 to April 13, 1889:*

Byrne, Charles C., Surgeon, U. S. Army, promoted Surgeon, with the rank of Lieutenant-Colonel, to rank from March 29, 1889.

Munn, Curtis E., promoted from Assistant Surgeon to Surgeon, with the rank of Major, to rank from March 29, 1889.

By direction of the President, Captain Paul R. Brown, Assistant Surgeon, will report in person to Brigadier-General John R. Brooke, president of the Army Retiring Board at Omaha, Neb., for examination by the board. Par. 9, S. O. 80, A. G. O., Washington, April 6, 1889.

By direction of the President, the State of Wisconsin is transferred from the Department of the East to the Department of Dakota. G. O. 36, A. G. O., Washington, April 6, 1889.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the two weeks ending April 13, 1889:*

Marsteller, E. H., Passed Assistant Surgeon. Ordered to the U. S. S. Adams.

Stitt, E. H., of South Carolina, commissioned Assistant Surgeon, U. S. Navy.

Gates, M. F., of Pennsylvania, commissioned Assistant Surgeon, U. S. Navy.

Boyd, J. C., Surgeon. Detached from the Bureau of Medicine and Surgery, Navy Department, and ordered to the Yorktown.

Gates, M. F., Assistant Surgeon. Ordered to the Navy Yard, Philadelphia.

Heffenger, A. C., Passed Assistant Surgeon. Found unfit for duty at present, by Retiring Board, but not permanently incapacitated for active service, and granted one year's leave of absence for medical treatment.

DuBose, W. R., Passed Assistant Surgeon. Detached from the U. S. S. Constellation and ordered to the Practice Ship Jamestown.

Lowndes, C. H. T., commissioned an Assistant Surgeon in the U. S. Navy. March 13, 1889.

Society Meetings for the Coming Week:

Monday, *April 22d:* Medical Society of the County of New York; Boston Society for Medical Improvement; Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement; Baltimore Medical Association.

Tuesday, *April 23d:* Medical and Chirurgical Faculty of Maryland (Baltimore—first day); New York Academy of Medicine (Section in Laryngology and Rhinology); New York Dermatological Society (private); Buffalo Obstetrical Society (private); Medical Society of the County of Putnam (quarterly), N. Y.; Hunterdon, N. J., County Medical Society (Flemington); Litchfield, Conn., County Medical Society (semi-annual).

Wednesday, *April 24th:* Medical and Chirurgical Faculty of Maryland (second day); South Carolina Medical Association (Charleston); New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Auburn, N. Y., City Medical Association; Medical Society of the County of Albany; Berkshire, Mass. (annual—Pittsfield), and Middlesex, Mass., North (annual—Lowell), District Medical Societies; Gloucester, N. J., County Medical Society (quarterly); Philadelphia County Medical Society.

Thursday, *April 25th:* Medical and Chirurgical Faculty of Maryland (third day); Texas State Medical Association (San Antonio); New York Academy of Medicine (Section in Obstetrics and Diseases of Women and Children); New York Orthopædic Society; Brooklyn Pathological Society; Hartford, Conn., County Medical Association (annual); Roxbury, Mass., Society for Medical Improvement (private—annual); Cumberland, Me., County Medical Society (Portland); Pathological Society of Philadelphia (conversational).

Friday, *April 26th:* Medical and Chirurgical Faculty of Maryland (fourth day); Yorkville Medical Association (private); New York Society of German Physicians; New York Clinical Society (private—annual); Philadelphia Clinical Society; Philadelphia Laryngological Society.

SATURDAY, *April 27th:* New York Medical and Surgical Society (private); Worcester, Mass., North District Medical Society (annual—Fitchburg).

OBITUARY NOTES.

Jerome Henry Kidder, M. D., formerly of the medical corps of the navy, died at his home, in Washington, on Monday, the 8th inst., aged fifty years. Dr. Kidder was a native of Maryland, and took his medical degree from the University of Maryland in 1866, having previously been graduated in arts at Harvard University. He served in the navy from 1866 to 1882, much of the time in capacities for which his knowledge of the natural sciences made him specially fitted. After resigning from the navy he served in the United States Fish Commission. Dr. Kidder was a man of remarkable efficiency in the various stations in which he served the Government, and endowed with qualities that made him highly esteemed and liked by those with whom he was brought into contact.

Samuel W. Gross, M. D., of Philadelphia, a son of the late Dr. Samuel D. Gross and his successor as professor of surgery in the Jefferson Medical College, died on Tuesday, the 16th inst., at the age of fifty-two years. The deceased was a native of Cincinnati. He was widely known in the profession as a laborious worker in certain special fields of surgery, notably that of mammary cancer, on which he was the author of a treatise, as an excellent teacher, and as a genial man.

William Girdner, M. D., of Greeneville, Tennessee, died on Sunday, the 14th inst., at the age of eighty-one years. The deceased, who was the father of Dr. John H. Girdner, of New York, had been in the continuous practice of medicine for fifty-five years, and retired only a few months ago.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

Meeting of March 7, 1889.

The President, Dr. ALFRED L. LOOMIS, in the Chair.

The Treatment of Acute and Subacute Nephritis.—Dr. FRANCIS DELAFIELD, in a paper with this title, gave a *résumé* of the methods of treatment in these conditions advised by a French, a German, and an American authority, respectively; he also endeavored to determine how the various known drugs and plans of treatment were to be used so as to suit particular cases somewhat more accurately than had hitherto been done in the profession; he had no new drug or therapeutical measure to offer. The object to be kept in view was not to remove any of the symptoms (considered in themselves), but to cure the disease as comfortably and as speedily as possible, or else to prolong to the utmost the patient's power to work or enjoy.

The French writer quoted made the favoring of diuresis the most important indication, and thought this was best accomplished by a strictly milk diet. Dropsy and moderate vomiting could be left to themselves. Uræmic attacks were to be met by active measures, such as chloroform inhalation, and, in case of coma, oxygen inhalation. The German writer (Strümpell) added to this the use of diaphoretics and cathartics, and treated dropsy by sweating and puncturing. The American author (Flint) also advised attempting to remove the excess of urea by diuretics as well as by the skin and intestines, and the dropsy by the same means; he sought to diminish the amount of renal inflammation by dry cups and hot fomentations over the kidneys.

Most other authors agreed in making it the main object to prevent the accumulation of excrementitious substances in the blood; some believed the kidneys could be rested by having their work performed vicariously by increasing the activity of the skin and intestines; and some believed that the ingestion of fluids in amount could wash out the products of renal inflammation. Morphine and digitalis were advised by some in larger or smaller doses, in this or that stage of the disease, and by others their use was as strongly deprecated. Bloodletting was generally restricted in its employment to the nephritis of pregnancy, or to acute attacks in which cerebral symptoms and fever were marked. Thus, generally speaking, the symptoms of the nephritis received a major share of attention, and the nephritis itself did not. He would direct attention from an opposite point of view to the kidneys themselves, and consider the general condition which resulted under the separate heads of acute and subacute nephritis, as differences of the widest sort existed between the two.

The speaker then reviewed the pathology of acute nephritis, its symptoms and its course. In very mild cases no treatment was required beyond confinement in bed and a fluid diet. In severer cases the fever, prostration, loss of appetite, and vomiting all required no active medicinal interference, and the anæmia, though it was well to prevent its development so far as possible, was not to be attacked by drugs until convalescence became established. The nephritis itself and the cerebral symptoms (caused by contraction of the arteries and increased arterial tension) alone needed active treatment.

It was to be remembered that in nephritis, though the quantity of urine voided was small, its quality was good; that its secretion by the inflamed kidneys tended to relieve their congestion, so that they were better off than if at rest; and that a considerable diminution in the amount of urine could be well borne for a week or two. Convulsions and coma belonged, it was true, to the early stages of nephritis with scanty urine, but prolonged anuria produced rather a typhoid state. It was, then, not well to pay much attention to the diminution of urine; it was better to relieve the congestion of the kidneys so far as possible, and enable them to do their own work, which latter would of itself still further reduce the amount of congestion in them. The nephritis would continue, but the excretion of urea might meanwhile be ample.

The congestion of the kidneys could be relieved for short periods by applying heat to the entire surface of the body, by cuppings and hot applications over the kidneys, by the frequent use of small doses of calomel or sulphate of magnesium until the bowels began to move, and by drugs which lowered the arterial tension. The latter (chloral, opium, and aconite) in small doses were also to be used in case of the occurrence of cerebral symptoms.

The speaker's routine treatment consisted of confinement to bed and a fluid diet, daily washing of the entire skin, and the giving of drachm doses of sulphate of magnesium every hour for two days, or till an ounce was taken, or till the bowels were moved. He expected to see the albumin in the urine lessened within a few days, the pulse soft, the dropsy gone, but a condition of anæmia quite noticeable. Solid food was then gradually introduced in place of milk, and iron and oxygen were given.

In subacute nephritis the thing at fault in the performance of the renal function was not the quantity of urine (for this was often excessive) but its quality. That is, as the disease went on the proportion of solids became constantly less, and the symptoms were largely due to the effects of the nephritis on the composition of the blood and on the bodily nutrition. Anæmia, dropsy, and loss of strength were the prominent symp-

tions. Cerebral symptoms were more of the chronic sort. Recovery was not to be expected here, though intermissions and a very slow course were frequently met with. The conditions demanding treatment were: 1. The nephritis itself. 2. The nutritive changes. 3. The dropsy. 4. The arterial state. 5. The cerebral symptoms. 6. Acute attacks or exacerbations.

For the nephritis an outdoor life in a warm climate was the best treatment. In a cold climate these patients must stay indoors most of the time. The diet should ordinarily consist of solid foods and of fats. Excess in the use of mineral waters and of milk was to be avoided. Opium and the bichloride of mercury might be of some benefit. For the anæmia his remedies were the inhalation of oxygen, iron internally, massage, and the relief of constipation. Where the regulation of the diet and of the fluids drank, and the treatment of the anæmia, did not relieve a dropsy, and the latter was a cause of real distress, such measures as purging, sweating, and puncturing might be employed; but this would be necessary only in unfavorable cases. The point to keep in mind was that it was not well, when a patient was secreting about seven grains of urea to the ounce, to increase the amount of urine passed beyond what would enable the patient to secrete his normal five hundred grains of urea per diem. The amount of fluids taken should not exceed the amount of urine passed.

It was not well, in his experience, to increase a low arterial tension by digitalis or ergot. Increased arterial tension should be relieved at once, as the condition of the arteries and the excretion of urea seemed to determine the severity of the cerebral symptoms.

Dr. T. E. Satterthwaite thought that there were several distinct states complicated with a nephritis which might give the same symptoms. In but a few cases was the nephritis a primary lesion; it was ordinarily due to any one of several dyscrasias. Examination and classification must therefore precede determination of what the appropriate treatment was in any case. Much experience and a certain amount of trial in individual cases were needed. He believed vomiting was in some cases salutary. He had seen pilocarpine save some lives, but put others in danger. If it was used, the symptoms of poisoning should be looked for and met promptly in case they appeared. A number of other remedies might be called for in special cases depending upon other conditions present.

Dr. A. Jacobi thought that Dr. Delafield had said everything in his paper that was of salient importance, and had made a better because a simpler subdivision of the forms of acute and subacute nephritis than the seven or nine forms which Dr. Satterthwaite recognized as needing to be clinically distinguished. He differed with Dr. Delafield in a few points in regard to treatment; thus, as to what he had said about using caffeine as a heart tonic in uræmic conditions. The speaker had found that whenever there was a condition of cerebral hyperæmia, caffeine was certain to do harm, no matter whether this congestion was active or passive, and on this account he had abandoned its use. It must certainly be contra-indicated in all cases in which lessening of the blood supply to the head was of benefit. Only recently he had produced complete relief in a case of uræmic coma by applying leeches to the septum of the nose, and caffeine here could only have made the condition worse.

In subacute and chronic nephritis the influence of the bichloride of mercury was, beyond a doubt, excellent. He had employed it in all kinds of chronic interstitial inflammations in the various organs, in small doses, for long periods of time. He had seen patients disabled by cirrhosis of the liver recover a fair degree of health by the use of this remedy alone. In tabes, in cases at least of patients who held their ground, much gain could often be realized from this drug similarly employed.

Many cases of nephritis were not noticed while they were still amenable to treatment—cases that occurred not only after scarlet fever, but after measles and typhoid—and such could be cured by expectant treatment alone if taken in hand early.

In those forms of nephritis which came in the second half of life and were associated with vascular degenerations the addition of bromides to the general treatment was often of benefit; they seemed in old men to regulate a circulation disordered by atheromatous degenerations in the arteries. The use of digitalis was to be avoided in acute nephritis, as patients did better without it. If a heart tonic was required, sparteine would have all the good effects of digitalis without the bad ones.

Dr. F. P. Kinnicutt believed most cases of acute nephritis due to exposure or infection tended to recovery of themselves, and only needed rest in bed, a milk diet, and external warmth. He agreed that it was of most importance that we should modify the intensity of the inflammation in the kidney and the disturbance of the circulation. Sudden death from heart failure was not very infrequent in acute nephritis without there being uræmia at the time, and in these cases a marked dilatation of the left ventricle had been found by Dr. Goodheart, of Guy's Hospital, London, showing that the heart had become completely exhausted by the effort of pumping the blood through closely contracted capillaries and arterioles. On this account he never gave digitalis, but used as heart tonics either strophanthus or sparteine together with nitroglycerin.

Dr. J. W. Roosevelt remarked that in subacute nephritis we found in different patients a number of very different indications; thus in a certain class a high arterial tension was a source of much danger, not in itself, but by causing the heart to become overworked. However, to relieve this condition by using drugs to dilate the capillaries was of value only as a temporary expedient when immediate danger threatened. The treatment which could give real relief must in his judgment be that which re-established the flow of urine from the kidney. As Dr. Delafield had said, coma and convulsions were to be feared early in the disease, and in alcoholic patients, he would add, chiefly. In the long-lasting cases patients died in exhaustion with typhoidal symptoms, not in uræmia. The latter condition, then, was not due to suppression of urine, as was commonly supposed, even when long continued. He had observed that acute uræmic attacks came in two quite different classes of cases; in some patients coma and convulsions were accompanied by a high arterial tension, but in others sudden coma would be developed without any increase of arterial tension, and in these cases heart stimulants were of most service.

Dr. J. E. Winters said, in reference to Dr. Delafield's advice that patients with subacute nephritis should seek another climate, that, however desirable this might sometimes be, we had to do something for a large class of patients who either could not afford or were in no condition to go away from home. In these cases abundant exercise seemed to do the most good, especially when taken together with all natural means by which the flow of urine was found to be increased, for this was in his experience the best test of an improved condition. Whenever patients came under his care at the beginning—that is, suffering from acute nephritis—his first care was to keep them in bed for weeks running, or as long as the general nutrition could be supported under these conditions and the amount of albumin in the urine not become increased. Rest and keeping the functions of the skin active, together with a diet in which an excess of albumin was not present, were to him the most important elements in the treatment of acute nephritis. He allowed only the white meat of fowls, milk, and fish of delicate fiber, and encouraged the liberal use of fats and oils, especially cream and cod-liver oil,

which he considered of great value. He doubted whether iron in the anæmia following nephritis had the same effect as in anæmia due to other causes; it had not seemed to him to improve the condition of patients to whom he had given it, appreciably. He agreed with Dr. Delafield that the escape of serum into the subcutaneous tissue and into the cavities of the body was apt to afford relief to the nervous and cerebral symptoms, and lessened the tendency to uræmia, as if some of the poison which the kidney could not dispose of was filtered out of the general circulation.

Dr. Laurence Johnson spoke strongly of the value of pilocarpine in acute nephritis; he had employed it for a number of years in the uræmia of pregnancy, and here his results had been most favorable. Thus a lady in the eighth month of gestation had been suddenly seized with uræmic convulsions, which had been repeated five times in the next six hours. On arriving at the house he had given the sixth of a grain of the hydrochloride, and had repeated the dose every twenty minutes for three doses, and had given the fourth after two hours and a half. It had caused profuse sweating without in the least enfeebling the action of the heart. After six hours there had been a free flow of urine. The remedy was also of use in the non-puerperal forms of nephritis. He had seen complete relief follow its use in coma accompanying acute bronchitis. There was no danger in using it in any recent case of nephritis occurring in a well-nourished patient, but, on the other hand, it was never to be given to weak and debilitated patients.

The President thought the first thing to be taken into consideration when dealing with acute nephritis was the general condition of the patient apart from the renal symptoms, as determined by his age, predispositions, and habits. The same treatment would certainly not be called for in an infant and in a man of fifty. However, as a rule, rest in bed, moderate purgation, and liquid diet were enough, unless the accumulation of excrementitious products was such as to threaten convulsions. For decreasing arterial tension he preferred calomel and the saline cathartics, and added counter-irritation over the kidneys and stimulation of the skin functions.

Subacute nephritis was a difficult thing to handle well. He had long opposed the use of any measures tending to deplete the patient, such as hydragogue cathartics. To improve the general nutrition should be the main object, and, he would add, iron did not do this. A change of climate was of an importance hard to overestimate. In regard to the giving or withholding of cardiac tonics, including digitalis, he would say that whenever, in subacute nephritis, the heart was found to be failing, we had a good reason for resorting to some form of cardiac stimulant, and continuing its use as long as it increased the absorption of excrementitious materials from the tissues and the production of urine. When the weakening of the heart was due to the accumulation of poisons in the system, rather than to degenerative changes in its wall, he knew of no drug which could keep such a heart at work as well as opium in small doses.

Dr. Delafield replied to Dr. Jacobi in regard to his having recommended coffee or caffeine. He had only quoted from a French writer who advised its use. As to the great value of the bichloride of mercury, he could only say that it was an old stand-by, and it was perhaps a rule to give it; but he had never been satisfied that it alone was likely to improve the patient's general condition, and thought it hard to say how much it really contributed to the result when other measures were brought to bear. He agreed with Dr. Jacobi that subacute nephritis following diseases other than scarlet fever was much more common than was supposed; also that many cases passed through their acute stage unnoticed. As to the relief of high arterial tension, it was necessary to distinguish between acute and subacute nephritis in the treatment. In the condition as it occurred in acute nephritis small doses of sulphate of magnesium or of calomel were to be given till the bowels began to move, and the relief so obtained could be maintained by the use of aconite. In subacute nephritis he would use the nitrites and chloral. While digitalis was not a good drug in acute nephritis, it could be used in the subacute cases under the conditions pointed out by the president. He did not agree with Dr. Winters in the importance he attached to the amount of albumin in the urine as a test of the severity of the disease. Just as in subacute pleurisy, albumin in the urine was an exudation accompanying an inflammation, and it varied in amount in different cases without strict reference to the temperature or the state of general nutrition in the body. The patient in either disease might be gaining every day, while yet the amount of albumin escaping at the site of the inflammation continued as large as ever. According to his experience animal food was suited to the majority of cases, and it was not important that the amount of it given should be gauged by the appearance of albumin in the urine. As to iron, he thought if the blood was tested for hæmoglobin, and if the number of its red cells was counted, it would appear that some good was accomplished by the use of iron in the anæmia of nephritis, although the immediate symptoms and appearance of the patient might not at once be altered.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN THEORY AND PRACTICE OF MEDICINE.

Meeting of March 19, 1889.

Dr. R. C. M. Page in the Chair.

The Therapeutic Value of Systematic Passive Respiratory Movements.—Dr. Henry Ling Taylor, in a paper with this title, called attention to that large class of both rich and poor in our great cities whom a fashionable, sedentary, or otherwise one-sided life had physically degraded. The competition among the head-working and commercial classes, and the real narrowness and monotony of city life, constantly resulted in producing a spindling or flabby physical type, diminished fertility, and stunted asymmetrical offspring. Restriction and irritation commonly combined in producing this unbalanced and unwholesome development of the organism. Important regions of the body, the shoulders, the back, the loins, and especially the chest, together with the thoracic and abdominal viscera, were certain to suffer from the restricted and feeble muscular activities of such classes in the community. Flat and narrow chests and diminished respiratory power, neuro-central tone, and vital energy or endurance were the common expression in the second generation of the imperfect circulation, assimilation, and innervation of parents whose activities were one-sided and excessive.

This condition of deficient chest power had long attracted the attention of physicians, and many efforts had been made to develop chest capacity and to increase respiratory action by gymnastic exercises (especially of the upper extremities), by voluntary deep breathing, by modifications of tension or pressure in the inspired air, and by other means.

All things considered, a prolonged outdoor life, combined with moderately active but varied exercise, furnished the best remedy for the class of cases under consideration. Gymnastic exercises, as ordinarily prescribed, were far from satisfactory as a means of attaining this special object. They were not adapted to the weak and feeble, and while the pulse and respiration were accelerated the lungs were not apt to be expanded; in order to push, pull, or lift with the arms, the breath was held to immobilize the thorax and give a fixed point from which the shoulder muscles might work. The in-

crease of chest-measurement realized was frequently due mainly to muscular development. The respiratory capacity and the general endurance might at the same time remain stationary or be actually diminished. Judiciously used, gymnastic exercises *might* cause increase of breathing capacity by increase of demand for air, but, as a fact, the results showed that a scientific discretion in the use of clubs, dumb-bells, and pulley-weights was not easily taught to the majority of patients; and, moreover, as had just been said, gymnastics was out of the question with the very feeble. Benefits obtained from the inhalation of gases of various kinds (including certain advertised nostrums of this sort) he thought might be due mainly to the respiratory exercise involved. Voluntary deep and measured breathing could, no doubt, do much, but the irksomeness and the fatigue produced were a serious practical drawback. There was evidently a need for a method by which the chest could be expanded freely and regularly for considerable periods without fatigue—a means of automatically stimulating this automatic function.

Among the exercises based on the Ling system used by the speaker's father in 1856 was one in which the operator stood behind the patient on the bench upon which the latter was seated and lifted the shoulders (with the hands placed under the axillæ) at the same time that the patient's back was arched backward and supported against the operator's knee. In another movement the operator, standing as before, grasped the patient's hands and pulled the arms upward and backward against his resistance, after which the patient pulled down the hands of the operator until they lay in front of the chest. Since then a graduated mechanical resistance had been substituted for that made by the operator, and about seventeen years ago an apparatus called the respirator had been devised by which the most important of the passive movements was given by steam power, and with far greater efficacy than by the old hand method. The patient had only to lie on a couch which threw his body into the most favorable posture and grasp the handles of the levers of the machine, and inspiration and expiration would be produced at the rate and with the force which might be thought needful. This was continued for from ten to thirty minutes. The immediate effects had been found to be a slight increase of body temperature, an improvement in the circulation, a soothing of the cerebral centers, often to the point of drowsiness, a sense of fullness in the chest, and a feeling of invigoration or relief from weariness. After a course of treatment the color and circulation were usually permanently improved, the appetite and digestion were restored to the normal, the weight of thin patients as a rule was increased, and the sleep and nervous co-ordination of "nervous" patients were improved. The chest expansion was usually increased, but the effects of a course of treatment on the circulation and as a general or special tonic were more noteworthy. This increased expansion was usually obtained in two or three months and much of it remained, even if the treatment thereafter was very discontinuous. Gratifying results had been obtained in patients suffering from lateral curvature of the spine, from a flat, narrow, weak, or inelastic chest, from a phthisical predisposition, and from old pleuritic adhesions. Notable successes had been obtained in treating functional neurotics in this way, also delicate and overworked persons, especially women of flabby fiber and feeble respiratory power, the victims of backache, headache, neuralgia, dyspepsia, hysteria, neurasthenia, and uterine disorders.

The nervous centers as well as the circulation were affected by this and other forms of exercise or passive motion. Reflex effects of the most valuable sort could be obtained from passive motions similar to those secured by baths, massage, and electricity, but without the element of shock. In many respects the centers connected with respiration could be educated rather than stimulated into an activity by which the main vital processes would be carried on in a more efficient way.

Dr. Simon Baruch remarked that the results achieved in the practice of recent years from agencies such as Dr. Taylor had described had been quite insignificant and out of proportion in view of the labor which various men of ability had devoted to perfecting our knowledge of the therapeutic value of exercise, applications of water, and diet, scientifically regulated. He believed this had been due to lack of precision in their use. Physicians had too often paid no more attention to the first of these agencies, now so carefully graduated by men like Oertel, after telling the patient that he should "go out and take exercise." He commended the apparatus used by Dr. Taylor, and particularly because of its being one which could be adapted to the different capacities of various patients. His own device for giving increase and exercise of respiratory power was a simple but efficient one, consisting of a hickory stick a little longer than the extended arms, suspended by a rope fastened to its middle from the limb of a tree, so as to be just above the reach of the arms when the patient stood. Hanging from this rod with arms spread widely apart, and, in time, swinging to and fro, made an excellent exercise for increasing lung power which he had used in beginning phthisis. Another simple exercise of value for the same reason was to have the patient walk into the corner of a room with his arms extended, and consequently carried backward by the walls as he forced himself into the corner.

Dr. Louise Fiske Bryson referred to the belief of some investigators that every possible disorder could be traced to an original error in mechanics. The idea was strongly suggested when the effects of deficient normal respiration were considered. Not only on muscular but also on nervous and respiratory power depended the ability to perform all bodily exercises. Want of respiratory power was certainly either at the root or was an essential constituent of many morbid nervous conditions. Often, when of comparatively equal muscular ability, different persons showed marked inequality in respiratory power. Inspiratory exercises favored further muscular development, greater aeration of the blood, and increased control over nervous and muscular effort. In a case cited, no treatment for lithæmic neurasthenia had compared in efficacy to mechanical respiration, which promoted excretion and nutrition. There were other agents which stimulated and regulated reflex action—massage, baths, electricity, and hypnotism—but the respirator of Dr. Taylor seemed to the speaker superior to all other agents in certain cases, because no human agency was immediately visible. There were no manipulations made by an operator, nor was there personal contact with an attendant to engage the patient's attention or intensify insistent thoughts about himself. The easy, mechanical motions imparted soothed the patient and insensibly almost abolished volition, and soon he found himself becoming mechanical also. The source of the power one felt to be remote and not immediately operative. The speaker considered this absence of care or even thought and of a personal influence a noteworthy advantage of the respirator as a therapeutic agent.

Dr. A. B. Judson said that expansion of the chest by upward traction on the arms was illustrated in Silvester's method with the drowned. He had once seen an apt illustration in the dissecting-room of the effects of suspension by the arms. A cadaver had been drawn up through a shaft by a rope fastened to the hands. The lungs being thus extremely inflated, a long-drawn sigh had been heard as the body was laid supine on the floor. Dr. H. G. Davis, in the "American Medical Monthly," in 1856 and 1858, had called attention to the fact that the pectoral muscles made a connection between the humeri and the anterior surface of the chest, and that when the arms and the

anterior ends of the long ribs were fixed by the hands grasping a bar overhead, the posterior ends of the ribs were drawn down by the weight of the lower part of the body, thus directly and forcibly expanding the chest. Another illustration was seen in the action of a patient suffering from asthma, who rested his hands and forearms on the back of a chair to minimize the effort required in breathing.

The respiratory brace of Dr. French, described in 1877 in the "Boston Medical and Surgical Journal" and the "Medical Record," was designed to support the shoulders and arms in the exhaustion of orthopnœa. The apparatus and movements described by Dr. Taylor expanded the chest by traction on the arms. The speaker was practically familiar with their use, and could confirm all that had been alleged for them. However, it seemed to him that much good could be obtained by carrying out the same idea, partially at least, with simpler apparatus.

Nothing could more perfectly meet the indications in a case of asphyxiation from any cause than Dr. Taylor's respirator, with its faithful copying of the movements of natural respiration, but simple suspension alone would expand the chest, and might facilitate breathing to such an extent as to secure excellent results. With the patient seated in a chair, the body could easily be put in partial suspension. Dr. Davis had prescribed suspension by the hands in the treatment of lateral curvature of the spine and also of phthisis; in either case there was much to commend the practice from a mechanical point of view.

He would discredit the use (especially by children) of Indian clubs, the health-lift, and similar exercises common in ordinary gymnastics, and much preferred those which included suspension by the arms. Expansion, not compression, of the chest would then be favored.

Dr. Mary Putnam Jacobi doubted if Dr. Taylor's system covered the most important indication in the class of patients who suffered from deficient respiration. The effects produced by external therapeutic measures, to be of value, should be conveyed along definite channels and to definite centers. Now, in gymnastic exercises, and in artificial respiration where the motions of extraordinary respiration were produced, the stimulus did not move along the same channels in which the impulses which conveyed ordinary respiration traveled; it could not, therefore, be supposed to reach the same centers or to have the same effect on the vital functions. In other words, respiration effected by the action of the pectoral muscles could hardly have the same general effects as that produced by heightened pressure in the air cells of the lungs, with the resulting increased action of the diaphragm. She therefore had more faith in the benefit to be derived from the inhalation of compressed air, as given by the Waldenburg apparatus. The normal respiration was then imitated in every way, and the same nerve centers must be reached by impulses conveyed along the same fibers in the vagus nerve as in natural breathing. The whole movement became intensified, as shown by tracings taken with the pneumatometer, both inspiration and expiration became more prolonged and deeper, and this continued to be so for a considerable time after treatment was over. This was a much more important result than an increase in the size of the chest, considered in itself. The amount of increase in the natural respiratory movement must be the test of the benefit likely to result from any measures taken in this direction.

Dr. W. B. Wood called attention to the large proportion of cases of pulmonary disease of one sort or another in the aggregate mortality of the present time. It was only within a year or two that he had noticed how large a part of our work lay in this field. Out of 800,000 deaths recorded in the whole country in a recent year, 290,000 had been caused by pulmonary trouble, or nearly two fifths; and probably twice as many suffered from such diseases during life, and died of other diseases. In New York, ten thousand out of thirty-six thousand deaths had been due to various lung affections; and in a recent record of one thousand children brought to a dispensary, one half of the disorders found to be present had been pulmonary. He believed there was more or less good in all the methods described for improving respiration, and was inclined to take from each what he could use in a particular case. In children under five or three years of age it was a question how far any of these methods could be carried out, and yet the time when many cases of phthisis could be cured came before the third or the fifth year. We were all going back further and further in our estimates of when this disease began. What to-day we called a predisposed condition to-morrow we called the early stage of development. If we were not able to get the process under control before bacilli appeared, we were far from being able to handle the disease.

One defect, to his mind, in respiration effected by passive motion was that the voluntary part was lacking, and he did not see that respiratory power or the habit of deep breathing would necessarily be gained in this way. By massage it was possible to make the muscles of a limb hard and well developed, while yet the mechanism of nervous volition remained so poorly developed that the limb was a useless one. There was, moreover, always a reaction from conditions of hypertrophy artificially produced in the body, and wherever we got reaction we should question the means used, and ask whether we were not going beyond the power of nature to supply. We did certainly see such reactions occurring after patients had received the Weir Mitchell treatment, after a course of massage, and after much exercise had been taken perforce. He believed the strength of the patient must be kept in mind; it was often sorely taxed in these respiratory motions. It was to him a matter of risk to begin any sort of treatment tending to increase the respiration until we were certain that the air passages, especially the nostrils, were in fit condition and the waist was allowed to resume its natural shape. Otherwise, disturbances of circulation and uterine displacements might result. As to the Waldenburg apparatus and the pneumatic cabinet, it seemed to him there was nothing in nature which warranted the forcing of air into the lungs.

Dr. A. S. Hunter agreed with all that had been said in favor of measures which increased the respiratory capacity, and considered the results obtained by Dr. Taylor with his "respirator" as very satisfactory. The speaker had obtained like results, and results at least equally pronounced, by the use of the pneumatic cabinet—another means of securing "systematic passive respiratory movements." The cabinet consisted of an air-tight box, in which the patient was placed and which was supplied with a mechanism for exhausting the contained air and so rapidly diminishing the atmospheric pressure against the chest-walls during inspiration. The air breathed by the patient was in the mean time conducted to his mouth by a tube leading to the air outside the cabinet. This tube was intentionally made smaller than the trachea. The patient was thus at once obliged and enabled to make a long, slow, and deep inspiration. Air was then rapidly readmitted to the box until the pressure within became equal to that outside, and the patient then made a prolonged expiration. If less air than enough to equalize the pressure was readmitted, the expiratory muscles could be given exercise in exhaling against the difference of atmospheric pressure. Some of the poorest breathers could thus be trained in a short time to exhale against a considerable pressure.

That large class of anæmic women with partly collapsed chests and undeveloped respiratory muscles, whose breathing

was so rapid and superficial that they could scarcely complete a sentence of any length without an additional inspiration, could be greatly improved in all these respects. While they were in the cabinet the respirations could readily be brought down to fewer than eighteen a minute, and when they were out of it, before long they were able to take (and did take) long, deep, and rhythmical respirations, and to pause after each inspiration. This pause allowed the air in the lung to become rarefied. What had been gained in treatment was thus retained and the nutrient circulation of the lung was improved.

During two years past the speaker had employed this treatment in a number of inveterate cases of uterine disease in which all kinds of treatment of other sorts in the hands of various men had been ineffective. The results had been very satisfactory. The pneumatic cabinet at the same time taught and compelled and enabled a patient to breathe. A restoration of respiration had repeatedly seemed to him to supply a missing link in the chain of influences on which health depended. A number of women whom he had treated, previously unwilling to climb a single flight of stairs, had become enthusiastic walkers, having also gained in chest expansion, fullness under the clavicles, bodily weight, color, and nervous quietude. He believed the pneumatic cabinet the best means yet devised for accomplishing the purposes to which Dr. Taylor had addressed himself.

Dr. A. M. Phelps wished to indorse every statement made by Dr. Taylor. There had been a time when a member would have been listened to with suspicion who spoke of Swedish movements, or the hydropathic treatment of disease, or the occasional usefulness of a phial of homœopathic pellets. He was glad to say it was not so now. Having traveled in Sweden himself and met the eminent men to whose labors the systemization of exercise was largely due, he had gained a very high idea of the possibilities in this field. Practice in these lines should not be left in the hands of masseurs and rubbers; it should be given by men of scientific attainments and training. Berlin, Baden Baden, London, and Frankfort-on-the-Main all now had institutions in which children were taken in daily and put under a *régime* of a sort calculated in each case to develop the thorax, muscles, and vital organs. He was glad to know phthisis was now being treated through the agency of motion —just the reverse of what was needed for recovery from tubercular deposits in the joints and elsewhere—namely, rest.

Dr. E. A. Bracklow took issue on what had been said about exercise in so far as it might be thought to derogate from the vast importance to be attached to it. Exercise was practically the only agency we had for combating the mortality to be charged to pulmonic diseases. The profession owed it to their calling to teach young people to employ exercise to good advantage, for, well used, it could do no harm. He believed this country had far fewer all-around athletes than some European countries. By this he meant men able to withstand exertion of any and every sort, in whom staying power was developed to a high point. We saw many such men in Germany and Sweden, especially in the societies of gymnasts or "turners" which they supported there, and revived here in America, and in which their children were introduced early, so that the effects of American city life might in some measure be counteracted.

Forced voluntary respiration had been spoken of as something impracticable because much of it was irksome. Could it not be taken, then, in divided doses? He could testify that increased chest expansion could thus be gained, with the other good effects connected with that change. Five or ten deep breaths taken a number of times daily would not tire or exhaust the patient.

Dr. Kitchen asked whether Dr. Taylor considered his method of forced passive respiration a general tonic or a special stimulant to one function—the respiratory; and he desired another statement from him of what he believed the quality of its effect to be. He himself could not avoid recalling to mind the reaction and retrogression which succeeded to all forced developments, such, for example, as of the muscles or the voice. A public speaker in the intervals of a lecturing tour lost all the increase of voice which came while he made daily exertions in this line.

Dr. Quimby suggested that perhaps Dr. Kitchen and others failed to understand what the conditions to be treated really were; that is, what one had to do. He believed with Dr. Taylor that the improvement of the general nutrition was commonly of much greater consequence than any special development of any part or function of the body. In phthisis there was, from the first to the last, a contest between a bacillus and the protoplasm of the body. All means whatever, new or old—climate, fats, hot-air exercise or air pressure—were only useful in so far as they favored the general vitality of the patient, and aided his tissues in their combat with the enemy which had invaded the weaker portions of the economy.

He had the most faith in the pneumatic cabinet of any of the devices spoken of; not because of the changes it produced in the chest capacity, but on account of the general stimulation of circulation it effected. The blood was washed through the lungs and other organs, as the changes of tension were made, in a way which no other procedure brought about in a feeble patient. In his experience, the good effects had exceeded those which followed the inhalation of compressed air by the Waldenburg apparatus or passive exercises. The excretion of effete material and a more active nutritive process seemed to be set up by this effect on the circulation through the vital organs at the same time that abundant oxygen was brought in.

Dr. Taylor said that, while he could not enter into the subject of gymnastics or consider many other interesting points suggested by the paper, but not included in its scope, he did not wish to be understood as deprecating active exercises or voluntary deep breathing; he merely maintained that they did not satisfactorily meet certain indications. His aim certainly was not to overdevelop the chest, and he did not think it would be easy to do so in the patients he submitted to the respirator. The nervous patients took the exercise for a limited period of time and ran no risk of that kind. The respirator was not applicable in treating children under six years of age. Passive respiration was always taken in a loose jacket or wrapper, the corsets being first removed. He made it a rule that the patient should rest before and after the exercise, believing that to be an important point in securing the best results. He had not discussed the question of phthisis or recommended the use of the respirator in that disease. In youths with narrow chests whose near relatives had died early of phthisis, the method was indicated, especially where a free out-of-door life all the year round could not be followed. He did not believe that the exercise had more than a slight effect in developing muscle; it was not given for that purpose. He did not think the fact that all the gain in chest measurement was not in every case retained was a good objection; what was retained was worth striving for, and, as the paper had pointed out, the main advantage of the exercise was, after all, in its physiological effect, irrespective of gain in measurement. Whether or no the respiratory center was directly stimulated by Silvester's passive respiratory movements, as to which he had made no assertion, it seemed to him beyond question that certain higher nerve centers were stimulated by the respirator and their states profoundly modified in a way worthy of being therapeutically utilized, and this was to him the important and practical point. After all, the proof of the pudding was in the eating, and the respirator had stood the test of trial.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN SURGERY.

Meeting of March 11, 1889.

Dr. Robert Abbe in the Chair.

An Operation on the Os Calcis.—The Chairman presented a patient who, four years before, had received a lacerated wound in the heel by which a portion of the fleshy substance of its inferior surface was destroyed. A large and painful cicatrix had formed at the site of the injury, and walking had given the patient constant and severe pain, evidently due to the impact of the cicatrix against the rounded knuckle-like projection of the plantar surface of the calcaneum. As a plastic operation had been out of the question, it had occurred to him that relief might be obtained by sawing away a portion of the bone so as to obtain a perfectly flat surface inferiorly; this had accordingly been done; primary union had been obtained, and the patient was now able to walk on the heel thus flattened out without inconvenience.

Hysterical Monoplegia in a Male.—The Chairman also presented a young man about twenty-five years old in whom this condition was developed, the mild clonic spasm and its occurrence in a male patient making the case an uncommon one. This patient had fallen and struck on his back on a slippery pavement, had felt a sharp pain, and had at once lost full power to use the right leg. From this time on this limb had been affected with anæsthesia, the gait had been irregular, and if the patient lay down and moved the limb about, a clonic spasm appearing like an exaggerated tremor was at once produced. Any general effort produced violent trembling due to clonic spasm in the muscles of the neck and abdomen, and partial stoppage of respiration. Exquisite sensitiveness was complained of when a portion of the spinal column opposite the first dorsal vertebra was pressed with a piece of ice. However, the anæsthesia was diminishing, and when ether had been given, though the affected limb had remained weak while the patient was going under its influence, as he was coming out it had been used with the utmost vigor. It had become quite evident that the case was largely hysterical in its nature when it was also found that by suggestion the patient could be made to complain of the same pain in any portion of the spinal column touched with the ice as that which he had first felt. On being forced to run along the wards quite rapidly, he had used the affected limb freely and had not stumbled. Mild clonus was a rare affection, and had not been classified among any of the diseases of the nervous system. The monoplegia did not suggest a spinal paralysis. The condition present was probably then a hysterical neurosis, perhaps due to shock, and existing without the patient's being conscious that his own ideas were so largely the cause of it.

Modified Tracheotomy.—Dr. D. B. Delavan called attention to an expedient by which the ordinary operation of tracheotomy could be made much more satisfactory in its result to the patient. He had published an account of it several years ago, and had since used it repeatedly in his own practice to great advantage, but no notice of it had been taken by any one else in the profession.

The modification consisted in making a round opening in the trachea where it was desired to insert the cannula, cutting out with a small, sharp tenotomy knife a portion of two or more of the tracheal rings at once, instead of making a vertical slit and forcing the cannula through it. Several difficulties and accidents that sometimes occurred might be avoided in this way. The risk of making a false passage in inserting the cannula was entirely removed. Bulging forward of the fibrous tissue completing the tracheal tube posteriorly when the rings were flattened from in front in forcing in the cannula after the ordinary operation, and which had caused occlusion of the passage and death, was entirely prevented. The irritation and soreness in the edges of the distended parts, which usually continued for several days after the ordinary method had been followed, were thus obviated. When we considered that when a cannula was left in place for a few weeks the parts which the cannula pressed upon were absorbed and the opening became perfectly round, it would seem quite without objection to make such an opening at once. The method was particularly applicable for this reason in conditions, such as cancer and syphilis, where the cannula must be worn for a considerable time. It could be withdrawn and returned without difficulty from the first, and without the use of dilators. Granulations, malignant or other, would not spring up in the tissues about the cannula, as so often happened when a vertical incision was made.

Subluxation of the Head of the Radius, with a Resume of One Hundred Consecutive Cases.—Dr. W. W. Van Arsdale read a paper with this title, beginning with a clinical description of the injury and a comparison of the various theories held by different writers to account for the occurrence and peculiar symptoms of this lesion.

His conclusions were as follows: 1. The injury frequently occurring in children and called subluxation of the head, or displacement by elongation of the radius, is a well-defined surgical injury with well-marked constant symptoms and due to the same anatomical lesion in each case. 2. In frequency it makes one per cent. and over of the surgical injuries occurring in children, and it occurs almost entirely in children under nine years of age. 3. Its most frequent exciting cause is a sudden traction on the arm, but it sometimes results from a fall. 4. Its symptoms are absence of any appreciable deformity, loss of function in the arm, localized pain over the head of the radius on pressure, pronation of the hand, slight flexion of the elbow, and crepitation or snapping upon forced supination or restoration of function. 5. Treatment with a simple splint is advisable to prevent a recurrence of the condition. 6. The anatomical injury which causes the lesion has not yet been satisfactorily demonstrated.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN LARYNGOLOGY AND RHINOLOGY.

Meeting of February 26, 1889.

Dr. C. C. Rice in the Chair.

Epithelioma of the Soft Palate.—Dr. W. L. Cary presented a patient suffering from this form of malignant disease. He had come to the speaker with the statement that he had a growth in the soft palate and suffered pain on swallowing, and that a year previously he had had an acute attack of some sort of inflammation in this situation, but without any rise of temperature. Examination had revealed a small white spot on the uvula the size of a split bean, just at the edge of the palatine arch. Its rate of increase had been slow. He had then removed the growth by the galvano-cautery, which had put an end to the process for six months, but it had then recurred. There was now a general swelling of surrounding parts, with a tendency showing in a small spot to break down. Swallowing was painful, but there was no cachexia. The growth had been proved by microscopical examination to be a squamous epithelioma.

Dr. A. G. Gerster examined the growth through a new oral speculum, presented by Dr. Cary, made to exactly fit the irregularities of the mouth and to open still wider on attempts to close the mouth. He was of the opinion that the growth had made such progress that an operation would be followed by a

speedy return, although the fact that the glands were not involved tempted one to operate.

Dr. J. M. Kitchen presented several slender strips of sheet tin of various sizes and shapes, designed to form cores for intranasal plugs of shapes and sizes to suit any case, after being wound with cotton. With these plugs pressure could be made at any point in the nasal cavity, and, being bent to the form of the cavity, they would stay in place of themselves. Charged with antiseptics, such plugs could be kept in the nose for two or three days without discomfort, and could be made to serve many uses, including that of preventing adhesions between opposed surfaces, repressing exuberant granulations, making topical applications, preventing accumulation of secretions, and retaining flaps of mucous membrane in position after operations, until adherent. In many respects they could be used in place of the hollow rubber plugs used by Dr. Goodwillie.

Dr. Goodwillie remarked that in one exigency the rubber plugs were indispensable, and that was when it was desired to prevent adhesions between opposed surfaces or make pressure on these surfaces and at the same time have a current of air passing through. He had made such tubes of celluloid as well as of rubber.

Removal of a Tuberculous Tumor of the Larynx by Laryngo-pharyngotomy.—Dr. Gerster presented a patient upon whom this operation had been performed, and made some remarks on the technique and value of the operation. In connection with these remarks he presented another patient upon whom he had operated in a somewhat similar manner for the removal of a portion of a match stem imbedded transversely in the larynx, which had caused persistent dysphasia. Some months after the operation several cartilaginous sequestra had been coughed up, and the pain on swallowing had then entirely disappeared. He wished to call attention to the value of an operation for the removal of any circumscribed new growth from the larynx, and to a new means of diminishing the risk and the possibility of complications. Only six cases of solitary tumors of the larynx had been reported, but they were probably of more frequent occurrence than this would lead one to suppose. Tuberculous growths in the larynx which were strictly local—that is, which occurred without there being deposits elsewhere in the body—were, to say the least, very rare, and probably resulted, if at all, from inoculation. Most of such growths, then, were secondary. At one time, an operation for their removal had been thought to be precluded on this account, as in the case of anal fistulæ and tubercular inflammations in the genitals. Now we knew that if the progress of the inflammation in such a local deposit was slow and had not become too extensive, it was much better to remove it, and that the tubercular process in the lung was actually checked for a time by so doing. In connection with this statement, the speaker presented a man in apparently fair health, from whose knee he had some time previously excised a large amount of bone affected with tubercular caries, with the result that the fever, night sweats, cough, and emaciation from which he had till then been suffering had been for a time entirely suspended, and the man was now working at his trade again.

In the case of the patient from whom he had removed the solitary tubercular tumor (which was shown), the dysphasia, dyspnœa, and pain from which he had suffered had all been relieved, and so the pulmonary trouble markedly helped. Life had been prolonged for a time, and much suffering had been prevented. Tracheotomy could not have accomplished the same result. The cannula which he placed in the trachea when operating on the larynx had an attachment by which the portion of the tube which passed within the trachea could be increased in size at a certain point after its insertion. At the point in question the tube was composed of a framework of flat springs covered with rubber. The entrance of blood or secretions from the wound into the trachea was thus entirely prevented.

It was true that these secondary deposits of tuberculous matter were often found in patients who presented not the slightest signs of a lesion in the lungs. In such cases if some strain was brought to bear on the vital forces, it would often happen that dullness would soon become perceptible at one or both apices of the lung. Thus within a few weeks after removal of a testicle affected with tubercular disease from a stout patient whose lungs were apparently normal, he had seen pulmonary signs developed, the confinement and the shock of the operation having reduced the strength so that the "hoof" showed. The bronchial glands were in many cases the first tissues in the body to become the seat of tubercular deposits, and when the process had gone on until they had become cheesy, they became active sowers of the seed in either near or distant parts.

His main object in coming before the meeting was to place before the profession the value of operations for the removal of secondary deposits of tubercle. Such operations were not performed often enough. The only question which ought to be kept before the mind when a physician took charge of a case was as to how ultimate cure was to be effected. Thus, in the case presented, no other procedure, such as intubation of the larynx, could possibly have effected a cure.

Dr. Dillon Brown, in reviewing some of the uses and advantages of intubation of the larynx, referred to the case of the patient upon whom Dr. Gerster had operated in December, 1886, for the removal of a (supposed) tubercular growth of the larynx, and who had afterward come under his own care. Although the operation had been apparently successful, it had appeared as time went on that the patient could not remove the tracheotomy tube without being choked at once, and he had continued wearing the cannula until March, 1887, another operation having been done in the mean time for the removal of a deeply imbedded piece of match without relieving the tendency to choking as soon as the cannula was taken out. The larynx had then been intubated, and, although much pain and irritation had resulted (a thing which had never happened before in his experience), he had removed the tube after a week and the dyspnœa and dysphasia had not again appeared.

There was a brilliant field for the employment of intubation in gummata and œdema of the larynx. In syphilitic cicatrization relief could be obtained for a considerable time. He thought if the tube should be worn long enough, a permanent cure would result, and in every case there was a chance afforded to try the effects of constitutional treatment.

Dr. Gerster explained that the irritation caused by the intubation in the case which both he and Dr. Brown had had in charge had been due to the sequestra which had still been present, and that the recovery of the patient had really been coincident with his having finally expectorated them. No other operation than that which he had performed and no other procedure could have effected cure. Tracheotomy was an operation which he did only for tumors and foreign bodies; he had for some time past refused to perform it for other conditions producing dyspnœa, such as diphtheria.

NEW YORK SURGICAL SOCIETY.

Meeting of February 27, 1889.

The President, Dr. Lewis A. Stimson, in the Chair.

Extirpation of the Thyreoid Gland.—Dr. Charles McBurney presented two patients upon whom he had operated

for tumors of the thyreoid which interfered with respiration, and read a detailed account of the method used. (It will be published hereafter.)

Dr. J. A. Wyeth had in certain cases found the removal of the entire thyreoid a difficult operation. He had operated in eight cases with one death. In the latter instance the hæmorrhage had been the severest that he had ever had to deal with, and he had been compelled to abandon the operation. In the various cases in which he had operated the amount of hæmorrhage had differed considerably, and had seemed to depend upon the character of the tumor.

Dr. A. G. Gerster thought that the seeming contradiction in the experience of various surgeons as to the difficulty of controlling the hæmorrhage was due to differences in the method of treating the capsule of the goître. His experience had taught him that if all the layers of the capsule were split through to the parenchyma of the enlarged gland, easy and almost dry enucleation of the goître was the rule. If the capsule was only partly divided, the hæmorrhage would be large in proportion to the proximity of the line of division to the parenchyma. In certain forms of large goître of long standing, generally associated with calcification, the capsule contained a large number of much-distended and very brittle veins that, being already stretched to a great extent, offered every chance for laceration, and none almost for the formation of suitable masses for the application of ligatures. In these cases, as had happened once in the experience of Dr. Wyeth, extirpation had to be given up after a great deal of trouble and loss of blood.

If, on the other hand, the capsule was split through completely, a procedure often involving the necessity of applying a double row of ligatures along both sides of the cut for its entire length, enucleation would be found much easier—often astonishingly easy. It must be added that there was a considerable number of cases of goître in which a firm and not too vascular, rather loose capsule enabled the surgeon to remove the hyperplastic part of the gland, together with its vascular envelope. If the resistant bands of tissue were systematically divided between two mass ligatures, a nearly bloodless excision was often possible. But splitting of the capsule remained, after all, the best procedure.

Dr. Fred. Kammerer had witnessed many of the operations for the removal of the thyreoid in southern Germany and Switzerland. It was sometimes not easy to see, when cutting down on a thyreoid tumor, where the capsule ended and the parenchyma began. He did not entirely agree with Dr. Gerster as to the necessity of always getting through the capsule and enucleating a parenchymatous tumor, as hæmorrhage could generally, according to his experience, be avoided if the extracapsular operation was done systematically, as by Kocher's method. The ligation of the vessels on the tumor seemed to him to be the most troublesome procedure in the older methods of extirpation. This he would admit might be difficult. He referred, of course, to parenchymatous and not to malignant goîtres, where during the operation it was often impossible to limit the portion to be excised to the contents of the capsule.

Dr. McBurney remarked that in the case of the two tumors the removal of which he had just given an account of the capsule had been easily demonstrable, and the incision through the skin and fasciæ had exposed it at once. He entirely agreed with Dr. Gerster in thinking it a good general rule to get down to the part that was to be removed as the first and all-important step.

Rupture of the Quadriceps Extensor Tendon.—Dr. W. T. Bull presented a patient who had been successfully treated for the repair of this accident. He had been under the care of Dr. F. H. Markoe at Bellevue Hospital, where he had been admitted ten months prior to his appearance before the society. The sharp edge of a heavy body had fallen against his leg just above the patella. The power of extension had been completely lost, and a depression had appeared immediately above the patella, in front, but the lateral expansions of the recti had seemed to be intact. A posterior splint had been applied and kept in position for three weeks, when a plaster splint had been substituted and the patient allowed to go about on crutches. Passive motion had then been begun, and when the patient left the hospital the functions had been almost completely restored and were now perfect. The only trace of the injury was a thickening of the tissues just above the patella. The speaker then read a paper relating to the treatment of this injury. (See p. 421.)

The President had treated one case with the subcutaneous silk suture such as he used for fractures of the patella, and had obtained complete restoration of the functions of the joint. He believed that in this method the liability to the formation of adhesions which might seriously interfere with motion was less than after open suturing with exposure of the joint.

Dr. Gerster gave the history of three cases of rupture of the *rectus* part of the quadriceps muscle, just above the insertion of the tendon. Two complete ruptures had been observed in old people. The other one of the three was a case of partial separation in a middle-aged person. None of these patients had been subjected to an operation, and in all of them perfect functional results had been obtained after a simple treatment by rest in the extended position on a dorsal splint, supplemented by massage of the thigh, especially of the flabby quadriceps, beginning with the third week following the injury. The main difficulty was to be looked for in most cases in the excessive atrophy due to long inaction. Active and passive movements should be very gradually employed, and ought never to be forced or excessive.

Dr. Wyeth said that he could not agree with the reader of the paper in his argument that the restricting dressing should be removed after four weeks, especially when this treatment was applied to fractures of the patella. Nor could he agree with Dr. Gerster in advocating massage of the quadriceps muscle early in the management of such cases. He held that temporary atrophy of these muscles was a benefit rather than an injury, for a weakened muscle would not be causing so much constant traction on the ligament or band which was in process of organization between the two fragments. Moreover, the muscle would resume its tonicity in good time, when the patient had begun to move about. The treatment which he had adopted, and for which he was chiefly indebted to the instruction and experience of a great authority upon his subject, the late Professor Frank Hastings Hamilton, had for its object the prevention of strain upon this new ligament, until it became as thoroughly organized and strengthened as was possible.

Bearing in mind that a ligamentous band of union an inch or less in length, properly protected until it was organized, secured the greatest measure of usefulness to the member, he prevented free motion in the leg in the following manner: Hamilton's posterior splint and the figure-of-8 elastic flannel bandage were applied, and the limb was immobilized for six weeks, the approximating roller being tightened from time to time. At the seventh week the fragments were to be held firmly together, and the leg flexed to about twenty degrees. The splint, somewhat shortened, was then reapplied, and the patient, thus protected from accident, was allowed to go out on crutches. Passive motion was repeated every two weeks, always holding the fragments together to prevent strain and stretching of the forming ligamentous band. This was continued for six months, the patient moving about on crutches for three months, and after this with a cane. A knee check was then adjusted to prevent in-

jury in case of slipping, or any overflexion of the knee. This was worn for twelve months after the accident, and if this period ended in winter when the pavements were slippery, the protector was worn until the streets were safe. He removed the check at night, and made flexion at regular intervals to prevent adhesion of the patella to the femur, and to insure free motion at the joint, but always holding the fragments in juxtaposition at the same time, as nearly as possible.

He would not advise massage until after six weeks had elapsed from the date of the accident. He believed that the great number of failures to get recovery of function after fracture of the patella resulted from the practice of too early motion at the joint and too early removal of all protection at the knee.

Dr. Gerster replied that if the rupture did not involve much of the lateral extent of the fascia lata there would not be much disability in the limb afterward. He had seen patients with a wide separation of the tendon walk upstairs with alternating steps. The wasting of the muscles from disuse was the chief thing to be prevented. The mass of the new-formed ligament varied much in individuals; where it was large and solid, the best results in the way of treatment could be got. Where it was weak, no amount of prolonged fixation would prevent ultimate rupture of the ligamentous band.

Dr. F. Lange remarked that the extent and seat of the injury were important factors in determining the question whether any operation was necessary. He remembered a case in which the patient was able to raise the limb in extension, though with some difficulty, immediately after the injury. The rupture in this case had been just above the patella, and the gap narrow; probably, therefore, the lateral portions of the capsular ligament had been preserved. This patient had regained very good use of his limb. Massage had been used after the first two weeks had elapsed, and, though the limb had been kept in an elevated extended position, it had not been strictly immobilized, so that the patient had been able to make slight motions.

He had in several cases of old ununited fracture of the patella, where the upper fragment could not be brought down, cut across the rectus. However, this section had been made within the limits of the union with the vasti muscles, so that through the latter an indirect continuity had been preserved. Very good restoration of function had been obtained in these cases. It seemed to him that in the case presented by Dr. Bull the rupture had taken place within the limits of the vasti; at least, a depression could still be felt and seen at a point corresponding to that region.

Dr. McBurney said that he was guided in his treatment by the amount of the separation between the ends of the tendon. He considered that the principles of treatment were identical with those which governed the treatment of fractures of the patella. The operative treatment was usually necessary where the capsule was torn across entirely and the separation was considerable.

Dr. Bull was glad to note that the experiences of others had led them to no more positive conclusions than he had arrived at as to the best method of treatment. The results had been shown to be bad in half the collected cases. It was certainly not necessary to operate in cases such as had been mentioned by Dr. Lange, where the power of extension of the limb was preserved after the accident. In such it was probable that the lateral aponeurosis of the muscle was intact, or the rupture only a partial one; here the ends would be found not to be widely separated. He could not concur in the view that in following out the treatment by splints, without suture, it was necessary to keep the knee joint quiet for six months. Four weeks on a posterior splint, in bed, was time enough in which to secure a good union of the ruptured tendon. After that time he would allow a patient to walk, wearing a short posterior splint for perhaps two weeks more, and then leave the motion of the joint entirely to the discretion of the patient. He agreed with Dr. Gerster that if the tendinous union formed during the course of such management proved to be weak, and the power of extension deficient, massage should be employed, and finally the secondary suture.

Reports on the Progress of Medicine.

CUTANEOUS AND VENEREAL DISEASES.

By GEORGE THOMAS JACKSON, M. D.

Hydroxylamine is a recent addition to our list of drugs useful in dermatological practice. Eichhoff, a good and competent observer, says ("Monatsheft f. prkt. Derm.," 1889, No. 1) that he has found it very efficacious in lupus vulgaris, trichophytosis capitis, and trichophytosis barbæ. He warns us of its poisonous properties, and advises its use in a solution not stronger than one tenth of one per cent., as it is often very irritating. His favorite formula is: Hydroxylamine hydrochloride, a grain and a half; alcohol and glycerin, each an ounce and a half.

"Eczema partially cured by Vaccination" is the title of a short therapeutical note by Thomas, of Wellingborough ("Brit. Med. Jour.," Jan. 19, 1889, p. 128). The case was one of general and very persistent eczema in a child, and the vaccination was followed by marked improvement, no other treatment being used.

The Treatment of Eczema Impetiginosum by Picric Acid.—Cerasi ("Wien. med. Presse.," 1888, No. 47) reports rapid cure of these cases occurring on the face and scalp by covering the parts, after removing the crusts, with compresses soaked with a solution of picric acid (1 in 300 to 1 in 150).

The Treatment of Nævi by Electrolysis.—This method is recommended by Marshall, of Nottingham, Eng. ("Lancet," Jan. 12, 1889, fo. 73). He uses a needle attached to the positive pole, and says that the negative pole leaves a brown and disfiguring scar, causes more sloughing, and is more apt to be followed by hæmorrhage. [In quite an extensive experience we have not met with the production of a brown scar from the use of the negative pole.]

The Treatment of Rosacea.—Unna, in answer to a correspondent, says ("Monatsheft f. prkt. Dermat.," 1888, No. 22, p. 1162) that most cases of rosacea are associated with seborrhœal eczema, and yield to the treatment appropriate to the latter. There are some cases of *pure* rosacea that are due to a congenital abnormity of the cutaneous vessels, as shown not only by the redness of the nose, but also by the bluish-red color of the hands, disposition to frost-bite, and the like. This is excited by freezing of the nose, exposure to the sun, hyperæmic affections of neighboring parts, as of the nose in rhinitis, sharp changes of temperature, working before an open fire, alcoholism, sluggish circulation in the portal system, and the like. In the treatment of this pure rosacea, besides relieving any of the exciting causes, he recommends the internal administration of ichthyol for a long time in doses of fifteen to thirty grains a day, and the application to the nose during the night of a watery solution of ichthyol, or of a sulphur paste with ten per cent. of sulphur. When the diffuse redness is overcome the large vessels are to be treated by multiple punctures, followed by laying on of a damp cloth. For slight cases, and as an after-treatment if there is no great irritability of the skin, washing with ichthyol soap and warm water will render good service.

Lupus Miliaris, or acne lupus, is a rare disease of the skin, and very apt to be mistaken for a simple acne. It occurs upon the cheeks in the form of discrete, pinhead-sized, deep red, slightly raised papules, which do not tend to suppurate. Von During ("Monatsheft f. prkt. Dermat.," 1888, No. 22, p. 1131) has met with such a case and cured it by the following treatment: He applied a plaster muslin containing forty grains each of salicylic acid and creasote to a square yard of plaster mass. After three or four applications of this all the papules fell out, and the skin

healed rapidly under a plaster muslin of zinc oxide and ichthyol worn during the night, and a resorcin-zinc paste during the day. Some papules that appeared later were destroyed by the salicyl-creasote plaster, and the galvano-cautery.

The Treatment of Lupus.—Dr. Schütz, of Frankfort ("Münch. med. Woch.," Nov. 6, 1888) believes that the reason why the resulting scar from the treatment of lupus is so deforming is that the disease is seated in so many different layers of the skin, and that when the various foci are destroyed the different layers of the skin will heal at different rates. The deforming cicatrix is to be prevented by the regulation of the effort of repair on the part of nature. Various plans have been adopted for this, such as that of Lassar, given in the "Berl. klin. Woch.," 1887, No. 37; the use of antiseptic dressings, like that of corrosive sublimate proposed by Doutrelpont; or of mercurial ointment, as advocated by Gerhardt; or of the double-headed glue bandage of Unna. Schütz's method in the treatment of lupus is first to destroy the growth by the curette or cautery, and then to apply pyrogallic acid or chloride of zinc. So soon as granulation begins and the eschar is cast off under a sublimate bandage, he covers the wound with a "Carbolquecksilberguttaperchapflastermull," which is to be interpreted a gutta percha plaster muslin containing carbolic acid and mercury, and over this applies a number of coats of collodion. This is left on for from six to twenty-four hours, then removed, and reapplied after the edges of the wound are cleaned. Under this treatment granulation proceeds slowly but evenly, the edges of the wound lose their prominence, and finally there results a delicate, soft, and movable cicatrix. After the wound is closed it is to be dressed with some simple protecting ointment, and the cicatrix is to be treated daily with massage and rubbing with marble powder and soft soap. The diet and hygiene of patients with lupus must be carefully regulated.

Treatment of Leprosy.—Dr. Dreckmann, of Vienenberg, reports ("Monatsheft f. prakt. Derm.," 1888, No. 23) a case of advanced leprosy cured by Unna's method—that is, by the use of ten-per-cent. pyrogallol ointment on the forearms and hands, and ten-per-cent. chrysarobin ointment upon the rest of the body, excepting the face, where a salicylic acid and creasote plaster muslin was used. Ichthyol was given by the mouth in increasing doses from six grains up to forty-five grains a day. [We have just received a reprint of an article by Dr. Blanc, the distinguished dermatologist of New Orleans, who has tried substantially the same method of treatment in his hospital cases of leprosy. He reports that pyrogallol, resorcin, and salicylic acid were not at all satisfactory on the face, but useful on the body. Ichthyol up to six grains a day, internally, gave only negative results.—Ed.]

The Ways and Wanderings of the Contagium of Syphilis.—Lang believes ("Internat. klin. Rundschau," 1888, No. 51) that at the time of the infection with syphilis a cell infiltration takes place which forms a wall of isolation between the diseased center and the sound parts in the neighborhood. A part of the syphilitic poison is thus rendered harmless, while the rest gains access into the system either by means of the lymph cells into the lymphatics, or directly into the blood-vessels. If by the former way, the syphilitic infection will take place gradually; if by the latter, at once. Another way of infection is by what he calls regionary infection, by which is meant that the poison is carried into the regions in the neighborhood of the original focus through the interstices of the tissues, and there gives occasion to the formation of papules. The frequent infection of the rectum in women is, in most cases, due to the regionary infection from the primarily affected genitals. Another manner of the spreading of syphilis is the "post-initial infection," in which, on a region distant from the initial lesion, another initial manifestation appears, as on the lip from a genital chancre. An initial lesion with intact epithelium can only spread by way of the lymph channels and tissue spaces, while an ulcerated initial lesion permits all possible ways of infection. A part of the syphilitic contagium will be destroyed in the blood, a part got rid of by the excretory organs, and the rest can give rise to irritative processes, while some may remain for years quiescent, then to give rise to gummatous formations. During these years the poison must have undergone important modifications, as it is not infectious in the gummatous stage. The poison sometimes remains fixed in a certain organ without impairing the functions of the organ.

Miscellany.

The Continental Anglo-American Medical Society.—A considerable number of English and American physicians having accepted, in principle, the idea of an association of this kind, a meeting was held on March 14th, when the following gentlemen were present: Dr. Barnard, Dr. Boggs, Dr. Bull, Dr. Chapman, Dr. Darcus, Dr. E. Dupuy, Dr. Faure-Miller, the Hon. A. Herbert, Dr. Jennings, Dr. Linn, Dr. Loughnan, Dr. Murray, Dr. Nachtel, Dr. Warren-Bey, and Dr. Webb. In addition to these Paris practitioners, about forty from other places on the Continent have written to express their approval of the project, and many more are expected to send in their adhesions. At this meeting it was resolved to form a society under the above-mentioned title, limited to British and American physicians residing abroad, the first general meeting to take place in Paris, on Monday, September 30, 1889. This meeting, intended to organize the working of the society, was arranged to be held on that date at 4 P. M., and to be followed in the evening by a public dinner. Notice will be given, in due time, of the place of meeting. An executive committee was appointed to study the scope of the society, to draw up articles of association and by-laws, and to submit suggestions, all to be voted upon at the meeting in September. It was further decided to invite a certain number of distinguished members of the profession to become honorary presidents of the society. The following names were proposed: Sir T. Spencer Wells, Sir Joseph Lister, and Dr. Richard Quain, for England; Dr. Fordyce Barker, Dr. H. Weir Mitchell, and Dr. John S. Billings, for America; and Professor Ball and Brown-Séquard for Paris. With regard to the question of expense, the annual subscription for each member will probably not exceed five francs. The annual dinner, attendance at which will be optional, will entail a further expense of twenty francs for each member attending, such member to have the privilege of inviting any professional or lay friends at his own expense. The executive committee, however, contemplate inviting each year to the dinner about three of the leading members of the Paris faculty as guests of the society. The following-named gentlemen compose the executive committee: Dr. the Hon. Alan Herbert, 18, rue Duphot; Dr. Faure-Miller, 28, rue Matignon; Dr. Chapman, 224, rue de Rivoli; Dr. E. Dupuy, 53, avenue Montaigne; Dr. Barnard, 34, rue Washington; and Dr. Thomas Linn, 16, rue de la Paix. The last named to act as secretary. Gentlemen who desire to join the society are asked to communicate with the secretary or one of the executive committee.

The New York Academy of Medicine.—At the next meeting of the Section in Laryngology and Rhinology, on Tuesday evening, the 23d inst., storage batteries will be shown, and Dr. D. H. Goodwillie will read a paper on "Deafness as a Result of Nasal and Dental Diseases."

At the next meeting of the Section in Obstetrics and Gynæcology, on Thursday evening, the 25th inst., Dr. H. J. Boldt will read a paper on "The Manual Treatment of Diseases of the Pelvic Organs according to Brandt's Method," with a demonstration on a patient; and Dr. H. C. Coe will read a paper on "The After-history of Cases of Incomplete Ovariotomy."

THERAPEUTICAL NOTES.

Cannabin in Exophthalmic Goitre.—A recent number of the "Practitioner," quoting from the "Wiener medicinische Presse," No. 41, 1888, publishes the following formulæ recommended by Valieri, who has used cannabin in three cases of exophthalmic goître:

1. Four grains and a half of cannabin mixed with a sufficient quantity of sugar of milk to make five pills; to be taken in twenty-four hours.

2. Four grains and a half of cannabin, three ounces of distilled water, and one ounce of syrup of orange-flowers, mixed together; to be taken in teaspoonful doses in twenty-four hours.

Dysmenorrhœa.—Several formulæ for alleviating dysmenorrhœic pains are given in a recent number of the "Revue générale de clinique et de thérapeutique":

1. Equal parts of tincture of piscidia erythrina and tincture of viburnum prunifolium, twenty drops to be given four or five times a day.

Piscidia erythrina possesses antineuralgic properties. *Viburnum prunifolium* is an antispasmodic analogous to valerian, and a moderator of the excito-motor power of the medulla oblongata.

2. When the dysmenorrhœic pains are accompanied by menorrhagia, it is advisable to add to the viburnum *Hydrastis canadensis*, which has vaso-constrictive properties somewhat like those of ergot of rye and quinine sulphate. Twenty drops of a mixture of equal parts of the two tinctures may be given four or five times a day.

3. Under the name of a uterine sedative the following potion has been prescribed:

Tincture of viburnum prunifolium		20 drops;
Elixir de Garus, Syrup,	each	231·48 grains;
Distilled water		462·96 "

One soupspoonful to be given every half hour or every hour. [The *élixir de Garus* is made of compound tincture of saffron and syrup of *Capillus Veneris*, colored with caramel dissolved in orange-flower water.]

Creolin.—The "Deutsche Medizinal-Zeitung" for December 13, 1888, contains formulæ for the use of creolin in the treatment of diseases of the throat, nose, and ears:

1. *Otorrhœa* (Eitelberg):

Ten drops of creolin in a pint of lukewarm water, for an injection into the ears.

2. *Eczema of the External Ear and of the Openings of the Nostrils* (Eitelberg):

Creolin	1 part;
Vaseline	to 50 parts.

For an ointment.

3. *Diphtheritic Angina* (Schnitzler):

a. A solution of creolin 1 part, to from 100 to 500 parts of water, for a gargle.

b. A solution of from 1 to 2 parts of creolin in 100 parts of water, for swabbing.

4. *Diseases of the Larynx, especially Tuberculosis* (Schnitzler):

a. A solution of 1 part of creolin in 1,000 parts of water, for inhalation.

b. A solution of from 1 to 5 parts of creolin in 100 parts of water, for swabbing.

c. A mixture of from 1 to 5 parts of creolin and 100 parts of sugar of milk, for insufflation.

5. *Ozæna* (Lichtwitz):

Creolin	3 to 5 drops;
Distilled water	1 pint.

For douching the nose.

Revulsion by Iodogenous Paper.—One of the February numbers of the "Revue générale de clinique et de thérapeutique" calls attention to the results of investigations made by M. Aubert, of Lyons, and M. Eymonnet, his pupil. They recommend revulsion with nascent iodine by means of *papier iodogène*. It consists of three superposed sheets of paper separated from each other by gutta percha. The middle sheet is thin and unsized; those on the outside consist of blotting paper impregnated, one with a solution of iodide of potassium, the other with a solution of iodate of potassium and tartaric acid. The sheets are superposed after complete and absolute desiccation, and are kept away from all moisture. On wetting them, the tartaric acid reacts upon the alkaline iodide, hydriodic acid is evolved, which decomposes the iodic acid, and sets iodine free. The paper turns brown, and, owing to the intermediate piece of paper, the disengagement of iodine continues long enough to exercise a revulsive action upon the skin. When the disengagement of the iodine is finished, the paper turns yellow, then white. It then contains only acid potassium tartrate. The application of the paper is very simple. It should be moistened, placed in contact with the skin, and covered with a piece of gutta percha. The cutaneous revulsion is complete, and, as after the use of the tincture of iodine, terminates in a dry desquamation.

Podophyllum Ernodi.—A recent number of the "Lancet," quoting from "Pharmaceutical Journal," No. 970, 1889, says that it is probable that we shall soon look to *Podophyllum Ernodi* as a source of podophyllin instead of to *Podophyllum peltatum*. *Podophyllum Ernodi* is found in the Himalaya mountains, and is reported to be very abundant in Kunawin and Cashmere. The rhizome resembles that of the May-apple, but yields from 10 to 12 per cent. of resinous substance, while the American species yields from 3·50 to 5 per cent. The physiological action of the two appears to be identical. In the course of a few hours, half a grain of the resin mixed with a little sugar produces cathartic effects with some griping sensations.

A New Source of Digitalis.—The Austrian Pharmacopœia, says the "Lancet," orders *Digitalis purpurea*. Dr. Pasch-Ris has lately examined a wild form, *Digitalis ambigua*, found in some parts of Austria and Hungary. His experiments show that there is apparently no practical difference, chemical or physiological, between the two. Should these observations be confirmed, the present somewhat limited supply of digitalis will receive a valuable addition.

The Alkaloid of Ulex Europæa.—The "Monthly Journal of Pharmacy," quoted by the "Lancet," states that gorse (*Ulex europæa*) has been found to contain an extremely powerful alkaloid, ulexine. It apparently arrests all voluntary movements and reflexes by paralyzing the motor tract of the spinal cord, the trunks of the motor nerves, and the heart, though in the last case there is primarily a rise in arterial pressure Its diuretic action is as strong as that of caffeine.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

ELECTRIC CATAPHORESIS AS A THERAPEUTIC MEASURE.*

BY FREDERICK PETERSON, M. D.,
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IF two compartments separated by a membrane are filled with a fluid and in each an electrode is placed, there is a streaming of the fluid through the septum in the direction of the galvanic current—that is, from the positive to the negative pole; so that in the course of time there is an increase of fluid in the negative compartment. This osmosis, as is well known, occurs naturally without the use of electricity between two dissimilar liquids, the direction of the osmotic current being from the lighter to the denser liquid. But if the anode is placed in the denser liquid and the cathode in the lighter, this natural osmotic current is not only overcome but reversed. Du Bois-Reymond termed this the cataphoric action of the constant current. This streaming movement is analogous to that taking place in the semisolid sarcous substance of muscle when subjected to the constant current and observed under the microscope—a visible flowing of the contents of the muscular fiber from the positive to the negative pole causing a swelling of the fiber at the negative end. This is called Porret's phenomenon in living muscle.

Now, it has been found that the skin of animals is permeable to drugs. The degree of absorption varies in different animals and depends upon the quality of drug employed and the manner of its application to the skin. Thus the skin of the frog absorbs water or watery solutions rapidly (Guttman), while that of man does not do so at all because of the fat normally present upon the epidermis and in the pores. Solutions containing alcohol, ether, or chloroform, by removing the fat, render absorption easy (Parisot). All substances which are volatile and corrode the epidermis, like carbolic acid, are readily absorbed (Röhrig). Watery solutions striking the human skin in a finely disseminated spray may reach the interior of the body, probably by penetrating the interstices of the epidermis (Juhl).

Massage in connection with cutaneous medicaments causes easy absorption by forcing the particles into the pores. Wherever the epidermis is removed, as by an abrasion, burn, or blister, the transference of substances through the skin is rapid.

The cataphoric action of electricity has often been made use of experimentally to introduce drugs into the system through the skin. The anode moistened with a solution of strychnine has been applied to the skin of a rabbit, the cathode being placed upon any indifferent spot, and in a few minutes the animal has died from strychnine poisoning (H. Munk). In man quinine and potassium iodide have been thus introduced and subsequently detected in the urine (Landois and Sterling, "Physiology," p. 489).

Efforts have been made more particularly, however, for the purpose of producing a local anæsthesia by the use of electro-chemical osmosis. As far as I can learn, the first investigator in this direction was Dr. B. W. Richardson, who wrote two articles on "Voltaic Narcotism" in 1859.* He began experimenting in October, 1858, by producing a local anæsthesia with a solution of morphine on the anode. Then with a simple galvanic current and with tincture of aconite on the positive pole he brought about complete anæsthesia of a rabbit's ear, after trying in vain to do so with the current alone. After this he made the following solution:

℞ Tinct. aconiti..... ʒiij;
Ext. aconiti alc..... ℈j;
Chloroformi..... ʒiij. M.

One third of this was put on a sponge which was wrapped around the upper part of the hind leg of a dog, after shaving it, and attached to the positive pole, the other pole being applied to the ankle. In eleven minutes there was complete anæsthesia to transfixion with pins anywhere between the electrodes. A minute later a subcutaneous section of the tendo Achillis was made without pain. At the end of an hour the limb was amputated about an inch below the knee without a wince until the bone was sawed, when the animal screamed once, but it was not known whether this was from pain or terror. There was no pain in the subsequent manipulations. Twenty minutes later the animal ate heartily and walked about unconcernedly upon three legs. The wound healed by first intention.

Subsequently transferring his experiments to mankind, he painlessly removed a one-inch nævus from the shoulder of a ten-weeks babe, after half an hour's voltaic narcotism with five minims each of chloroform and tincture of aconite. Then, in five cases of extraction of teeth, a fine anode wound with cotton soaked in the same solution of chloroform and aconite produced complete anæsthesia in ten minutes. Afterward, the new method was used successfully in a case of strangulated hernia in a man; in one of tumor of the shoulder, of the size of an orange, in a woman aged forty-seven; and in one of staphyloma of the cornea. Equal parts of chloroform and tincture of aconite were used in all, and the duration of the narcotic process varied from half an hour to an hour.

It is needless to say that Richardson's articles roused a storm of opposition in the medical press of England and the continent. The ground taken by his opponents may be illustrated by the conclusions of A. Waller,† which are as follows: Insensibility from so-called voltaic narcotism is produced solely by the local absorption of the chloroform and aconite mixture. Anæsthesia is produced with equal efficacy by the mere topical application of the narcotic mixt-

* Read before the Section in Theory and Practice of the New York Academy of Medicine, February 19, 1889, and before the Alumni Association of the Buffalo Medical College, March 26, 1889

* "Med. Times and Gazette," February 12 and June 25, 1859.

† *Ibid.*, March 19 and July 30, 1859. See, also, views of J. Althaus, "Wien. med. Woch.," ix, 1859, p. 433.

ure without the electric current. The procedure is in itself painful, and the result is inflammation and disorganization of the skin.

It is to be regretted that Richardson himself subsequently abandoned the position he had taken with regard to voltaic narcotism.*

The subject slumbered for more than twenty-five years, and has only of late years been revived, or rather rediscovered, for Richardson's articles had in the mean time been so completely forgotten that no reference has been made to them anywhere until this moment.

Wagner† reintroduced the matter to the profession in 1886 by a short note on the possibility of cocaine anæsthesia with the galvanic current, but without definite experiment.

But Adamkiewicz has written more fully upon this subject of late than any one else. His first article in 1886 described what is known as his diffusion electrode‡ (see Fig. 1), with which he professed to introduce chloroform into tissues and produce local anæsthesia. He found chloroform would evaporate too rapidly from the ordinary sponge electrode, and hence devised this new instrument. It holds three c. cm. of fluid in a hollow brass cylinder, the bottom of which is of porous carbon. Over the carbon bottom a piece of moistened linen is stretched to prevent burning when in contact with the skin. This instrument is made the anode, of course, and applied to painful spots in neuralgia with a three to five or seven milliampère current. He professed to obtain a gradual anæsthesia with disappearance of pain, and had employed the method with chloroform in rheumatic pains and neuralgias of the intercostal and trigeminal nerves.

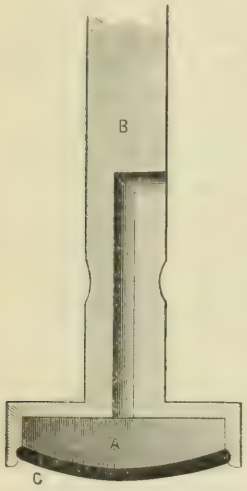


Fig. 1.—Adamkiewicz's diffusion electrode. A, cavity to hold chloroform; B, metal part of electrode; C, carbon bottom of cavity.

This revival of Richardson's discovery was again met by strong opposition and criticism. Paschkis and Wagner# maintained that chloroform was almost a complete insulator and did not conduct at all; that, though anæsthesia was produced, it was solely due to contact of the chloroform with the skin, and that the gradual disappearance of the chloroform from the electrode, noticed by Adamkiewicz and ascribed by him to cataphoresis, was nothing but an evaporative phenomenon.

Adamkiewicz replied that, though a poor conductor, chloroform did conduct, and that anæsthesia was produced in four minutes, first to temperature and then to pain; that with a strong current deep sloughing could be produced in a few minutes, which chloroform alone could not induce for hours; and he was able to show cataphoresis with the galvanic current in a rabbit's ear by staining chloroform with gentian violet.

Afterward he reported three cases of neuralgia, at the sixth *Congress für innere Medicin*,* relieved by his method with a one to seven milliampère constant current where other means had failed to do any good.

Lumbroso and Matteini† have employed chloroform with ordinary electrodes and ten to twelve milliampères in neuralgia, always with great success in relieving pain, whereas the current alone without chloroform produced no result.

Dr. J. L. Corning‡ has reported some experiments of his with cocaine cataphoresis. He tried a five-per-cent. solution with the anode and produced a slight effect. He then perforated the skin by means of the Baunscheidt needles, and was able to produce anæsthesia with a two-and-a-half-per-cent. solution of cocaine on an ordinary sponge electrode. He reported, however, no cases.

My own experience with electric cataphoresis has extended over many months of time, and my experiments number much over a hundred, about a fourth of which I report in detail. Actuated by the great diversity of opinion among the investigators I have quoted, I began at the foundation, in order to demonstrate to my own satisfaction the actual facts in a scientific manner.

Experiment No. 1.—*Uselessness of the Adamkiewicz Electrode.*—Barrett fifty-cell chloride-of-silver battery. Placed three c. cm. of a four-per-cent. aqueous solution of Merck's cocaine in the Adamkiewicz electrode, diameter four ctm., and made it the anode. Applied this to skin over first interosseous muscle between thumb and index finger of left hand, an ordinary sponge-covered negative electrode five ctm. in diameter being placed in the palm of same hand. Both sponge and linen over the two electrodes were first well moistened. The current from eighteen cells was used for three minutes. No change of any kind in sensibility.

Experiment No. 2.—Same details as in No. 1, but current contact for five minutes. No change in sensibility.

Experiment No. 3.—*Current Painful.*—Same details as in No. 1, except that twenty cells were used for three minutes, causing severe prickling and burning sensation at once. Very feeble anæsthesia to touch and slight hyperalgesia on pricking, possibly due to the pressure on the terminal sensory filaments by the intense congestion produced by the anode. Sensibility normal three minutes later.

Experiment No. 4.—Same details as in No. 3, but current applied for ten minutes. Exactly the same sensory disturbance as in last experiment.

Experiment No. 5.—*Defects in Adamkiewicz's Electrode.*—The Adamkiewicz electrode was replaced by an ordinary sponge-covered metal electrode two ctm. in diameter soaked in the four-per-cent. solution of cocaine. Details same as in No. 3. Current applied for six minutes. Could then prick with a needle until bleeding occurred, in a spot one ctm. in diameter where cocaine had been applied, without its being felt, and there was also complete anæsthesia to touch and temperature. This anæsthesia lasted ten minutes. Investigating into the cause of this remarkable difference in results, I found that the electrode

* "Med. Times and Gazette," Feb. 3, 1866.
† "Wiener med. Presse," 1886, S. 212.
‡ "Neurolog. Ctrlbl.," Bd. v, S. 219–497.
Ibid., Bd. v, S. 413.

* "Neurolog. Ctrlbl.," Bd. vi, S. 238.
† "Sulla cataforesi elettrica," "La Riforma medica," July and November, 1886.
‡ "New York Med. Jour.," Nov. 6, 1886.

of Adamkiewicz was absurdly faulty in construction. The metal cylinder with its carbon bottom was a piece of inexcusable stupidity. As the electric current travels where there is least resistance, it is evident to the merest tyro that the whole current will traverse the metallic part of this electrode, and not a vestige pass through the fluid and carbon disc, when it is applied closely to the skin.* The resistance of chloroform amounts to billions of ohms. I consequently abandoned any further use of this instrument.

Experiment No. 6.—*No Anæsthesia with Cocaine alone.*—This experiment was undertaken for the purpose of ascertaining if the electric current really had any effect in hastening anæsthesia. A four-per-cent. solution of cocaine was applied to the skin of the dorsal surface of my left hand for twelve minutes by holding the open mouth of the bottle containing the solution against it. The skin surface in contact with the solution was one ctm. and a half in diameter. No anæsthesia of any kind was produced.

Experiment No. 7.—*None with Ten-per-cent. Solution.*—For same purpose as No. 6. Soaked a metal sponge-covered electrode, two ctm. square, in a ten-per-cent. solution of cocaine and applied to skin over first interosseous of my left hand for ten minutes without current. No anæsthesia whatever produced.

Experiment No. 8.—*No Anæsthesia with Current alone.*—Same electrode as in No. 7 to same place. A large sponge-covered wire-netting cathode, some eight by twelve ctm. square, in the palm of same hand. Sixteen cells of a Grenet battery for six minutes without cocaine. No anæsthesia whatever.

Experiment No. 9.—*Current and Cocaine together cause Marked Anæsthesia.*—Same electrodes and application as in No. 8, but with ten-per-cent. solution of cocaine on the anode. Contact for five minutes with sixteen cells of Grenet battery. Complete anæsthesia to touch, pain and temperature lasting over an hour in surface in contact with anode. It is known that the anode normally paralyzes the vaso-motor nerves, producing congestion and œdema, while cocaine has the opposite effect, contracting the capillaries; but when applied together, the normal electric effect outbalances that of cocaine, and the part under the anode remains congested. The current itself with this strength is somewhat painful at first at the anode, but as anæsthesia appears the pain gradually diminishes and ultimately disappears.

Experiment No. 10.—Exactly same details in every respect as in No. 9, but applied to the hand of Dr. J. A. Booth instead of my own. Same anæsthesia as on myself. Repeated this the next day on Dr. Booth for seven minutes, with same result. The anæsthesia in these short applications is always limited to the area of the anode.

Experiment No. 11.—*No Effect with Cathode.*—Exactly same electrodes and application as in No. 9. Same number of cells, but commutator reversed so that the ten-per-cent. solution of cocaine was on the cathode. Contact of current for five minutes. Result: Continual increase of pain at spot under cathode and no anæsthesia whatever, the very opposite effects produced by the anode.

I had now satisfied myself that a watery solution of cocaine alone, applied to the skin, or upon the cathode with a strong continuous current, and that the current alone without cocaine, could produce no cutaneous anæsthesia, but that there was an actual cataphoresis of the cocaine solution and consequent anæsthesia of considerable duration with the anode. I then proceeded to make therapeutic use of this method.

Experiment No. 12.—*Successful Use of Cocaine; Cataphoresis in a Case of Supra-orbital Neuralgia.*—Dr. E. C. Seguin. kindly placed at my disposal an obstinate and severe case of right supra-orbital neuralgia. L. E., female, aged forty. Duration of neuralgia, a year and a half. Everything tried unavailingly. Suffering every few minutes with the usual agonizing pains of the disease. There was slight analgesia over right half of the forehead and right side of the nose, but exquisite hyperæsthesia of the tactile sense in the same areas, so that a slight touch or breath of air was exceedingly painful. There was great tenderness on pressure. The two-ctm. square anode with a ten-per-cent. solution of cocaine was placed in the right supra-orbital region over a painful spot, and the eight by twelve ctm. sponge and wire cathode in the right palm. Nine Grenet cells were used for three minutes, then raised to eleven cells for two minutes longer, which caused prickling but no pain; and then raised to thirteen cells, which was too painful, and was reduced to twelve cells and continued for five minutes. The whole application lasted ten minutes without break of current. There was no neuralgic pain during this time and the hyperæsthesia had disappeared. There was the expected anæsthesia. The patient was completely relieved from pain for from four to five hours.

Experiment No. 13.—A second similar application was made the next day in the same case by Dr. Seguin at his office with equally gratifying results.

Experiment No. 14.—Same case and same electrodes as in No. 12. Seven Grenet cells, five milliampères current strength, ten-per-cent. solution of cocaine, six minutes' application. Equal relief.

Experiment No. 15.—Same case and details. Eleven cells, ten-per-cent. solution of cocaine, six minutes. Equal relief.

Experiment No. 16.—Same case. Application by Dr. Seguin. Ten-per-cent. solution of cocaine, fifteen milliampères current strength, twenty minutes' contact moving slowly over different parts of right supra-orbital region. Very great relief for five hours.

Experiment No. 17.—Same case. Sixteen to twenty cells, ten-per-cent. solution of cocaine, five to seven milliampères current strength, nine minutes. Same relief. In this case aconitine pushed to its toxic effects did not relieve pain. The cataphoric application is still in use in this case, and always with the marked results mentioned. Latterly several applications of the anode with a twenty-per-cent. solution of cocaine have been still more distinctly beneficial. On one occasion she had eleven hours of perfect freedom from pain, the longest interval of relief in a year and a half. Whether any actual curative effect will be produced it is now too early to determine. The patient herself is so convinced of the efficacy of this method that she will now try nothing else.

Experiment No. 18.—*Successful Use of Cocaine Cataphoresis in another Case of Chronic Supra-orbital Neuralgia.*—This second case was also placed at my disposition by Dr. Seguin. J. F., male, aged sixty, extreme suffering from right supra-orbital neuralgia for twelve years. Internal administration of aconitine is gradually relieving him, but pains every few moments exceedingly severe. Same electrodes and application as in No. 12. Ten-per-cent. solution of cocaine. Five cells, six minutes. Anæsthesia slight. Pain relieved. Can not endure so much current as No. 12.

Experiment No. 19.—Same case. Ten-per-cent. solution of cocaine. Nine cells of Grenet battery. Three milliampères and

* I see that this has also been quite recently pointed out by J. Hoffman ("Neurolog. Ctrlbl.," Nov. 1, 1888).

a half current strength. Six minutes and a quarter. Great relief and considerable anæsthesia.

Experiment No. 20.—Same case. Very little pain for past forty-eight hours since last application. Aconitine probably doing its work. Great tenderness on pressure over supra-orbital nerve. Cocaine as before. Eleven cells, seven minutes. Complete anæsthesia produced. No pain on pressure.

Experiment No. 21.—Same case and condition as in last. Cocaine as before. Fifteen cells, five milliampères, ten minutes. Same result.

Experiment No. 22.—Same as last. Fifteen to eighteen cells for eight minutes. Same result.

Experiment No. 23.—*Successful Use of Cocaine Cataphoresis in Inferior Maxillary Neuralgia.*—Tried by Dr. J. A. Booth, and notes kindly furnished me by him. Inferior maxillary branch of left trigeminal. Neuralgia for three weeks. Cathode in right hand. Anode over left mental foramen. Ten-per-cent. solution of cocaine. Both electrodes five centimetres in diameter. Seventeen Leclanché cells, seven milliampères current strength, five minutes and a half contact. Spoke very soon of relief caused. Slight anæsthesia produced.

Experiment No. 24.—*Deep Analgesia with the Cataphoric Use of Aconitine.*—I now performed several experiments upon myself with the same apparatus as before, but substituting an alcoholic solution of aconitine (gr. iv to ℥ j) for the cocaine on the anode. Result: In two or three minutes deep-seated analgesia but tactile hyperæsthesia, a painful burning sensation, the area covered by anode whitened and elevated. The analgesia to pricking and the burning sensation continued for an hour. The pallor disappeared after a quarter of an hour, giving place to redness. There was no excoriation.

Experiment No. 25.—*Relief of Dorsal Neuralgic Pains in Locomotor Ataxia by Aconitine Cataphoresis.*—S. B., male; a case of locomotor ataxia suffering from intense neuralgic pains in the back at mid-dorsal region. Cathode on left side of abdomen. Anode one centimeter in diameter with aconitine as in No. 24 to region of greatest pain. Fourteen Leclanché cells, five to six milliampères current strength, four minutes application. A white elevated disc larger than the area of anode was produced which was completely analgesic and anæsthetic for an hour, but in which there was a burning sensation for an equal length of time. The neuralgic pains were relieved for eight or nine hours. This was tried again a few weeks later with ten minims of tincture of aconite on the anode, with equal effect.

Experiment No. 26.—*Relief in a Case of Double Trigeminal Neuralgia from Cataphoric Use of a Mixture of Cocaine and Aconitine.*—E. B., female, aged thirty; excruciating double trigeminal neuralgia of a year's standing, upper two branches. Had tried blisters, electricity, and aconitine internally, and once had morphine habit. No day without pain. Twenty-eight chloride-of-silver cells. Water rheostat. Twenty-per-cent. solution of cocaine on anode one centimetre in diameter to right temple over painful spot for twelve minutes. Cathode six by ten centimetres in right palm. Complete anæsthesia and analgesia and relief in that side. Same for five minutes to left temple with like beneficial result. Then four minutes over main trunk of nerve in front of right ear with a mixture of equal parts of twenty-per-cent. solution of cocaine and the solution of aconitine (gr. iv to ℥ j), causing deep anæsthesia to touch and pain. With this last there was slight burning sensation at first, but it subsided in a minute or two. Relief from pain experienced for several hours.

Experiment No. 27.—*Cocaine and Aconitine Cataphoresis.*—I now thought it best to try some further experiments upon myself. A 6-x-10-ctm. cathode was placed in the left palm, and the one-ctm. anode over the left first interosseous, as before. The anode was well saturated with a mixture of aconitine and cocaine, as in the last experiment. Twelve chloride-of-silver cells; five minutes' application. Result: complete anæsthesia to touch, pain, and temperature over a space three times the area of the anode, without burning sensation as when aconitine was used alone. There was at first great pallor of skin beneath the anode, which gradually gave way to slight redness in a quarter of an hour. There was slight return of tactile sense in fifteen minutes, and in twenty minutes slight hyperæsthesia to touch, temperature, and pain.

Experiment No. 28.—*Trial without Current.*—Same electrode, saturated with same solutions as in No. 27. Held it on the back of my left hand without the galvanic current for eight minutes, frequently rubbing in order to hasten absorption. There was no effect whatever save redness produced by rubbing; no anæsthesia.

Experiment No. 29.—*Very Mild Current for a Longer Period of Time Successful.*—As in some of the experiments here described unpleasantly strong currents had been used, I tried upon myself the effect of a mild current for a longer period of application than usual. Same electrodes, points of contact, and solutions as in No. 27. Six chloride-of-silver cells; current imperceptible; ten minutes' duration. Marked anæsthesia to pain, touch, and temperature resulted as before.

Experiment No. 30.—*Use of Chloroform without Current.*—Held a sponge, two ctm. in diameter, well saturated with Squibb's chloroform, against mid-dorsal surface of left hand, frequently rubbing, for ten minutes. There was smarting, stinging pain during the whole application, with intense redness, a very slight superficial anæsthesia to touch, but none to pain of pricking. No current used. The trivial anæsthesia disappeared in two minutes, when the part became hyperæsthetic. The redness disappeared in an hour. There was no excoriation of epidermis.

Experiment No. 31.—*Cataphoric Use of Chloroform and Bad Effects.*—Same electrodes and position as in No. 27. Anode saturated with Squibb's chloroform. Eighteen chloride-of-silver cells. Six minutes' application. Complete anæsthesia to touch and pricking with needle in area of anode, lasting barely four minutes. Application more painful even than that of aconitine. There was no insulation by chloroform. The frequent use of the interrupter showed that a strong current was passing. There was a general redness at first. An hour later there were œdema and pallor, surrounded by an aureole of redness. Twelve hours later there were swelling, congestion, redness, dermatitis, and vesication. A week elapsed before complete healing of the injury. There was sloughing of the epidermis and part of the cutis vera.

CONCLUSIONS.

The cataphoric action of the constant current is beyond doubt or question.

The use of the Adamkiewicz electrode or of chloroform for cataphoresis is altogether inadmissible.

My own experiments have been chiefly with cocaine and aconitine.

With the former, or with the two combined, a deep anæsthesia may be produced in conjunction with the anode, sufficient for the relief of pains in superficial nerves, or for small operations—such as the painless removal of cutaneous growths, or the electrolysis of hair roots.

The anæsthesia may be made rapid by the use of strong currents—an advantage in neuralgias—or slowly produced with a current imperceptible to the patient.

Wherever and whenever the anode is employed for the relief of pain, its efficacy will be greatly increased by moistening it with a ten- to twenty-per-cent. solution of cocaine.

Rubbing the skin with a little alcohol or chloroform, to remove the oil globules previous to the application, will hasten the effect.

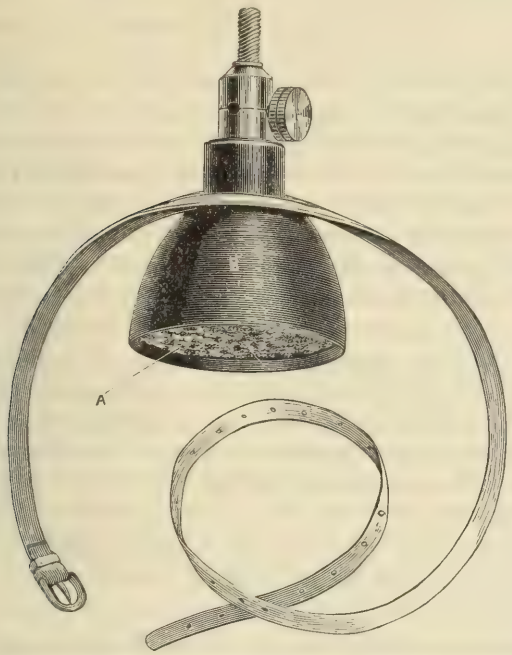


FIG. 2.—A simple cataphoric electrode with rubber cap to prevent evaporation. A, sponge-covered metal electrode; B, soft-rubber bell-shaped cap.

Cocaine cataphoresis is particularly of benefit in neuralgias of the trigeminus and its branches.

If volatile solutions are used, evaporation may be prevented by the employment of a tight-fitting, bell-shaped, soft-rubber cap, adjusted over the end of the electrode, as in Fig. 2. This is quite sufficient for all therapeutic purposes.

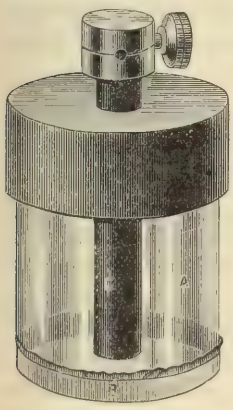


FIG. 3.—A perfected diffusion or cataphoric electrode. A, glass holder for fluid; B, membrane bottom of cavity; C, carbon conductor in a cork.

For more exact physiological experiment or dosage, it would be better to employ the cataphoric electrode I have devised (illustrated in Fig. 3), which corrects the imperfections of that of Adamkiewicz.*

The law should not be lost sight of that the amount of electrical osmosis grows with the resistance of the fluid acted upon. Hence the enormous resistance of chloroform adds to its cataphoric power. The electrode of Adamkiewicz doubtless did carry chloroform into the tissues, notwithstanding the criticisms of Wagner and Hoffman, for the bottom, when in use, is covered with moist linen, and no doubt a thin layer of chloroform would get between the circular metallic rim and the skin. Hence both Adamkiewicz and Hoffman are right in some of their statements and wrong in others. My own experiments with chloroform sufficiently attest this.

In none of the experiments with cocaine or aconitine did any excoriation or other injury to the skin follow, but occasionally there was slight scaling of the epidermis. There were, of course, no constitutional effects.

I would suggest the use of electric cataphoresis for other purposes than that of producing topical anæsthesia. Wherever, for instance, iodine is used as a local application over swellings or tumors, the galvanic anode will greatly add to the efficacy of the medicament.

* I have had these electrodes made for me by Messrs. Waite & Bartlett, of this city.

TREATMENT OF PNEUMONIC FEVER.

By EDWARD F. WELLS, M. D.,
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(*Concluded from page 378.*)

In the beginning of the attack the pain is usually severe, and occasionally excruciating. It is generally limited in duration to the first three or four days, declining and ceasing spontaneously. It is the opinion of all writers that pain should be relieved, and the only difference in their views is as to the means most useful and least detrimental in the attainment of this end.

Early in the attack sinapisms and dry or wet cups are beneficial, and later stimulating liniments and blisters, according to the exigencies of the case, are useful. Hot applications are grateful and beneficial throughout the entire course of the disease. These measures not only relieve pain and dyspnœa, but they also tend to limit the deposit and promote the absorption of the exudate.

The sinapism should be large and more or less energetic according to the age and nervousness of the patient. It should be placed over the local seat of disease and allowed to remain only sufficiently long to cause decided redness of the surface. It may be repeated at intervals until pain is no longer complained of.

If the pulmonary inflammation is unilateral, the affected side may be immobilized by careful strapping,* or if it is bilateral, a thoracic bandage † may be applied. These must be promply removed if there is inability to expel the bronchial secretions, and they are only useful in the early stages of the attack.

A blister often relieves pain almost immediately,‡ and, if milder measures fail to afford relief, one should be applied.

The blister finds its most appropriate place in those cases in which pain continues long past the time in which it usually

* Bemis, "N. O. Med. Jour.," July, 1878; Hilton, "Lancet," New York, 1852, vol. i, p. 350; Mitchell, "Therap. Gaz.," Nov., 1885, p. 721.

† Gehrung, "Am. Prac.," Aug., 1877, p. 73, and "St. Louis Clin. Rec.," June 17, 1874; Hartshorne, "Essen. of the Prac. of Med.," 1874, p. 167; Roberts, "Practitioner," June, 1874.

‡ Alford, "Med. World," 1888, p. 230; Brunton, "Therapeutics," 1885, p. 926; Luckie, "Am. Jour. of the Med. Sci.," vol. viii, p. 354.

ceases, with delay in the appearance of the crisis. Under such circumstances I have so often seen benefit promptly follow the application of a blister as to render it highly improbable that the improvement was merely a coincidence.*

The location of the blister should be, as a matter of consistency, over the local lesion, although this has been a matter of amusing dispute.

Thus Baglivi † applied them to the legs, Andral ‡ to the legs and arms, Cunning # to the shoulders, while Cullen,‖ Pringle,^ and others gravely argued that they should be applied to the chest.

For the relief of the soreness remaining after the subsidence of the acute pain, and which often continues long into convalescence, nothing is so useful as a terebinthinate liniment.◊ Indeed, it may be employed with advantage throughout the attack.

Morphine should be given ‡ in small doses, repeated as frequently as necessary to allay the pain,‡ anxiety, and harassing cough. If the pain is very severe, it may be used hypodermatically.

Opium, which is a royal remedy in the early stages of pneumonic fever, was either condemned or awarded only the scantiest praise by the older authors.‡ It was, however, used by Hamilton ** with results so satisfactory as to "fill him with astonishment." It seems strange that so long a time was required to make its virtues widely and fully known, yet so learned a physician as Laennec †† was not aware that it had been recommended alone before his day, and Armstrong ‡‡ deemed it necessary to refer very particularly to it.

Although entertaining an exalted opinion of the usefulness of this drug in the very earliest stages of properly selected cases, yet I deem it a duty to enter my emphatic protest against the reckless practice which keeps the patient profoundly narcotized from the time he is first seen by his attendant until he is ready for the undertaker, or, perchance, escaping both the disease and its more formidable remedy, (?) recovers.*

Solanine,† hyoscyamus, ‡ asclepias tuberosa,# the bromides, ‖ etc., have been offered as substitutes for opium,^ but they are almost worthless when relief is really required.

The cough in the early days of the attack will be apt to be very frequent, painful, and distressing, and will require attention. By keeping the atmosphere of the sick-room moist and of an equable temperature, and by the use of proper remedies, the cough may be greatly relieved. Morphine, in small doses and repeated at suitable intervals, is a most useful remedy. It may be often advantageously combined with chloroform, dissolved in a palatable syrup. Other articles of the materia medica—*e. g.*, codeine,◊ belladonna, ‡ oxalate of cerium, ‡ cocaine, ‡ etc.**—form useful additions or substitutes under certain circumstances. If the cough seems aggravated by dryness of the bronchial mucous membrane, apomorphine, pilocarpine, or ipecacuanha may be added to the cough-mixture. If, however, there is excessive secretion, atropine is the proper adjuvant.

Dyspnœa is a symptom which is very distressing to the patient. It depends upon various causes, most of which are dangerous conditions, and it should be relieved if it is possible to do so. If it is due to an overfull right side of the heart and the accompaniments of this state, free bleeding is the remedy to be relied upon.

Veratrum viride and other arterial sedatives are useful, but they do not compare favorably in promptness and efficiency with venesection in severe cases.

When there is joined to the dyspnœa irregularity of breathing, with great nervous excitement, gelsemium acts very nicely.†† It diminishes the frequency of the respirations, obtunds nervous sensibility, and acts upon the sympathetic nerve. ‡‡

If the difficulty in breathing depends upon a filling of the air-passages with bronchial secretions, an emetic,## especially in infantile cases, is indicated.

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* For further information see Chomel, "Pneumonie," Leipzig, 1841, S. 383; Cunning, "Dublin Hosp. Reports," vol. v; Gerhard, "Diseases of the Chest," Philadelphia, 1860, p. 205; Hart, "Jour. of the Am. Med. Assoc.," Oct. 10, 1885; Lépine, "Pneumonie," Wien, 1883, S. 171; Watson, "Prac. of Phys.," Philadelphia, 1845, p. 586. They are objected to by Bettelheim, Lépine's "Pneumonie," S. 171; Chambers, "Lancet," New York, 1862, vol. ii, p. 260; Dauvergne, "Med. Rec.," May 16, 1885, p. 546; Dejean, "Bull. gén. de thérap.," 1885; Flint, "Prac. of Med.," Philadelphia, 1868; Fox, "Reynolds's Syst. of Med.," Philadelphia, 1880, vol. ii, p. 213; Goldmann, "Med. Rec.," Jan., 1884; Louis, "Mém. sur la saignée"; Wyss, "Fortschr. d. Med.," Jan. 5, 1887; Ziemssen, "Pneumonie," Berlin, 1862, S. 282.

† "Prax. med.," 1751.

‡ "Med. Clin.," Philadelphia, 1843, vol. ii, p. 208.

\# *Op. cit.*, and "Am. Jour. of the Med. Sci.," vol. ii, p. 432.

‖ "Prac. of Phys.," Philadelphia, 1792, vol. i.

^ "Dis. of the Army," London, 1768.

◊ See, also, Todd, "Lancet," New York, 1855, vol. ii, p. 498.

‡ Even to infants. See Holt, "Med. Rec.," Feb. 21, 1885, p. 203.

‡ Objected to by many. See McBride, *op. cit.*; Raven, "Practitioner," vol. xxxi, p. 42; Loomis, "Prac. of Med.," New York, 1884; *et al.*

‡ Borsieri, "Med. Prac.," vol. iv; Chomel, *op. cit.*, S. 383; Frank, "Cur. hom. morb.," lib. ii; Lieutaud, "Méd. prat.," Paris, 1761; Pringle, "*op. cit.*; Störck, "Feb. irreg. hist.," 1766; Sydenham, "Works," London, 1788, vol. i; Willis, "De med.," S. i, cap. viii; *et al.*

** "Med. Com.," 1785, vol. ix, p. 196.

†† "Med. Auscult.," New York, 1830, p. 252.

‡‡ "On Fevers," 2d ed., p. 244.

* Gadbury, "Abortive Treat. of Pneumonia."

† Brunton, *op. cit.*, p. 835.

‡ Tribolet, "Allg. med. Ann.," 1816.

\# Sawyer, "Jour. of the Am. Med. Assoc.," July 31, 1886, p. 123.

‖ Porteous, *ibid.*, Aug. 7, 1886, p. 154.

^ Gilbertson, "Lancet," 1884, vol. i, p. 129; Swett, "Dis. of the Chest," p. 112.

◊ Garrod, "Med. Times and Gaz.," March 26, 1864, p. 333; Mohammed, "Birmingham Med. Rev.," August, 1885.

‡ Hart, *op. cit.*

‡ Smith, "N. Y. Med. Rec.," May 1, 1880.

‡ Brunton, *op. cit.*, p. 222; Gräpfer, "Allgem. Cent.-Zeit.," June, 1885; Schneider, "Therap. Gaz.," March, 1885, p. 774.

** Ergotine, see Allan, "Brit. Med. Jour.," 1884, vol. ii; vapor of glycerin, see Trastour, "N. Y. Med. Jour.," Jan. 3, 1885, p. 28; physostigma, see Fraser, "Edinb. Med. Jour.," August, 1863, p. 123; elenine, see Valenzuola, "Med. Rec.," May 31, 1884; general, see Fothergill, "Med. Rec.," Sept. 5, 1885, p. 253; Peruvian bark, see Wesley (Rev. John), "Primitive Physic, or an Early and Natural Method of Curing all Diseases," 1747.

†† Davis, "Jour. of the Am. Med. Assoc.," vol. ii, p. 129.

‡‡ Bartholow, "Mat. Med.," New York, 1876, et "Prac. of Med.," New York, 1880.

Prettyman, "Med. Rec.," May 21, 1887, p. 579, *et al.*

Jürgensen * speaks very highly of hypodermatic injections of apomorphine in these cases, but I must confess that my experience with this drug has not been such as to lead me to entertain a favorable opinion of it under these circumstances. In the four cases in which I employed it the emesis was prompt and efficient, but there followed a depressed state of the system, with a lessened disposition to get rid of the increased secretion by coughing, so that the patients were eventually made worse by the treatment, and all died.

In some of the cases in which apnœa is threatened by the retention in the bronchi of abundant mucous and serous secretions, the patient may be relieved by placing him in the prone position † in such manner as to make the mouth the lowest part of an inclined plane, thus allowing the fluids to escape by gravitation. This measure I have employed on several occasions, and always with the most gratifying success. It is especially useful in the cases complicated by pulmonary œdema.

For the relief of dyspnœa depending upon pulmonary œdema, bloodletting is very efficient.‡ In this state death is imminent, and there is no time to await the slow action of medicines. A measure is required which will at once relieve the respiratory embarrassment, and this is found in venesection.

After the respiratory passages have been freed from the accumulated secretions, means to limit their future production and promote their removal are indicated. Happily, we are in possession of a few agents which directly meet this necessity. Of such agents, atropine, chloride of ammonium, and turpentine are especially worthy of consideration.

Atropine causes a hyperæmic dryness of the bronchial surfaces with absence of secretions. The chloride of ammonium, either internally administered or locally applied, has a similar effect, with the difference that the mucous membrane is in an anæmic condition.* Turpentine-fumes continuously inhaled cause a diminution of the bronchial secretion, but an increase follows their withdrawal.‖

In those cases in which the dyspnœa depends not so much upon the amount of the secretion as upon its excessive viscidity, rendering expectoration difficult or impossible, it is advisable to render it less viscid and increase its quantity by such agents as pilocarpine, emetine, apomorphine, acetic acid, benzoate of sodium, steam, etc.

In dyspnœa due to a paretic condition of the respiratory muscles, strychnine is our most valuable remedy.△ In this state the secretions are not only retained, but the total quantity of air respired is far below the capacity of the lungs and the requirements of the system. Strychnine stimulates the respiratory centers, and in several cases in which I have invoked its aid, prompt and beneficial results were speedily obtained.

In extreme cases* artificial respiration may be necessary. In one of my cases this procedure was continued for fifteen hours, with the result of saving the patient's life. During all these long hours respiration would cease whenever there was any intermission in the artificial respiration. In another case artificial respiration was kept up for four hours, but the end was finally fatal.

When the dyspnœa is due to spasm of the bronchi, inhalations of belladonna,† stramonium, chloroform,‡ nitrite of amyl,# pyridine,‖ etc., may be had recourse to. Inhalations of oxygen△ are indicated in cyanotic dyspnœa, and cardiac tonics when there are evidences of heart failure.◊

Quebracho has been presented as a specific remedy in all forms of dyspnœa.‡ I have employed this drug in a number of cases, but the results observed were not such as to lead me to recommend it. No method of treatment can be satisfactory which does not take into consideration the cause of the difficult respiration.‡

With the treatment above mentioned, nervous irritation will have been allayed and the patient will obtain sleep—not much, it is true, yet enough for his needs—but in some cases restlessness and sleeplessness persist,‡ and this symptom must be relieved by such hypnotics as chloral, paraldehyde,** urethrane,†† hydrate of amylene,‡‡ sulphonal,## etc.

In those cases in which the sleeplessness is combined with profound prostration, alcoholic stimulants should be given with the hypnotic. In cases with a lesser degree of prostration, kümmel, in half-ounce doses, diluted with hot and sweetened‖‖ water, often acts like a charm.

Delirium must be met in various ways, according to the cerebral and general conditions present; sedatives△△ when there is cerebral excitement, and stimulants◊◊ in the opposite

* Ziemssen's "Handb.," Bd. v, 1877, S. 252.

† See Hunter, "Lancet," New York, 1859, vol. ii, p. 185.

‡ Flint, "Med. News and Abst.," September, 1881, p. 520.

See also Mascagni, "Bibliothek Med.," Bd. xlii, S. 251; carbonate of sodium.

‖ See Brunton, "Brit. Med. Jour.," Nov. 14, 1874; muscarine.

△ Habershon, "Lancet," 1887, vol. ii, p. 1168; Thorowgood, *ibid.*

* Hermann ("Lungenentzündung," München, 1880, S. 38) recommends hypodermatic injections of camphor.

† Davies, "Brit. Med. Jour.," Mar. 20, 1886.

‡ Breithaupt, "Deutsche med. Zeit.," 1856, No. 39.

Fraser, "Lancet," 1887, vol. ii, p. 52.

‖ Sée, "Therap. Gaz.," 1885, p. 746; Silva, "Lond. Med. Rec.," Feb., 1887.

△ Clark, "N. Y. Med. Jour.," Aug. 11, 1883; Kellogg, "Jour. of the Am. Med. Assoc.," Aug. 25, 1888, p. 258; Sawyer, "Med. Bull.," 1887.

◊ Drysdale ("Med. Press and Cir.," Dec. 8, 1886) recommends minute doses of crotalus under these circumstances.

‡ Berkart, "Brit. Med. Jour.," July 17, 1880; Eloy et Huchard, "Arch. de phys.," Avr. 1, 1886; Flint, "Med. News and Abst.," 1881; Larrion, "Therap. Gaz.," June, 1884, p. 283; Maricini, "Lond. Med. Rec.," May, 1883.

‡ See Patton, "Jour. of the Am. Med. Assoc.," Aug. 11, 1883, p. 139.

‡ As is often the case. See Garland, "Pneumonia," 1888, p. 99.

** Genkin, "Proc. of the Kaluga Med. Soc.," Nov. 30, 1885, p. 42; Sauter, "Fortschr. d. Med.," Aug. 5, 1885; Strahan, "Lancet," Jan. 31, 1884.

†† Oliver, "Lancet," 1887, vol. ii, p. 204.

‡‡ Buchan, "Berliner k. Wochenschr.," 1888, S. 228; Von Mehring, "Therap. Monatschr.," 1887.

Oesterreicher, "Berliner k. Wochenschr.," 1888, S. 501; Rabbas, *ibid.*, S. 330; Rosin, *ibid.*, S. 499.

‖‖ Preferably with saccharin. See "Brit. Med. Jour.," Oct. 15, 1887.

△△ Sturges, "Pneumonia," London, 1876.

◊◊ Graves, "Clin. Lec.," vol. i, p. 257; "Lancet," New York, 1859, vol. i, p. 54.

state. Coma is to be met with hypodermatic injections of atropine and strychnine and external counter-irritation.*

There is no single point in the treatment of pneumonic fever requiring nicer discrimination than the use of alcoholic and other stimulants. Alcohol is certainly a remedy of great value in suitable cases, but it is likewise capable of doing much harm when inappropriately given. It is not required in the ordinary case during the continuance of the acute symptoms, but at a later time it promotes resolution and hastens the completion of convalescence. It may, however, be allowed at any time to facilitate expectoration, quiet nervous excitement, avert collapse, sustain the flagging vital powers, or to fulfill other special indications.

The use of stimulants throughout the entire course of the disease as a special line of treatment has had the advocacy of a great array of physicians, † the chief of whom were Brown ‡ and Todd, # but this practice is open to serious objections, ‖ especially when the doses are large △ and frequently repeated.

Alcohol is recommended in the pneumonic fever of drunkards by Chomel ◊ and others, but I prefer to combat the symptoms of depression which are prone to arise in these cases with strychnine, atropine, cocaine, morphine, etc.

The especial field for alcohol in this disease is in the cases marked by asthenia, great prostration, enfeebled circulation, muscular tremors, sleeplessness, delirium, dryness of the tongue, sordes on the teeth, etc. ↕

In the low typhoidal form of the disease, especially when there is a low, muttering delirium, musk ↕ has long been recommended, and I can attest, as the result of a considerable experience, that its effects are at times marvelous. ‡

The dose of musk is from five to ten grains, and, when employed, it should be given in full doses. Owing to its very high price, there is a temptation on the part of the prescriber to order it in inadequate doses, and for the dispenser to furnish light weight or an inferior or adulterated article, and failure to obtain satisfactory results may be often attributed to these circumstances.

When there is failing vitality, turpentine * and its derivatives, terebene † and hydrate of terpine, have been, in my hands, valuable stimulants, both general and local.

The carbonate of ammonium has been long and largely ‡ employed in this disease as a stimulant, a solvent of fibrine in the blood, and a direct antipneumonic remedy. In former years I frequently prescribed this salt, but the most careful scrutiny has failed to show any beneficial results, and I have therefore abandoned its use. The salicylate of ammonium # is useful whenever there is a rheumatic complication. ‖

In 1862 Bennett △ published his well-known paper on the "Restorative Treatment of Pneumonia," which, although it embodied no new principle, attracted universal attention and has remained a landmark to this day. His system was essentially the treatment advocated by Brown, ◊ the "supporting" treatment of various writers, ↕ and the stimulating treatment of Cunning, ↕ Todd, ‡ and others. In the main it consisted in dispensing with phlebotomy, antimony, and other "lowering" measures, except in the most sthenic cases, and in the administration of wine, beef-tea, and other stimulants and nourishing foods—paths already well trodden. The system rapidly grew in favor and was adopted by a majority of subsequent systematic writers.**

The treatment above mentioned, modified according to the individual peculiarities of the patient and the stage of the disease, is appropriate from the beginning of the attack to the end of the exudative process. If it has been early

* Copland, "Med. Dic.," New York, 1855, vol. i, p. 1210; Jones, "Montreal Med. Jour.," Mar., 1855.

† Anstie, "Lancet," Mar. 21, 1874; Beale, "Brit. Med. Jour.," July 4, 1863, p. 12; Chambers, *op. cit.*; Cunning, *op. cit.*; Douglas, "Med. World," 1885, p. 143; Ferguson, "Med. News," Nov. 28, 1885, p. 605; Fox, *op. cit.*; Fincham, "Lancet," New York, 1857, vol. ii, p. 71; Green, "Quain's Dic. Med.," p. 890; Hassal, "Lancet," New York, 1857, vol. ii, p. 73; Humphreys, "Lancet," 1887, vol. ii, p. 1109; Nothnagel, "Berliner k. Wochenschr.," 1884, S. 288; Shrady, "Jour. of the Am. Med. Assoc.," Nov. 28, 1885, p. 615; Smith, "Med. World," 1885, p. 125; Sturges, *op. cit.*, p. 236; Waters, "Clin. and Prac. Med.," London, 1887; Winn, "Med. Times and Gaz.," Sept. 7, 1872.

‡ "Elements of Medicine."

"Clin. Lec.," London, 1860.

‖ Davis, "Jour. of the Am. Med. Assoc.," 1883, and "Prac. of Med.," 1884; Patten, "Therap. Gaz.," 1885, p. 234; Thorowgood, "Lancet," 1887, vol. ii, p. 1168.

△ Brunton, "Pharmacology," p. 653.

◊ "Jour. de méd.," t. vii, p. 284.

↕ Flint, "Med. News," Nov. 28, 1885, p. 605; Loomis, Pepper's "Syst. of Med.," vol. iii.

↕ Brunton, "Pharmacology," Philadelphia, 1885, p. 914; Chomel, "Pneumonie," Leipzig, 1841, S. 393; Jacquet, "Bibliot. méd.," t. lix, p. 19; Lebert, "Berliner k. Wochenschr.," Oct. 2, 1871; Récamier, "Gaz. méd.," 1830, p. 36; Trousseau et Pidoux, "Traité de thérap.," t. i, p. 31.

‡ It is also a respiratory stimulant.

* Baruch, "Med. Rec.," Dec. 24, 1887, p. 787; Huss, "Brit. and For. Med.-chir. Rev.," Oct., 1846; McAldowie, "Brit. Med. Jour.," May 29, 1886.

† Cammann, "Med. Rec.," Oct. 8, 1887, p. 476; "Cin. Lan. and Clin.," Jan. 15, 1887, p. 90; D'Estrées, "Bull. gén. de thérap.," 1884; Guelpa, *ibid.*, April 30, 1885; Lépine, "Med. Rec.," July 18, 1885, p. 68; McAldowie, *op. cit.*; Murrell, "Brit. Med. Jour.," Dec. 12, 1885, and July 26, 1886; Wood, "Therap. Gaz.," Sept. 15, 1886, p. 605.

‡ Brunton, *op. cit.*, p. 543; Cunning, *op. cit.*; Gerhard, "Dis. of the Chest," 1860, p. 217; Patten, "Therap. Gaz.," 1885, p. 234; Paton, "Am. Jour. of the Med. Sci.," Oct., 1887, p. 374; Richardson, "Jour. of the Am. Med. Assoc.," Dec. 11, 1886, p. 661; Rochester, *ibid.*, Nov. 28, 1885, p. 614; Waters, "Dis. of the Chest," 1868, p. 50; Watson, "Prac. of Phys.," Philadelphia, 1845, p. 586.

Barnett, "Jour. of the Am. Med. Assoc.," Dec. 11, 1886, p. 654; Jackson, "Trans. of the Va. Med. Soc.," 1888; Wick, "Jour. of the Am. Med. Ass.," Feb. 11, 1888, p. 169.

‖ Salicylic acid and other salicylates are also useful. See Buckler, "Med. News," June 17, 1882, p. 652; Deplatz, "Bull. de l'acad. de méd.," Sept. 7, 1880; Drzewiscki, "Med. Rec.," Aug. 28, 1888, p. 205; Herrlich, "London Med. Rec.," July 15, 1887; "Medycyna," 1887, Nos. 44, 45, 46.

△ "Lancet," New York, 1862, vol. ii, p. 302. See, also, "Lancet," 1865, vol. i, p. 195.

◊ "Elements of Medicine," Portsmouth, 1803.

‡ Fincham, "Lancet," New York, 1858, vol. i, p. 524, *et al.*

↕ "Trans. of the Dublin Col.," vol. v.

‡ *Op. cit.*

** Bristowe, "Prac. of Med.," London, 1884; Chambers, "Lancet," New York, 1862, vol. ii, p. 260; Flint, "Prac. of Med.," Philadelphia, 1868; Waters, "Liverpool and Manchester Reports," vol. iv; *et al.* It was formally objected to by Copland, "Lancet," April 8, 1865, p. 382.

put in operation, the symptoms will soon have been ameliorated in the majority of cases, and in a few the disease will have been aborted. In any case the patient will have been more composed with the relief afforded and more able to meet with equanimity some of the, to him, alarming symptoms of the malady when it has reached its height. If abortion occurs it is quickly manifested, otherwise the disease passes on to the second stage—that of complete consolidation—and the physician must content himself with efforts toward conducting the case to a successful termination. The vast majority of patients when first seen by the medical attendant have already arrived at this stage and the most favorable time for aborting the disease has long passed by, although this possibility yet remains.

After the acute febrile symptoms have subsided, means should be adopted to rid the lung as quickly as possible of the inflammatory exudate. For this purpose small or moderate doses of iodide of potassium may be given until the exudate has been completely removed by absorption and expectoration.

Iodide of potassium has long been used in every stage of the disease.* Schwartz† claims that, when give nearly in very large doses, it will certainly cut short the attack, but such results have not been obtained by others.‡ The iodide as it is eliminated through the lungs acts upon the saline exudate in such a way as to facilitate its liquefaction and subsequent absorption.

Various other remedies to promote absorption have been recommended, many of which are worthy of consideration. Of these may be mentioned iodide of ammonium,# chlorate of potassium,‖ chloride of ammonium,△ counter-irritants, etc.◊

Convalescence is usually rapidly completed, yet it may be accelerated, by judicious tonic and stimulating treatment. The application of these to the individual case must be made on general principles—to one, iron; to another, a simple bitter; to another, cod-liver oil; and to another, alcohol may be given, either alone or variously combined. All should have food at frequent intervals and regulated exercise. Forced inspiration should be practiced several times daily for several weeks, in order that the respiratory tract may remain permeable and pleuritic adhesions be prevented.

* Fox, *op. cit.*, p. 211; Gualdi, "Am. Jour. of the Med. Sci.," Oct., 1884, p. 564; Upshur, "Ranking's Abst.," 1845; Zinis, "Bull. gén. de thérap.," June 30, 1887; Brunton, *op. cit.*, p. 512.

† "Deutsche med. Wochenschr.," 1881, S. 13.

‡ Orth, "Deutsche med. Wochenschr.," 1881.

Bartholow, "Prac. of Med.," New York, 1880; Brunton, *op. cit.*, p. 520.

‖ Davis, "Prac. of Med.," Chicago, 1884; Pattee, "Jour. of the Am. Med. Assoc.," July 24, 1886, p. 91.

△ Rodman, "Med. Rec.," 1875; Todd, "Med. Times and Gaz.," July 15, 1854, p. 51; Walker, "Med. World," 1886, p. 336.

◊ See "Allg. Wiener med. Zeit.," Nov. 10, 1874; Allingham, "Dis. of the Rectum," p. 19; Davis, "Jour. of the Am. Med. Assoc.," April 5, 1884, p. 371; Ewart, "N. Y. Med. Jour.," April 9, 1887, p. 420; Dally, "Bull. gén. de thérap.," Sept. 30, 1881; Fothergill, "Handb. of Treat.," p. 374; Haigh, "Med. World," 1888, p. 197; Holmes, "Miss. Valley Med. Mon.," 1887; Kobert, "Practitioner," 1885; Popoff, "Lond. Med. Rec.," June, 1886; Sunol, *ibid.*, Dec., 1884; Williams, "Cycl. of Prac. Med.," vol. i, p. 321; Wycisk, "Allg. Med. Cen.-Zeitung," 1875.

THE VALUE OF ELECTRO-THERAPEUTICS IN LESIONS OF THE OPTIC NERVE.*

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The chapter on the practical application of electro-therapeutics to the diseases of the optic nerve is, unfortunately, at least so far as its results are concerned, a very brief one. The statements advanced by Benedikt, Driver, Erb, and others have not stood the test of time and added experience at the hands of other observers. Ophthalmologists owe much to Benedikt for first doing away with the crude notions formerly held in regard to the application of electricity in the treatment of diseases of the eye. He first called attention to the advisability of applying the galvanic current to paralyzed ocular muscles in a systematic manner. But the views which he originally held in regard to the causation of intracranial disease with ophthalmoscopic lesions, and the connection of the latter with affections of the sympathetic nerve, have been almost entirely given up by modern ophthalmologists. Galvanization of the sympathetic nerve in the neck for inflammation of the optic nerve, as recommended by Benedikt, has been entirely abandoned.

Electricity has failed to vindicate its pretensions to any real value in the treatment of optic-nerve lesions, though, by its capacity for exciting phosphenes, it fosters the hopes of a credulous incurable patient.

Benedikt considered that most of the lesions of the optic nerves were due to disturbances of the sympathetic or vaso-motor nervous system. He professed great success in the treatment of pathological processes in the brain by galvanization of the sympathetic, and this success he thought depended upon the influence exerted upon the neurosis of the sympathetic nerve which accompanies the pathological process in the brain. Hence he maintained that the neuro-retinitis, symptomatic of certain forms of brain disease, might be cured by this galvanic treatment.

Benedikt alleged most brilliant results from electro-therapy in cases of neuro-retinitis, but admitted that they were very negative in actual atrophy, whether the latter were primary—as in tabes dorsalis—or secondary to inflammation and infiltration of the tissue of the optic nerves. He reports one case of atrophy of the optic nerve due to tabes, in which an improvement in the vision followed galvanization of the entire length of the vertebral column without any local treatment of the optic nerves; but he says nothing concerning the ultimate result in this case. His plan of treatment consisted in placing the negative pole on the forehead, and passing the positive pole gently to and fro over the temple or inner canthus, the current being of sufficient intensity to produce phosphenes or subjective light-sensations. A temporary improvement in the vision he met with very frequently. He considered that the mechanism of this method of treatment was not through a direct irritation of the optic nerve, but rather by a reflex irritation through the fifth nerve. The proof of this explanation he thought lay in

* Read before the New York Academy of Medicine, March 21, 1889.

the fact that the subjective light-perception did not depend absolutely on the strength of the current, but upon the sensitiveness of the branches of the trigeminus.

Benedikt also professed good results in papillitis, due to intracranial tumor, by galvanizing the sympathetic nerve in the neck. Another observer who alleges the most surprising results from the employment of galvanism as a therapeutic agent in inflammatory processes in the optic nerve is Driver, of Chemnitz (see "Arch. of Ophthal. and Otol.," iii, 1, p. 226). He advises the application of the constant current in three ways—viz.: 1. Through the head, either longitudinally with the anode on the nucha and the cathode on one frontal protuberance; or transversely, with the anode and cathode on each temple or both mastoid regions. 2. Galvanization of the sympathetic on one or both sides, with the anode on the nucha and the cathode on the region of the upper cervical ganglion. 3. Locally on the eye, with the anode on the nucha and the cathode on the closed lids. He employs the positive pole always fixed and the negative pole movable, and a sitting should last from one to two minutes. He uses from six to fourteen elements of a Stöhrer's battery, and is careful to avoid inducing vertigo. He adopts Benedikt's theory of the causation of choked disc, namely, a disordered innervation of the sympathetic. In what he calls neuro-retinitis symptomatica, or neuro-retinitis in consequence of cerebral lesions, he claims that galvanization of the sympathetic sometimes produces brilliant results in both central and peripheral acuity of vision. The dizziness, headache, attacks of sudden blindness, and occasional paralysis of the ocular muscles usually cease. The galvanization should be done daily on both sides.

In congenital amblyopia and in the various forms of toxic amblyopia, Driver admits that the results of galvanization are less encouraging. These brilliant results, transient though they are, have not been met with by more recent observers among the ranks of the ophthalmologists.

Leber has professed some moderate successes in optic neuritis due to heredity or congenital tendency. In simple, uncomplicated optic-nerve atrophy he recommends the constant current as promising either positive improvement or an arrest of the process of degeneration. It very often, however, does neither. There are no rigid rules laid down by Leber as to how the electrical treatment is to be employed. He sometimes recommends direct irritation with the cathode placed on the closed lids or the supra-orbital region, while the anode is placed on the neck, the sessions lasting for but a few minutes.

Soelberg Wells advised the placing of the positive pole on the nape of the neck and the negative pole on the closed lids. He used from four to fourteen cells, and passed the current for from one to three minutes every day.

Other observers recommend that the current be transmitted through the head from before backward, or obliquely. In case the atrophy of the optic nerve is due to some spinal lesion, as in tabes, Schmidt-Rimpler has advised the application of the constant current to the entire length of the spinal column. In cases of injury to the optic nerve some authors have advised the application of the galvanic current directly through the head, but we have no sufficient testimony of any great success in this lesion.

In traumatic anæsthesia of the retina, as from a blow upon the eyeball, the constant current has been said sometimes to produce rapid improvement in the acuity of vision when applied with the positive pole at the nape of the neck and the negative pole on the closed lids.

Up to within the last two years, the reporter has employed the galvanic current in every case of optic nerve lesion that occurred in his private practice, and in many cases in hospital practice. His results were so negative, and in many cases so unfavorable, that for two years he has entirely given up galvanism as a method of treatment in these diseases. From his own experience and that of others, as found in ophthalmological literature, he thinks he is justified in drawing the following conclusions:

1. In optic neuritis from whatever cause, and in papillitis or choked disc from intracranial tumors, galvanism, whether direct through the closed lids and eyeball, or indirect through the cervical sympathetic, has no real value and should be abandoned.

2. In optic neuritis, due to heredity or congenital tendency, galvanization of the sympathetic nerve in the neck is of no value.

3. In simple, uncomplicated atrophy of the optic nerve, the use of the constant current can not be said to promise either positive improvement or an arrest of the degenerative process. In most of the cases in which an improvement of vision has been noted it proved to be merely temporary; and the same may be said of the apparent retardation of the degenerative process.

4. In cases of injury to the optic nerve, galvanism has not proved of the slightest permanent value.

5. In traumatic anæsthesia of the optic nerve and retina, uncomplicated by any laceration of nerve tissue or rupture of nerve fibers, galvanism carefully and persistently applied has been known to produce a rapid and permanent improvement of vision, when applied directly to the closed lids, and the current passed through the eyeball.

Foreign Medical Practitioners in Turkey.—According to the "British Medical Journal," "it is announced that a regulation has been issued requiring all foreign medical practitioners practicing in Turkey to undergo an examination for a degree at the medical school in Constantinople. All the ambassadors have refused, it is said, to sanction the rule, with the single exception of Sir William White. That British physicians alone should have to undergo the ordeal of examination, whatever it may be, necessary to obtain a Turkish diploma, seems rather invidious."

Diagnosis of Pericarditis.—"M. Puis, of Vienna (cited in 'La France médicale,' No. 27), has drawn attention to the presence in pericarditis (with effusion?) of a limited strip of dullness posteriorly extending from two fingers' breadth above the angle of the scapula to two fingers' breadth below the inferior border of the lung, and limited by the spinal column on the right. Bronchial breathing, bronchophony, and increased vocal vibration occur over this area. But when the patient is in the prone or knee-elbow position, the dullness is replaced by a tympanitic note, the bronchial breathing disappears, and friction becomes audible."—*Lancet.*

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ORTHOPÆDIC SURGERY IN ENGLAND AND THE UNITED STATES.

About thirty-five years ago, when orthopædic surgery in the United States was in somewhat the same state of inertia as it seems to be in now in England, Dr. H. G. Davis, then of New York, demonstrated the value of traction in the treatment of chronic joint disease. Soon after, if not contemporaneously, several surgeons in New York, men of unquestioned ability, whose reputations to-day are world-wide, began to devote themselves to the treatment of chronic joint affections. These men, among whom may be mentioned Dr. Lewis A. Sayre and Dr. Charles Fayette Taylor, contributed largely to form a school of American orthopædic surgery, the distinctive feature of which was the portative traction idea of Davis. Although the pathology of joint disease was not then fully understood, the relief afforded by traction apparatus properly applied and the benefit conferred by the almost unrestricted out-door life permitted by its use, was apparent to those who investigated the subject intelligently. And now, as the result of the efforts of the eminent men above named and of those who have followed them, orthopædic surgery is a fully recognized specialty in the United States, and there are many men of ability engaged in promoting its interests and in extending its usefulness.

In several of the leading medical colleges of the country—the University of Pennsylvania, Bellevue Hospital Medical College, and the University of the City of New York, not to mention several others—there is a chair of orthopædic surgery. The American Orthopædic Association, composed of thirty active members living in different parts of the United States, has been duly admitted to membership in the Congress of American Physicians and Surgeons. In New York there are many orthopædic clinics, especially in two of its colleges and in the schools for practitioners; two large orthopædic hospitals where thousands of patients are treated annually; one large general hospital with a distinct orthopædic service; several hospitals which have orthopædic consultants; two large hospitals which have orthopædic dispensaries; and an exceedingly active orthopædic society. In Boston, Philadelphia, and other places also orthopædic surgery is recognized and appreciated.

On the other hand, orthopædic surgery in England has apparently made but little progress during the period named. There are no college professorships of orthopædic surgery; there are no national or local associations devoted to this special branch of surgery; and, while there are orthopædic institutions in London and elsewhere, under the care of eminent surgeons whose names are familiar to all students of surgical literature, the mechanical treatment of joint disease is sadly neglected. The general surgeon still holds almost unopposed sway, and chronic joint disease is not considered worthy of special orthopædic care.

When the general surgeon of England needs mechanical assistance in the conduct of a case of joint disease he is apt to call in an instrument-maker, whose imperfect knowledge of the mechanical needs of the patient is not always supplemented by an extended experience on the part of the surgical adviser. Not only is this true, to a great extent, of general orthopædic measures, but the portative traction treatment is not appreciated in England, and the skill, experience, and patience required to use the traction apparatus successfully have not been sufficiently cultivated by either the surgeon or the mechanician. The consequence is that English surgeons find themselves unequipped for the proper mechanical management of chronic joint disease, and as between the uneducated aid of the conventional instrument-maker, and their own unwillingness or inability to meet the indications from a mechanical standpoint, there is, at least, a tacit confession of failure.

Under these circumstances, and while the surgeons of the English orthopædic institutions, who had the opportunity of developing the mechanical therapeutics of chronic articular disease, allowed the opportunity to pass or preferred to follow the beaten paths of their predecessors, Mr. Thomas, of Liverpool, promulgated a mechanical treatment of chronic joint disease which resembled very much that advocated by the late Dr. Hutchison, of Brooklyn. Dr. Hutchison's method may be briefly described, and, as a matter of illustration, the hip apparatus will be selected for description. In order to protect the diseased hip joint, a patten three or four inches high is placed under the sound limb and is secured to the foot, the patient using axillary crutches for the purpose of locomotion. The diseased member thus becomes a pendent limb—very like the arm. This simple expedient constituted the sole protection of the diseased joint. It seems almost useless to say that the method never became popular with the orthopædic surgeons of the United States.

Mr. Thomas's apparatus consists of the same general arrangement, as above described, with the addition of a posterior splint (a bar of steel bent to fit the outline of the body and extending from the thorax to the lower end of the thigh bone) on the diseased side. At its upper end this steel bar is attached to the thorax by bands and straps; at its lower end it is secured to the thigh by a strap. As in the Hutchison method, locomotion is performed by the aid of axillary crutches, a high patten being placed under the sound limb.

Mr. Thomas contends that his apparatus absolutely immobilizes the hip joint. It exerts no traction whatever; on the contrary, as it is fitted only for "fixation," on the lever principle, it must be apparent that this posterior hip splint makes a fulcrum of the inflamed articular surfaces. Hence, if the attempt is made to "fix" the joint by this method, there must be an increase of the articular pressure, which is just the thing to be avoided in the treatment of chronic arthritis. But we have never seen, either in England or in this country, a Thomas splint for the hip that produced anything approximating true

immobilization of the joint, and we doubt if the apparatus can be made to secure it.

The American method makes direct traction upon the diseased joint a fundamental principle of treatment. The apparatus is so adjusted to the distal part of the joint that the ever-present reflex muscular spasm that accompanies chronic (osteitic) joint inflammation is directly antagonized, and, instead of increasing the pressure of the diseased joint surfaces upon each other by using the lever principle of Thomas, a pulling force is substituted that directly modifies, if it does not wholly remove, this pressure. This apparatus, with its rigid pelvic band, its straight lateral traction rod, and its perineal pads, with or without the thoracic attachment, affords a complete perineal crutch upon which the patient walks without axillary crutches, in the open air, unless for surgical or exceptional pathological reasons recumbency may be necessary for a brief period. In the mean time the peculiar and efficient relief afforded by the traction not only adds to the comfort of the patient, relieving the pain, preventing suppuration, etc., but aids, more than any other means now known, in promoting final recovery without deformity and frequently with an entire restoration of mobility and function.

A few months ago, at the request of the medical board of a hospital in New York, one of our orthopædic surgeons gave in writing his opinions upon certain questions that had been propounded to him by the board. In the course of his remarks he pointed out what he deemed to be the defects of the Thomas splint in the treatment of chronic joint disease, and stated his reasons for approving of the traction method. An abstract of his remarks, with statements on other matters pertaining to the questions under consideration, was made the subject of a report, and the paper was printed by the hospital authorities. A copy of the report seems to have reached Mr. Thomas, and to have led him to attack the American method and its upholders. His pamphlet, "An Argument with the Censor at St. Luke's Hospital, New York," has been widely distributed in New York, both among the profession and among the laity.

It appears that Mr. Thomas thinks he has discovered a certain and a very ready means of diagnosticating hip-joint disease, and he even declines to place any value upon the published results of the work of others, because he infers that his "flexion test" in the diagnosis of hip disease was not used by the reporters in the cases which form the basis of an extensive analysis of the results obtained by a certain method of treatment.

It will be of service to quote Mr. Thomas's own words in describing this "flexion-test" method of diagnosis, of which he says in the pamphlet referred to: "As soon as American surgeons master the detail of the simple flexion test . . . the American method of treating hip-joint affections will be relegated to the history of by-gone surgery."

In the third edition of his "Diseases of the Hip, Knee, and Ankle Joints," on page 17, Mr. Thomas says: "Plate 3 illustrates the manipulation in this diagnostic method. Having undressed the patient and laid him on his back upon a table or other hard plane surface, the surgeon takes the sound limb and flexes it, so that the knee joint is in contact with the chest. Thus he makes certain that the spine and back of the pelvis are lying flat on the table; an assistant maintains the sound limb in this flexed position; the patient is then urged to extend, as far as he is able, the diseased limb, and this he will be able to do in a degree varying with the previous duration of the affection. While the patient is retained in this position, the operator will be able to make out a rigid cord corresponding to the origin of the adductors, which are invariably the first to shorten."

It is no wonder that Mr. Thomas is able to cure "hip disease" by his own or indeed by any other form of apparatus, if he relies upon this as his guide in the diagnosis of hip-joint disease. We think that Mr. Thomas may learn, from further study of the writings of those who are familiar with the clinical aspects of hip-joint disease and affections that mimic it, and especially the intricate subject of diagnosis, that the diagnosis is attended with great difficulty in many instances, and that there are many conditions other than hip disease and those named by Mr. Thomas in the chapter from which the foregoing quotation is made that will produce flexion of the thigh under the conditions named in the description of his "flexion test."

As to the Thomas apparatus and mode of treatment, and the statements made for them, there is no commentary so fitting as Mr. Thomas's confessed inability to make any report upon his cases or upon the results he has obtained. He appears to disregard the pathology of the disease, and to treat it only as a mechanician. He sees the deformity rather than the disease which produces it. He seems to think that when he has removed the deformity he has gone a long way toward curing the disease—or, at any rate, that the deformity is something which must be corrected at once, without regard to the injury that may be inflicted upon the diseased articulation by the lever action of his apparatus.

Mr. Thomas's comments upon the statistics of the surgeon whom he principally attacks in his pamphlet are neither fair nor just. We feel at liberty to speak with emphasis on this point, because the paper referred to, "The Ultimate Results of the Mechanical Treatment of Hip-joint Disease, an Analysis of Fifty-one Cases occurring in the Service of the New York Orthopædic Dispensary and Hospital," impressed us at the time of its publication as being a scientific essay of importance, and after it was published we called attention to its merits and value. Mr. Thomas probably overlooked the exacting conditions under which this essay was prepared, and for that reason we may be pardoned for mentioning them here. The exclusive conditions under which the report above referred to was made were as follows: 1. No case was to be considered in which the patient had not been under the care of the institution from the time of its entry until its final discharge. 2. No case was to be considered in which the patient had not been finally reported upon as "discharged cured" after a final examination. 3. No case was to to be considered in which the patient had not been "discharged cured" at least *four years* prior to the investigation. 4. No

case was to be considered except those of patients who had presented unmistakable signs of the disease at the time of the first examination. 5. None were to be considered which had not been at least *two years* under treatment. 6. None were to be considered in which the patient had not been seen or examined after the investigation was begun. 7. *All cases* coming within these exclusive conditions were to be classified and reported upon.

It seems unnecessary to make any comment upon these conditions. The effort was an honest one and represented years of labor. Whether the results reported are satisfactory to Mr. Thomas or not, it is safe to say that a far more rigid diagnostic test than that depended on by him was adopted—otherwise there might have been a larger number of "cures."

ELECTRICITY IN THERAPEUTICS.

The discussion that took place on the value of electricity as a therapeutic agent, at a meeting of the New York Academy of Medicine held on the 21st of March, brought out the views of a number of well-known men. The ground covered was far from including all even of the chief applications of electricity in medicine, but it was extensive enough to show a remarkable diversity of opinion, ranging almost from absolute "therapeutic nihilism" up to a degree of trustfulness hardly exceeded by the laity. About the same difference of opinion is probably to be found among the profession at large. There are those who rival the advertising "medical electrician" in the display that they make of electrical treatment, whether from genuine enthusiasm or as a means of impressing the multitude; and there are others who have "tried electricity" more or less blindly and will have no more of it. There are some who will not be satisfied till they have dived into the lowest depths of electrophysics, and there are still a few, we fear, who are content to go on applying what they indiscriminately term "galvanism" without regard to details that they look upon as frivolous and vexatious. With some modification, these extreme ideas, or lack of ideas, will doubtless continue to be held until the time comes when medical education draws near to perfection and when we have learned to make electrical appliances behave better than they are wont to behave at present. Touching this last point, it is not unlikely that storage batteries will soon come into general use in medicine, and that physicians will thus be enabled to confine their attention more closely to pure electro-therapeutics, and be no longer distracted with the mulishness of the ordinary medical battery. The costliness of an adequate electrical outfit and the care and special knowledge needed to keep it in good working order are probably at the bottom of the diversity with which men estimate the value of electricity as a therapeutic agent.

However one may have been led into doubt by his own mistakes or by his bad fortune in the matter of apparatus, it is almost inconceivable that anybody should fail to recognize the possibilities of therapeutic action in an agent of such unmistakable potency as electricity, whether for good or for evil. If we were acquainted with no other example of the action of electricity on the animal organism than its power to destroy life instantaneously, we should still be naturally inclined to the supposition that, properly curbed and modified, it might be made remedial. But there are facts equally obvious and quite as striking that lead directly to a belief in its curative power. Whoever, for example, has seen a little pocket faradization machine start the breathing of an asphyxiated new-born babe will not listen to the pessimism that calls up cases of death from blundering electrization of the heart as an offset. Little less can any man's confidence in the therapeutic usefulness of electricity be undermined if he has seen the same little machine stop a post-partum hæmorrhage that had proved rebellious to all other safe measures known; if he has seen galvanism followed by faradization not only bring back the lost plumpness of paralyzed muscles, but also—even if he can not say how—lead the patient along the only road that ends in regeneration of the diseased spinal cord; if he has seen the cautery wire bury itself bloodlessly in parts that he would not have dared attack with a knife; or even if he has seen faradization give comfort in a few minutes to a person suffering with muscular rheumatism. There ought to be no doubt entertained of the great therapeutic value of electricity; what is wanted is more precise knowledge as to when and how to use it. That knowledge must be obtained by experimental work guided by correct notions of physiology and pathology.

MINOR PARAGRAPHS.

THE BACILLUS OF TUBERCULOSIS.

Dr. George M. Sternberg recently delivered a lecture in the Hoagland Course, at Brooklyn, which presents in compact shape our latest knowledge concerning the bacillus of tubercle. The discovery that tuberculosis was contagious, he said, was made in 1868, and was demonstrated to the satisfaction of the scientific world in 1874, but the agent of infection was not discovered till 1882, when Koch demonstrated conclusively that it was a bacillus. Koch first demonstrated by an original method that the bacillus existed, but other experimenters who followed his methods could not produce such good results. Erich, using an aqueous solution of aniline and a solution of fuchsine, improved considerably on the facility with which the bacillus could be demonstrated. Some microscopists had maintained that the so-called tubercular bacillus consisted really of chains of micrococci. Koch not only showed in his first demonstration that the bacillus was present in all tuberculous material, but also succeeded in cultivating it in solidified blood serum. The speaker was, perhaps, the first one in this country to attempt to cultivate the tubercle bacillus. He prepared blood serum according to Koch's directions and introduced upon its surface a fragment of a lymphatic gland of a rabbit which had previously been inoculated with tuberculous sputum. His first experiment was not successful, owing to the fact that the tuberculous material was not properly broken up, as directed. Koch's demonstrations had been entirely successful, and not to admit now that tuberculosis was infectious would argue an unfamiliarity with the evidence. The growth on blood serum began after the lapse of fourteen days. Koch cultivated the bacillus from forty-three separate sources, and the cultivations that had been maintained since that date were as virulent to-day as at first. Koch had also shown that the inhalation of his cultivated tubercle bacillus

in vaporized form produced tuberculosis. The statement had been made by a German investigator that ultramarine blue and pulverized glass produced tuberculosis, but in experiments which the speaker had conducted, at which the investigator in question had been present, he had demonstrated that this was not the case. The particles of glass were simply encysted and the animals presented no evidence of tuberculosis. The dried sputum might be kept for a long time if maintained at a low temperature. The virulence of tuberculous sputum was destroyed by putrefaction and also by a boiling temperature. If suspended in water, the tubercle bacillus would retain its vitality for over a hundred days.

THE SYMS OPERATING THEATRE.

It is reported that the Roosevelt Hospital is likely to receive by bequest from the estate of the late Mr. William J. Syms the large sum of $350,000 for building and maintaining a new operating theatre. It is said that the building, together, we presume, with its equipment, is to cost $250,000, and that the remainder of the legacy is to be invested, and the income applied to the maintenance of the theatre. This is truly a superb endowment, and we are glad that it is to pertain to so well managed an institution as the Roosevelt Hospital. With this enormous sum of money at their command, the trustees of the fund, who are not likely to waste anything in mere adornment, may be expected to build an operating theatre in which no essential or even desirable feature will be lacking, and one that will be not only a notable addition to New York's resources in surgical teaching, but also, owing to the proximity of the two institutions, of special benefit to the students of the College of Physicians and Surgeons.

A MEDICAL EDITOR'S MISFORTUNE.

Dr. R. C. Word, the editor of the "Southern Medical Record," of Atlanta, Georgia, is reported to have suffered grievously by the burning of his home and all its contents. He loses his scientific papers, his lecture notes, and the manuscript of a book nearly ready for publication, none of which can be replaced. This peculiarly hard fate will be best appreciated by Dr. Word's brethren, the medical editors of the country at large. He has our sincere sympathy.

HOMŒOPATHY IN AUSTRIA.

According to the "British Medical Journal," official statistics show that there are only 118 homœopathists in Austria out of the whole number of medical men, 7,183, and that only 44 of those profess to practice homœopathy exclusively. There are none at all in the Italian districts, and but 19 in Vienna. They are said, too, to be decreasing in number.

THE ST. LOUIS POST-GRADUATE SCHOOL OF MEDICINE.

The activity of this school for practitioners is shown by the fact that a monthly journal, the "St. Louis Polyclinic," has been started in connection with it, *i. e.*, is edited by Dr. L. A. Turnbull in conjunction with the faculty. The first number of the "Polyclinic," for April, contains a well-arranged table of contents, and the matter itself is of interest and well presented.

THE CINCINNATI HOSPITAL.

The twenty-eighth annual report of this hospital, for the year 1888, gives abundant proof of its character as a progressive institution. A training school for nurses was opened during the year, and the growth of the library and of the pathological museum was quite decided. It is gratifying to see that three of the seven members of the board of trustees are medical men.

A NEW GERMAN MEDICAL JOURNAL IN NEW YORK.

There are many German practitioners in this country whose acquaintance with the English language is still imperfect, and it is not strange that they should feel the want of accounts in their own tongue of what is going on in American medicine. There are several creditable German medical and pharmaceutical journals published here. The youngest of them is the "Medicinische Monatsschrift," edited by Dr. A. Seibert and published in New York. With the April number it reached the fourth monthly issue of its first volume. Its communicated articles, society reports, and abstracts are of a high order, and its editorial articles are very readable. The editor makes a spirited answer to a recent criticism of the course pursued by the German Hospital in seeking to import a house officer from Germany.

FALSE ECONOMY IN LONDON.

The London "Spectator" comments very properly upon the penny-wise economy displayed by the new County Council of the English metropolis in the matter of fixing upon the amount of annual salary to be paid to the medical officer of health. The sanitary committee had recommended that it should be fixed at £1,250, but it was cut down to £1,000, and the attempt was made to reduce it to half that sum, one of the advocates of the latter proposal making the remark that he had never in his life seen a man whose services were worth more than £500 a year. As the "Spectator" justly says, the Council seemed wholly unaware that an incompetent sanitary adviser might cost them thousands a year in wasted precautions, while a man of high ability might enable them to diminish not only the death-rate but the sick-rate of London, and thus save millions annually to the population.

THE NEW YORK COLLEGE OF PHARMACY.

The newspapers have lately spoken of an alleged state of discord in the governing body of the college, growing out of race antipathy. It is said that the American members object to the tendency shown to make the methods of teaching conform to German practices. Our impression is that whatever antagonism may really exist is not at all commensurate with the accounts given in the newspapers. There is doubtless a certain degree of emulation between the American and German gentlemen in the board, but that is wholesome so long as it is not allowed to degenerate into so-called politics. Pharmacy is certainly well taught in Germany, and we do not see why evil should be apprehended from the application of like teaching in New York. But it is suggested that the contention may reach beyond the field of what concerns the ordinary functions of the college and affect the course pursued by its representatives in the approaching revision of the pharmacopœia. The pharmacopœia of 1880 is said to have been "Germanized," and thereby damaged, and the fear seems to be entertained that further "Germanization" will be carried out in the new edition if the Germans get full control of the college. In this direction, too, we see little to apprehend, for, whether it was "Germanized" or not, the pharmacopœia of 1880 was immensely superior to any of its predecessors in all respects save one—that of placing the names of preparations in continuous alphabetical order with those of the drugs. This backward step ought to be retraced in

1890, and we hope that the influence of the College of Pharmacy will not be inimical to such a change.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending April 23, 1889:

DISEASES.	Week ending Apr. 16.		Week ending Apr. 23.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	10	2	11	3
Scarlet fever	478	54	446	47
Cerebro-spinal meningitis	1	1	4	3
Measles	184	19	164	11
Diphtheria	197	56	198	54

Bellevue Hospital.—The Townsend Chapel, on the hospital grounds, was dedicated on the 22d inst.

A Prize for Cleanliness.—It is announced that Mr. John G. Borden, a winter resident of Florida, has offered a prize of $1,000 to the city within that State that shall be found in the most cleanly condition on the 1st of July.

The Sanitary Institute of Great Britain will hold its next annual convention at Worcester in the latter part of September.

Dr. Elliot Coues, of Washington, purposes making a tour through England, France, Egypt, and India in the interest of the American Theosophical Society, of which he is the president. It is announced that he will soon give a lecture in New York on the subject of modern miracles.

An International Congress of Otology and Laryngology will be held in Paris, in the palace of the Trocadéro, from the 16th to the 21st of September. Gentlemen who wish to read papers before the congress should send the titles to the secretary of the committee of organization, Dr. Loewenberg, No. 15 rue Auber, Paris, before the 15th of July. The subscription is twenty francs.

The Medical Microscopical Society of Brooklyn.—At the next meeting, on Wednesday evening, May 1st, at the Hoagland Laboratory, Dr. Weeks will read a paper on "The Microscopical Appearances of the Tissues of the Eye in Glaucoma," and Dr. Kemp will read a paper on "The Histology of the Coagulation of the Blood."

The Hornellsville (N. Y.) Medical and Surgical Association is a newly incorporated body which has adopted the code of ethics of the American Medical Association. Dr. J. S. Jameson has been chosen president and Dr. C. G. Hubbard secretary. Its meetings are held on the first Monday of each month.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from April 14 to April 20, 1889:*

Smith, H. K., Lieutenant-Colonel and Surgeon, U. S. Army, reports address of New Army Building as at No. 39 Whitehall Street, N. Y. City, April 18, 1889.

Williams, John W., Major and Surgeon, U. S. Army, died at Jackson Barracks, Louisiana, April 15th, at 5.06 P. M.

Happersett, John C. G., Major and Surgeon, U. S. Army, is relieved from duty at Willett's Point, N. Y., and ordered to report to the commanding officer, Atlanta Barracks, Georgia, for duty as Post Surgeon at that post. By Par. 12, S. O. 88, A. G. O., April 16, 1889.

Ewen, Clarence, Major and Surgeon, U. S. Army, promoted Surgeon, U. S. Army, with rank of Major, to take effect April 15, 1889.

Woodruff, Charles E., First Lieutenant and Assistant Surgeon, U. S. Army, is relieved from duty at Fort Mackinac, Michigan, and ordered to Fort Gaston, California, for duty. Par. 14, S. O. 86, A. G. O., April 13, 1889.

Leave of absence granted in S. O. 44, February 21, 1889, A. G. O., to Lieutenant-Colonel James C. McKee, is extended seven days. Par. 11, S. O. 86, A. G. O., April 13, 1889.

Polhemus, Adrian S., Captain and Assistant Surgeon, U. S. Army, is relieved from duty at Fort Gaston, California; ordered to Fort Monroe, Virginia, for duty. Par. 14, S. O. 86, A. G. O., April 13, 1889.

Appel, Aaron H., Captain and Assistant Surgeon, U. S. Army, is granted leave of absence for twenty-one days. Par. 1, S. O. 38, Headquarters Division of the Missouri, April 16, 1889.

Under authority from the Secretary of War, conveyed by letter of the 16th ultimo from Division Headquarters, the post of Fort Sisseton, Dakota, will be discontinued June 1, 1889. S. O. 35, Headquarters Department of Dakota, St. Paul, Minn., April 8, 1889.

Society Meetings for the Coming Week:

Tuesday, *April 30th:* Tennessee State Medical Society (Nashville); Boston Society of Medical Sciences (private).

Wednesday, *May 1st:* Society of the Alumni of Bellevue Hospital; Harlem Medical Association of the City of New York; Medical Microscopical Society of Brooklyn; Medical Society of the County of Richmond (Stapleton), N. Y.; Essex, Mass., North District (annual—Haverhill), and Plymouth, Mass., District Medical Societies; Penobscot, Me., County Medical Society (Bangor); Bridgeport, Conn., Medical Association.

Thursday, *May 2d:* United States Naval Medical Society (Washington); National Association of Railway Surgeons (first day—St. Louis); New York Academy of Medicine; Society of Physicians of the Village of Canandaigua, N. Y.; Medical Society of the County of Orleans (semi-annual—Albion), N. Y.; Ocean, N. J., County Medical Society (Tom's River); Boston Medico-psychological Association; Obstetrical Society of Philadelphia.

Friday, *May 3d:* National Association of Railway Surgeons (second day); Practitioners' Society of New York (private); Baltimore Clinical Society.

Saturday, *May 4th:* Clinical Society of the New York Post-graduate Medical School and Hospital; Manhattan Medical and Surgical Society (private); Miller's River, Mass., Medical Society.

Letters to the Editor.

THE GERMICIDAL TREATMENT OF CONSUMPTION.

Brooklyn, *March 26, 1889.*

To the Editor of the New York Medical Journal:

Sir: Inasmuch as so many unsuccessful efforts have been made to discover a medicament or method of treatment that will destroy tubercle bacilli in the lungs of the phthisical, without damage to the patient, I am impelled to suggest that it might be more rational for us to transfer our efforts to the broader field of attempting the total annihilation of the germ as it exists in nature, for, as it seems to me, were it possible for any given medical man to devise a way or a means for the total destruction of the bacilli in any given consumptive's lungs, the

germs would soon be replaced in his tissues from the atmosphere, which, we may feel certain, contains them in great numbers in the form of floating dust. It will be remembered that Miquel found 55,000 germs, embracing many varieties, in ten cubic metres of the air of the *rue de Rivoli*, Paris. Recent attempts to destroy tubercle bacilli in the lungs of the phthisical by the respiration of air carried to a high temperature, as suggested by Weigert, inspire this communication. We can not lose sight of the fact that a temperature considerably less than 300° F. is sufficient to coagulate the albuminoid elements of animal tissues, if brought to bear for only a few minutes. The high degree of humidity of the residual, reserve, and expiratory tidal volumes of air serves to protect the lungs and air-passages (and also the bacilli) from abnormal grades of temperature. The familiar illustration of plunging a wet hand into a vessel of molten metal exemplifies this. Many tubercle bacilli are found, when present in phthisical lungs, deeply imbedded in the tissues, and these tissues must be invulnerable to the influences brought to bear for the destruction of the germ; if otherwise, the result is obvious.

In conclusion, I wish to put on record the statement that no germicide will be found that will be able to destroy tubercle bacilli in the lungs without damage to the patient, and, further, that if this contention is ever shown to be wrong, our ability to destroy the parasite under such circumstances will be of no advantage to the phthisical.

G. A. Evans.

THE TREATMENT OF SCARLATINA.

47 East Sixtieth Street, *April 23, 1889.*

To the Editor of the New York Medical Journal:

Sir: My special interest in modern hydrotherapeutics prompts me to ask your readers' attention to a very promising treatment of scarlet fever, especially of those severe types which are now so prevalent and so fatal in this city.

I will not take up your valuable space with my own views on this subject, but simply indorse what has been said by Professor von Ziemssen in one of those classical clinical lectures which he has recently published and which stamp him as the Trousseau of to-day. After reviewing the various types of scarlatina and dwelling upon the fact that Sydenham regarded it as a very tractable disease, and that Bretonneau had never lost a case in twenty-four years and yet met with a very fatal epidemic a year later, and referring to the fact that the success of treatment depended much upon the character of the epidemic, he says there is certainly a treatment that in individual cases may yield extraordinarily good results and save lives that might otherwise be lost. "But, of course, much care and labor for physicians and nurses are connected therewith."

"Let us begin with the treatment of the fever and the other general manifestations of infection. We possess no remedy to limit the development of the disease germs or to paralyze the action of their poisonous products. Hence the most prominent indication remains for us to maintain if possible the capacity of resistance of the organic cells and to spur on the energy of the innervation. In the first line stands here hydrotherapeutics, preferably in the form of cool or lukewarm baths and affusions. Currie, the founder of scientific hydrotherapeutics of the infectious diseases, had already laid down the indications in scarlatina with precision. My method, says he, if I am called early to the patient, is to have him undressed and to pour from four to five gallons of water as cold as it can be had over him. This results in the usual cooling effects, but they are not so enduring as in typhus. Two or three hours later the heat is not rarely as great as it was before. The cold bath must, therefore, be repeated as often as the obstinacy of the heat demands; occasionally it is necessary to use it ten or twelve times in twenty-four hours. After these the intensity of the fever is broken and tepid affusions at longer intervals are now quite sufficient to overcome the disease. During this time cold water and lemonade must be the drink, and the bowels must, if necessary, be emptied by calomel. Noticeable lassitude and weakness with a desire to sleep and rest follow this rapid inhibition of the fever, and occasionally to such a degree that one becomes alarmed lest coma or a considerable reduction of the vital powers be impending; but I discovered that such fears were unfounded. It was always sufficient to facilitate the warming of the surface, especially of the extremities, by proper covering, and then to leave the patient to that deep rest by which Nature is in the habit of refreshing itself after intense excitement. . . . But if the anxiety of the parents or the timidity of other physicians ties our hands and this decisive method can not be used, we may resort to the lukewarm bath with noticeable but yet milder effects. Only in mild cases will this abort the disease, but it will render them less intense, because it lessens the heat and causes perspiration.

"As he informs us, Currie had an opportunity, after using his method three years, to test it in the great and malignant epidemic which ravaged Liverpool in 1801. He treated over one hundred and fifty children, among these his own, and he was himself surprised by the favorable results. Currie expressly insists that the cold affusion is contra-indicated by an adynamic condition of the patient, and that, under these circumstances, lukewarm and even warm baths should be resorted to.

"It is scarcely necessary (says v. Ziemssen) to add anything to the experience of this excellent observer. The correctness of his observations and deductions has only been confirmed by the numerous English physicians who treated scarlatina after his method during the malignant epidemics of the beginning of the present century.

"The most recent time also has again proved the high value of hydrotherapeutics in scarlatina. That the energy of the water treatment must be graded by the physician for each individual case is evident; the earlier the patient comes under treatment, the higher the temperature and more resisting the organism, the lower should be the temperature of the bath and affusion. On the other hand, in the advanced stages—*i. e.*, on the third or fourth day—and in the adynamic types, only lukewarm or even warm baths should be used, and the energy of the innervation should be stimulated by the previous use of excitants, especially wine. You will do well to refrain entirely from affusions in such asthenic cases, and only to resort to the full baths, and the latter cautiously as a gradually cooler bath, as I have directed in the treatment of typhoid fever. If you place a patient with a temperature of 41° C. in a bath of 35° C., and cool this down a few degrees by adding cold water, you are enabled, after the first bath, to judge from the reaction of the system whether you may advance to a more decided cooling down or not.

"As I have already emphasized in the therapeutics of typhoid fever, the effect is not limited to the cooling of the blood, but, far more, the thermic stimulus causes a refreshing of the central innervation, and, corresponding to the latter, a stimulation of the functions of the vital organs.

"The value of antipyretic remedies, especially of acetanilide and antipyrine, is not to be underestimated, but they can not approach even distantly the effect of hydrotherapeutics, because just here the chief effect of the thermic excitation, the refreshing of the nervous system, is absent." ("Klinische Vorträge," von Professor D. H. v. Ziemssen, vierzehnter Vortrag, Verlag von Vogel, 1888, pp. 33–35.)

As I have expressed the same views in regard to typhoid fever, with the hope of urging the profession to their adoption,

that are contained in the last sentence quoted, I will not add aught to this valuable practical advice, but urge its adoption in the severe forms of scarlatina prevailing at present.

SIMON BARUCH.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

Meeting of March 21, 1889.

The President, Dr. ALFRED L. LOOMIS, in the Chair.

Discussion on the Place of Electricity in Therapeutics.

The Physical and Physiological Action of Electricity.—Dr. M. A. STARR read a paper with this title in which he also considered the therapeutic value of that agent. He first referred to ideas held in times not very far past according to which electricity was a substance or an entity of a fluid-like nature which flowed in a so-called current, and affected the tissues in a way more or less analogous to the action of a drug. It was now well known that electricity was a form of vibratory activity imparted to the molecules composing a body which at two points was in contact with poles whose electrical condition was opposite. It was known that the condition of the molecules between the two poles varied according to the distance of any one molecule from one or the other pole, but the nature of the difference between the positive and the negative pole was in itself not known, except that these poles represented two different forms of electrical state.

The speaker then defined and compared static, galvanic, and induced or faradaic electricity, and showed that all were forms of the same force, only differing in the mode and conditions of their production. Static electricity had this peculiarity, that the change of electrical state was limited to the surface of the body charged. He thought it strange that it had so long held a place in the minds of physicians (to say nothing of the popular ideas concerning it), as if it had some peculiar and mysterious power. Any effects derived from it must be due to stimulation of the surface of the body and the peripheral cutaneous nerves. It was possible that certain reflex effects in deeper parts might in this way be brought about.

Another matter in this connection he would speak of with which a popular fallacy was bound up. The state on the surface of a body so charged was communicated to the adjoining air or to the hair of the head, and these, being in the same state of electrification, were repelled. The air so charged constantly moved away from the body, and this produced what had been called the electrical breeze; and in no possible way could it differ from air put in motion in any other way, or have any therapeutic action. To sum up what there was to say about the therapeutical value of static electricity, it was the equivalent of any other mild form of counter-irritation, such as switching the surface of the body with bundles of fine twigs, massage, the needle bath, or the faradaic brush, etc. It could have no inherent or peculiar curative effects, unless through an action of the mind or from pure expectation.

Galvanic electricity had a much more definite and far-reaching effect, but he thought few who had used it extensively would be likely to say that it could be compared with such a drug as opium in certainty of action. We recognized clinically three varieties in the effects obtainable, called catalytic, cataphoric, and electrotonic. The catalytic effect of a galvanic current was a state in which separate molecules were caused to fly apart from each other. It was therefore a disintegrating force and produced chemical changes in compound bodies. The two poles being applied to points on the tongue, a sour taste would be noticed at one pole and a salt taste at the other. It had a limited number of uses in medicine, such as removing hairs from the face, and perhaps in causing the absorption of tumors, but there had hardly been time, as yet, to form a definite judgment as to its advisability in the latter employment. In urethral strictures all the best authorities now condemned its use. Its results were less satisfactory than those of most surgical operations; it was apt to produce ulcers which healed slowly, and gave much pain. When a milder current was used, certain effects in the way of increasing the chemical changes in the body were obtained which were an aid to nutrition, and actual growth could be induced in muscular fiber. In a case of diphtheritic multiple neuritis, reported by Professor Macher, of Yale, in which both arms were paralyzed, the galvanic current, applied to either arm successively for a week at a time, had produced hypertrophy of its muscles and increased its size and strength. Faradism had produced no change, and massage had been followed by actual loss.

He had never seen any good effects obtained from galvanism in organic diseases of the brain and spinal cord. Sometimes the patient would improve and then grow worse; sometimes he would not improve at all. In all forms of insanity it was useless. In diseases of the cord it was usually recommended, and was often applied. He had never known a spinal disease associated with degenerative changes of tissue in which the least permanent benefit had been obtained. In destructive inflammatory diseases it could not reduce the congestion even temporarily, and hence was contra-indicated. In the period of convalescence it was often used, but he doubted if with any actual benefit. In spastic rigidity or in locomotor ataxia galvanism had not, in his experience, given good results. Its analgesic effects were often not obtainable; on the whole, he had been disappointed in trials that he had made of its power to relieve pain. The speaker ended this branch of his subject by quoting the opinions of Gowers and Strümpell, according to whom little could be said in favor of the employment of galvanism in central nervous diseases. In the local treatment of paralyzed muscles he approved of its use.

We had no definite knowledge of the extent to which changes could be induced in the deep viscera of the body, since we had no means of proving how much of a current passed through them. Muscles conducted electricity easily, bones less easily, and nervous structures very badly. The current was not uniformly diffused through the body as the diagrams in textbooks would lead one to suppose.

Applied to the periphery, galvanism did unquestionably increase the circulation and the chemical changes going on in a part, and here had a certain value. However, in many cases of lead palsy, facial paralysis, and neuralgia in which he had employed it, the results had been decidedly disappointing. In these local applications he had found Dr. Gibney's rule a good one—that the strength of the current must be increased until there was a distinct sensation in the peripheral distribution of the nerve to which the application was being made.

The cataphoric action of galvanism by which the absorption of substances in solution through the unbroken skin could be increased had a certain value, especially in the use of cocaine and aconitine, in producing local anæsthesia and relieving neuralgic pains in nerves superficially placed. The objection to medicated baths was that the amount of the drug absorbed could not be accurately determined.

Lastly, he would speak of the electrotonic effects of electricity. When a current was thrown into a part or tissue the

molecular change at the moment was of an intense sort, and also when the circuit was broken. When the poles were reversed a still more active state of electrical activity was set up. The excitation so produced might be very useful in appropriate cases to promote nutrition and activity. Faradism, a weak interrupted galvanic current increased in intensity by magnetic induction, had no advantages over galvanic alternation for this purpose. The apparatus was more portable. The effects obtained were purely tonic; an irritation of superficial parts was also produced which in a reflex way had an effect on deeper parts and excited functional activity. Such use of electricity was partly empirical and partly physiological.

After using electricity according to the most approved rules and with the best apparatus during a period of ten years on a large number and variety of patients, he must frankly say that he was disappointed with the results which he had obtained as a whole. He had selected his cases, used the most approved methods of application, and measured the strength of his currents with the utmost care.

The Value of Electro-therapeutics in Lesions of the Optic Nerve.—Dr. C. S. Bull read a paper with this title. (See page 457.)

The Effects of Electricity in Spinal and Cord Diseases.—Dr. L. C. Gray read a paper with this title. (To be published.) He first remarked that he could not agree with Dr. Starr as to there being no certain or definite effects to be had from electricity. He believed that certain affections came under its influence as certainly as we were accustomed to see any other conditions yield to the action of opium or quinine. Among these he would mention neuralgia, neuritis in either extremities or trunk, neurasthenia, and certain mental symptoms occurring in organic mental diseases. Palliation at least could be looked for. He thought a lack of success in the use of electricity in dispensary practice spoken of by Dr. Starr might have been due to lack of delicacy in the apparatus used, and especially to the currents not being measured, or graduated in strength to suit individual cases. He only spoke from a knowledge of what the application of electricity in dispensaries usually was.

Dr. W. R. Birdsall said that he had been asked to speak on the use of electricity in organic diseases of the spinal cord. Dr. Starr had just given a doleful picture of what its value was here, but he thought it was not more so than might be given of the benefit to be derived from any other method of treatment. These difficulties were incurable and we must not expect much aid from any direction. He had seen patients that recovered, and he had seen others in whom the condition was decidedly alleviated. In accomplishing the latter result he had known electricity to do more than any other remedy tried by relieving the painful spasms, the effects of paralysis, and the trophic disturbances. As to reaching the organic state which determined all these symptoms, we must remember that nothing else in the way of a remedy did so, but that electricity aided in this direction.

In the acute inflammatory affections of the cord electricity was not of use, and was perhaps of positive harm. He believed its most valuable effects were obtained in cases where there was a need of some stimulating agent to excite action in living tissues. In relieving pain, both anode and cathode were of equal value. What was called the peripolar state, or that existing in the neighboring tissues, was exactly opposite to that of the pole applied, and so the effect of either was the same. The condition present, moreover, at the moment the cathode or anode was taken away, was just the opposite of the state which afterward persisted. He believed a large share of the effects obtained by electricity were reflex in their origin. Because static electricity only excited nerves in the periphery was no reason for its having no deep effects. On the other hand, it was well known that contraction of muscles and distant nervous effects could be obtained from static electricity. A galvanic current of twenty milliampères sent through the arm from the hand to the middle of the back would cause flashes of light before the eyes, showing that the current was widely diffused. Electricity seemed to be useful in various functional diseases, partly by its mental effects.

Electricity in Functional Nervous Diseases.—Dr. A. D. Rockwell read a paper with this title. (See page 430.)

Electricity in Functional Nervous Affections.—Dr. E. D. Fisher read a paper with this title. He defined a functional nervous affection as an abnormal action of the nervous system manifested by symptoms which had no physiological explanation, and were accompanied by no anatomical changes. We had to assume that there was a molecular change or some fine disturbance of nutrition in the nerves of a part sufficient to alter its functional activities and yet not recognizable by our present methods of investigation. This view was sustained clinically by the fact that many of the so-called functional affections were temporary and evanescent. They might become chronic—that is, habitual—but even then they might after years of continuance entirely disappear, as was seen in idiopathic epilepsy, neurasthenia, hysteria, melancholia, etc.

When we considered the function of the nervous system, with its cells and conducting fibers, in controlling the growth and nutrition of every part of the body, it would seem probable that a constant and natural nerve current existed, or, as Foster termed it, "a molecular disturbance traveling along a nerve fiber in the form of a wave." In electricity we had a force which acted upon nerve fibers and muscles, arousing or increasing their physiological action by some alteration of this "molecular disturbance." When this force was applied directly to the nerve in its peripheral distribution or in its course in the cord and brain, either a stimulant or a depressive effect resulted, one or the other resulting according to the condition of the nerve or the strength and direction of the current. As compared with other parts of the body, the nervous system was composed of elements particularly well adapted to the conduction of the electrical current. The sympathetic system was responsive to the electrical current, and therein we possessed a means of controlling the circulation and nutrition. We knew that at the point of diffusion of the galvanic current hyperæmia of the part was induced by a dilatation of its blood-vessels. This must lead to a change in the nutrition of the part affected. He believed that much could be accomplished in functional affections in this way.

To establish the true place and value of electricity as a therapeutic agent he preferred to turn to the records of careful and qualified observers. In the hands of Munk, Stein, Charcot, and especially Benedikt, the static current had been found to give excellent results in many of the so-called functional diseases, such as cerebral and spinal neurasthenia, spinal irritation, chorea, epilepsy, cephalalgia, neuralgia, etc. The irritant or stimulant effects of the faradaic current were useful as such, but they were not confined to the parts to which the applications were directly made. Rumpf had found that faradization of the skin produced hyperæmia of the hemisphere of the brain opposite to the side of the body to which the application of the current was made, while faradization of the abdominal walls caused abdominal plethora and cerebral anæmia. Statements as to the clinical effects of general faradization or the use of the faradaic brush thus received confirmation when we considered their physiological action. It was, however, in galvanism that we found the greatest remedial agent in the class of diseases just men-

tioned. Here chemical and electrolytic effects gave added power in controlling bodily processes. Experiments had shown that it could be made to affect the circulation (and consequently the nutrition) of the cerebro-spinal system.

On the whole, physiological, borne out by clinical, data would seem to sustain the title of electricity to a high place in the therapeutics of functional nervous diseases.

Dr. M. Putnam Jacobi said that exact statistics as to the success of the Apostoli method in the treatment of uterine fibromata might have an interesting bearing on the discussion. They were rather difficult to find, considering the widespread reputation of the method.

Carlet's thesis, which embodied Apostoli's only detailed report, contained accounts of ninety-four cases. In five of these the tumors had been very large, rising nearly to the xiphoid cartilage, and had been treated partly by galvano-puncture. In one of these treatment had not lasted long, and no result had been reached; in four of them, after from a month to a year of treatment, the relief obtained had been very considerable, at least as regarded symptoms, and the tumor in one case had diminished three fingers' breadths, but much less in the three others. Eighty-nine cases had been treated exclusively by intra-uterine cauterization with both positive and negative poles. In two of these pregnancy had been unrecognized and abortion had resulted, in one the condition had proved to be subinvolution following confinement, and in one incipient cancer.

Four cases of subperitoneal fibroid had been treated; in the first of these relief had been obtained after a month and the length of the uterine cavity had been reduced from 13 to 12 centimetres. In the second the tumor had risen above the umbilicus. Single cauterizations had been followed by an abscess which had been opened through the abdominal wall, but also by some diminution in the size of the tumor. In the third the tumor had reached nearly to the xiphoid cartilage and the cavity of the uterus had measured 21 centimetres. Fifty-two cauterizations, given during a year and a half, had been followed by entire relief of symptoms and reduction of the cavity to 12 centimetres. In the fourth the tumor had risen above the umbilicus. The symptoms of the patient had been entirely relieved, but without diminution in the size of the tumor.

In four cases of interstitial fibroid, treatment of short duration had given negative results in three, but in the fourth the length of the uterine cavity had been reduced from 14 to 12½ centimetres.

The seventy-seven remaining cases afforded, from their description, no adequate proof of the existence of a tumor. The descriptions given—often most summary—corresponded rather to a chronic metritis. The depth of the uterine cavity had varied from 6½ to 9½ centimetres. In forty-seven of these cases entire relief of symptoms and some reduction in the depth of the uterine cavity had been obtained. In thirty cases the results of treatment, usually of short duration, had been negative, but in several instances a pre-existing perimetritis had been seriously aggravated by the intra-uterine cauterizations.

The net result of these first statistics went to show that the Apostoli method was very valuable in the treatment of chronic metritis, or for the relief of the symptoms caused by small fibroids. It seemed in a few cases to have occasioned a certain diminution in the size of large tumors; but beyond this Apostoli himself had published no positive results. Dr. Keith, of London, spoke enthusiastically of the method, but gave no statistics, only stating that he had made twelve hundred applications to one hundred patients, a proportion to each patient which was scarcely large enough to judge of the value of the method by. Engelmann, of St. Louis, in an elaborate paper on the theory of the method, did not give the history of a single case. Martin, of Chicago, had stated that he had seen tumors from the size of an apple to that of a cocoa-nut disappear under treatment, but gave no details. Everett, in the "N. Y. Medical Journal" for April 18, 1885, had given a list of seventeen cases of undoubted tumors treated by the intra-uterine method. In three of these, polypoid tumors had been extruded after external faradization of the abdomen. In two cases submucous fibroids had been said to be cured after intra-uterine faradization lasting in one case nearly four weeks and in the other three months. In three cases pedunculated tumors had come down to the os externum under the influence of faradization and had then been removed. In six cases galvano-puncture had been employed. In two of these patients recovery had afterward been obtained by laparotomy and excision, in one by the extrusion of an interstitial fibroid into the uterine cavity, in two life had been terminated by cancer, and in two by tuberculosis; finally, in one there had been a dangerous collapse, but the patient had recovered and shrinking of the tumor had followed.

Freeman, using Cutter's method of galvano-puncture through the vagina and abdomen simultaneously, had met with four deaths in a series of fifty cases, and had reported three successful cases. Webb, an enthusiastic observer in Apostoli's clinic, had related the history of three remarkable cases of subperitoneal fibroids. The first had filled the abdomen up to the sternum; after three galvano-punctures and thirty-eight intra-uterine negative cauterizations during a period of eighteen months, the upper border of the tumor had come only to within a hand's breadth of the sternum. In the second case the tumor had risen two inches above the umbilicus. Fifteen galvano-punctures during a period of eleven months had caused it to fall to a point two inches below the umbilicus. In the third case metrorrhagia had entirely ceased after the fourth puncture. Dr. W. H. Baker had been quoted by Dr. Buckmaster as having said that in one case he had seen a tumor entirely disappear after treatment by galvano-puncture, and in twelve cases shrink to from a third to a half of its former size. Dr. Massey, in his recent volume on the use of electricity in pelvic diseases, had reported two cases of his own in which subperitoneal fibroids had been reduced to two thirds of their original size with full relief of symptoms, one case in which a submucous mural fibroid was extruded after thirty-eight galvano-chemical cauterizations, one case in which a small submucous fibroid was cured after thirteen applications, and four cases in which intramural fibroids had been much reduced in size. He quoted Holland as having caused sloughing and complete enucleation of a tumor reaching to the umbilicus, after nine cauterizations given during one month.

Dr. G. W. Jacoby thought the sum of all we know about electricity very little, either in itself or its applications in medicine. It had been recommended in every disease imaginable, even in tuberculosis, with the idea that this was a disease of the sympathetic system. When different opinions were given by high authorities as to the value of an agent, what were men of less experience to think?

Dr. W. G. Thompson thought highly of the stimulating effects of the faradaic current, both on the circulation and on the nutrition of muscles. He could speak well of its use in removing opacity of the cornea, exudations into the tissues, and some of the symptoms of chronic muscular rheumatism.

Dr. Starr expressed his satisfaction with the extent to which he had drawn out the actual views of men present. He only wished to contrast them with the unhesitating statements made in many of the text-books, or rather most of the text-books, as to what could regularly be accomplished by electricity. Patients were still coming to New York from long distances for electrical treatment, as if it were something which might and probably would succeed where everything else had failed.

Gowers had been the first writer of authority on nervous diseases to say that he was disappointed in electricity.

In regard to our lack of knowledge concerning the effects of the anode and cathode, alluded to by Dr. Gray, and the physical difference between them, he had this to say: If we knew of no physiological differences observable in their effects, the only conclusion to be drawn was that these effects were very uncertain, or else that our knowledge was very incomplete.

With regard to Dr. Gray's statement that electricity was of use in cases of hemiplegia without contractures, it was enough to say that persons with these forms of hemiplegia always recovered. If there were no contractures, then evidence was wanting of the presence of any descending degeneration, and hence of any organic disease. Diphtheritic paralysis was well known to end in recovery spontaneously; hence, while electricity would preserve the nutrition or motility of the part while paralyzed, it could make no difference as to the outcome of the disease.

With the statement of Dr. Fisher, that the nerves conducted easily and that the sympathetic nervous system could readily be brought under the influence of electricity, he could not agree. The nervous structures were known to resist the passage of a current more than the muscles, or the vessels, or the bones, and the central nervous organs, being surrounded by fluid, were thereby specially insulated. As to passing a galvanic current through the sympathetic, he seriously doubted its possibility. It was certainly very difficult to excite the cervical ganglia, judging by the fact that it took very strong currents to produce changes in the size of the pupil.

He took exception to the statement of Dr. Rockwell that the faradaic current acted on the intramuscular nerves, and hence failed to produce a contraction in a muscle whose nerves were degenerated. It failed to do so because the alternative electrotonic state produced by that current was formed too rapidly to affect the low tension and slow contractility of a muscle whose nerves were degenerated. If a single faradaic shock was given, the muscle would contract in just such cases, since force enough was present to respond to a single application of a stimulus, although not present if the stimulus was repeated too frequently. It was in this way that galvanic and faradaic currents were really alike; at least they did not affect different parts of a muscle.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN NEUROLOGY.

Meeting of March 8, 1889.

Dr. L. C. Gray in the Chair.

Muscular Deformities of Nervous Origin and their Treatment.—Dr. V. P. Gibney read a paper with this title. He included among muscular deformities those due to changes in the tendons. They might be peripheral or central in origin. Among peripheral nervous diseases giving rise to deformities he included neuritis and neuralgia, and among central diseases any affection, either primary or secondary, affecting the brain and spinal cord. Taking up the deformities due to peripheral nerve lesions, the speaker first discussed torticollis. There was considerable doubt in the case of this affection whether we had to deal with hyperkinesis or akinesis. Congenital torticollis was usually not dependent on a nervous lesion, and manifestly it was not so where it was the result of a hæmatoma of the sterno-mastoid. The most frequent cause of wryneck was rheumatism depending on a cold. Though here usually self-limited, it might become permanent, and structural shortening of the muscles take place. Here, after constitutional treatment had failed, forcible correction under an anæsthetic should be made, or myotomy done, and an appliance adjusted. He had usually relied upon the head spring called the jury mast, supplemented by constitutional remedies, and had seen the most obstinate cases yield within a few months. Still, in a certain number of cases the ætiology remained obscure, rheumatism, malaria, Pott's disease, and hysteria all having been excluded. Here myotomy had given prompt relief. In the treatment of hysterical torticollis the orthopædic surgeon found quite as many difficulties to encounter as the general practitioner did. He would admit that he had no specific treatment.

The deformities of the shoulder due to paralysis of the circumflex nerve he had once supposed amenable to electrical treatment, but much light had been thrown on the cause and means of cure of this condition by Harrison in the "Lancet" for February 16, 1889, who had shown that the circumflex nerve in passing through the quadrilateral space was by that circumstance rendered liable to injury, and even strangulation, such as could not occur in the case of any other nerve. Either irritation and hyperæsthesia, or complete interruption of the nerve current and paralysis, might result. As a means of restoring the normal positions of the teretes muscles and the long head of the triceps and freeing the nerve from constrictions caused by inflammatory products matted together, this writer had, in a series of six cases, practiced passive circumduction of the limb, with marked immediate relief, which had become permanent after a few repetitions of these manipulations.

In drop-wrist, Thompson, of Liverpool, had found it of advantage to add to medical treatment a mechanical appliance which fixed the hand in a position of the greatest possible superextension, thus giving absolute rest to the paralyzed muscles. Fractures at the elbow and wrist were not uncommonly followed by neuritis and consequent deformities in the hand and fingers. Time largely must here be relied on for cure. The hot douche, active motion, and massage were the best agents we had to aid in recovery.

The suture of nerves divided at the wrist gave brilliant results when skillfully done. The questions as to the nervous origin of rotary lateral curvature of the spine he would not speak on decisively before so many neurologists, but would pass on to the deformities of the lower extremities, many of which that were known as distinctly neurotic were treated by orthopædic surgeons.

Many reflex paralyses and contractures producing deformities and disability in these parts could be cured by blistering the spine; many others could be traced to irritation in distant parts. An excellent illustration of troubles that were due to irritation at a remote point had been sent him by a surgeon in Belfast, Ireland. A little girl of ten years had had a persistent cough, so that spurious pertussis had been diagnosticated. There had been no elevation of temperature. The cough had continued for two weeks, when a fire had broken out in her bedroom, frightening her badly and causing the cough to disappear. Its place had been taken within a few hours by pain in her right hip joint, shooting pains throughout the distribution of the anterior crural nerve, and painful reflex spasm when adduction and abduction were attempted. The pain had increased for four or five days, when the temperature had risen to 102° F.; an abundant herpetic eruption on the thigh, knee, and leg had broken out, and much tenderness had appeared over the fourth lumbar vertebra. The eruption had continued for fourteen days, and with the temperature had as suddenly disappeared, leaving, however, the thigh wasted, pain on extreme extension, and pain over the trochanter and the crest of the ilium. This had appeared to some to indicate a neurosis of the hip, and to others an osteitis of the hip. However, the limping in the walk

had nearly disappeared in six months, though weakness had persisted in the joint for nearly a year. Finally, the mystery had been solved by the discovery of a piece of needle in the right foot, and complete relief had followed its extraction.

Reflex disturbances were especially to be looked for from affections of the ear, nose, eye, and genitals; also from those of the intestinal tract. The numerous contributions to literature by men working in these special fields had simplified therapeutics and increased the accuracy of diagnosis in these disorders of reflex origin. It was now difficult to deal charitably with a surgeon who put a splint on a muscular deformity depending on a neurosis. The management of such deformities must largely consist in the management of the neuritis.

Taking up muscular deformities depending on central lesions, the speaker remarked that they were generally amenable to simple methods of treatment, but that this did not restore the function of the limb. The question of cutting or stretching tendons was an open and disputed one. From his own observation, he saw no reason to condemn the practice of cutting; correction of the deformity was certainly obtained.

Among meta-hemiplegic disturbances he would mention drop-wrist and drop-foot. In the case of the first the only means of relief he knew of was the mechanical support of the hand, since its weight alone was enough to cause the paralyzed muscles to let the wrist fall into its characteristic deformity.

For spastic contraction of the lower extremities he relied on subcutaneous division of the adductors of the thigh, the flexors of the leg, and the extensors of the foot, with confinement of the limb in an overcorrected position for many weeks, and instructions for associated movements at home. The ætiology of the affection was to be studied, of course, so that any discoverable factors in the causation of the spasm could be eliminated. The results from this method of treatment had, on the whole, been satisfactory to the parents of the children in whose cases it had been employed. He made no effort to secure the management of such cases.

The muscular deformities most difficult to treat arose from diseases in the spinal cord. He treated the deformities arising from compression myelitis consecutive to Pott's disease by fixation, prolonged rest, prolonged administration of iodide of potassium in large doses, and, in the older patients, by the use of the Paquelin cautery lightly applied along the spine. He used no electrical treatment whatever. Dr. Weir Mitchell had lately revived an old method used by his father, which consisted of daily suspension, lasting from a few minutes to several hours.

In England the plan of cutting down on the cord at the point of compression and removing the thickening of the membranes which caused it was being tried. So far as his observation went, tension obtained by pulleys was as efficient as that obtained by suspension. Poliomyelitis resulted in luxation, subluxation, curvatures of the spine, flexion at the different joints of the lower extremities, and talipes equino-varus and calcaneus. When the muscles at the shoulder joint were paralyzed, a deformity resulted which, according to his experience, no appliance could correct. The deformity resulting from shortening of the thigh flexors and of the tendo Achillis he had best succeeded in treating by myotomy and tenotomy. The excision of paralytic joints had been practiced, but he had no experience to offer in this direction. His reliance had been, in cases where the paralysis of the limb had been quite extensive, on appliances designed to make a peg-leg of the limb. For adult patients a jointed apparatus, which locked as the patient stood, was very serviceable.

Dr. A. B. Judson remarked that many cases of deformity owed their origin to absence of innervation in muscles, the latter being chiefly due to anterior poliomyelitis. Club-foot was one of the deformities acquired mainly in this way. Talipes calcaneus was a form of club-foot of nervous origin which was of exceptional interest. Here atrophy of the muscles of the calf prevented the patient from keeping the foot at right angles to the leg, or from rising on tip-toe. He had operated scarcely at all for the relief of this condition, but had got very good results in other ways. A simple brace which prevented the flexion of the foot on the leg removed the irregularity of the step, and gave stability to the foot and ankle. The pressure and friction which ordinarily fell on the ball of the great toe and the anterior part of the foot were transmitted by this brace to the upper part of the anterior surface of the leg, near the tubercle of the tibia, where, if the brace performed its functions, a callus would be formed.

Another condition equally amenable to mechanical treatment was caused by paralysis of the quadriceps extensor of the thigh. It might conveniently be called inability of the knee. A patient thus affected could stand on the paralyzed limb (in a case of moderate severity), with the other foot raised from the ground; but the slightest blow in the popliteal region would send him to the floor, unless he quickly used the other limb to prevent this. If he sat on a table with the legs hanging, he could not extend the knee. In walking, the lower part of the thigh was grasped by the hand at every step, to prevent flexion and consequent collapse of the limb. If a very simple brace was adjusted to the limb during childhood, so as to give the limb stiffness, serious results might be averted. Otherwise, as with years the weight of the body increased, the limb would come to be less and less used in locomotion, crutches would be adopted, and contraction of the ham-strings would follow. In just such cases as these he had known artificial limbs to be adjusted to a stump formed by fastening the leg in extreme flexion on the thigh. Amputation had often been performed under similar circumstances, to rid the patient of a deformed and useless limb.

Mechanical treatment of such conditions was palliative only, and yet extremely necessary. The muscular inability to control the joint resulted in the patient's having essentially a defective skeleton, and the surgeon sought to re-enforce it by adding an artificial one, and so getting the necessary rigidity. The brace, then, resembled in a way the skeleton of the lobster and crab in that it inclosed the muscles. Our mechanics, however, had the great disadvantage of bringing the bony skeleton and the artificial one of steel together, with the sensitive and vulnerable skin interposed. Still, with care and time and experiment and more or less ingenuity, the problem could, as a rule, be satisfactorily solved. Much assistance and encouragement came from the fact that the patients were children, with the element of growth in their favor. If a threatened limb could be kept in good shape by mechanical means from the age of six to that of sixteen years, the ten years of growth would be in the right direction, and tend to result in ability and symmetry.

Believing that the function of the specialist was to strengthen the hands of the general practitioner, he wished to say, in behalf of his co-laborers in orthopædic practice, that many patients who were sent directly to the instrument-maker should be sent to the orthopædic surgeon, for an opinion at least. There were many cases in which the former could supply all that was required, but there were also many in which the aid of the most skilled and educated eye and hand should be called in.

Dr. John Ridlon remarked that in the paraplegia of Pott's disease he used rest, fixation, iodides, and the Paquelin cautery, but he could not satisfy himself that the iodides really contributed much to recovery. Rest of the spinal cord alone did as much good as any of the other measures used, and probably most of the good. In regard to the effects of the Paquelin cau-

tery, he would say that they were often valuable, if at the same time the patient could lie still long enough. To the latter element in the treatment, indeed, he attached all importance. In some cases he would enjoin rest for even so long a period as five years.

Dr. H. L. Taylor agreed with previous speakers that the deformities of the feet and legs resulting from infantile paralysis could always be prevented by proper mechanical protection to the limb. After the occurrence of distortions they could nearly always be removed or greatly relieved by mechanical means, and, if not excessive, in perhaps a few weeks. Protective and retentive apparatus would still be needed, just as after operative interference. In nearly all these cases, even the severer ones, the patients could be put upon their feet by the aid of proper support, and enabled to walk very fairly or even well without crutches. This could always be done if there was power of extension at the knee, and sometimes where this power was absent.

The vascular paresis present in these withered limbs, resulting in poorly nourished and cold extremities, was favorably affected by restoring the limbs to their natural use, and also by thrusting them daily for ten or twenty minutes into a box the air in which was heated to a temperature of 120° or 130° F.

The brace used should in winter be worn between two pairs of woolen stockings; very cold legs could sometimes be kept warm in this way. When the indications and limitations in these cases were appreciated their orthopædic treatment was very satisfactory.

Dr. Samuel Ketch remarked that of late years everybody who had been associated with orthopædic institutions saw many cases of muscular deformities of nervous origin. As a rule, these cases were sent at a very late stage of the disease which caused the deformity, and many of them at a time when an apparatus was the only resource left, the erroneous idea being a common one, in the minds of both the profession and the laity, that a child could always be made to walk with the help of "a brace."

Of the peripheral paralyses, torticollis was the most frequent one presented to the orthopædic surgeon. Without discussing some interesting points in its ætiology and diagnosis, he would state that very good results had been obtained in its treatment by the use of Taylor's chin piece as modified by Shaffer, where the ball-and-socket arrangement allowed of the placing and retaining of the head in any position desired, and was especially efficacious after operative measures.

Of all the deformities of muscular origin which presented, the largest number of cases were of club-foot following anterior poliomyelitis. Here, not as in the congenital cases (whose ætiology was still somewhat obscure and, contrary to what was usually taught in the text-books, which were not of paralytic origin), we had to deal with a paralysis, partial or complete, the direct result of the spinal lesion. The deformity in these cases was caused by purely mechanical laws, as shown by Volkmann. In the treatment of these cases it would seem wise to try to secure proper warmth and improved nutrition of the limb, and at the same time to attempt the removal of the deformity. For the latter purpose no fixed plan, either operative or mechanical, was to be adhered to, but means must be selected to suit individual cases. Exercise of the part was very important, and, in the speaker's judgment, this could best be accomplished by means of Shaffer's shoe. Here the action was an intermittent one, and, while tending to the removal of the deformity, also distinctly improved the nutrition of the muscles. The prolonged use of electricity was of great value, as shown in a case verbally reported by Dr. Sayre, where repeated applications of a current which caused contractions which were hardly perceptible and quickly disappeared brought about a permanent improvement. Hypodermatic injections of strychnine were also of service at times.

He had been glad to hear Dr. Gibney speak of his attempts toward the relief of that distressing class of cases which resulted from spastic paralysis; he would have liked to hear more specifically the results of tenotomy and reposition. Rupprecht, of Dresden, had reported marked improvement in his cases treated by these means, not only in the deformity, but in the mental states of his patients. These results had not as yet been verified in the speaker's own experience.

With regard to the treatment of the paraplegia of Pott's disease, he could agree with Dr. Ridlon that iodide of potassium did not shorten its duration. Absolute rest was, in his opinion, of most value in this condition. It was of especial importance that, where possible, the patient should have head support during this time. He differed with Dr. Judson in regard to the moderation of the opinion expressed by him that there were some cases the treatment of which could be left to an instrument maker. In his own opinion, no case could be well treated by any one but by him whose education had specially fitted him for this purpose.

Dr. Ingraham asked how soon in the course of the disease it was well to call in the orthopædist, and also what appliance Dr. Gibney used in Charcot's joint disease.

Dr. Field asked if contraction of the prepuce was to be regarded as a cause of any of the deformities under consideration. A case had been referred to him in which neglect to treat a phimosis had apparently been the cause of a deformity of the limbs.

Dr. J. F. Terriberry thought a brace should be applied as soon as a child became old enough to begin learning to walk. The orthopædist could very often assist the neurologist, and *vice versa*. The two should be more intimately associated than they were.

Dr. E. D. Fisher thought that mechanical appliances had far better chances of giving lasting aid in deformities resulting from poliomyelitis than in those due to spastic hemiplegia, where the cerebral irritation usually went on for years. He had seen several cases in which the latter disorder had been present where braces had temporarily relieved the deformity, but recurrence had been noticed in a short time. He thought well of Dr. Weir Mitchell's recent method of treatment. He had patients under his care whose condition had greatly improved after daily suspension had been practiced for a few months. A case presenting a somewhat curious deformity had recently been brought to him. A girl ten years of age had both arms drawn forcibly backward by a persistent contraction of the muscles determining that movement. He had concluded that the case was not a critical one when during a revival meeting complete relief of the condition had resulted from religious emotion, and had lasted a month, but had been followed by a recurrence shortly after her being engaged in a quarrel.

The Chairman said that in any case of muscular deformity it was a question of great importance to determine the cause, as well as to determine whether the contracture was not compensatory. In some cases that he had seen, removal of the contracture by massage and rest had made a limb that had been partially useful perfectly useless, because the mechanical support of the contracture had been removed. Where the deformity resulted from an incurable lesion of the brain or the spinal cord, appearances of disability could be removed, but no essential good was obtained. In undertaking the treatment of a case of deformity due to progressive muscular atrophy, it should always be borne in mind that progressive muscular atrophy occurred in three forms, in one of which the lesion was central, in another of which it was due to disease in the peripheral nerve,

and in the third of which it was only and entirely due to disease in the muscular fiber itself or in the motor end plate upon the muscle. When it was possible to distinguish the latter two forms, mechanical treatment might hold out more chance of relief than where the cause was central.

A question of gravity often arose as to when the brace should be applied. Thus, in a case of hemiplegia recently under his care, a cure had been effected by the use of the faradaic current after a sickness of a year, and when the patient could not rise from bed, Dr. Gibney having meanwhile been applied to by the parents for a set of braces. He thought that where an operation for phimosis cured deformities in the extremities, this result was due largely to the shock and the effects of the ether on a more or less hysterical condition. But when poliomyelitis resulted in a deformity of the arm, great care was to be exercised in the giving of ether, as the respiratory center was here very apt to become paralyzed; in two instances he had seen children come near dying on the table.

Dr. GIBNEY, replying to Dr. Ingraham, said that in locomotor ataxia with deformities—in Charcot's disease or tabetic joints—he had not seen cases early enough to try the effects of preventive treatment, but he should suppose that apparatus would only assist patients so affected to get about for a time; the disease would not be in any way controlled.

In reply to Dr. Field, he said that he had not met with any cases of monoplegia or monospasm resulting from phimosis, but had seen general paretic disturbances and contractions in children relieved by circumcision. Such instances, however, he believed, were rare.

Book Notices.

Experimental Surgery. By NICHOLAS SENN, M. D., Ph. D., Attending Surgeon, Milwaukee Hospital; Professor of the Principles of Surgery and Surgical Pathology in Rush Medical College, Chicago. Chicago: W. T. Keener, 1889. Pp. xii–522. [Price, $5.]

DR. SENN has here published in book form a number of papers which have appeared from time to time in medical periodicals, so that this work is already familiar to surgeons. The author's many experiments enable him to speak with authority, and his ingenious methods of performing enterorrhaphy and enterostomy entitle him to a high position among abdominal surgeons. But it seems somewhat unfortunate that he should mar his otherwise perfect work by his recommendation that a "wound of the stomach or intestine should be sought for in some such way as a plumber locates a leak in a gas pipe." This reminds one of the remark made by the gentleman afflicted with prostatic hypertrophy to the effect that "he would be much more comfortable if his doctor were only a better plumber." Dr. Senn advocates inflation of the intestine *per anum* with hydrogen in cases of penetrating wounds of the abdomen, in order that this gas may by its escape through the abdominal wound reveal the existence of a visceral perforation. The gas must be ignited in order to prove that it is really hydrogen which is escaping, and, as he naively adds, this is a most efficient means of rendering the wound aseptic! But how as to the peritoneal cavity? This must be distended with gas which has been forced through the rectum and colon, the cavities of which organs can hardly be instanced as types of sterilized localities, and it is not quite correct to use the expression "saved as by fire" in its literal sense when relating the successful result of a laparotomy for perforating wounds of the intestine. Grave objections to such procedures are so apparent that further comment is unnecessary. With this single exception, we have nothing but the highest praise to offer, and our congratulations to both the author and his readers are hearty as we lay down the book.

Intestinal Surgery. By N. SENN, M. D., Ph. D., Attending Surgeon, Milwaukee Hospital; Professor of Principles of Surgery and Surgical Pathology, Rush Medical College, Chicago, Ill. Chicago: W. T. Keener, 1889. Pp. vii–269. [Price, $2.50.]

THIS book consists of three papers which were published separately last year. The first, on the "Surgical Treatment of Intestinal Obstruction," was read before the Congress of American Physicians and Surgeons at Washington; the second, "An Experimental Contribution to Intestinal Surgery, with Special Reference to the Treatment of Intestinal Obstruction," appeared in the "Annals of Surgery"; and the third, "Rectal Insufflation of Hydrogen Gas, an Infallible Test in the Diagnosis of Visceral Injury of the Gastro-intestinal Canal in Penetrating Wounds of the Abdomen," was read before the American Medical Association.

The first contains a *résumé* of the best literature on the surgical treatment of intestinal obstruction, together with some account of the author's experience, both clinical and experimental. The second is, as the title indicates, entirely experimental, and relates to artificial obstruction, enterectomy, enterorrhaphy, intestinal anastomosis, and the adhesion of serous surfaces. The third attracted an amount of attention when first published which was perhaps the greatest accorded any one paper last year, and met with such free and widespread discussion that further mention of it than we have already made is unnecessary.

All of Dr. Senn's work is original and valuable, whether all of his conclusions are correct or not. He is one of the pioneers in this branch of surgery, and his opinions are worthy of careful consideration by all who may ever be called upon to perform operations on the intestines.

Surgical Bacteriology. By NICHOLAS SENN, M. D., Ph. D., Professor of Principles of Surgery and Surgical Pathology, Rush Medical College, Chicago, Ill. Philadelphia: Lea Brothers & Co., 1889. Pp. 17 to 270.

THIS work is a careful and concise *résumé* of the results obtained by bacteriologists in their investigations as to the microbic character of surgical diseases, giving in condensed form what is now known on this subject. It will prove a great boon to the practitioner who has neither the time nor the inclination to wade through the voluminous original literature, but who has a desire to gain some idea as to the demonstrated facts which support the theory. The work is a valuable book of reference, and is well deserving of wide distribution.

A Manual of Instruction in the Principles of Prompt Aid to the Injured, designed for Military and Civil Use. By ALVAH H. DOTY, M. D., Major and Surgeon, Ninth Regiment, N. G. S. N. Y.; Attending Surgeon to Bellevue Hospital Dispensary, New York. New York: D. Appleton & Co., 1889. Pp. xiii–224. [Price, $1.25.]

IT is truly refreshing to meet with a treatise on a medical subject which, written mainly for the benefit of the laity, is at the same time accurate, concise, and practical. Dr. Doty has well accomplished a very difficult task—that of explaining the why and wherefore of the various measures to be adopted in the temporary care of the injured without the use of avoidable

technical terms or mention of useless details. The chapter on bandaging is a most excellent one, and the descriptions of improvised dressings are clear and eminently useful. The book is also enhanced in utility by the incorporation of the "Manual of Transportation" of the United States army.

As to its shortcomings, it would be improved by a little more treatment of the negative side of the question, especially in the matter of the management of hæmorrhage, which is, perhaps, the most trying of all emergencies to the nerves of the layman. That is, a few "don'ts" in the discussion of the use of the various hæmostatic measures described would be more firmly fixed in the memory than any number of positive directions; as, for instance, the layman always remembers the fact that constriction of a limb will arrest hæmorrhage from any point below, but can not, as a rule, remember the fact that it should only be used when direct pressure on the bleeding point is impossible or insufficient.

One or two insignificant inaccuracies, such as "*perchloride* of iron (Monsel's solution)," are to be noted, but on the whole the work is most creditable to the author, and is by far the best of its kind we have as yet seen.

Hand-book for the Hospital Corps of the United States Army and State Military Forces. By Charles Smart, Major and Surgeon, United States Army. Approved by the Surgeon-General of the Army. New York: William Wood & Co. Pp. viii–577.

This book is the outcome of the necessity for "a higher intelligence and more extended knowledge on the part of the non-commissioned officers" of the medical corps of the army than have heretofore been required. Dr. Smart's duties in connection with the Surgeon-General's office have given him an opportunity to discover the deficiencies of this class of men, and in the volume before us they are fully and intelligently met. It will undoubtedly find much favor in the regular army, to the wants of the medical department of which it is especially adapted. The needs of the State military forces call, we think, for a less comprehensive volume, in which routine hospital work, such as is required in the regular army, monthly returns, meteorological reports, etc., are not included. The work is divided into three parts. Part I deals with the service of the post hospital, the ambulance drill, active service in the field, and general hospital service. Part II treats of elementary anatomy and physiology, including the anatomy of bones, joints, and muscles, the physiology of the circulation, alimentation, respiration, excretion and secretion, and the nervous system. This portion of the work prepares the reader for a clear understanding of Part III, which instructs him in the elements of first aid to and intelligent nursing of the injured, and in the supervision of hospital wards. In the portion of this section of the book which deals with hæmorrhage, cuts illustrating the method of checking hæmorrhage by digital compression of certain arteries would, we think, be of great assistance to the non-medical reader. Illustrations in the work are numerous and, in the main, fair, but the mechanical part of the book is not very creditable, particularly the binding, which gives evidence of haste or carelessness. The book has a green cover, bearing the hospital steward's chevron, and fastened with a clasp, and is of the same size as the works on tactics used in the army, to which it is intended to be a companion volume.

BOOKS AND PAMPHLETS RECEIVED.

The Illustrated Optical Manual; or, Hand-book of Instructions for the Guidance of Surgeons in testing Quality and Range of Vision, and in distinguishing and dealing with Optical Defects in General. By Surgeon-General Sir T. Longmore, C. B., F. R. C. S., Honorary Surgeon to the Queen, etc. Fourth Edition. Enlarged and Illustrated by Seventy-four Figures from Drawings and Diagrams by Inspector-General Dr. Macdonald, R. N., F. R. S., etc. London and New York: Longmans, Green, & Co., 1888. Pp. xxii–239. [Price, $4.50.]

Lectures on Bright's Disease. By Robert Saundby, M. D. Edin., Fellow of the Royal College of Physicians, London, etc. With Fifty Illustrations. New York: E. B. Treat, 1889. Pp. vi–290.

Lehrbuch der praktischen Ohrenheilkunde. Von Dr. D. B. St. John Roosa, Professor der Ohren- und Augenheilkunde an der medicinischen Facultat der New Yorker Universitat. Nach der 6. Auflage des Originals. Bearbeitet von Dr. Ludwig Weiss, in New York. Mit 77 Holzschnitten. Berlin: August Hirschwald, 1889. Pp. xii–396.

Électricité médicale. Éclairage et galvanocaustique. Par le Dr J. Garel, Médecin des hôpitaux de Lyon. [Extrait du journal "La Province médicale."]

College Botany, including Organography, Vegetable Histology, Vegetable Physiology, and Vegetable Taxonomy, with a Brief Account of the Succession of Plants in Geologic Time, and a Glossary of Botanical Terms; being a Revised and Enlarged Edition of the "Elements of Botany." With nearly Six Hundred Illustrations, largely from Drawings by the Author. By Edson S. Bastin, A. M., F. R. M. S., Professor of Botany, Materia Medica, and Microscopy in the Chicago College of Pharmacy. Chicago: G. P. Engelhard & Company, 1889. Pp. 15–451. [Price, $3.]

Tenth Annual Report of the Trustees of the Binghamton Asylum for the Chronic Insane. For the Year 1888.

The Disorders of Menstruation. By Andrew F. Currier, M. D., of New York. [Reprinted from the "Medical News."]

On Diabetes and its Connection with Heart Disease. By Jacques Mayer, M. D. Blennorrhœa of the Sexual Organs and its Complications. Dr. Ernest Finger. [Wood's "Medical and Surgical Monographs."]

Seventy-fifth Annual Report of the Trustees of the Massachusetts General Hospital and McLean Asylum, 1888.

A Text-book of Pathology, Systematic and Practical. By D. J. Hamilton, M. B., F. R. C. S. E., F. R. S. E., Professor of Pathological Anatomy, University of Aberdeen. Copiously Illustrated. Vol. I. London and New York: Macmillan & Co., 1889. Pp. xx–736.

Suggestions on the Treatment and Influence of Diet in the Management of Rheumatic Diseases. By Morris H. Henry, M. A., M. D., LL. D., of New York. [Reprinted from the "Dietetic Gazette."]

The Insanity of Oscar Hugo Webber. By James Hendric Lloyd, M. D., etc. Read before the Medical Jurisprudence Society of Philadelphia, November 13, 1888. [Reprinted from the "Proceedings of the Medical Jurisprudence Society of Philadelphia."]

Second Annual Report of the Training School for Nurses connected with the New York Post-graduate School and Hospital, May 31, 1888.

The Annual Report on the Health, Sanitary Condition, etc., of the Borough of Hastings. For the Year 1888. By C. Knox Shaw, L. R. C. P. Lond., etc.

Biniodide of Mercury. Its Antiseptic Use. By Eugene P. Bernardy, M. D. [Reprinted from the "Transactions of the Philadelphia County Medical Society."]

The Resuscitation of Asphyxiated New-born Infants by the Suspension Method. By Llewellyn Eliot, M. D., Washington, D. C. [Reprinted from the "Transactions of the American Association of Obstetricians and Gynæcologists."]

Reports on the Progress of Medicine.

GYNÆCOLOGY.

By ANDREW F. CURRIER, M. D.

The Use of Certain Medicaments with or without Precedent Dilatation in the Treatment of Endometritis, Metritis, Fibromyomata, and Fluxions of the Uterus (Jonin, "El Prog. Gin. y Ped.," March 25, 1888).

—After four years' experience the author feels warranted in recommending the intra-uterine use of pencils of iodoform, resorcin, opium, belladonna, and sulphate of quinine for the treatment of the affections mentioned in the title of his paper. These pencils are dissolved within the uterine canal, exert a topical influence in modifying the condition of the mucous membrane, provoke uterine contractions, and so influence the activity of the circulation and favor the absorption of exudates which may have infiltrated the tissues of the uterus.

Before the insertion of the pencils the uterus should be dilated with bougies, or with antiseptic laminaria tents. One great advantage of this treatment is the ready exit which is thereby afforded for the discharges of the uterus; in other words, good drainage is accomplished. The treatment is also to be recommended because it is unaccompanied with danger. This treatment was originated by Becquerel, though he introduced his applications only within the cervical canal. Fritsch's objections to the treatment are that the pencils will cause uterine contractions, and that they will be expelled before they have accomplished the desired result. Other writers insist that the pencil becomes covered with mucus, and that very little of the medicinal substance is absorbed. Such a statement may be true concerning nitrate of silver, but it is not concerning iodoform, which is readily diffused. The pencils may cause pain, however, and hence induce uterine contractions, but the advantages which are to be obtained more than compensate for the pain. In twenty-five cases of fibroid tumor in which this treatment was used there was decided improvement, which was probably due to the concomitant metritis. The treatment should be efficient in dysmenorrhœa. It is understood that it is to be associated with suitable general treatment.

The Electrical Treatment of Hydrosalpinx (Apostoli, *ibid.*).—The conclusions which the author has reached from the treatment of a case of hydrosalpinx by electricity and the study of others are as follows:

1. Fever and the inflammatory state are not an absolute contra-indication to the methodical and appropriate application of the galvanic current.

2. Non-suppurative inflammations of the annexa of the uterus may be advantageously treated by the faradaic current, which, though favorable in congestion and in the first stage of inflammation, is contra-indicated in confirmed suppuration. Those cases are excluded in which electrical cauterization may open a free passage for pus into the vagina.

3. Galvano-puncture is a valuable method for attaining two ends: 1st, the abortion of an initial phlegmasia, and the encouragement to disappearance of a progressing inflammatory process; 2d, the ready evacuation of collections of fluids.

4. Every inflammatory exudate which manifests itself at the *fornices vaginæ* should be treated by galvano-puncture, under suitable precautions.

5. This method will be useful in certain cases of salpingitis or hydrosalpinx, especially if it is likely to release attachments to the abdominal wall.

6. In all operations rigid antiseptic precautions must be observed as to patients and instruments.

7. Two galvano-punctures *per vaginam* with the negative pole into an acute hydrosalpinx will cause a rapid diminution in the intensity of the process, and produce a complete symptomatic cure.

The Treatment of Elytritis and Blennorrhœal Endometritis (Fritsch, *ibid.*).—The author makes a mixture containing equal parts of chloride of zinc and water. Twenty grammes of this mixture are combined with a litre of water. This is heated to a temperature of 30° R. and is used by irrigation in the treatment of blennorrhœal vaginitis and endometritis twice daily, being continued during the menstrual period. About ten irrigations are usually required. If the disease has extended to the cervical canal, the mucous membrane of the uterus, and the tubes, the discharge will soon recur. In such cases the uterine cavity should be cauterized with concentrated solutions of chloride of zinc, and a pencil of iodoform should be introduced at suitable intervals within the cavity.

Bandl's method of treatment is the following: The speculum having been introduced, a fenestrated cannula is passed within the cervical canal as far as the os internum; then a ten-per-cent. solution of sulphate of copper is passed within the cannula, the latter being rotated so that all portions of the mucous membrane shall receive the copper solution through the fenestra. After the cannula has remained in position a few minutes it is to be removed and a tampon introduced within the cervix. Such applications should be made every three or four days, irrigations of a very weak solution of sulphate of zinc being used during the intervals.

Chronic Endometritis (Cornil and Brault, *ibid.*, April 25, 1888).—Inflammation and hypertrophy of the mucous membrane of the body of the uterus are frequently seen as the result of frequent and severe parturitions, as accompaniments of ovaritis, salpingitis, peritonitis, and parametritis, and associated with fibroid or cancerous tumors. The statement that the lesion of endometritis consists in the conversion of the ciliated epithelium of the mucous membrane into pavement epithelium is erroneous. De Sinéty describes three varieties of vegetations which are to be found in this disease: 1, Glandular, which are developments of the hypertrophied glands; 2, embryonal, formed from embryonal tissue, and containing small vessels and traces of glands; 3, vascular, formed by dilated vessels and analogous to blood tumors. The modifications of the stroma of the mucous membrane have been well described by Schröder and Ruge. The authors of this paper made their investigations upon fresh uteri removed by Péan from living subjects, two cases being illustrations of simple metritis, three of fibroid tumors, and three of cancer of the cervix. These specimens enabled them to see not only the mucous membrane under conditions favorable for study, but also the entire wall of the uterus. The uterus being divided longitudinally, the mucous membrane was found of a grayish or reddish color, and in some cases of a bright-red color; it was usually smooth at the surface, sometimes corrugated, and could be easily scraped off with a scalpel. When scraped with a sharp spoon it was found difficult to distinguish and separate the mucous membrane from the uterine muscle. In most cases it was found that the inflammatory process did not amount to more than a hypertrophy of the glands. In endometritis following epithelioma of the cervix the inflammatory lesions are contiguous to the cancerous zone of the cervix. In metritis, which follows other inflammations of the genital apparatus, the lesions of the mucous membrane are not uniform. In those cases in which the surface has a fungous appearance there are eminences and depressions which constitute the condition variously known as endometritis villosa, or fungosa, or granulosa, or vegetans, and which has been described by Sinéty and Slavjanski. These vegetations represent, in some cases, true pedunculated tumors. Less frequently the papillomatous prolongations, or hypertrophic glandular development, contain small cysts which have the appearance of Nabothian follicles. The glandular ducts are usually lined with a single layer of cylindrical epithelial cells, the vibratile processes of which can only be seen in very fresh preparations. The lumen of these glandular processes is usually empty, but sometimes it is filled with epithelial or lymphatic cells in process of degeneration. The lesions of the superficial layer of the mucous membrane are more important than exist in those more deeply situated. The elements of this layer may become necrosed and disintegrated after having undergone a true maceration. The interglandular cellular tissue is normally present in very small quantity, but when inflamed its nuclei increase in size, many new cells appear in the interstices of the glandules, and the vessels increase in number and in size. There may be a general infiltration by lymphatic elements; ordinarily the glandules seem distributed in a stroma of young embryonal cellular tissue. Change in the stroma of the mucosa and new formation in the glands appear to be related phenomena. If we compare the changes, in the shape of glandular hypertrophy, which occur in chronic metritis with those which sometimes occur in the intestine, we find the mucous membrane of the latter above a delicate layer of smooth muscular tissue, but in no cases in which there is glandular hypertrophy of this mucous membrane is the muscular layer invaded except in cases of cancer. There is great difficulty in the anatomical diagnosis between glandular hypertrophy and epithelioma of the neck of the uterus in many cases, but in the majority of cases the distinction can be drawn. In simple glandular hypertrophy there is generally a layer of cells between the bottom of the follicles and the connective tissue, which serves as a foundation for the implantation of the ciliated epithelium lining the follicles, and the cili-

ary processes project into the lumen of the follicles. The interglandular tissue has a less marked infiltration of lymphatic elements than is the case in epithelioma, and the layers of young connective tissue are arranged in lines parallel to the direction of the ducts of the follicles. In epithelioma, on the contrary, there is not only hypertrophic enlargement of the glandules, but an abundant multiplication of cells also which quickly lose the typical characteristics of ciliated epithelium, the proliferation causing complete obstruction of the ducts of the glandules. The cells, after their original form has been changed, may present a polyhedral or a cubical form. When the walls of the glandule are broken, the characters and conditions of epithelioma appear. In general, it may be said that there is only a brief period in which it is possible to confound endometritis chronica with epithelioma. In conclusion, it would seem, therefore, that it would usually be easy to establish a histological diagnosis if one possessed the entire uterus. If, on the other hand, a diagnosis is to be made from the characteristics of fragments obtained by scraping, which may or may not present the conditions of glandular hypertrophy, it can not be done satisfactorily unless one has specimens which show the entire depth and area of the glands.

Oophoritis and Cysts of the Ovary (Petit, *ibid.*, Aug., 25, 1888).—The conclusions of the author's clinical and anatomo-pathological investigations are the following:

1. With the two principal forms of ovaritis, the suppurative and the sclerotic, the principal cystic formations are related—namely, the encysted abscesses, the follicular cysts, whether serous, caseous, or sanguineous—and it is important to distinguish these from the other tumors of the ovary.

2. It is generally admitted that the abscesses are not intimately related to the puerperal state. It is possible that they are first localized in the follicles of the ovary. They may continue a long time in a chronic state, acting as a focus of infection. With reference to cysts of the follicles it is probable that the primary cause is, in many cases, a morbid and repeated congestion of the ovary, interstitial inflammation following slowly. The successive phenomena in the history of these cysts of the follicles are hypergenesis of the epithelial elements, sclerosis of the follicular walls, degeneration of the epithelium, liquefaction of the exuded and retained exudate, and hæmorrhage.

3. In the presence of a small ovarian tumor, with no general or local symptoms of malignancy, one should first treat the case by means of hot injections, curetting, etc., and watch the progress of the growth for two or three months before resorting to castration.

A Clinical Concept of the Cellular Inflammations of the Pelvis (Gutierrez, *ibid.*, September 10, 1888).—Circumuterine inflammations are so frequent and their consequences are of such importance that every one should be able to make a diagnosis of them and establish suitable treatment. The anatomical disposition of the connective tissue which constitutes the pelvio-subperitoneal space, with its numerous veins and lymphatics, enables one to understand why it so readily responds and reacts to morbid causes, both directly and secondarily. The traumatisms which this tissue experiences during pregnancy, and the infectious elements which are communicated to it from the uterine cavity by the open mouths of the lymphatic vessels, are the conditions which cause these inflammations, which are apt to be suppurative and often place the lives of the puerperæ in danger. In other cases traumatism alone produces a local inflammation in the form of a circumscribed parametritis, which tends to resolution, but at the same time causes a hard, fibrous retraction of the tissues, drawing the uterus into a vicious position, and thus leading to important changes. Other causes which may give rise to the same conditions of inflammation consist of traction, which may be exerted upon the lower part of the uterus for diagnostic or therapeutic purposes, mechanical dilatation of the cervical canal, the introduction of the uterine sound, inappropriate intra-uterine medication, perhaps on the eve of menstruation, the improper use of a pessary, the abuse of coitus, and improperly administered vaginal douches or injections. A septic or gonorrhœal endometritis may also serve as an efficient cause. Individual disposition or tendency to this disease is much more pronounced in some persons than in others, the same being also true with respect to intensity. The effects of the disease are more or less limited to those portions of the genital apparatus which are provided with cellular tissue. The parametral portion of the cervix, the vesico-uterine and recto-uterine cellular spaces, and the bases of the broad ligaments, one or all, are the principal situations for this disease, and it is *paraметritis circumscripta* or *parametritis diffusa*, as it is present in one or all the situations. If an inflammation which has begun in a parametral connective-tissue zone of one side is propagated to the fold which forms the parenchyma of the broad ligaments, a phlegmon of the organs involved will result. The same result may follow a direct traumatism, the inflammation being propagated from the ovary, or it may arise from infection. If the inflammation extends from the connective-tissue zones mentioned to all the cellular tissue of the iliac fossæ, it is called pelvic cellulitis. The clinical concept, therefore, is based upon the anatomical concept; the cellular inflammations of the pelvis have a distinct physiognomy, though gradations of the same lesion. They should not be confounded, for the final result is not the same in each case, and each variety calls for a particular form of intervention. If the inflammation is intense, the peritonæum, which is in intimate contact with the cellular tissue, will be involved, and the symptoms of pelvic cellulitis and pelvic peritonitis will be mingled, though clinical observation has shown the relative independence of both inflammations, especially in true parametritis. These inflammatory processes frequently terminate by resolution, but frequently also, in the puerperal state, by suppuration. In the former case there is a condensation of the connective tissue with contraction and retraction; there is also cicatrization, and deviation of the uterus from its normal position. The final result of parametritis proper is not the same as that of phlegmon of the broad ligament, when both terminate by resolution. In the former the adhesions and immobility appear, for the most part, above the cervix uteri; in the latter they are above the cervix, and also above the tube and ovary, often causing deviations of the uterus, various nervous phenomena, and sterility. The termination by suppuration follows a distinct course, according as it is treated by one or another method. If the parametritis is circumscribed, the pus finds exit by the vagina, the rectum, and sometimes by the bladder. If the inflammation is diffuse, the pus may make its exit from the abdominal wall, or it may collect in the peritonæum. The experiments of Koenig confirm the statements which have resulted from clinical observation, that phlegmonous inflammations of the broad ligaments open, if they suppurate, in the inguinal region and the iliac fossa; parametritic inflammations in the rectum and vagina, and pelvic cellulitis in the inguinal region.

Pelvic Peritonitis: its Treatment by Forced Dilatation and Curetting (Walton, *ibid.*).—The lesions of the endometrium constitute an important factor in the ætiology of diseases of the Falloppian tubes, peritonæum, ovaries, and parametrium, though it does not follow that this is the only way by which the inflammatory element is transmitted from the uterus to the neighboring organs.

Septic infection after having been located in the endometrium is propagated principally by the lymphatic vessels.

Pelvic cellulitis, phlegmasia alba dolens, and the great majority of puerperal accidents are caused by the absorption of septic germs.

Contagion is acquired rapidly, on account of the existence of traumatic lesions caused by parturition or abortion.

While the so-called puerperal septicæmia can be transmitted directly by the uterine parenchyma, the lymphatics, or the veins, the same condition is not propagated apart from the puerperal condition. Catarrhal inflammation and gonorrhœal infection have a tendency to invade the uterine mucous membrane. After having produced the lesions of the womb, there is extension to the tubes, salpingitis being first produced and then perimetritis.

The foregoing statements explain the views of Schröder and others that pelvic peritonitis is very frequent, and pelvic cellulitis, apart from the puerperal state, very rare.

The initiatory agent of inflammations of the mucous membrane is always a microbe. This micrococcus, whether septogenic, pyogenic, puerperal, or blennorrhœal, located in the folds of the mucous membrane, gives rise to symptoms of endometrial inflammation, which indicate active treatment for their relief.

To cure this inflammation and avoid subsequent pelvic peritonitis, dilatation, curetting, and antiseptic precautions are indicated. The following conclusions result from the author's experience:

1. In non-exudative pelvic peritonitis the pain which is the principal symptom may be relieved by dilatation.

2. In the exudative variety forcible dilatation by facilitating the return circulation may check the progress of peritoneal infarctions and assist the absorption of exudates.

3. In circumuterine or pelvic abscesses, which are usually nothing more than cysts of the tubes, it is possible, by dilating the womb, to evacuate the cysts by way of the uterine canal.

4. In cases of puerperal septicæmia the septic symptoms will disappear under this treatment. No other is so efficient for the disinfection of the cavity of the uterus and disposing of the products of infection.

5. Reflex symptoms, such as vomiting, are immediately relieved by forcible dilatation.

The Pathogeny and Treatment of the Diseases of the Cervix Uteri (Doléris, *ibid.*).—The best way to understand the diseases of the cervix uteri should consist in observing and carefully following the course of their pathogenesis. Obstetric traumatisms, natural or artificial, open the door to pathogenetic agents of inflammation. Inflammation impedes the spontaneous repair of the lesions. The nature of the tissues and the condition of the glandular acini insure the persistency of the changes. The changes in the form of the cervix are caused by unilateral or bilateral traumatisms, or by muscular spasm. Nervous derangement and repeated congestions establish and increase the deformities. The following deductions are based upon the study of more than a hundred clinical cases and the microscopical examination of sixty fresh anatomical specimens obtained from operations practiced upon the cervix uteri:

1. A general condition which is below the normal causes in the mucous membrane of the female genital apparatus, whether in the virgin or not, a predisposition to inflammation by encouraging passive congestion, and thus favoring excessive secretions. This condition is commonly called simple catarrh. In this catarrh there is no *a priori* inflammation.

2. Inflammation of the cervix uteri follows the introduction of and contact with phlogogenetic agents. Traumatism by means of operations and the parturient state, inflammations of the vagina, etc., prepare the way for these agents.

3. Aseptic traumatisms of the cervix are repaired without the occurrence of inflammation, whether the traumatism consists of a simple erosion or a removal of tissue.

4. Septic traumatisms do not undergo repair, but give place to persistent deformity, with inflammation, painful cicatrices, repeated attacks of perimetritis, etc.

5. Erosions, with reference to their progress, may be primary or secondary, the former being immediately related to the pathogenetic cause. They may consist of destruction of continuity in the tissue of the cervix with inflammation in the parturient woman, or they may be due to a recent inflammation in the virgin or the nullipara. The secondary erosions are those which appear upon a surface which is already diseased—that is, upon everted and cicatricial portions of the cervix.

6. Cicatrization of cervical ectropion with erosion can not take place as long as the tissues remain in a morbid condition. The cervix is changed in consequence of a chronic inflammation which produces changes in the muscular stroma.

7. The treatment, therefore, should be aimed to combat (1) recent erosions, (2) secondary erosions, (3) cervices which are not eroded, but have been diseased for a long time and in which the work of cicatrization has been accomplished.

8. The use of the cautery and of caustics favors superficial cicatrization of the openings of the glandules and the tissues between these openings. An antiseptic anodyne treatment which gives opportunity for spontaneous repair is preferable, such as might be afforded by applications of glycerin and iodoform, by irrigations, etc.

9. The actual cautery may cure with greater certainty, since it destroys all with which it comes in contact. It is not free from danger, however, and is apt to remove the capacity for impregnation.

10. Secondary erosions, as well as the voluminous, deformed, hypertrophied, and cicatrized cervices of which they form a part, are susceptible of cure by plastic or mixed methods of surgery, by means which imply the ablation of the diseased portion and the restoration of the normal form.

The Post-mortem Appearance of a Phlegmon of the Broad Ligament (Lewes, "Anales de Obst., Ginecop. y Pediat.," Aug., 1888).—The patient in question came to the author's attention suffering from mania and parametritis. Bronchitis supervened and terminated fatally. At the autopsy the peritoneal folds forming the broad ligament were found separated by exudate. The external surface of the peritonæum was somewhat granular. The swelling had the appearance of a sponge, and from the cavities a sero-sanguinolent fluid exuded, but no pus. The right ovary was adherent to the adjacent surface of the broad ligament by recent exudate, and contained an abscess holding two grains of pus.

This case illustrates a phase of parametritis which is rarely observed, and has great interest with reference to the pathology of oophoritis. From this it would seem to be difficult to conceive of oophoritis as a primary affection, rather than as a secondary. Perioophoritis is produced by the propagation of the inflammatory process to the Falloppian tube and pelvic peritonæum, pelvic peritonitis, including the ovary, being the result. Interstitial oophoritis may be produced by the propagation of the inflammatory process from the connective tissue between the folds of the broad ligament, along the tissue of the hilum of the ovary to the parenchyma of the ovary. Interstitial oophoritis would, therefore, seem to be secondary to parametritis. In the given case the inflammation of the broad ligament had reached the period of phlegmon, while that of the ovary had continued to the formation of abscess.

Ninety Cases of Sterility following a Single Parturition in each Case (Ansell, "Anales de Obstetricia, Ginecopatia, y Pediatria," June, 1888).—This author believes that sterility follows a single parturition once in thirteen times. Kleinwächter analyzed 1,081 cases of patients who had required gynæcological attention, and found among them 90, or 8·32 per cent., of sterile ones after a single parturition—a result which coincided with Ansell's statement. The causes of sterility in the 90 cases were as follows:

	Per cent.
Inflammatory processes consecutive to the puerperal state	17·77
Catarrhal endometritis	17·77
Inflammatory processes independent of the puerperal state	12·22
Displacements of the uterus	12·22
Neoplasms of the uterus	8·88
Constitutional conditions	7·77
Sexual debility of the husband	7·77
Atrophy of the uterus	5·55
Neoplasms of the ovaries	3·33
Unknown factors	6·66

The age at which matrimony was contracted had no apparent bearing in the given cases. Marriage began between the ages of 14 and 17 years in 24·04 per cent.; 18 and 20 years in 48·78 per cent.; 21 and 25 years in 21·95 per cent.; 26 and 27 years in 1·21 per cent. In this form of sterility the same ætiological factors, excepting congenital imperfections which render conception impossible, are present as in cases in which there is absolute sterility.

Disturbances of the General Condition of Menstrual Origin (Gratery, "Gaz. méd. de Paris," Sept. 15, 1888).—Almost all the organs of the economy may become the seat of morbid phenomena more or less accentuated under the influence of menstrual disorders, whether these are connected with difficult establishment of the function or abrupt suspension of it. The morbid phenomena are to be considered as either complementary or supplementary to menstruation. Most frequently there is limited congestion in an organ or a portion of an organ. The symptoms gradually become less marked and finally disappear when the menses are established anew. Less frequently the congestive phenomena become inflammatory in character, and in such cases the menstrual flow may disappear entirely. The ætiology of the symptoms in these cases is often very obscure. A preliminary or provisional diagnosis may be made of typhoid fever, tubercular meningitis, or nephritis, but it may happen that in three or four days the patient will appear quite well again. The treatment should consist, first, in combating the vis-

ceral phenomena with general sedatives, such as sulphate of quinine, digitalis, and bromide of potassium, or by revulsives, whether cups, leeches, or the actual cautery, the pain being quieted by subcutaneous injections of morphine; second, in the regulation of the menstrual function by the proper use of emmenagogues, leeches, or sinapisms.

Miscellany.

Bromidia.—In the "Medical Press and Circular," of London, Dr. Edward Warren-Bey tells of the great extent to which bromidia, made by Messrs. Battle & Co., of St. Louis, is used by the physicians of France as a hypnotic.

The State Medical Society of Arkansas will hold its fourteenth annual meeting at Pine Bluff, on Tuesday, Wednesday, and Thursday, May 28th, 29th, and 30th.

Mortality in Cities in the United States.—The following table represents the mortality in the cities named, as reported to Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, and published in the abstract of sanitary reports received by him during the week ending April 12th:

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—										
				Cholera.	Yellow fever.	Small-pox.	Variola.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y.....	April 6.	1,560,836	862	..	..	..	..	..	..	6	71	48	13	19
Philadelphia, Pa....	April 6.	1,040,245	372	..	..	..	..	..	..	7	5	16	1	1
Chicago, Ill.....	April 6.	830,000	291	..	..	..	..	..	..	1	6	22	15	1
Brooklyn, N. Y....	April 6.	821,525	347	..	..	..	..	..	..	..	12	23	8	5
Cincinnati, Ohio....	April 6.	255,139	112	..	..	..	..	..	..	..	..	7	1	....
Baltimore, Md.....	April 6.	500,343	162	..	..	..	..	..	..	..	..	2	..	1
St. Louis, Mo	March 30.	440,000	168	..	..	..	..	..	..	..	..	10	2	3
Detroit, Mich.....	March 30.	250,000	69	..	..	..	..	..	..	1	2	..	..	1
Pittsburgh, Pa.....	April 6.	230,000	85	..	..	..	..	..	..	1	3	1	2	2
Cleveland, Ohio	March 2.	235,000	75	..	..	..	..	..	..	3	1	2	..	..
Cleveland, Ohio	March 9.	235,000	77	..	..	..	..	..	..	..	3	1	..	1
Cleveland, Ohio	March 16.	235,000	77	..	..	..	..	..	..	3	..	2	..	..
Louisville, Ky.	March 30.	227,000	70	..	..	..	..	..	..	2	..	..	1	6
Washington, D. C ..	March 30.	225,000	89	..	..	..	..	..	..	3	..	..	..	2
Washington, D. C ..	April 6.	225,000	123	..	..	..	..	..	..	4	..	3	..	3
New Orleans, La....	March 30.	254,000	96	..	..	..	..	..	..	1	1	1	1	....
Milwaukee, Wis	March 30.	210,000	67	..	..	..	..	..	..	..	2	3	..	..
Milwaukee, Wis.....	April 6.	210,000	54	..	..	..	..	..	..	1	2	..	..	....
Minneapolis, Minn..	March 30.	200,000	52	..	..	..	..	..	..	..	1	4	..	..
Newark, N. J.....	April 2.	181,351	63	..	..	..	..	..	..	..	3	6	..	..
Newark, N. J.....	April 9.	181,351	96	..	..	..	..	..	..	1	3	7	..	..
Kansas City, Mo....	March 30.	180,000	22	..	..	..	..	..	..	1	2	..	..	..
Providence, R. I....	April 6.	127,000	43	..	..	..	..	..	..	..	2	2	..	1
Rochester, N. Y....	April 6.	120,000	34	..	..	..	..	..	..	..	..	3	..	1
Richmond, Va.....	March 30.	100,000	39	..	..	..	..	..	..	..	..	..	..	..
Richmond, Va.....	April 8.	100,000	46	..	..	..	..	..	..	..	..	1	..	1
Denver, Col.....	April 5.	100,000	32	..	..	..	..	..	..	..	..	3	1	....
Toledo, Ohio	April 5.	80,000	14	..	..	..	..	..	..	..	1	1	..	..
Camden, N. J.....	March 14.	70,000	30	..	..	..	..	..	..	..	..	..	..	..
Camden, N. J.....	March 21.	70,000	18	..	..	..	..	..	..	3	..	..	..	..
Camden, N. J.....	March 28.	70,000	37	..	..	..	..	..	..	3	..	1	..	..
Nashville, Tenn....	April 6.	65,153	14	..	..	..	..	..	..	..	..	..	..	..
Fall River, Mass....	April 6.	65,000	19	..	..	..	..	..	..	..	1	..	..	..
Charleston, S. C....	March 30.	60,145	28	..	..	..	..	..	..	..	..	..	..	....
Charleston, S. C....	April 6.	60,145	49	..	..	..	..	..	..	..	..	..	..	..
Lynn, Mass.....	April 6.	50,000	15	..	..	..	..	..	..	..	..	..	..	..
Portland, Me	April 5.	42,000	9	..	..	..	..	..	..	..	..	..	..	..
Manchester, N. H...	March 30.	32,630	14	..	..	..	..	..	..	..	1	..	1	..
E. Saginaw, Mich...	April 6.	40,000	13	..	..	..	..	..	..	..	..	..	..	..
Galveston, Texas...	March 22.	40,000	5	..	..	..	..	..	..	..	..	..	..	..
Galveston, Texas...	March 29.	40,000	6	..	..	..	..	..	..	..	..	..	..	..
Council Bluffs, Ia...	March 30.	35,000	8	..	..	..	..	..	..	..	..	2	..	..
Davenport, Iowa....	March 30.	33,715	.....	..	..	..	..	..	..	..	..	..	..	..
Davenport, Iowa....	April 6.	33,715	6	..	..	..	..	..	..	..	..	2	..	..
Altoona, Pa.....	March 30.	30,000	5	..	..	..	..	..	..	..	..	..	2	..
Altoona, Pa.....	April 6.	30,000	7	..	..	..	..	..	..	..	..	..	..	..
Auburn, N. Y.....	March 30.	26,000	13	..	..	..	..	..	..	..	..	2	..	..
Auburn, N. Y.....	April 6.	26,000	11	..	..	..	..	..	..	..	1	..	..	..
Haverhill, Mass.....	March 31.	25,000	8	..	..	..	..	..	..	..	..	..	..	..
Haverhill, Mass.....	April 6.	25,000	4	..	..	..	..	..	..	..	..	..	..	..
Newport, R. I.....	March 28.	22,000	5	..	..	..	..	..	..	..	..	1	..	..
Newport, R. I.....	April 4.	22,000	8	..	..	..	..	..	..	..	..	3	..	..
Newton, Mass.....	April 6.	21,353	4	..	..	..	..	..	..	..	..	..	..	..
Keokuk, Iowa.....	March 30.	16,000	2	..	..	..	..	..	..	..	..	..	..	..
Keokuk, I wa.....	April 6.	16,000	3	..	..	..	..	..	..	..	..	..	..	..
Pensacola, Fla.....	March 30.	15,000	6	..	..	..	..	..	..	..	..	..	..	..
Pensacola, Fla.....	April 6.	15,000	1	..	..	..	..	..	..	..	..	..	..	..

Neurasthenia.—"The great characteristics of the pulse in children and infants are reproduced in the pulse of those suffering from neurasthenia. As the circulation of the infant is characterized by irritability, irregularity, and variability, so it is with the circulation of these patients—a clear example or illustration of the theory of dissolution as applied to the nervous system; but these attributes belong not alone to the pulse; they define equally well the mental processes and the other nervous actions in this affection. The variations in the pulse-rate are not more remarkable than the changes in the 'spirits' of these patients. Nor can the explanation of these variations be always adequately accounted for by recognizable external conditions. The external conditions include any change at the periphery of the nervous system, whether this periphery be the sensory nerve-endings in the skin, the muscles, the alimentary or respiratory tracts."—*Lancet.*

ANSWERS TO CORRESPONDENTS.

No. 260.—We can find no report of a case that would answer as a precedent. Your contention is undoubtedly just, but we should advise you not to appeal.

No. 261.—1. The "Journal of Laryngology and Rhinology," published by R. Anderson & Co., 14 Cockspur Street, Charing Cross, S. W., London. 2. Mr. Lennox Browne.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

CRITICAL REMARKS ON THREE CASES OF ABDOMINAL SECTION FOR THE RELIEF OF INTERNAL OBSTRUCTION OF THE INTESTINE.

BY ARPAD G. GERSTER, M.D.,
PROFESSOR OF SURGERY AT THE NEW YORK POLYCLINIC; SURGEON TO THE GERMAN AND TO MOUNT SINAI HOSPITALS, NEW YORK.

IN bringing to public notice from time to time both the successful and unsuccessful cases of intestinal obstruction within my experience treated by laparotomy, I only fulfill a duty universally acknowledged by the profession. In two of the cases here reported *bands* were found to be the cause of strangulation. Comparatively mild symptoms were observed in the beginning of the disorder in both instances, and, unfortunately, led to fatal procrastination. In spite of the relief afforded by the division of the bands, both patients died of the peritonitis and shock found to be present before and at the time of the operation.

The morbid condition requiring surgical interference in the third case was *volvulus*. Here the disease had set in at once with such decided symptoms of general dejection as to suggest the possibility of the presence of typhoid fever in its initial stage. This led to the speedy transfer of the patient to the hospital, where, the true character of the trouble being recognized, no time was lost in giving relief, and in every way successfully, by prompt laparotomy.

The cases were as follows:

CASE I.—Miss Rosa L., a rather slender anæmic girl of nineteen, had, in May, 1888, some abdominal trouble accompanied by vomiting and ileo-cæcal pain, but no swelling. She was kept in bed for a week. June 6th—that is, about three weeks after the occurrence—she was well enough to dance. In taking a leap she felt a sudden sharp pain above the umbilicus. She was put to bed and a laxative was administered, with no appreciable effect, except to cause vomiting. The rectum, however, seems to have been evacuated by a series of enemata. No movement of the bowels had taken place between the 6th and 14th of June, when I first saw the patient. The family attendant reported that ever since June 6th persistent, since June 9th fæcal, vomiting and intense thirst had been complained of. No fever, however, nor meteorism were present. The pulse also was full and normal in quantity. June 13th a medical consultant, who had repeatedly seen the case, and had, in spite of the fæcal vomiting, rejected the proposal made by the family attendant of doing laparotomy, performed a rather vigorous course of massage of the belly of the patient, who was kept in the prone position during the procedure. Very intense pain was complained of during this process, which was followed up by the administration of a number of large enemata administered in the knee-elbow position. No improvement followed any of these measures, but, on the contrary, fever and meteorism set in—indications of peritonitis. The patient's condition being nearly hopeless now, the proposal of laparotomy was finally accepted. June 14th I found the patient lying in the dorsal decubitus, with anxious expression, face covered by perspiration, rate of respiration increased, temperature 101·5° F., tongue dry, thirst intense, a great deal of tympanites, the thighs flexed on the pelvis. No vomiting occurred when food was withheld, but if any nourishment was taken, fæcal vomiting ensued. The pulse was 100 beats to the minute. Laparotomy was immediately performed at the home of the patient. An incision, seven inches long, reaching about three inches above the navel, was at once crowded full of much-distended, purple, deeply congested intestines, which were received in hot towels. The gut was filled with fluid masses principally. In passing my hand into the abdomen and moving it about among the coils of gut in various directions, it was finally arrested by a tightly conglomerated, immovable, and intensely distended portion of the ileum, which was found to be immovably fixed near the margin of the smaller pelvis in the right iliac fossa. Being exposed, this immovable convolution was found to consist of a large loop of gut that had slipped through, and was strangulated in an aperture formed by a short, solid band of connective tissue extending from the brim of the pelvis to the mesentery of the ilium. The band being severed, the contents of the distended intestine were at once seen to pass into the empty distal segment. Owing to the collapsed condition of the patient, the anæsthesia was very difficult and much interrupted. Whenever insensibility was produced, deep cyanosis and stoppage of the pulse warned me from continuing the use of ether. The next moment, however, violent contractions of the abdominal muscles hindered the progress of the operation in a very disagreeable manner. A careful revision of the entire intestine was not deemed advisable under these circumstances, and closure of the abdominal cavity was proceeded with in the hope that the strangulation which had been relieved by cutting the band above mentioned would be the only trouble present. It was very noticeable how much the distension of the small gut was diminished by the passage of a large part of its contents into the distal part of the intestinal canal. Nevertheless, replacement of the abdominal contents and closure of the wound was by no means easy. Kuemmel's proposal of tucking the edges of a disinfected towel under the abdominal parietes, using this artificial diaphragm for the retention of the intestines while the stitches were passed and closed, was found of great utility, and materially helped a rapid closure of the wound. Under vigorous stimulation the patient rallied unexpectedly well from the shock. Her temperature, however, did not fall as was hoped, but after a short pause rose to 103° F. with all the usual symptoms of intense general peritonitis. Food was vomited, the distension of the abdomen became more marked, interfering with respiration, and therefore it was deemed advisable to commence with the administration of a saline cathartic, of which two half-ounce doses were taken, but almost immediately rejected. On June 16th, about twenty hours after the operation, the patient suddenly collapsed during a spell of vomiting, her last exclamation being a wail of complaint about a sharp pain in the belly.

As no post-mortem examination was permitted, it could not be ascertained whether death was due simply to general peritonitis, the beginnings of which were already found at the time of the operation; or whether a second band was overlooked and the strangulation thereby produced left unrelieved; or, finally, whether perforation of a diseased part of the intestine was caused by the use of the laxative.

The principal corollary and lesson of the case, however, is the fact, which I do not hesitate to express with some emphasis, that procrastination robbed the patient of otherwise good chances of recovery. Had laparotomy been performed two or three days before the advent of peritonitis, a leisurely and methodical examination of the entire intestine would have been possible, both on account of the

good condition of the patient and mainly because extreme tympanites was absent at that time.

Case II. Samuel Gross, a Hebrew tailor, thirty-three years old, had in the morning of January 21, 1889, made a hearty meal of beer and cheese. About noon of the same day sharp colic compelled him to abandon his work. The same evening his sufferings were augmented by vomiting, which regularly followed whenever the patient quenched his burning thirst by drinking. The case bore the aspect of an indigestion, and was treated accordingly, the family physician administering one strong cathartic after the other. Only after the cathartics were all rejected, and great tympanites with fever had set in, were enemata tried, but to no purpose. On January 23d fæcal vomiting appeared, and on January 27th I found the patient suffering from cyanosis, owing to the enormous distension of the belly, which was very painful on touch everywhere. In the right iliac fossa an increased resistance could be made out distinctly, but the percussion sound there was clearly tympanitic. The temperature was 102·6° F., pulse 112 a minute, respiration hurried, and a clammy perspiration covered the patient's skin. In spite of his poor condition, laparotomy was suggested as the only means of relief, and the man was accordingly transferred to Mount Sinai Hospital, where chloroform was administered. Dark, brownish-purple, much-distended gut escaped through the rather extensive abdominal incision, and was cared for in the usual manner by being wrapped up in hot towels. Most of the small intestine had to be thus withdrawn from the abdominal cavity before a recognition of the existing conditions was rendered possible. In the right iliac fossa a convolution of intestine was found to be firmly fixed, and, being well exposed, it became evident that the apex of the vermiform appendix was attached to the transverse mesocolon on its lower aspect, where the place of attachment was marked by intense reddening of the peritonæum, back of which a rather massive swelling of intumescent mesenteric glands could be seen and felt. About three feet of the ileum had slipped through the aperture formed by the appendix, and were tightly strangulated and ominously discolored. In applying a double ligature to the appendix near its attached point, this separated from the mesocolon, and a few drops of thick pus escaped from a fistula located in the center of the spot of attachment. This place being well surrounded by a number of sponges, about two drachms of pus were pressed out of the abscess cavity located within one of the enlarged glands. The surrounding surface was carefully disinfected, and protected by a strip of iodoformed gauze, after which, another ligature being applied to the root of the appendix, this was excised. The patient's complexion, distinctly cyanosed even before, became still more so at this stage of the operation, the pulse thready, and stimulation by means of hypodermatic injections of whisky had to be resorted to to ward off imminent collapse. The deep, passive hyperæmia of the entire small intestine seemed to be only one phase of the general venous stasis, undoubtedly due to a failing heart's action. However difficult were the initial steps of the operation, the most formidable obstacles were met with when the reduction of the intestines was attempted. Profound anæsthesia was out of the question, the abdominal muscles were contracted to a board-like rigidity, and Kuemmel's expedient of replacing the bowels by means of a towel spread over them and tucked under the margins of the abdominal wound failed utterly. Nay, its application led to another serious complication. The cohesion between the visceral peritonæum and the muscularis of the gut had been so diminished by the prevailing œdema that the surface of the gut, becoming matted to the carbolized towel, clung to it to such an extent that large and wide flaps of visceral peritonæum were stripped up during and in consequence of the efforts at reduction. It became evident that further attempts in the same direction would inevitably lead to a rupture of the gut, and therefore enterotomy was done on a loop of intestine well drawn away from the rest. After the evacuation of several quarts of liquid fæces the parts were occluded by finger pressure and well cleansed, and the intestinal wound was closed by a Lembert suture. Less difficulty was met with now in the reduction of the gut, but the application of the abdominal sutures was nevertheless very troublesome. Before closing the last stitch, the strip of iodoformed gauze placed against the aperture of the mesenteric abscess was withdrawn. The patient was brought to bed in a collapsed and deeply cyanosed condition, and died, although restoratives and stimulants were freely administered, about an hour and a half after the operation, which had consumed just an hour and ten minutes.

It seems to me that, had the operation been preceded by an evacuation of the distended stomach by means of the stomach tube, less difficulty would have been experienced in the replacement of the prolapsed intestine.

My third and successful case presents a pleasing contrast to the foregoing two cases. Its favorable issue is entirely due to the early recognition of the obstruction and the prompt measures resorted to for its removal at a time when the absence of tympanites made the steps of the operation easy, permitting expedition combined with thoroughness, and when the patient's strength was not sapped by prolonged vomiting and peritonitis.

Case III.—Mary Block, twenty-seven years old, a Hebrew housewife, began to have colicky pains on January 1, 1889, with headache, lassitude, a bad taste in the mouth, with dryness of the tongue. She noticed also that pressure in the right hypochondriac region intensified the pain. Her bowels had been more or less constipated for some time, and therefore cathartics were administered on January 2d, having little effect. More cathartics were given on January 5th, but were rejected. The local pain and general dejection increasing, she sought admission to Mount Sinai Hospital on January 7th. On admission, the following facts were noted down: Patient fairly nourished, but pale; face drawn and anxious; temperature, 100° F.; respiration, 26; pulse, 90, rather weak; tongue, dry and covered with dark sordes; intense thirst, with nausea; great general dejection. Palpation of the abdomen, which is soft and moderately distended, reveals a resisting mass, presumbly of intestine, which is painful to touch and pressure. On deeper, bimanual examination of the right loin, a distinct tumor can be made out, occupying the site of the right kidney, which, however, does not seem to be painful. The urine was found normal. The case was a puzzling one in several respects, and, in order to gain a better insight, large hourly enemata were ordered to be given in the knee-elbow position for the following ten hours. Opiates were withheld, and no nourishment of any kind was permitted. On the morning of January 8th it was reported that eight enemata had produced no appreciable effect. The patient's condition had become rather worse than better, its physical characteristics remaining unchanged. At 11 A.M., ether being administered, an ample incision was made through the abdominal walls, extending to an equal distance above and below the navel. The first thing noted was a convolution of much-reddened, distended, and somewhat œdematous gut, lying in the right side of the abdominal cavity, surrounded by coils of pale and normal-looking, empty intestine. This hyperæmic portion of gut proved to consist of about two feet of the lowest

portion of the ileum, twisted on its mesentery, the vessels of which showed marked venous stagnation. No adhesions had as yet formed, and it was an easy matter, after finding the cæcum, to pass first the entire small intestine and afterward the whole of the large gut through the fingers. Thus was the locality of the twist ascertained, and the presence of any other intestinal trouble excluded, the latter point one of great value, as it permitted a fearless use of cathartics in the after-treatment. Incidentally it was also made out beyond any doubt that the swelling in the right loin consisted of a somewhat enlarged and movable kidney, which, however, bore no apparent relation to the intestinal disorder. As soon as the normal position of the twisted coil of gut was restored, its liquid contents passed on into the colon, and the marked distension disappeared. The abdominal walls being closed, the wound was dressed and the patient brought to bed.

January 9th.—It was found that she had recovered rapidly from the anæsthesia, had needed one hypodermatic injection of morphine during the night for some pain, and passed urine spontaneously. The temperature was 98·6° F. during the day; it rose at midnight to 101·4° F., but fell to 98·2° F. by the morning of January 12th. Occasionally a few drops of the tincture of opium were administered to allay restlessness. It was noted that the patient's tongue became moist and clean within twenty-four hours after the operation, that she consumed liquids without nausea and kept them down, and that the abdominal pain formerly complained of had disappeared. Some flatulence being present, several drachm-doses of sulphate of magnesium were administered on January 12th at half-hourly intervals. After four doses, an enema was given, and this brought away a small amount of fæcal matter, followed by a second small stool at 6 P. M. At seven o'clock another enema was given, and resulted in a large stool. During the night four more semi-liquid evacuations dispelled all apprehensions in regard to the permeability of the gut. Convalescence proceeded uninterruptedly, except for the appearance of several stitch-hole abscesses of the abdominal wound, which, being evacuated, healed promptly and were cicatrized over by February 10th. On February 26th the patient was discharged cured.

ELECTRICITY IN DISEASES OF THE BRAIN AND VASO-MOTOR SYSTEM.*

By LANDON CARTER GRAY, M. D.

As the task has been allotted to Dr. Birdsall of speaking of the effects of electricity upon diseases of the spinal cord, the central nervous diseases which have been assigned to me must be those of the brain and the vaso-motor nervous system. Before entering more immediately upon my subject I desire to say a few rapid words about some essentials in electrical apparatus. Every one using electricity should have a more or less constant cell, an accurate meter, an interposer and regulator of resistances or rheostat, and electrodes of such varying sizes as to be adapted to the different organs of differently sized individuals. An absolutely constant cell has never yet been made, but there are a few different makes upon the market in which the constancy may be said to be practically perfect, although the larger proportion of cells that are sold vary so enormously in their constancy as to be well-nigh useless to the physician. The requisites of a meter—nowadays called a milliampère-meter, since the thousandth part of an ampère, or a milliampère, has been adopted as the electrical unit—are accuracy, a needle that shall swing but slightly, a locking apparatus that shall make the meter portable without injury to the needle, a scale large enough to permit of one fourth of a milliampère being easily read at a distance of ten feet, and on which from one to thirty milliampères can be measured. Some American milliampère-meters possess all these necessary qualities with the single exception of the large reading scale, which has not as yet been introduced into this country, so that I for one use almost entirely an instrument made by Hirschmann, of Berlin. Without a meter it is absolutely impossible to give a galvanic current accurately, and without a rheostat it is impossible to make small additions and subtractions of the current. When it is remembered that the meter has only been introduced to this country within a few years, and that only a few electricians use a rheostat, it can be understood that the giving of electricity in America has been a matter of pure empiricism until within a short period of time. I confidently assert that the vast majority of American medical gentlemen using electricity at the present day do not possess the proper apparatus for measuring the current or for grading it delicately. As I have used electricity almost daily for some sixteen years, I shall venture to draw deductions from my own experience, even if they do not always agree with the opinions of others.

The diseases of the brain may, for our purpose, be divided into the insanities and gross cerebral diseases. From the insanities we may exclude the very chronic and incurable forms. Subacute mania, melancholia, the insanity of doubt, and those various morbid fears and fancies which so many writers have called cerebral neurasthenia, and to which I have thought it more proper to give the name of the functional insanities, can all usually be benefited by electricity, but only in the period of convalescence. I have never seen the slightest benefit come from the administration of electricity in the acute stages of these mental troubles. Melancholia usually responds best of all to this form of treatment, mania next best, while the amount of benefit which can be obtained in the insanity of doubt and the functional insanities will vary from case to case. Of the gross cerebral diseases it may be said that it is useless to administer electricity in brain tumors, in meningitis of traumatic or epidemic or aural origin, or in facial hemiatrophy. Electricity is usually a very useful adjuvant to other treatment in intracranial syphilis in the early stage of headache and insomnia, before paralysis or mental changes have supervened, and sometimes in the later stage following hemiplegia. As is well known, hemiplegia may occur in the adult or the child from a great variety of causes, and whether or not electricity shall be used will depend upon the particular case. Roughly speaking, it may be said that adult hemiplegia is produced by a lesion of the motor or sensory cortical centers or of the nerve strands leading from them to the basal ganglia, thence through the complicated subthalamic structures to the crura cerebri, to the pons, and thence to the cord. The principal lesions affecting these

* Read in the discussion on the place of electricity in therapeutics at the New York Academy of Medicine, March 21, 1889.

parts and which may cause hemiplegia are traumata, neoplasms, meningitis (mainly of the epidemic type), syphilis, and the changes in the blood-vessels occurring in the endarteritis of middle age or nephritic disease, or from cardiac and pulmonary emboli. Neoplasms and meningitis may be omitted from the treatable causes, and syphilis has already been mentioned. If the molecular changes induced by chronic endarteritis of middle age, or of nephritis, or by the emboli, are such as not to lead to a fatal issue, they can usually be favorably influenced by electricity when the primary symptoms of shock have thoroughly passed off. The hemiplegia of children is most apt to occur in early infantile or fœtal life from encephalitis, porencephaly, meningitis of traumatic or epidemic origin, neoplasms, and alterations in the vessels supplying the basal ganglia. Encephalitis, neoplasms, and meningitis of epidemic origin can be omitted from the treatable causes. Meningitis of traumatic origin, if slight, may be benefited by electricity, and if the hemiplegia of vascular origin be not followed by contracture it can usually be benefited by electricity. General paresis of the insane can not be influenced by treatment, except temporarily, but there are a certain number of cases of intracranial syphilis with slowly supervening symptoms of dementia which are often very difficult to distinguish from general paresis, and in these cases a great deal of benefit can often be temporarily obtained from the use of electricity. Tic douloureux is uncertain in its response to electricity, for I have seen some cases very greatly benefited by it, while to others I have faithfully administered electricity in every way and form for months without the slightest appreciable result.

A great deal depends in these cases as to the form of electricity which is used and as to the manner in which it is given. I may at once say that I have no faith whatsoever in the Holtz machine or what is named static electricity, which I regard as a very pretty and imposing toy that is sometimes temporarily beneficial and which generally has a fine psychical effect upon impressible individuals of hypochondriacal or hysterical tendencies. The two currents which will answer every purpose of the physician are the galvanic and the faradaic. It is somewhat difficult in a brief debate of this kind to give more than general indications as to the current which shall be used in each particular case. It may be said, speaking in this somewhat general way, that the insanities require only electrical treatment addressed to the intracranial contents, and that this is almost invariably done best with the galvanic current. It may furthermore be said that the gross cerebral diseases produce two great classes of symptoms: those that are entirely cerebral, and those that are both cerebral and peripheral. In the former class galvanism addressed to the intracranial contents will usually answer every purpose, while in the latter class it may be best to employ galvanization of the intracranial organs and faradization of the affected peripheral structures. The administration of electricity, therefore, in diseases of the brain consists of cerebral galvanization and peripheral faradization. If the object is to galvanize the whole intracranial contents, this can usually be done by the use of one electrode upon the nape of the neck and another upon the forehead. The cervical electrode should be about seven inches long and three inches wide, while the frontal electrode should be about five by two and a half inches. One electrode, preferably the one upon the neck, should be placed in position; then a very slight current should be turned on, and the other electrode should then be placed upon the forehead so gently and gradually as not to cause the slightest vertigo or flash of light before the eyes. By means of the rheostat the current should now be very gradually increased, always so gently as to avoid vertigo or flashes of light, until one milliampère is measured. Usually one or two milliampères are all that can be pleasantly borne through the brain, although some individuals will take very much larger doses, and in this respect the susceptibility of the brain is infinitely greater than that of the spinal cord or the nerves and muscles, in both of which latter, I may be permitted to say, I use currents running up to thirty milliampères, contrary to the tenets of the German school. The current should be allowed to pass in the first sittings for only three minutes, although a patient will usually rapidly grow accustomed to larger doses. The test of the requisite quantity is the effect upon the patient. Many patients who will be made uneasy, dizzy, and sleepless by ten milliampères will be very greatly relieved and stimulated by one or two. In removing the electrodes the current should first be very gradually diminished to an almost imperceptible measurement upon the meter, and then one electrode should be carefully tilted upon its edge and taken off in the same gentle and gradual manner, so as not to cause vertigo or flashes of light. If a lesion can be localized within the brain, and it is desired to affect any particular portion, the situation of the electrodes may be varied accordingly, and even the size of the one to be placed over the diseased locality may be also varied. The peripheral structures that are affected by the intracranial disease may be treated best usually with faradism, and this can be done by picking out the motor points which have been so carefully delineated of late years by electricians, a small electrode being placed over the motor point. It is useless to waste time in vaguely wandering over a group of muscles when it is so perfectly practicable to strike a nerve at its so-called "motor point," and precisely carry the electricity to the muscles within its distribution. In tic douloureux the trigeminal nerve, according to the branch affected, should have a small round electrode two inches in diameter placed upon it, while an electrode of the size already given should be placed upon the nape of the neck, a current of one to two milliampères being used for three to five minutes, although sometimes a current running as high as ten or fifteen milliampères will be found extremely useful. The question as to which pole should be employed, or as to whether an ascending or descending current should be used, has been a very puzzling one to me for a great many years. I am perfectly well aware that there is a difference between the chemical effects of the negative and the positive pole. I am perfectly well aware that there is a physiological difference between the negative and the positive poles, and that upon this difference is based the prognostic use of electricity. I am furthermore perfectly well aware that every pa-

tient can distinguish the positive from the negative pole by the sensation. Yet, in spite of all these indubitable differences, chemically, physiologically, and pathologically, between the negative and the positive pole, I have never yet been able to satisfy myself that there was a therapeutic difference between them. Reasoning from *a priori* considerations, the text-books tell us that the positive pole is sedative and that the negative is stimulant, whatever these terms may mean to the writers who so often employ them rote-like; but over and over again, on hundreds and hundreds of patients, have I unavailingly endeavored to obtain indications for the use of the positive or the negative pole in a given disease. The only rule which I can lay down is this: Where one pole does not agree, try the other; and if that does not agree, stop using electricity. The question of the ascending and the descending current has of late years been merged into the question of the poles, although I think there is a difference, but I know of no indications for one more than the other.

THE LIMITATIONS OF THE INFLUENCE OF THE MIND UPON THE BODY,

BEING A DISQUISITION UPON THE TRUTHS AND DELUSIONS OF PSYCHO-THERAPEUTICS.*

By J. LEONARD CORNING, M. A., M. D.,

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The reciprocal relations of mind and body constitute one of the most thoroughly apprehended principles of physiology. From the beginning of philosophy—yes, I had almost said, from the very dawn of thought itself—men became conscious of a hand, intangible in its subtlety but none the less real, weaving into indissoluble harmony the life within with the life without, the mind with the body, the seen with the unseen, the overwhelming mystery of conscious individualism with the perturbations of flesh and blood.

In the earlier stages of the world's history this mystery became the talisman of jugglers, priests, and oracles; with the evolution of speculative philosophy it became the object of some of the loftiest flights of the human intellect; while in modern times the application of the principles of the natural sciences to the elucidation of vital phenomena has given a new direction to current thought.

While, therefore, the physiological psychology of the day has done much to clear away superstition and that crude generalization which is equally disastrous to sane thinking, it must be confessed that much that is barbarous, much that is quixotic, still abides with us. A striking exemplification of the intellectual vandalism which periodically breaks out in societies, even the most civilized, is at present afforded by that curious conglomeration of superstition and grotesque fallacy known variously as the "mind-cure" and the "faith-cure." Armed with a spavined logic, founded upon half truths, a horde of fanatics, ignorant of the most rudimentary principles of medical science, has swept down upon civilized society, which it threatens to overwhelm with a mode of treating disease as quixotic as it is dangerous to the weak-minded votaries of this modern phase of humbug. The expressed belief of these mind-healers, or whatever else they may call themselves, is to the effect that all physical ailments, whatever their gravity may be, originate in an unhealthy condition of the mind itself, and that hence all diseases may be prevented or cured through the mind; for, they add, do not all educated physicians admit the close relationship existing between mind and body; do they not grant that the former exerts a prodigious effect upon the latter? Here is the key which reveals to us the manner in which these impostors gain ascendancy over other dupes. Laying hold upon the recognized fact that the mind does really exert a circumscribed influence upon the body, the faith-healing charlatan ignores all limit, and declares that because emotional excitement may cause a person to grow pale or to become suffused with blushes, therefore an appeal to the mind must bring about a cure of the most incurable phases of organic disease. As a further support to their specious pretensions, they appeal to a fund of well-worn stories of how headaches, hysterical imitations of organic disease, or hypochondriacal delusions, or, in short, minor functional conditions, have been relieved by addressing the therapeutic appeal to the mind. When such evidence has not been enough to convince the incredulous, they have not hesitated to resort to limitless mendacity—a mendacity which, though but a grotesque exhibition of depravity in the eyes of thoughtful people, has been sufficient to dupe the shallow reasoner, and to minister to that thirst for sensationalism which is the true birth-work of mental shallowness. Such, I conceive, is a fair exposition of that outbreak of charlatanism—half knavery, half fanaticism—which has invaded our cities, and particularly our large cities, within the last few years. Before leaving New York for Albany, to attend the meeting of the State Medical Society this year, I was requested by a number of medical gentlemen, for whose distinguished talents I have the highest respect, to deal with this latest abomination. How well I shall have acquitted myself of the task is for your honorable body to decide. Certain it is that my motives are those of patriotism—a patriotism which, for that matter, concerns the profession as a body quite as much as individuals.

To avoid the possibility of an imputation of unfairness, let us proceed with calmness.

The first question that naturally suggests itself is this: What are the limits of the action of the mind upon the body? This question may be answered by experience somewhat as follows: We know, in the first place, that ordinary sensation may be temporarily evoked, diminished, exalted, or perverted.

In his remarkable little book on hypnotism, Mr. Braid gives the account of an experiment which admirably illustrates the influence of the intellect on sensation.

Four gentlemen, some of whom occupied exalted positions in the scientific world, were requested to place their arms on a table with the palms of their hands turned upward. Silence having been enjoined, each was requested to look at the palms of his hands for a short time, his whole attention being at the

* Read before the Medical Society of the State of New York at its eighty-third annual meeting.

same time focalized upon this simple act. What happened is most interesting from a psycho-physiological standpoint. In the first place, five minutes had scarcely elapsed before one of the gentlemen complained of a sensation of intense cold in his hand; another soon afterward declared that he felt a pricking sensation in the palms of the hands, as though electric sparks were emitted from them; a third felt a disagreeable sensation of heat in his hand, while the fourth had become affected by cataleptic rigidity.

Insensibility to pain induced by psychical means is one of the remarkable facts of hypnotism. This subject has recently been revived and thoroughly discussed in the medical journals. The induction of the condition known as the hypnotic or mesmeric state is not, however, indispensable to procuring exemption from pain, for there are persons who, thanks to a mere association of ideas, coupled with a continuous powerful expectancy, are able both to rid themselves of pain and even to prevent its occurrence. Tuke relates that on one occasion he was about to have a tooth extracted under the influence of laughing gas, when, in consequence of an unlooked-for *contretemps*, the dentist was unable to administer it. The extraction was therefore performed without it, but the operation was rendered almost painless by the writer's vividly imagining pleasant ideas, and mentally repeating to himself How delightful! How delightful!

More common is the immunity from suffering enjoyed by persons while in a state of great excitement; while in this condition they may be wounded by bullets, sharp instruments, or even burned, without experiencing pain. Forty years ago Dr. Elliotson, and subsequently Dr. Esdaile, reported scores of cases in which surgical operations of the greatest gravity had been performed without pain by the aid of mesmerism. It was thought at that time, and the same idea has been lately repeated, that the true surgical anæsthetic had been found; but the simple fact that only a certain percentage of persons can be hypnotized utterly destroys such hopes as these. I shall have occasion to refer to this point later on when discussing the limitations of legitimate psycho-therapeutics.

The intellect may exert an habitual and an exceptional influence over the movements of voluntary muscles; the former effect is seen in the wonderful and almost continuous play of the facial muscles; the latter is exemplified by the action of the muscles, notably those of the hand and face, in persons whose thoughts are being divined by the "thought-reader," as the individual is called who is able to follow the mental action of another by the aid of the betrayal of thought afforded by subtile concomitant actions of the muscles.

Temporary loss of muscular power (paralysis) may also be induced through mental action. The suggestion culminating in the fixed belief that a muscle or group of muscles can not be contracted or relaxed is enough in susceptible persons to induce a transient loss of power. Fixed expectancy engendered, for example, by the suggestion of an individual in whom the person operated upon stands in some fear or awe, or by circumstances which exert a like potent influence upon the imagination, may give rise to astonishing modifications of the special senses, as well as of the muscles and general sensibility.

Many of the hallucinations occurring in sane persons, or those who are usually, at least, not accounted insane, are to be referred to this circumstance.

Here is an instance in point related by Professor Bennett, of Edinburgh:

"A clergyman told me that some time ago suspicions were entertained in his parish of a woman who was supposed to have poisoned her newly born infant. The coffin was exhumed and the procurator, who attended with the medical men to examine the body, declared that he already perceived the odor of decomposition, which made him feel faint, and in consequence he withdrew. But on opening the coffin it was found to be empty, and it was afterward ascertained that no child had been born, and consequently no murder committed."

This is an excellent illustration of the powerful suggestive effect upon the mind of dramatic circumstances, and of the readiness with which such suggestions become translated into veritable hallucinations. It is only necessary to repeat that similar phenomena may be evolved by suggesting to a susceptible person the certainty, probability, or even possibility of their occurrence.

Here is a case, narrated by Dr. Gregory and quoted by Tuke, which illustrates this point:

"In Kleische, a small village in Germany, a maid-servant was sent to buy some meat. She executed her order correctly, and as she was returning in the evening she thought she suddenly heard a great noise behind her, like the noise of many wagons. Upon turning around, she observed a little gray man, no bigger than a child, who commanded her to go along with him. Upon reaching the outer court of her master's residence, she was met by the coachman, who asked her where she had been, to which she returned a very distinct answer. He did not remark the little man, but she still continued to do so. As she was passing the bridge he summoned her for the last time, and, upon her refusing to answer him, he told her, with a menacing look, that she should be four days blind and dumb, and having said so he disappeared. The girl hastened to her apartment and threw herself on the bed, unable to open her eyes or to pronounce a word. She appeared to understand all that was said, but could not make any answer to the questions which were proposed to her except by signs. Everything was tried for her recovery by the family with whom she lived, but all was in vain. She was incapable of swallowing the medicines which were ordered for her. At last, on the expiration of the fourth day, she arose in tolerably good health and narrated what had happened to her."

The limits of the present paper will not admit of further enlargement on the questions of the modification of the special senses by the intellect, or, if a more exact form of statement be desired, by cortical function. I will merely add, therefore, that during the hypnotic or mesmeric state the most astounding exaltation and depression of the special senses may be induced by suggestion. These facts have long been known to the profession, and I have repeatedly had the opportunity of making interesting demonstrations on persons susceptible of being hypnotized.

It has also long been known that the involuntary muscles may be influenced by the intellect; the heart's action may be rendered irregular by concentrating the thoughts

upon it; the blood-vessels may be made to expand or contract, as seen in blushing or the pallor from fear; nausea, vomiting, and even peristaltic action of the intestines, may be induced by imaginary causes. I know a lady who suffered from nausea at the mere sight of a dead cat. A large number of cases are also on record where vomiting has been caused in persons who had taken inert substances which they falsely imagined to be endowed with emetic properties; and even evacuations of the bowels have been induced over and over again by leading the subject to believe that he had taken a purgative, while in reality a bread pill or some other inert substance had been administered.

The secretory functions and general nutrition are much influenced by mental phenomena; hence, a mass of evidence is forthcoming which shows conclusively that the salivary glands, the kidneys, the skin, and probably even the intestinal glands, may be functionally affected through the imagination, precisely as we have seen in the case of the stomach. As regards the influence of the mind upon general nutrition, the facts are so notorious as hardly to require mention. Pleasant emotions, when not accompanied by excesses, promote nutrition, while disagreeable feelings, such as anxiety and protracted worry, often cause a rapid loss in weight, besides imparting the emaciated, haunted appearance to the physiognomy which bears such unmistakable evidence of the conflict within.

Such, then, are the more tangible effects of the psychical mechanism upon the physical economy; or, if a more technical statement be demanded, such are the effects of certain cortical states upon the remainder of the economy.

An analysis of these effects reveals, in the first place, the important fact that they are largely *evanescent* in character and liable to disappear with the cessation of the emotion or conception to which they owe their origin. The second important point to be borne in mind is the fact that the effects are *functional* in character and represent modifications in degree rather than in kind. These two facts taken together—to wit, the evanescence of mental effects upon the body *plus* their purely functional character—would of themselves lead us to the inference that changes in the tissues involving such immense perversions of histological processes as those seen in cancer and other neoplasms could not be alone attributed to mental influence. And in this inference we should without doubt be borne out by facts.

But if we can not produce tumors and other profound changes in healthy persons by acting upon their intellectual mechanism, how can it be supposed that we can remove such gigantic histological perversions, when they have once become established, simply by acting upon the patient's mind through the medium of suggestion and the expectant attention thereby engendered? The supposition is simply preposterous. But there are reasons other than a mere *reductio ad absurdum* why we must place the stamp of infamy and fraud upon the pretensions of the mind-healer *et hoc genus omne*. The most cogent of these reasons is the fact that not only during bygone centuries but throughout modern times up to the present day scientific physicians throughout the world have striven to act upon the minds of their patients suffering from incurable maladies, if for no other reason than to conceal the advent of death from the sufferer, with a view to postponing the agony of the spirit incident to protracted waiting for the inevitable end. While encouraging the patient by suggestion and arousing in him that hopefulness which is called expectant attention in the psychological jargon of our day, the ancient doctor, all unbeknown to himself perhaps, did more than mind-healer or other charlatan ever could, save that his actions were characterized by that scientific honesty which is the mark of the true physician. He made no false pretenses of imaginary cures. He informed friends and kindred of the inevitably fatal termination, and sought to postpone the end by every resource of surgery and medicine, meanwhile smoothing the pillow of the dying by fostering hope to the last.

Here we have a gigantic fund of experimental data ready at hand with which to disprove the fraudulent assertions of mind-healers that they are able to cure organic disease by the aid of mental influence alone. Disregarding all theoretic proof of the absurdity of their doctrines, we may content ourselves by simply stating that appeals have been made to the minds of those suffering from organic affections of all kinds for centuries without avail. It is true, as we have said, that such appeals were not those of the charlatan. The patient was not left to die without dietetic, medical, or surgical support like the unhappy victims of the modern mind-healer; but for this very reason the negative results are all the more decisive.

The mind-healer or faith-healer, then, is not an exponent of progress, but he is rather the disciple of decadence. He ignores the experience of the ages, and appeals to fallacies which have been disapproved millions of times by actual trial. He is the anarchist of science; to him what is is of no account whatever. Logic and scientific evidence he despises; but when his unutterable ignorance is revealed, his specious fallacies and paltry scientific usurpations laid bare, he appeals to religious doctrine, which he distorts and perverts to suit his own vile ends. His exploits in the last-named direction have been of such a character as to make all friends of true religion hide their faces. It is time that the Church should join hands with medicine in the eradication of this infamy; both are alike discredited by its continuance.

Let me once more repeat that, from the very beginning, the influence of the mind upon the body, and the applicability of the principle in the treatment of functional affections, and particularly in functional affections of nervous origin, have been perceived and recognized as a legitimate and valuable adjunct to the manifold resource of the scientific physician; it is only against the quixotic exaggeration of the principle that his protest is recorded. Herein lies the difference which must ever exist between the perversions of the ignorant, brazen humbug and the enlightened application of all legitimate means to the cure of disease, which is the prerogative of the conscientious doctor.

Seeing, then, that the influence of the mind upon bodily function as a therapeutic adjunct in certain affections, notably those of hypochondriacal, hysterical, and neurasthenic character, has been thoroughly recognized by the profession, there is every reason why the prerogative of exercising and

deciding when such mental treatment is indicated should remain as it always has with the profession.

Some of the more cogent of these reasons may be summarized as follows: In the first place, the number of cases in which an exclusive reliance upon the curative potency of mental effects can be placed is so exceedingly limited that without a thorough acquaintance with pathology, diagnosis, and therapeutics it is impossible to accomplish much for the patient. Secondly, the most positive harm is liable to occur by a misuse of the method. A case in point was recently reported in one of the New York evening papers by Dr. Allan McLane Hamilton. The case in question was that of a lady who had suffered for many years from a spinal disease which interfered with locomotion. She was induced to consult a mind-healer, who told her to throw away her crutches and walk. With excessive faith she did throw away the crutches, but, to the consternation of all, she at once fell to the floor, sustaining a fracture of the thigh which led to her death a few weeks afterward. Another great danger is found in the propensity of these charlatans to season their quixotic philosophy with an ample proportion of religious superstition. As a result of this, the imagination of the patient is so unduly wrought upon as to imperil his sanity. I have a case of this kind under my care at present, in which hallucinations of hearing, insomnia, and morbid depression of a severe type have been developed by treatment at the hands of one of these fanatics. It is evident, therefore, that the faith-cure, mind-cure, and similar forms of charlatanism represent not only exaggerated forms of humbug, but positive danger to the community.

In combating these flagrant abuses, the enlightened press of the country can render the greater assistance. Substantial proof of this is afforded by an editorial of great ability which recently appeared in the "New York Commercial Advertiser." In concluding this excellent piece of writing the editor pertinently observed:

"In this State we have a statute regulating the practice of medicine and intended to forbid such practice by any person not duly qualified. By reason of a technicality, this prohibition does not seem to apply to faith-healers, mind-curers, and Christian Scientists. It is high time that the statute should be so amended as to embrace these with other quacks."

I have quoted this editorial because it proves that an enlightened public opinion is with the profession on this question; and I may add that, from conversations which I have had with eminent clergymen, the profession may confidently reckon upon substantial support from that quarter. Shortly before leaving New York to attend the meeting of the State Society, I was informed by a medical gentleman from Boston that the question of invoking the aid of the Legislature for the suppression of the dangerous excesses of the faith-healers had been agitated by members of the Massachusetts Medical Society.

Whether the Legislature of the State of New York shall be petitioned for the same purpose remains for the profession to decide.

If I have rendered any service to my colleagues in the profession by a simple statement of the more prominent issues involved in this question, I shall feel quite satisfied.

ANGULAR CURVATURE OF THE SPINE;

CHARACTERISTICS AND CAUSES.

By GEORGE H. TAYLOR, M. D.

The difficulties presented by deformities characterized by a posterior convexity or angle of the spinal column are among the most perplexing and serious the physician encounters. The equivocal and, at best, imperfect results secured by remedies in this class of cases strongly suggest possible misapprehension touching their nature, and indicate the propriety of further inquiries. The struggle of therapeutists has generally been confined to the mechanical appearance or phase of the affection, and to adapt remedies to this outward manifestation. The constitutional side of the affection, the causes operating to deteriorate the nutritive processes through which all phases of vital existence are sustained, whether perfectly or imperfectly, have been sadly neglected. There are, therefore, room and need for further investigation. Let us hope, through inquiries into the fundamental nature and sources of affections of this general class, to bring to light remedial principles of some service to these unfortunate sufferers.

A proper understanding of angular curvature requires that the attention be first given to the more obvious and external features of the affection; that the connection of these with the more obscure concomitants be traced, and that the more tangible facts be so employed as to develop the hidden rational sources of this class of affections. In this way it is probable that the nature of the remedies required to cover the demands of these cases will be developed.

The morbidly changed exterior line of the spinal column is conceded to be due to alterations of shape of anatomical parts or segments, the vertebræ and intervertebral cartilages. These acquire a shape comparable to a wedge, the thinner part being forward. The inner portions of certain vertebræ become diminished in perpendicular measurement, while, for a time at least, the posterior portion remains of the original or proper thickness. The loss of vertebral substance at a restricted locality breaks the axial line of the column into upper and lower portions, which meet at the affected point. This gives the angle from which the affection is named, and affords the ordinary remedial indication.

The spinous process of this particular bone is, in consequence, thrust outward and backward, thus giving an exaggerated prominence to the angle and an unsightly form to the back. The breast bone curves forward, the shoulders are projected upward and the head sinks between them, the back bends sharply back, the ribs are displaced, the stature is shortened, while the limbs appear to have become disproportionately lengthened. The organs of the chest and of the abdomen are displaced by the invasion of these cavities by their exterior walls, often greatly to the disadvantage of their functions.

These mechanical consequences of vertebral disease appeal to the eye and to the understanding with such force and intensity as practically to obscure the reflective faculties of those most interested. The patient's friends are startled by a suspicion of prospective increase of size of the prominence, and of its possible permanent character,

with the consequent restriction of physical power and deprivation of grace of form and of social advantages. The very existence of other factors than the mechanical is practically ignored in the concern felt for the latter.

There is usually a marked absence of pain or other symptoms demanding ordinary medicinal interference. The friends of the invalid are cognizant of the deviation of columnar form, and of little or nothing besides; the physician gives his sympathy, and this controls his action. The remedial requirements are considered only from a mechanical point of view. The column should be forcibly rectified and maintained for an uncertain period. To execute this purpose, mechanism is required similar to that demanded for straightening an obstinate inanimate object of similar form.

The circumstances which have contributed to restrict the conception of vertebral disease to its mere mechanical outcome, and the remedies, to those of a mechanical order, are many and various. The appetite appears to be good, and there is absence of acute manifestations. These facts are to most people positive evidences of good health, and this idea is therefore insisted on in spite of the evidence to the contrary afforded by another order of symptoms. Is not the body a plastic object, capable of being molded to a more desirable form? Will not even bones yield to sufficient prolonged mechanical force? Concealment of the obtrusive prominence is particularly desirable. This is secured by the covering afforded by an apparatus.

Practical medicine does not much encourage the study of fundamental principles; it seeks, rather, agreeable immediate consequences; it is too apt to sacrifice the future to the present. In this case visible, tangible consequences are just what would seem to be the promise of properly employed mechanical force through the medium of apparatus.

The outer or mechanical misshape of the spinal column, and the mechanism adapted to its rectification, appear to the physician questions quite distinct from medical considerations. Neither by nature, habit, experience, nor study has he the desirable degree of competency for dealing with mechanical problems. He therefore readily and unquestioningly consigns cases of irregularity of form to those professing themselves competent to deal with these cases promptly and thoroughly—the *orthopædic specialist.* The latter may be an excellent mechanical expert; he, in general, does not feel called upon to manifest remarkable competency in pathology and ætiology; he may not even be quite at home on very simple questions of physiology. Indeed, the ideal orthopædist seldom appears quite to know whether the realization of his endeavors would promote or supersede and stifle physiological activities and manifestations.

The function of the specialist is strictly limited to the exterior features of the case.

This lack of breadth of view of the specialist in angular curvature effectually conceals from him its most important part. He practically ignores the existence of a potential—an ætiological factor. Spite of observation and experience, he deems the mechanical problem, with the help of his favorite apparatus, an easy conquest, and he inspires his patrons with a similar confidence. By cautiously parrying too impertinent questions relating to physiology and ætiology, he is able to dominate his case for an indefinite period. It is too troublesome for persons engaged in the ordinary duties, pleasures, and ambitions of life to acquire correct knowledge of principles relating to their own physiological well-being.

Mechanical Considerations Subordinate.—The change of the exterior line of the spinal column to an abnormal form is not self-caused, spontaneous, or fortuitous. It is a result or product of adequate antecedent conditions or causes. Nothing else could happen under the circumstances. But the exterior appearance reveals nothing of the processes engaged in its production. Neither does the study of the mechanical principles of straightening cast a ray of light on its source, or afford any suggestion regarding the conditions which render its development impossible.

Injuries to the spinal column from mechanical causes have been said to produce local disease and deformity of the column. This cause has been so pertinaciously insisted on, especially by those in the interest of mechanical apparatus, as to demand examination. This statement results from an inadequate conception of the fundamental sources of the affection, for local injuries have little or no power to restrain the physiological physics which are the necessary precursors of vertebral disease and its effects on the shape of the column. Besides, injuries to this part of the organism are amenable to the same laws respecting reparation as are those of its other portions, the probability and the rapidity of the act depending on the general vital capacities and powers more than on its location. This statement is confirmed by experience, which shows that thousands of instances of recovery occur to one of deformity of the column after local injuries received by it. Instances are exceedingly rare in which the memory or actual knowledge are able to connect angular curvature with local injury in the relation of cause and effect.

It hence becomes evident that the mechanical view and estimate of the pathology of disease of the vertebræ and its consequences as revealed in the exterior form of the column are inadequate. They are too restricted to afford a practical basis for remedies. The mechanical considerations fail to include the dominating facts involved in these cases. They exclude the obscure antecedent processes, occurring locally, beneath the visible manifestation, and also those occurring throughout the general organism, through which the visible consequences are produced. The mechanical conception omits to provide for these potential antecedent morbid processes, but allows their uninterrupted continuance, content only to conceal the outward manifestation which depends thereon. Such measures are, in fact, well calculated to perpetuate indefinitely the deformity, because they serve to perpetuate its constantly operating causes.

Angular deformity of the column is therefore not only incorrectly understood, but the understanding is fraught with pernicious consequences, when regarded as a mere mechanical problem. The deformation is, in fact, but an outward expression of the morbid process from which it proceeds. No remedial means can be worthy the name which fails to consider the nature of its sources, and to apply the proper correction thereto.

Rational Signs of Incipient Vertebral Disease.—Probably no age or social condition is entirely exempt from liability to affections of the vertebræ which portend a morbid modification of form, but experience proves the far greater liability of children and youth. The contributive causes must exist in sufficient degree and for a sufficient period. The ordinary sufficiency of the automatic self-rectifying powers of the organism will then have become permanently impaired, and these powers will require assistance. The nature of these antecedent conditions will be explained further on. In more advanced life, however, the marked results become manifest, in general, in other ways.

A cursory mention of some of the less noticeable and often neglected evidences of approaching vertebral disease may be here made.

The subject usually manifests an irregular but frequently strong, even craving, appetite. This condition is often regarded as a natural and healthful need for food. On the contrary, this may be a consequence either of a morbid nervous irritability of the digestive organs due to the presence of undigested food, or from morbid and acrid digestive secretions, or from incipient decomposition of previous ingesta, or from a feeling of lack of strength, which is misinterpreted to indicate need of food, but which physiological facts show to be due to defective use by the functioning organs of nutritive material abundantly present. A proper study of the appetite in connection with the physiological activities may often afford a key to the pathological situation. The feeling of need of food is often kept up by habitual looseness of the bowels. This symptom requires, not restraint of the bowels, but such measures as insure the appropriation and consequent absorption of digestive aliment.

Subjects of vertebral disease prefer such kinds of food as possess piquancy or are highly sweetened or seasoned, or food in a fluid state. This is because the sense of taste, being blunted by foul secretions, is more readily excited by these qualities in food. The skin is ashen and dull, but in periods of excitement puts on an unwholesome temporary flush. The abdomen is tumid, soft, and doughy to the touch. The limbs are thin and unmuscular. In some cases an unnatural plumpness indicates sluggishness of vital processes and undue retention of residuals of nutrition.

A peculiar languor of temperament further characterizes persons thus affected. They manifest an indisposition to take the initiative, as though fettered both in will and in physical ability. The powers of the vital system evidently fail to properly support its expenditures. What does this imply? We shall see.

The most significant characteristic of the morbid conditions foreshadowing vertebral consequences is shown in the muscular department of the vital system. Whatever that appearance to the eye may be, the muscles are soft, flabby, shrunken, and feeble. They are defective in persistency or power of sustained action. There is a manifest tendency to a decline, rather than to a recuperation of power. Voluntary action is followed by depression and weakness, and rest fails to restore vigor.

The actual qualities of muscle are denoted by the energies they manifest. These are not obvious in a cursory physical examination. The real test of the physiological value of muscular tissues consists of the amount and degree of the service they render the vital organism, whether they perfectly or only imperfectly accomplish the tasks with which they are charged.

The influence of the muscles in the vital organism culminates, not in motor energy as such, nor in the transmission of motor impulses to exterior objects, but in the proper utilization by the vital system of the energy developed coincident therewith. The dynamic energy of muscles prevents the column from falling into angular and other curves, but the parallel function they exercise is equally indispensable. Mechanical substitutes are attempted for their mechanical function, but none are available or hardly thought of for their *chemical* function. The chemical phase of muscular energy engages the ingredients of the organism in their atomic character, and, like the motor phase, extends beyond the tissues immediately engaged. The chemical form of energy corresponds in scope and degree of intensity with the motor form, coincidently developed—that is, whenever motor manifestations are restricted and feeble, the chemical consequences, consisting in the preparation of organic matters for exit from the organisms, are insufficient and incomplete. These consequences are concealed from direct observation, but become manifest through accumulation by their tendency to assume morbid localized forms.

In these facts relating to degrees of preparation of products of vital expenditure lies the significance of muscular failure. Herein also lies the ill-recognized reason of the inadequacy and untrustworthiness of remedies which pay little respect to the unquestioned facts of physiology. The chemical phase of physiological activity is charged with the function and the power of preserving the vital integrity, through maintenance of the standard quality of the materials employed in its service, to the very point of their exit from the organism. By this chemistry of the organism its ingredients are constantly resolved into innocuous forms of matter. Through defect of this chemistry, the same ingredients *fail* of such resolution, vital control is lost or suspended, and organic ingredients assume *noxious* forms, become unsalutary, and react on the vital system in various ways known under the epithets applied to disease. Circumstances quite subordinate in character cause one or another local function or part to suffer more than others from the effects thus arising.

The special nature of the chemical insufficiency which predisposes to vertebral disease has been pointed out by the writer in previous essays. The reader is referred particularly to the works entitled "Mechanical Massage" and "Scrofula" for a further development of this subject. For the present purpose it will suffice to refer to the well-established principle of physiology that the vital economy employs oxygen for removing obstacles to vital sway. Insufficient and incomplete physiological oxidation gives rise to material obstacles—morbid matters—which are in physical and chemical opposition to vital purposes. Those ingredients which are most easily and rapidly oxidized disappear from the vital fluids, while the more resisting tend to accu-

mulate therein, so that all parts of the organism may become replete with an injurious excess of a class of ingredients whose oxidation is tardy. This material is albuminous, and the fact of its presence in injurious excess is shown by local evidences, the tissues of the spine being sometimes the seat.

Now, the motions proceeding from the muscles have a potent influence in determining the relations of oxygen to organic substances. The motor energy expended in the vital system is turned by it to the account of its oxidizing function. When the muscular system is normally active its chemical functions are completed, expenditures and waste are normal, and no destructive residuals appear. When, however, the muscular powers are feeble, the oxidizing function becomes less searching, and certain portions of the albuminous contingent remain unchanged. The organism is habitually pervaded by unfunctioned material. Such material finds lodgment at such points and regions of the body as are, under the circumstances, most shielded from the physical causes which operate to urge the nutritive fluids along their natural courses.

Such parts of the body as possess the smallest and fewest blood-vessels, and such parts also as have the least advantage from motor impulses, become, for these reasons, locations favorable to blood stasis or hyperæmia. When blood, or fluids derived therefrom, is partly retained at points favorable thereto, its ingredients are also shielded from oxidation, and its less fluid portions tend to become localized and fixed. Such is the physical condition of the tissues of the spinal column when vertebral disease is imminent or present.

Angular Curvature a Secondary Affection.—The above exposition of the sources of vertebral affections shows them to be products arising from the union of several distinct factors or causes. These factors may be regarded as an orderly succession having mutual dependence, and may be either normal or abnormal. These factors also denote physiological stages in the career of the nutritive ingredients within the vital organism. By tracing the progress in a *reverse* order and noting the value of each stage, we may better understand the nature of the affection under examination.

1. The form. The exterior, visible, measurable shape of the spinal column is a consequence of the disposition of, or what occurs within its interior substance; the form does not control the columnar tissues, but is controlled by them.

Morbid form also relates to each dimension of the affected parts as well as the exterior and visible portion. The height, inclination, and stability of the spinal column depend on its vertebral and cartilaginous segments. The anatomical frame is also intimately related to these component parts, inasmuch as subsidence and deflection of the column derange the relations of parts sustained by the column. Osseous and cartilaginous misshape is therefore due to—

2. Local disease of vertebral tissues. The local morbid process occurring in the tissues of the column is of a nature which, under the circumstances, results in loss of substance or absorption. Solid matters of the column gradually disappear, allowing remaining portions to occupy less space, causing diminished length of column. This process begins in the anterior portions of the affected vertebræ and cartilages, thus causing the column to bend more or less sharply forward, and necessitating a posterior convexity or prominence proportionate to the absorption at the diseased parts. In advanced stages the whole column becomes shortened and the stature diminished. The diseases of the columnar tissues depend directly upon—

3. Local columnar hyperæmia or congestion. Blood and other fluids in excess and without motion are disposed to chemical changes of deterioration and the consequent development of obnoxious chemical products, thus displacing the physiological chemistry essential to health, both as relates to local fluids and the local tissues depending thereon. The health of columnar tissues is maintained by a free circulation of blood throughout their substance, conveying away all superfluous, waste, deteriorating matters, and resupplying the local tissues with oxygen and such materials as may be demanded by vital uses. The progressively morbid states supervening on hyperæmia or congestion of the column are due to—

4. Suspension of the elastic function of the spinal column. The circulation of the blood in the column by which its health is maintained is effected by the exercise of its elasticity and flexibility. By this means the fluids of the column are urged from it and fresh fluids drawn in—that is, the circulation and healthy nutrition of its tissues are maintained. In the absence of the exercise of its elasticity the fluids of the vertebral, cartilaginous, and other local tissues are indefinitely retained and exposed to spontaneous morbid changes. These local fluids necessarily become surcharged with unstable suboxides and strongly tend to resolution into simpler chemical forms of matter. Vertebral congestion and the restricted elasticity of columnar tissues which invite this condition are therefore due to—

5. Failure of the muscles on which elasticity of the column depends. The spinal, aided by other muscles, physiologically sustain the column in all its positions, and also effect all its changes of position and form. They thus become the indirect motor source of the spinal circulation. The mechanism of the column and its muscles has a fit resemblance to a pump in respect to the control of the fluids of its tissues. Defective power of the spinal muscles, and the liability of its more impervious tissues to become the seat of local disease, are due to—

6. Defective functioning of the general muscular system. A certain amount and intensity of muscular functioning are required to secure the necessary physiological degree of oxidation of the more resisting of the ingredients of the vital system. The final dismissal from the organism of materials designed for its uses depends on securing the proper degree of oxidation. The condition supervening on such failure is—

7. The continued retention by the organism of ingredients which become obstructive and noxious from insufficiency of the chemical physics of the vital system, prominent among which is a surplus of unfunctioned and unreduced albuminoids. These morbid ingredients become a

source of local vertebral disease when morbid consequences are favored by constitution, age, and circumstances enumerated in preceding paragraphs.

Angular curvature is, therefore, a malady as well as a deformity, and, from the nature of the malady and the circumstances under which it is developed, remedies applicable only to *one* of its consequences, the exterior form, can have no curative application to it. The potential disease is wholly unaffected by supports, appliances, and means adapted to rectify the axial line of the spinal column. Mechanical remedies have as little applicability to vertebral as to glandular, pulmonic, skin, and other expressions of essentially the same constitutional disorders. Were it possible, by some magic or means at present unknown, to transform the crooked and diseased spinal column to perfect health, the actual condition of the subject would be only momentarily benfited, so long as the series of causes above pointed out continue unrectified, since these are continuously reproducing the same consequences.

The Testimony of Experience.—The practical results of remedies based on an exclusive mechanical conception of angular deformity of the spinal column are far from satisfactory. At every hand one encounters *un*remedied examples of those who have made and are continuing the best possible use of the remedial principles which find expression in devices for mechanical support of the column. These results strongly imply that not only the therapeutic but also the orthopædic requirements are not covered by the remedy—that, in other words, the nature of these cases has failed to be fully comprehended, and that the treatment supplied for their relief has been inadequate, and to some extent probably misapplied.

The public and the physician have doubtless not infrequently been misled by the advocates and representatives of various competing mechanical instruments, whose claims are supported by abundance of written, verbal, and printed testimonies from respectable sources. This kind of testimony is incompetent and valueless, from the following considerations:

It relates not to the actual morbid process and its cure, but only to the *product* of the process, and to the transient form into which the column may possibly be forced by instruments.

It makes no pretense of either remedying or obviating the continuous reproduction of morbid states of which the exterior form is a consequence.

The testimony referred to is founded on incorrect assumptions; it compares cases not parallel. Different individuals afflicted with spinal deformity have vastly differing constitutions and capacities for recovering from the disease which is the cause of the deformity, both *without* remedies and under *different* remedial methods. These facts render nugatory the testimony favorable to special instrumental methods and processes.

There are many reasons why physicians encounter these cases of angular curvature with a feeling of dread, and are more than willing to surrender them to the tender mercies of the specialist. The latter professes superior acquaintance with their therapeutic needs; he is well provided with the costly mechanical facilities which he insists are essential; he is prepared to give his time to the interests of the case.

On the contrary, the ordinary physician has no facilities, no time for these exacting cases. His ordinary course of studies has led him into far different pathological fields; the practice demanded of him has familiarized him with radically different duties. By nature he may be unfitted for the pursuit of the searching inquiries necessary for a due working comprehension of the obscure pathology of these cases. Add to these considerations the vehement demands of parents and friends of the afflicted for *immediate visible* results of treatment, and their lack of comprehension of the medical side of the affection, and it is little wonder that physicians are inclined to consign these cases to specialists, and so escape certain responsibility and blame.

It is, however, due to say that an evident distrust of the instrumental method is prevailing and increasing among physicians, and a consequent corresponding increase of confidence is given to physiological methods, though the full meaning of the pathological condition which ushers in vertebral disease is probably less frequently apprehended. In evidence of this statement, reference may be made to a communication of Dr. Gibney (professor of orthopædic surgery in the New York Polyclinic) in a late number of the "New York Medical Journal." Dr. Gibney gives therein a detail of his personal experience in dealing with several cases of deformed spine. He also gives to a still larger extent the experience and methods of another surgeon working in the same field. The cases were treated *without* apparatus of any kind being worn by the patient. The method of procedure consisted mostly of special voluntary exercises, adapted to increase the power and development of special regions of the body supposed to be defective. The constitutional and the local effects of these procedures were increased by introducing the elements of *resistance* and *isolation*—that is, restriction of the action to local regions, and by intervals of time between the distinct processes. The results were commendable, although the processes chosen might have been better adapted to the condition, and the repertory was meager and restricted.

The specialists above referred to appear not to understand that the ideas and principles they adopted are quite as susceptible of adaptation to the most advanced and helpless instances of vertebral disease as to early stages of the affection.

The late Dr. Carnochan, who is well known to have had the clearest judgment in all matters surgical and orthopædic, and who had incomparable opportunities for experience required for perfecting the judgment, expressed to the present writer his conviction that no instrument worn upon the person was capable of either benefiting the health or of actually and permanently correcting the form of the spinal column, and that the use of all mechanical appliances involved practically a failure of their purposes.

The American Pharmaceutical Association will hold its thirty-seventh annual meeting in San Francisco, on the 24th, 25th, 26th, 27th and 28th of June. Among the questions announced for consideration there are many that have an important bearing upon the work before the next Pharmacopœial Convention.

THE PURULENT CONJUNCTIVITIS OF INFANTS, AND BLINDNESS IN NEW YORK STATE.*

By LUCIEN HOWE, M. R. C. S.,
BUFFALO.

I DESIRE to call the attention of the society to the following facts:

1. That there is in the State of New York, as in the United States, an apparently rapid increase in the number of blind.

2. That a very large proportion of blindness here, as elsewhere, is due to the purulent conjunctivitis of infants.

3. That by the use of methods already known this could be materially lessened.

4. In spite of that, no systematic effort is made to do so.

I propose in this paper to take up these different points as briefly as possible and in the order mentioned. When we compare the report of the United States Census of 1870 with the report of 1880, it appears that while the population increased during that decade at the rate of 30·09 per cent., the number of blind had increased 140·78 per cent. Such, in a word, are the figures concerning the increase in the entire country. As for the State of New York, more exact examination of the statistics is equally instructive.

According to the United States Census reports, the population of New York in 1870 was 4,302,759, and in 1880 it was 5,082,871, being an increase of 15·9 per cent.; whereas the number of blind in New York State in 1870 was 2,213, and in 1880 was 4,981, being an increase of 125·07 per cent.

In a similar way, if we compare the State Census of 1875 with the United States Census of 1880, we find the population in 1875 was 4,698,958, and in 1880 was 5,082,871, being an increase of 8·1 per cent.; while the number of blind in 1875 was 2,256, and in 1880 was 4,981, being an increase of 111·03 per cent.

In other words, official reports show that during the ten years preceding 1880 blindness in the State of New York increased eight and two tenths times as rapidly as the population, and during the last five years of that decade it increased thirteen and seven tenths times as rapidly. It is not improbable that there were imperfections in these statistics—the United States Census of 1880 being very complete, the others incomplete—but it is hardly possible that those differences in the manner of enumeration would account for more than a part of the increase as is here shown. And when the facts are taken up in detail and carefully weighed, one can not but arrive at the conclusion that certain causes have tended to produce an increase of blindness out of proportion to the increase in population, and much greater than there is any necessity for.

In the second place, I wish to show that one of the most important factors in the production of blindness is the ophthalmia of infants, or, as it is otherwise called, the purulent ophthalmia or purulent conjunctivitis of children, or ophthalmia neonatorum. In this country, unfortunately, very few systematic investigations have been made as yet into the causes of blindness. It is probable, however, that the same diseases here produce the same results as elsewhere, and there is no reason to suppose that there is any less proportion of the ophthalmia of infants in America than in Europe. For our present study, therefore, we are entirely warranted in drawing conclusions from data obtained there. On examining any statistics concerning the causes of blindness, the results found will vary somewhat according to the age of the individuals, certain diseases, like cataract, glaucoma, etc., belonging particularly to advanced life, and the one we are considering, of course, to early life. In a list of 2,528 blind *of all ages* collected by Magnus, it was found that the ophthalmia of infants was more destructive to vision than any other disease or form of accident, that causing 10·87 per cent. of the unfortunates. To appreciate its true importance, we should see how large a portion of the blindness among children is due to that disease.

Thus Fuchs found that among 3,204 cases of blindness collected from asylums in different parts of Europe, 23·5 per cent., or nearly a quarter of the entire number, are doomed to lifelong darkness because of the ophthalmia in infancy. In certain countries, where all the inmates of all asylums are counted together, the proportion who have become blind from this disease is found to be even a little greater; thus all the asylums in Switzerland gave 26·02, all the asylums in Germany gave 25·83, all the asylums in Austria-Hungary gave 20·47.* In order to ascertain in a similar manner the influence of this disease and others in the production of blindness in this State, I made, with the aid of my former assistant, Dr. Starr, an examination of the eyes of 128 inmates of the New York Institution for the Blind at Batavia, and found there also that the ophthalmia of infancy produces more havoc than any other disease—20·4 per cent. being caused by it.

Next I wish to call attention to the fact that a very safe, simple, and reliable method is now known by which this disease can be, to a great extent, prevented, and to show how decided would be the advantages if it were thoroughly employed. The figures which I have given in regard to the blindness caused by purulent ophthalmia of infants were collected from the examination of individuals born before Credé's method had come into use even in Europe. At that time a large proportion of eyes were annually sacrificed to the disease. As early as 1874 or 1875 various forms of disinfectants had been used as preventives, but in 1880 Credé first began his method of treatment. That consisted in a thorough cleansing of the eyes of the infant immediately after birth, and then applying a two-per-cent. solution of nitrate of silver. This is done only once, and in that consists the whole of the so-called "Credé's method." As for the reasons of this, from a bacteriological point of view, it is out of place here to go into any details except to mention that as this solution of silver removes the superficial layer of epithelial cells, it probably destroys at the same time any germs which may be in them. However that may be, as to how the nitrate of silver acts, there is, fortunately,

* Read before the Medical Society of the State of New York at its eighty-third annual meeting.

* Fuchs, *ibid.*, page 70.

no question as to the practical results. This has been determined by exactly recorded cases which can be counted now, not by tens or hundreds, but by thousands; not observed by one practitioner, but by many; and especially we have lists showing the effect of treatment without this method as well as with it. I need not take these up in detail, but simply give the summary.

The following table gives on the left side the names of six different obstetricians who used no treatment for the eyes of 8,793 children born in institutions of which they had charge or in private houses. Among these children there were 8·66 per cent. who had ophthalmia in a greater or less degree.

In another list I have placed the results obtained by four different observers who directed the treatment of 8,520 children with a two-per-cent. solution of nitrate of silver. In these cases there were only 0·65 per cent.

AUTHORS.	WITHOUT ANY PRECAUTION.		TWO-PER-CENT. SILVER NITRATE.	
	Total number of births.	Per cent. of ophthalmia of infants.	Total number of births.	Per cent. of ophthalmia of infants.
Olshausen	550	12·5	....	.....
Credé	2,897	10·8	1,106	0·01–0·02
Königstein	1,092	4·8	1,250	0·7
Krukenburg	1,266	7·3	703	0·14
Felsenreich	1,887	4·3	{ 3,000 { 2,100	1·9 1·0
Bayer	1,106	12·3	361	...
Total	8,798	....	8,520	...

Average per cent. without any precaution, 8·66; average per cent. by Credé's method, 0·656.

If any further evidence were required to show the advantages of these steps for preventing the wholesale blinding of children, I would cite the example of certain governments in their enactment of laws requiring such precautions. These are referred to in Fuchs's "Verhütung der Blindheit."

In December of 1882 Austria recognized the advantages of Credé's method by its official recommendation to physicians in the state service, and, according to section seventh of the directions for nurses in Austria, every midwife is required to call a physician to the patient whenever she finds that the child under her care develops the ophthalmia of infants. The Hungarian Secretary of the Interior issued a pamphlet on the subject of the ophthalmia of infants, designed for distribution among all the nurses of the country. In Switzerland it is also obligatory upon them to give notice to the physician of the existence of any such disease. This was established as far back as 1865, and, according to Professor Horner, of Zurich, not a single case of blindness in an individual born since then had entered the large blind asylum in that city up to the time of his death. The Prussian regulations for nurses for 1878 give particular directions and instructions concerning this important point, and in the French official directions for 1880 a note was inserted also calling attention to it.

In view of this, we may ask ourselves what has been done or what is being done in the country, or particularly in the State of New York, for the prevention of this disease? The answer to this question can be brief: By individual effort, very little; by combined effort or by the State, absolutely nothing. And yet the same reasons exist in a manifold stronger degree why the same plan should be adopted in this country—why practitioners here should take advantage of the means already at their command for lessening the effects of this terrible scourge.

I think we are safe in speaking of blindness as a scourge, no matter from what standpoint it is viewed, whether of the economist or of the philanthropist.

From the report of the committee to which I have referred, it will be seen that the blind cost the State of New York, directly and indirectly, each year, considerably over a million and a half of dollars, or exactly $1,791,169; and as it is safe to say that at least one fifth of the cases are due to ophthalmia of infants, we can consider at a moderate estimate that simply the effects of this disease cost New York State three hundred thousand dollars every year.

If any mother were to decide the question for her child between lifelong blindness and death, she would in most cases prefer the latter. Now, if a remedy were known whereby the death-rate of those who suffer from a certain disease could be lessened 20 or 25 per cent., there is no question but that physicians would avail themselves of it immediately. I do not make a plea for Credé's method as the only one; it is possible that in a short time some still better treatment may be found. But I do say that as long as there is such a means of preventing misery at our command, and one which can be so simply and efficaciously employed, it is next to criminal negligence for any practitioner to omit the use of nitrate of silver in every case without exception which he attends. Perhaps there are those who think such a rule very good for obstetricians in charge of large institutions but unnecessary in private practice, surely not for those whose patients are scattered over a large territory. It must be remembered, however, that only a very small part of the births occur in institutions, and the profession is quite as responsible for the health of patients outside of such places as it is for those inside. There are other practitioners, men of keen perception and large experience, who have told me that they could not believe that the ophthalmia of infants was so frequent. In a country practice extending over a considerable territory they see such cases only at rare intervals. It is true we are often surprised at the aggregate when the separate parts seem small. But if the mother and child are at a distance, the physician may frequently have ceased his visits. When the disease in the child's eyes begins to make its appearance, the nurse imagines she can take charge of the rest, and the physician may not hear of the child again until blindness occurs. In just such a practice should Credé's precaution be the invariable rule, and the necessity of it is shown by the fact that, as a rule, even more blindness exists in the sparsely settled counties than near the large cities in this State. There it is that the nurses have full control at an early stage of the affection. In view of these facts, I think it proper to submit the following as the course which we should pursue in combating the disease and attempting to lessen its effects:

First. To call the attention of the profession in general

to the apparent increase of blindness in this State and in the United States, to the importance of the ophthalmia of infants, and to the efficacy of proper means for preventing it.

Second. To request the examiners of nurses and midwives to require of the candidates some knowledge of this danger to the eyes of infants, and an acquaintance with the methods which are now in use for obviating it.

Third. To instruct our committee on legislation to formulate and recommend the passage of a law by which all midwives in this State shall be obliged to report the existence of any case of ophthalmia of infants within twenty-four hours after its occurrence to the family physician, to the district physician, or to some legally qualified practitioner.

AN ANENCEPHALIC FŒTUS.*

By J. MILTON MABBOTT, M. D.,
RESIDENT PHYSICIAN, NURSERY AND CHILD'S HOSPITAL, NEW YORK.

The specimen which I have the privilege of presenting before the Section this evening is an anencephalic fœtus, delivered at the Nursery and Child's Hospital, January 30, 1889, in the service of Dr. J. J. Hull. The monstrosity is not of extremely infrequent occurrence, but I trust that the following rather full notes of the case will be of interest:

Mrs. L. P., aged twenty-six years, Swede, was admitted to hospital December 6, 1888. There is no family history of imbecility or monstrosities.

She bore a child at full term on August 4, 1886, ten months after marriage. She was still nursing this child when she again became pregnant about April 25, 1888. During lactation she had suffered from alopecia areata. The hair has since grown again evenly, but much less thickly than before. She thought she might have contracted some disease from her husband, but she presented no further symptoms, and had no other reason for suspecting him of being syphilitic. He had suffered from a severe sunstroke in July, 1884, and heat-prostration each summer since. Finally, during the last four months before Mrs. P.'s admission to hospital, her husband, for the first time, had experienced three severe epileptiform attacks.

About the middle of pregnancy Mrs. P. received a strong mental impression from meeting a man on the street several times who had a hideous disfigurement of the left side of his face, due to some kind of tumor. This and her husband's epilepsy had made her very fearful that she would "mark" her child. She is of nervous temperament, anæmic, and rather poorly nourished.

On examination, December 7, 1888, when about seven months and a half pregnant, it was noted that abdominal palpation indicated an R. O. A. position of the fœtus; fœtal pulse 144, heard loudest in hypogastric and right inguinal regions of maternal abdomen; and no abnormity was appreciated. Labor-pains supervened at full term, January 29, 1889, but the patient did not call attention to them until about 8 A. M., January 30th. A vaginal examination was then made by the nurse, who reported that the woman was in labor. The nurse afterward stated that she had suspected that there would be something unusual about the case, as she had noticed that the fœtus "would spring to the touch" in a peculiar way—a statement which I consider of special interest, as it not only illustrates the symptom of convulsive movements which Charpentier describes in these cases, but also indicates that the fœtus was alive until after the first examination was made during labor. The membranes ruptured shortly after this examination, and an excessive quantity of amniotic fluid escaped.

On examination, about 9.30 A. M., I found the patient near the end of the first stage of labor, and the presence of a monstrosity was at once recognized. The presenting part was easily within reach of the examining fingers, the cervix uteri being almost completely dilated, and the lowest part of the fœtus at the level of the middle plane of the pelvis. The part situated centrally in the vagina was that portion of the head just above and between the orbits and above the root of the nose. The orbits, eyelids, nose, mouth, and gums were successively recognized, and the lower border of the inferior maxilla could just be reached by the ends of the examining fingers. Both ears could be felt and recognized laterally. On passing the examining fingers from the root of the fœtal nose anteriorly toward the maternal pubic symphysis, the scalp covering the forehead could be felt to terminate about an inch above the orbital arches, and beyond this there was a feeling to the finger of the surface of flattened diminutive cranial bones, very thinly covered (to a thickness appreciated as being about a sixteenth of an inch) with a slightly uneven layer of connective tissue, presenting a smooth membranous surface, not cutaneous. The bony resistance terminated about an inch from the termination of the scalp, or two inches above and posterior to the upper margins of the orbits, in a rough, uneven border, somewhat concave from side to side, and beyond this the finger detected a large opening in the cranium, due to the absence of a large portion of the calvarium.

During the foregoing examination the fœtal heart-sounds had been carefully listened for without success, and, as no spontaneous movements of the fœtus had been recognized after the examination by the nurse, above recorded, the life of the fœtus was considered extinct at the commencement of the second stage of labor. My examination was confirmed before the birth of the child by my assistant, Dr. Bratenahl, and by Dr. I. H. Hance, to whom I had sent a note inviting him to see the case.

When the head was in sight at the vulva it became possible to feel the left scapula of the fœtus, the shoulders being situated almost laterally in the vagina, the left somewhat posterior to the right. Descent was slow in the second stage of labor on account of the resistance offered to the comparatively large dimensions of the shoulders, the passage not having been sufficiently dilated by the anencephalic head. Digital traction was therefore made in the left axilla, aided at the same time by pressure upon the fundus uteri through the abdominal wall by an assistant. The left shoulder rotated posteriorly and was delivered first, while the right engaged under the symphysis pubis. The rest of the body followed without difficulty. The duration of the second stage of labor was two hours and ten minutes, and the third stage was normal and of twelve minutes' duration. The fœtus was still-born and weighed 6 lbs. 7 oz. The placenta was rather dry and fibrous, but practically normal.

* Read before the Section in Obstetrics and Gynæcology of the New York Academy of Medicine, February 28, 1889.

THE ANTROPHORE.

By M. NEUMANN, M. D.,
SAN FRANCISCO.

Gonorrhœa and its treatment have been a source of annoyance for many years, and it is only now (that is, in my opinion) that we have in the antrophore a specific for all stages of this common complaint.

For the benefit of those physicians to whom the antrophore is unknown as yet I shall give a brief explanation of it, and cite a few of the many cases where it has proved so satisfactory that I feel it incumbent upon me to inform the medical profession of its merits.

The term antrophore is derived from ἄντρον, meaning "a cavity," and φορεῖν, "to carry"—a carrier into a cavity, or a contrivance to convey medicaments in soluble form into canals like the male urethra, the rectum, the vagina, etc.

The instrument consists of a spiral or skeleton made of closely wound wire of tube shape and covered with a thin film of rubber and shellac to prevent oxidation and the corrosive action of chemicals. They are coated with various remedies dissolved in a compound of gelatin and glycerin combined in such proportions as to melt at blood heat in from ten to thirty minutes. The spiral while remaining in the cavity or being withdrawn is entirely unproductive of pain.

Case I.—D. D. called on me, afflicted with acute gonorrhœa in its severest form, with a beginning bubo and paraphimosis. I attended to both with the usual remedies. I gave him large doses of citrate of potassium in solution for a few days until the acute inflammation and pain had somewhat subsided. On the fourth day I gave him the antrophore, No. 24 (containing 2 per cent. of thalline sulphate), one to be used morning and evening for three days, and allowed it to remain in half an hour.

On the seventh day I gave him No. 23 (containing 5 per cent. of thalline), one to be used on going to bed, allowing it to remain half an hour.

On the ninth day the discharge was very thin and watery and greatly decreased.

On the tenth day I still continued No. 23, and there was but little discharge.

On the thirteenth day there was very little to be seen.

On the fifteenth day, still using No. 23, there was little or no discharge.

On the seventeenth day he was entirely cured.

Case II.—Mr. S., subacute gonorrhœa. Contracted it thirteen days prior to coming to my office. Had used internal remedies and Guyon's injector, but he said when I saw him that he was "worse now than when he first got the 'clap.'"

I immediately gave him No. 13 (containing zinc acetate, gr. $\frac{1}{8}$; lead acetate, gr. j). He used one each evening upon going to bed. After using four, gave him No. 14 (containing lead acetate, gr. ij; zinc acetate, gr. $\frac{1}{4}$). He continued using these for about two weeks, when the discharge was thoroughly dried up. Still I had him continue using them a few days in order to prevent a relapse; and now, after three months, he has never noticed any, nor the slightest signs of it.

Case III.—N. R., chronic gonorrhœa of five weeks' duration. He had been taking internal remedies until his entire stomach (as he expressed it) was upset, and had loss of appetite. His friends "scented" what he had from the medicines he took through the mouth. He had also injected various solutions three times daily for four weeks with but little improvement.

I began with No. 9 (containing silver nitrate, gr. $\frac{1}{16}$), one each evening (invariably keeping them in half an hour) for three days. Then used No. 10 (containing silver nitrate, gr. $\frac{1}{8}$). Continued this treatment for fourteen days, he only having used fourteen antrophores, when I discharged him cured.

Case IV.—C. B. had had a gleet for three years; had tried all kinds of suppositories and sounds for two years. Then tried internal remedies with no improvement. Accidentally he came to me, and upon examination I found a small stricture. I began using sounds, and inserted immediately after No. 8 ($8\frac{1}{2}$-inch, containing iodoform, gr. iij). Allowing him to remain quiet on my lounge for half an hour, I used one each day for a week. The second week I used sound but twice, but gave him No. 3, to use one each night upon going to bed. The third week he was very nearly cured, but continued with No. 26 (containing iodoform, gr. iij, and ichthyol, $2\frac{1}{2}$ per cent.). At the end of the third week I noticed no more discharge. The fourth week he used one each second night, and at the end of that week the gleety discharge had entirely disappeared, but the treatment was still continued a week longer. After a year Mr. B. tells me "he never noticed any more discharge."

Case V.—Mr. Y. had a gleet of ten years' standing. With the aid of the endoscope I noticed granulations. He had been treated with the use of the endoscope for a long while, but with no benefit. I began with No. $10\frac{1}{2}$ ($8\frac{1}{2}$-inch, containing 2 per cent. of silver nitrate), using one every other night, and at the end of the first week I noticed that the granulations had disappeared, but still the discharge continued. Using a bougie, I found a stricture, very deep-seated and of small caliber. I treated him twice a week with sounds and No. $10\frac{1}{2}$ ($8\frac{1}{2}$-inch), every other night for two weeks, with great improvement. Then used a 4-per-cent. silver nitrate antrophore for a week every other night, and after using four he was entirely cured.

Case VI.—Mr. S., chronic prostatitis. Began with No. 25 ($8\frac{1}{2}$-inch, containing ichthyol, 10 per cent.), one each evening for a week. At the beginning of the second week I noticed some improvement, and had him continue using the same. The third week I gave him No. 26 (containing iodoform, 8 per cent.; ichthyol, $2\frac{1}{2}$ per cent.). At the end of this week he was free from all trouble.

I have also tried the antrophore in impotence and spermatorrhœa with very good results.

To recapitulate: 1. The antrophore is flexible and readily soluble. 2. It enters the urethra or any cavity very easily. 3. In most cases but one a day is needed. 4. Nothing unpleasant ever follows from their use, as from that of suppositories and injections (cystitis, orchitis, etc.). 5. It is not necessary to use internal remedies.

Anthrax at Horsehair Factories.—"An inquest was lately held at Sudbury, Suffolk," says the "Lancet," "on the body of a horsehair dresser of Long Melford, who had died at the Sudbury Hospital. From the evidence it seems that the deceased first fell ill on February 9th, and that on the 11th he complained of a pimple on the back of the neck near the left ear. Next day it was more inflamed, but he persisted in going to work, and did not consult a doctor until the 15th, when he was seen by Mr. Horsford, who forthwith sent him to Dr. Holden at Sudbury, by whom he was admitted into hospital, and shortly after Dr. Holden excised the malignant pustule. The excision was, however, too late to avert death, which took place early on the 17th, just about a week after the patient first complained of feeling ill. Dr. Holden testified that death was due to anthrax, and stated that this was the fourth case which has occurred in the district during the last two years in connection with horsehair factories. This is important testimony, and demonstrates the need of inquiry into the conditions and nature of the work at such factories, which might profitably be undertaken by the Local Government Board."

The Diagnosis of Hernia.—"Dr. Multanovski suggests the addition of a new diagnostic sign to the classical method of diagnosticating abdominal hernia. Having made observations on one hundred and fifty-two cases of hernia in Professor Bogdanovski's wards, he states that in all these, when the finger was passed up into the abdomen, a more or less tightly stretched strap-like band could be detected connecting the contents of the sac with those of the abdomen."—*Lancet.*

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
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NEW YORK, SATURDAY, MAY 4, 1889.

THE SUNDAY NEWSPAPER AND THE PHYSICIAN.

NOT long since the *anathema maranatha* of a certain eminent divine was launched at the Sunday newspaper. It was denounced from the pulpit as a literary Antichrist, and at its door was laid the blame for the heterodoxy of the masses. But, with due respect to the opinion of the reverend gentleman, we must not forget that every question is equipped with an outfit of at least two sides, and, as the medical profession is interested in one of these, it may not be amiss for us to espouse the cause of the denounced journals, although we have no desire to come into collision with the clergy. We have nothing to offer as to the allegation of the scribes to the effect that the philippic mentioned was but a resurrection of the old ecclesiastical intolerance of anything which contributes to human pleasure or liberal education—that it was of the Rip Van Winkle type of dogma and had missed its train by a few centuries—but will simply endeavor to state the subject from the physician's standpoint.

Throughout Christendom Sunday is regarded as a day of rest, and this opinion is fostered and encouraged by the clergy. But Sunday is the clergyman's busy day, on which he earns his salary, and the chief day of the week on which one could not in justice refer him to the model of industry and virtue presented by the habits of life followed by the common pismire as worthy of his emulation. Now, does the pastor spend his less busy days in the study of "Barnes's Notes" or discard his "Pigs in Clover" for the mental relaxation of an attempt to disentangle the reticulated syntax of "Butler's Analogy"? Does he not read his morning paper, which represents the breaking of an entire Sunday afternoon and evening on the part of a large number of men, and even feel piqued if the report of his own discourse is meager or lacking? In case his Saturday dinner had been inconsiderate enough to have assumed the rôle of Ghost to his Richard, so that it sat heavily on his soul on the morrow, he would be filled with righteous wrath if his physician should refuse his aid on the ground that Sunday was the only time he had for the improvement of his mind, and that he answered no calls on that day. The defender of the Faith does not appreciate the fact that he denounces the practice he himself follows on his day of rest when he arraigns his flock for Sunday newspaper reading—the avoidance of the care or suggestion even of business—but says that all must occupy themselves with the things that constitute his heaviest labor, and not only that, but must do nothing else. If such views were advanced by any other professional man, should we not consider it in the light of an unconscionable lusting after the possession of the solar system?

But the Sunday newspaper is of such catholic character that it broadens the minds of all classes of men. Take the physician as an example. He has finished his week's work, and resolves to pass Sunday afternoon in company with himself and his own time. His soul loathes the very thought of medical literature, and he yearns for some mild, gentle literary hypnotic. As he reads his paper a feeling of placid comfort and perfect peace steals over his mind by virtue of the history of the Kentucky vendetta, or the private laundry-list of some family high in the social scale. He absorbs medical lore in spite of himself from those encyclopædic columns, but this is so artificially illuminated by the sparkling radiance emanating from the glittering generalities with which it is accompanied, that he is all unconscious of his acquisition until after it has been recorded upon the "tablets of his mind." The familiar technical terms masquerade in fantastic garb after they have enjoyed a season of social communion with other verbal *bric-à-brac* resident in the mind editorial, and he has ingested the recorded fact before he has resolved the first anagram into its rational formula. The Sunday newspaper, then, permits the physician to study and relax his mental tension at the same time.

If he is convinced, on the other hand, by the arguments against the paper, how different the result! His weary brain yearns not for exercise, and consequently he does not feel equal to the mental effort required in the study of the Bible or of theological works. He is, therefore, perforce driven to the perusal of some secular work or of the religious periodical. He may choose the latter, and is straightway beguiled into reading a florid eulogy of some patent medicine. Visions of the vendors thereof in the act of abstracting the bread from the very mouths of his rapidly emaciating children rise up unbidden before his eyes, and soon such a phantasmagoria induces a marked discord in the symphony of mind and soul which his pastor would scarcely regard as increasing his receptivity of spiritual pabulum, or as being in strictly "good form" for a Sunday-afternoon inspection of one's personal moral accoutrements. In the case of the physician it is certain that the religious newspaper is distinctly contra-indicated.

But the quack advertisements in the secular journal do not disturb him, for he expects to see them, and is skilled in the art of recognizing them in any disguise. Instead of goading him into a furious delirium of profanity and implacable malevolence, the paper gradually soothes his spirit until he falls into a luxurious lotus-eater's day-dream; his cynical contempt for the vanities of social life gives place to a broad philanthropy as he reads of the "delicate surgical operation known as skin grafting"; his childhood's innocence and faith again animate his mind as he reads of the infant on whose integument is frescoed in capillary arabesques a schematic map of some incident which had excited the intense interest of its maternal source during the early months of its fœtal existence; his agnostic creed or atheistic materialism is as chaff before the hurricane of conviction produced by the history of the bedridden female whose pallid lips had parted for the entrance

of nourishment but once in twenty years, and whose soul was a victim to the habit of periodical journeyings to alleged supernal receptions, leaving behind the body, care, and appetite of this life, but who nimbly vaulted over a barbed-wire fence five minutes subsequent to the process of "laying on of hands," engineered by a faith-cure apostle, and who ran down a predatory jack rabbit within the next four seconds and a half, establishing a record.

But the Sunday paper adds to its moral influence much valuable scientific information. The physician can not glean from the entire literature of his profession nor from any personal experience what he may acquire in a single afternoon by the aid of his Sunday paper. From no other source could he learn of the analgesic small boy and of the magnetic maiden. He would still, but for his paper, be wofully ignorant of the facts relating to the hosts of animate pathological cryptogams which medical science, despite the golden lure of untold wealth to spur on its efforts, has been forced to admit to be beyond its ken. The practitioner whose professional escutcheon is quartered with no bar-sinister arms of a medical Alma Mater, and who has never answered to the charge of carrying a concealed diploma, is not given to reporting the histories of his cases in the medical journals. He reverently enshrines in a fruit-jar the reptile which he has enticed from its comfortable home in the stomach of the unimaginative society queen, who had informally drank from a mountain rill without the use of the customary utensil while honoring with her presence a select camp-meeting a few years previous, and he tells no man other than a reporter of the matter. A wealth of clinical information is thus given to the medical profession, and thereby a residence at the very outposts of civilization is not made essential to the acquisition of a complete experience as to pathological vagaries.

One more reason why the physician should be allowed his Sunday newspaper is because of the broad field for mental exercise of a gentle nature afforded by its contents. The medical reader can dreamily speculate on the why and wherefore of the curious psychical abnormity that impels the journalist to adopt a medical technology governed only by laws revealed by the light of nature, in both its orthography and its lexicology. The reporter rarely stumbles when he saunters through the etymological mazes of the labyrinthine and pranksome Latinity of the law, and has no serious misunderstanding with the staid Hebrew and Greek roots which ramify through the nomenclature of theology and relieve the monotonous invariability of the laws formulated by physical and chemical science. But he shakes up a limited vocabulary of medical terms in a hat and impartially draws out a sufficient number of them as occasion may demand. The reportorial head would fall into the basket if he should hand in an account of the judicial ablation of a malignant tort from the inchoate right of dower of a feme-covert, or assign an ingrowing assymptote as the cause of the isomeric henotheism and failure of a synthetical analysis; but he would receive an increase of salary for "beating" his fellow reporters by the report of the details of a kelotomy for the removal of the semilunar cartilages from the semicircular canals of some eminent man, or a cheerful description of a gastrostomy for the purpose of ascertaining the situation of a serous fibroma of the fourth ventricle, especially if he had spelled serous with an "i." This metaphysical problem is the last thought of which the physician is conscious, and the call to prepare for dinner finds him refreshed and ready, perhaps, to attend divine service in the evening. Nay, forbid not the physician to read his Sunday paper, for it serves to make him wise, kind, and tolerant of the shortcomings of his fellows.

THE PRANKS OF A DRUG.

We admire the pluck shown by Dr. D. W. Prentiss, of Washington, in reporting another case in which the administration of jaborandi has been followed by a change in the color of the hair, for his previous publication of an instance of the sort brought down upon him an amount of correspondence that would have deterred any ordinary man from returning to the subject. The doctor reported his first case in the "Philadelphia Medical Times" for July 2, 1881. It was that of a lady, twenty-five years old, whose hair was of a pronounced blonde. She was affected with pyelonephritis with anuria of unusual duration and uræmic symptoms. There was continuous total anuria for eleven days, with constant vomiting, severe headache, sleeplessness, confusion of vision, delirium, and muscular twitchings, and convulsions seemed to be impending. Hot baths and packs having failed to give rise to sweating, pilocarpine was used subcutaneously, and promptly caused profuse sweating and salivation, with complete abatement of the uræmic symptoms. Between the 16th of December and the 22d of February, twenty-two injections of pilocarpine hydrochloride were given, from thirty-five to forty centigrammes of the drug being employed—about six grains. But the lady's relief from her kidney symptoms was not the only result; her hair was found to be chestnut-brown in January and almost pure black by the 1st of May, while its growth was more vigorous and the individual hairs were thicker. Dr. Prentiss adds that her hair has now, in 1889, become dark brown. There were some incredulous readers of Dr. Prentiss's narrative, and one critic publicly stated that the lady must have been in the habit of bleaching her hair, and that the occurrence of its assuming a dark hue must have been only the natural return to its original hue on the enforced discontinuance of the habit; but again, in the "Therapeutic Gazette" for April, Dr. Prentiss affirms the correctness of all his previous statements, and says that the facts are known to scores of persons in Washington, and are entirely beyond question. But the report of the case met with general belief, and numerous letters about it were received by the doctor, from all parts of the country and from abroad. One correspondent, writing from London, England, was evidently more credulous of the doctor's statements than of his willingness to respond to his request, for he inclosed one half of a two-dollar bill, and promised to send the other half on receipt of the formula. A hair-dresser of Geneva, Switzerland,

offered a partnership, with a division of the profits. Most of the inquiries, however, came from the gray-headed and bald-headed, and it is to be surmised that they had their trouble for their pains.

In his last communication Dr. Prentiss speaks of a similar occurrence, alleged to have taken place in France, which, but for its probable fictitiousness, might serve as a precedent in cases of legal complications arising from mistaken identity consequent on a change in the color of the hair produced by pilocarpine. The story was that a sea captain, having married a young blonde, went to sea leaving his bride behind; that during the husband's absence the lady had kidney trouble and was treated with pilocarpine, with the result of turning her hair and eyebrows black and adorning her with a pronounced mustache; and that, when she went to join her husband in Egypt, he repelled her, so that she was obliged to resort to legal measures to establish her identity. There is a flavor of salt water, not to say "marines," about this tale, and we are not surprised that Dr. Prentiss's diligent search for a report of the judicial proceedings in the case has led him to regard it as the figment of a certain wayward person who, after having published it in a New York Sunday newspaper, incontinently fled to Chicago and has not since been heard from.

Dr. Prentiss's second case—the one that serves as the text for his article in the "Therapeutic Gazette"—was that of an elderly lady with Bright's disease, for whom fluid extract of jaborandi was prescribed for the relief of itching. Her hair had before been of a uniform silvery-white, but dark patches began to appear in it, and at the time of her death it showed black tufts and her eyebrows had grown quite black.

It is evident that this effect of jaborandi is exceptional, but it may not be amiss to bear the possibility in mind when occasion seems to arise for prescribing the drug in the case of blondes.

MINOR PARAGRAPHS.

THE POTATO CURE.

This is limited in its scope, being recommended, so far as we know, only for persons who have swallowed foreign bodies. It is known as Cameron's method of treatment. In some respects it is probably to be preferred to the use of a cheese diet. In a case in which it was lately employed by Dr. Deichmüller, as we learn from the "Deutsche Medizinal-Zeitung," the potatoes were given in the form of a purée to a child who had swallowed a pin. The pin was voided on the fifteenth day, imbedded in a fæcal mass.

THE CLAVICLE BANDAGE FOR FRACTURE OF THE SCAPULA.

In the third of his series of articles on "The Surgery of the Upper Extremities," published in the "Buffalo Medical and Surgical Journal" for April, Dr. Edward M. Moore, of Rochester, gives an outline of the history of a case of transverse fracture of the scapula below the spine, in which his "figure-of-eight-from-the-elbow" clavicle bandage gave immediate relief from severe pain, and its use resulted in prompt and perfect recovery. By pressing the humerus backward it slides the scapula around on the thorax and brings it into close contact with it, thus affording splint-like support of a natural kind. Moreover, it relaxes the teres major, the muscle that has the most powerful tendency to separate the fragments. The use of the same bandage has been followed by good results also in cases of fracture of the neck of the scapula.

THE NORMAL POSTURE FOR A WOMAN IN LABOR.

According to Dr. A. F. A. King, of Washington, who contributes an interesting article on this subject to the April number of the "American Journal of Obstetrics and Diseases of Women and Children," the question "What is the Normal Posture for a Parturient Woman?" admits of little more discussion than the topic of the famous chapter "On Snakes in Iceland." In other words, Dr. King maintains—with perfect justification, we think—that there is no one posture that can be called normal for a woman in labor. He favors a change of posture from time to time, as may be indicated by an instinctive desire for it, by an arrest of the process of labor, or by emotional discontent, peevishness, or despair.

MUNICIPAL APPRECIATION OF MEDICAL SERVICES.

It is unfortunately not often that a municipality sets a just estimate upon medical services for which it is called upon to pay. A commendable example in this respect has been set by the Municipal Assembly of St. Louis in voting an appropriation of $500 to Dr. A. C. Bernays for attendance on a member of the police force who had been injured in the discharge of his duty. We learn that the case was one of gunshot wound of the abdomen involving the stomach, the duodenum, and the jejunum, and that immediate laparotomy was performed with perfect success.

GERMAN SURGICAL ASPIRATIONS.

According to a dispatch to the "Staats-Zeitung," Dr. von Bergmann said, on the occasion of the opening of a congress of surgeons: "Although the privilege of ministering to the ailments of their Emperor was denied the German surgeons, they nevertheless will continue to strive to attain the highest pinnacle of usefulness in their professional capacity, so that out of that era of trial and sorrow there may spring forth a time of blessing and joy."

AN UNUSUAL FŒTAL PRESENTATION.

At a recent meeting of the Philadelphia County Medical Society, Dr. E. P. Bernardy showed a child that had been expelled with both shoulders presenting, the neck being somewhat stretched and thrown forward on to the chest, and the head, slightly twisted to one side, lying in a depression of the chest, between the arms. The process of parturition was described as having been accompanied with hardly any pain, although the mother was a primipara only eighteen years old, and during the early part of labor the soft parts were very rigid. When Dr. Bernardy first saw her, the membranes had been ruptured four hours; the fœtus occupied the right oblique diameter; the presenting part seemed to be the breech, with the right side deeper in the pelvic cavity than the left; the fingers could be hooked into what appeared to be the groin, but did not perceive the full feeling of a breech; there was a sort of sulcus or fissure in the center of the presenting part. External palpation showed the uterus divided into two parts by a deep indentation, a large body occupying the upper left portion, and a body occupying the lower portion of the right side, and this state of things gave rise to the impression at first that the case was one of twin gestation.

THE INFLUENCE OF THE MIND UPON THE BODY.

In his article upon "The Limitations of the Influence of the Mind upon the Body," published in this issue, Dr. J. Leonard Corning seems to us to have considered the principles underlying psycho-therapeutics in a spirit of perfect candor. While admitting the purely functional modifications that may often be produced by a powerful appeal to the patient's imagination, by the aid of suggestion, and by the induction of a condition of fixed expectancy, he is careful to point out that in the majority of instances the effects thus induced are evanescent in character and can not be depended upon to effect a permanent abatement of symptoms. As for the pretense put forward by charlatans that organic maladies are to be cured in this manner, he justly observes that the accumulated evidence in the hands of the medical profession entirely disproves such a preposterous assumption. His proposition to confer the prerogative of employing psycho-therapeutics exclusively upon physicians must commend itself to all enlightened persons, in view of the outrageous abuses that have characterized the operations of "mind-healers," "faith-healers," and other charlatans. Should the consideration that this question is now receiving at the hands of physicians and prominent churchmen result in legislative abatement of the evil, the interests of the community at large could not fail to be advanced materially.

THE MEDICAL SERVICE ASSOCIATION.

This is the corporate title of a Brooklyn society having for its object to secure to persons of moderate income medical attention and supplies on a mutual or co-operative basis. The capital stock is placed at $5,000, divided into five hundred shares at $10 each. One gratifying feature about this and other similar organizations is the fact that there is a recognition that medical services and care have a real value to their members, so that, while the latter seek to pay only the minimum of the physician's due, they are willing to pay something. The objectionable feature is that persons able to pay ordinary fees are usually admitted to membership, and, although paying but a tithe of what they ought to pay, put on an offensive air of determination to get the utmost possible amount of service—a determination in which they are only too apt to succeed, to the detriment of the physician employed and to the discouragement and abasement of the medical profession as a body. Such organizations are rare in this country, and we hope that they will never become common.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending April 29, 1889:

DISEASES.	Week ending Apr. 23.		Week ending Apr. 29.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	11	3	5	2
Scarlet fever	446	47	281	43
Cerebro-spinal meningitis	4	3	5	5
Measles	164	11	174	12
Diphtheria	198	54	158	49

The New York Academy of Medicine.—At the next meeting of the Section in Pædiatrics, on Thursday evening, the 9th inst., Dr. W. E. Forrest will read a paper on "Retro-pharyngeal Abscess," and Dr. A. F. Currier will read a paper on "Vulvo-vaginitis in Children."

At the next meeting of the Section in Neurology, on Friday evening, the 10th inst., Dr. Charles K. Mills, of Philadelphia, will read a paper on "The Localization of Lesions of the Great Nerve Plexuses"; Dr. R. C. M. Dawbarn will give the history of "A Case of Spinal Resection for Fracture causing Paraplegia," with notes by Dr. L. C. Gray; and Dr. Matthew D. Field will present "A Report of Cases illustrating a Peculiar Defect of Memory in Chronic Alcoholism."

Changes of Address.—Dr. Joseph D. Bryant, to No. 54 West Thirty-sixth Street; Dr. J. F. Chauveau, to No. 31 West Sixtieth Street; Dr. J. Leonard Corning, to No. 53 West Thirty-eighth Street; Dr. George B. Fowler, to No. 56 West Fiftieth Street; Dr. Joseph O'Dwyer, to No. 967 Lexington Avenue.

Recent Deaths.—Dr. Harvey Lindsley, of Washington, D. C., died on Sunday, April 28th, aged eighty-five years. He was the oldest surviving member of the Medical Society of the District of Columbia and a medical educator with a record dating back to 1830. He was graduated from the National Medical College in 1828, and served as a professor in that institution from 1839 to 1846, holding the chairs of obstetrics and diseases of women and of practice. He was one of the founders of the Pathological Society, and was actively interested in every movement in society progress in the district.

Dr. O. G. Given, of Carlisle, Pa., died on April 26th, aged fifty years. He was a native of Ohio and was graduated from the Rush Medical College in 1870. He became governmental physician at the Indian Training School in 1884, and had been president of the Cumberland County Medical Society.

Dr. Charles W. Stickney, of Newark, N. J., died on April 23d, at the age of fifty-eight years. He was an alumnus of the University of Pennsylvania, of the class of 1858. During the civil war he served with distinction as surgeon of the Twenty-third Regiment of New Jersey Volunteers.

Dr. James Watson Frion died in Brooklyn on the 26th ult., aged fifty-five years. He was a native of Newbern, N. C., and a graduate in medicine from the University of Louisiana, class of 1856. He was at one time a resident of New York and a member of the Medical Society of the County of New York.

Dr. Frank W. Rockwell, of Brooklyn, died on Tuesday, April 30th, at the age of forty-six years. He was graduated from the College of Physicians and Surgeons of New York, and for a number of years was connected with the Long Island College Hospital.

The "British Medical Journal" announces the death of Dr. von Lauer, of the German army, who for many years had been the physician to the late Emperor William; also that of the eminent French chemist, M. Chevreul, in his one hundred and third year.

The "Lancet" records the deaths of Professor A. von Biesiadecki, of Lemberg; Dr. Chautrain, physician to the King of the Belgians; and Professor Joaquin Gimeno, of Saragossa.

The New York Infant Asylum.—Dr. Edmund C. Wendt has been appointed a visiting physician to the asylum, in place of Dr. E. Bradley, resigned.

The Johns Hopkins Hospital, in Baltimore, will be formally opened on Monday, the 7th inst.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from April 21 to April 27, 1889:*

Magruder, David L., Colonel and Surgeon. By direction of the Secretary of War, the retirement from active service this date, by operation of law under the provisions of the act of

Congress, approved June 30, 1882, is announced. Par. 4, S. O. 94, A. G. O., April 23, 1889.

Vollum, Edward F., Colonel and Surgeon. Promoted to surgeon, with rank of colonel, from April 23, 1889.

Wright, Joseph P., Lieutenant-Colonel and Surgeon. Promoted to surgeon, with rank of lieutenant-colonel, from April 23, 1889.

Woodruff, Ezra, Major and Surgeon. Promoted to surgeon, with rank of major, from April 23, 1889.

Pursuant to instructions contained in letter from A. G. O., Washington, April 13th, the following-named medical officers will assemble with troops in New York Harbor on the 27th inst., prepared for field service in connection with New York Centennial parade:

White, Robert H., Major and Surgeon; Ewen, Clarence, Captain and Assistant Surgeon; Cochran, John J., Captain and Assistant Surgeon; and Ewing, Charles B., First Lieutenant and Assistant Surgeon. S. O. 90, Headquarters Division of the Atlantic, Governor's Island, New York city, April 19, 1889.

Walker, Freeman V., First Lieutenant and Assistant Surgeon. By direction of the Secretary of War, leave of absence for four months on surgeon's certificate of disability, with permission to leave the Department of Texas, is granted. Par. 12, S. O. 92, A. G. O., April 20, 1889.

Change of Stations of Medical Officers.

Havard, Valery, Assistant Surgeon. Relieved from duty at Fort A. Lincoln, Dakota, and ordered to Fort Buford, Dakota.

Crampton, L. W., Assistant Surgeon. Relieved from Fort Bridger, Wyoming, and ordered to Fort Lyon, Colorado.

Spencer, W. G., Assistant Surgeon. Relieved from Fort Yates, Dakota, and ordered to Fort Bridger, Wyoming.

Robertson, R. L., Assistant Surgeon. Relieved from Fort Buford, Dakota, and ordered to Fort A. Lincoln. Par. 29, S. O. 95, A. G. O., April 24, 1889.

Woodruff, Ezra, Captain and Assistant Surgeon, by direction of the Secretary of War, is relieved from duty at Fort Missoula, Montana, and will report in person to the commanding officer, Fort Monroe, Virginia, for temporary duty at that post. Par. 14, S. O. 92, A. G. O., April 20, 1889.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the two weeks ending April 27, 1889:*

Byrnes, James C., Passed Assistant Surgeon. Detached from special duty at Norfolk, Va., and to the Chicago.

Heffenger, A. C., Passed Assistant Surgeon. Granted leave of absence for six months, with permission to leave the United States.

Leach, Philip, Passed Assistant Surgeon. Leave of absence extended six months, with permission to remain abroad.

Lowndes, C. H. T., Assistant Surgeon. Ordered to Naval Academy, Annapolis, Md.

McCormick, A. M. D., Assistant Surgeon. Detached from the Vermont and ordered to the Chicago.

Wilson, George B., Assistant Surgeon. Detached from the Naval Hospital, Mare Island, and ordered to the Iroquois.

Cordeiro, F. J. B., Passed Assistant Surgeon. Detached from the Vandalia, and ordered to the Naval Hospital, Mare Island, California.

Bransford, John F., Surgeon. Ordered to the Iroquois.

Stitt, Edward R., Assistant Surgeon. Ordered to the Bureau of Medicine and Surgery, Washington, D. C.

Fereber, N. M., Surgeon. Ordered to the Naval Academy, Annapolis, Md., for examination of candidates for admission to the Academy.

Society Meetings for the Coming Week:

Monday, *May 6th:* Wisconsin State Medical Society (Milwaukee); New York Academy of Sciences (Section in Biology); Medico-chirurgical Society of German Physicians; Morrisania Medical Society (private); Brooklyn Anatomical and Surgical Society (private); Utica Medical Library Association; Boston Medical Association (annual); Boston Society for Medical Observation; St. Albans, Vt., Medical Association; Providence, R. I., Medical Association; Hartford, Conn., City Medical Association; Chicago Medical Society.

Tuesday, *May 7th:* Kansas State Medical Society (Topeka); New York Obstetrical Society (private); New York Neurological Society; Elmira Academy of Medicine; Buffalo Medical and Surgical Association; Ogdensburgh Medical Association; Hudson, N. J., County Medical Society (annual—Jersey City); Mercer, N. J., County Medical Society (annual); Androscoggin, Me., County Medical Association (Lewiston); Connecticut River Valley Medical Association (Bellows Falls, Vt.); Baltimore Academy of Medicine.

Wednesday, *May 8th:* Kentucky State Medical Society (Richmond); New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medico-legal Society; Medical Society of the County of Albany; Pittsfield, Mass., Medical Association; Franklin (annual—Greenfield), Hampshire (annual—Northampton), and Worcester (annual—Worcester), Mass., District Medical Societies; Philadelphia County Medical Society.

Thursday, *May 9th:* Society of Medical Jurisprudence and State Medicine; Brooklyn Pathological Society; Medical Society of the County of Cayuga; South Boston, Mass., Medical Club (private); Pathological Society of Philadelphia.

Friday, *May 10th:* Michigan State Medical Society (Kalamazoo); New York Academy of Medicine (Section in Neurology); Yorkville Medical Association (private); Medical Society of the Town of Saugerties.

Saturday, *May 11th:* Obstetrical Society of Boston (private).

Letters to the Editor.

AN OPENING FOR A DOCTOR.

Lambert, Tenn., *April 16, 1889.*

To the Editor of the New York Medical Journal:

Sir: I have been so flooded with letters from all parts of the Union since you published the piece in regard to the need of a doctor at this place in your issue of April 6th, that I shall have to call upon you for aid. Unfortunately, I forgot to state the size of this place, and for that reason receive more letters than I otherwise should have done. I can not begin to answer all of them, so you will please state, for the benefit of all doctors wanting to change, that Lambert is in the country, with only one store, and is eight miles from Galloway, Tenn., on the Louisville and Nashville Railroad, and ten miles from Somerville, the county-seat of this (Fayette) county, which is on the Tennessee Midland. We have a mail here by horse twice daily. The practice will pay about $1,500 to $2,000 a year. The near-

est doctor in any direction is eight miles away. Collections are usually made in full when cotton is sold. I will answer by mail any letters of application after the publication of the foregoing. If it is not asking too much, I shall be glad if you can give this a place in your next issue. I am confident I have received a great many letters from physicians who would not wish to locate in the country, but were inadvertently misled by the publication in your issue of the 6th inst.

With many thanks, James H. Cocke.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN LARYNGOLOGY AND RHINOLOGY.

Meeting of March 26, 1889.

Dr. C. C. Rice in the Chair.

Complete Bony Occlusion of the Anterior Nares due to Hyperostosis of the Facial Bones.—Dr. G. B. Hope presented a case of this rare affection, occurring in a young girl, with an account of the operative procedures that were being carried out to secure a nasal passage. The occlusion of the nares was due to growth of the turbinated bones, but, while other bones of the face had attained corresponding size and weight (the lower jaw being three fourths of an inch in thickness and the roof of the mouth half an inch), the other passages and foramina of the skull did not seem to have been encroached upon, with the exception of the lacrymal canal, which had become obstructed first of all, and the Eustachian tube, which was enlarged and of bony hardness. The smell, sight, and hearing were good. She had some cough from pharyngeal catarrh, snored at night, breathed almost entirely through the mouth, and had frequent attacks of coryza. Her other functions were normal. Of nine children in her family, she was one of two living. Her breathing had always been difficult, and she had had two attacks of pneumonia and one of bronchitis. With the electric trephine Dr. Rice was making an opening, now nearly completed, through to the pharynx.

Dr. Knight had seen thickenings of the palatal bones which about closed the posterior nares, but no case like the one presented. The slight impairment of nervous and other functions was remarkable considering the amount of bony growth.

Ethmoiditis; Attempted Operation.—Dr. Knight presented a patient upon whom he had operated on the right side, without success, to remove a soft red mass growing in the upper back part of the nasal fossæ. The affection had begun a year or more previously, being ushered in by intermittent and then persistent headache, and being accompanied by loss of smell and taste. Acids had been without result; the cautery had made a passage, but it had soon closed up again; Weir's forceps had next been used, and had caused repeated discharges of pus, which applications of peroxide of hydrogen had not arrested as yet.

Laryngeal Vertigo.—Dr. S. T. Armstrong, of the Marine-Hospital Service, read a paper with this title, in which he had collected all the recorded cases of laryngeal vertigo (sometimes called "epilepsy" and "syncope"), nineteen in number. He gave an elaborate review of the various theories which had been advanced to explain the occurrence of unconsciousness produced by laryngeal irritation. Cases had first been reported by Charcot. Dr. Lefferts and Dr. Gray had each published cases. Convulsions had in most instances been absent; in a few of the cases cited there had been movements. On emerging, the patient was not confused, and in one case it had been recorded that he would continue saying what the attack had interrupted him in. Local treatment of the larynx cured the whole trouble. These facts had led some to object to the term "laryngeal epilepsy," as not being properly descriptive. However, if we recognized that epilepsy might result from a scar or some persistent cause of irritation in any part of the body, it might not seem improbable that intense irritation of the superior laryngeal upon sudden sharp coughing might result in epileptoid unconsciousness by a direct effect on the brain. We need not suppose with some that the vagus and heart were affected primarily. Bromides had in some instances stopped the seizures. In a case occurring in the speaker's practice the attacks had been much favored by a condition of nervous exhaustion or the breathing of a vitiated atmosphere. Dimness of vision and muscæ volitantes preceded the attacks. The speaker preferred the term laryngeal syncope, as standing for a symptom of a functional rather than organic disorder.

Dr. W. R. Birdsall said the question uppermost in his mind was as to how these cases stood related to the laryngeal crises of locomotor ataxia, and referred to a case of posterior spinal sclerosis with tabes in which violent laryngeal crises had occurred, together with loss of consciousness. Treatment for a few weeks of a slight redness and thickening of the vocal bands by a specialist had caused suspension of the attacks for a long time, but they had subsequently returned. While attempting to get a view of the larynx he had once produced one of them; the man had apparently fainted, and had at first become very cyanotic, as if from a laryngeal spasm closing the glottis. He believed these attacks had been due to a functional disturbance acting through the branches of the pneumogastric, and thought this might be so in the case of laryngeal vertigo also. A spasm of the adductors closing the glottis might of itself have a brain effect.

The Central Tracts of Olfactory Nerves and their Diseases.—Dr. C. L. Dana read a paper with this title, in which he presented some facts and views concerning the first cranial nerve that, as he believed, were new. The nose was treated by rhinologists mostly as a respiratory organ. Disturbances of the sense of smell were commonly disregarded by physicians and patients, but it should be remembered that this sense served useful purposes. It was our most delicate means of appreciating attenuated matter. In fishes something akin to a sense of smell, if not an identical sense, was well developed. In reptiles there was a fair development of the sense, and in birds scarcely any; but the highest development was seen in mammals, except those of aquatic habits, like the seal, in which it was nearly wanting. In the anthropoid apes it was not well developed, and in savages, the negro and Indian (contrary to the assertions of some writers), its development was not equal to that which it attained in civilized races. The Indian might be superior in acuteness of smell, but in the discrimination of different odors and the appreciation of flavors and their æsthetic associations the civilized man was as much the superior of the Indian as the latter was in advance of the anthropoid ape. In animals it served for sexual purposes, for selecting food, for hunting prey, and for avoiding enemies. In man it served for selecting food and drink, for arousing the sense of hunger, for warning him against injurious vapors, and for æsthetic and to some extent sexual purposes. Diminution in keenness of olfaction was found present in the criminal, lunatic, idiotic, and degenerate classes in society. The olfactory sense in man was growing, and fortunately so, for every avenue which carried new impressions to the brain helped to develop it. He believed

that the senses of smell and taste would one day be cultivated in children as a means of causing them to grow up with greater keenness of mind and larger capacity for discrimination and for æsthetic enjoyment. The sense of smell had always been appealed to in religious rites, and women instinctively learned that to exhale a delicate perfume added to their sexual attractiveness. He had lately observed anosmia in a number of neurasthenic patients, which was often independent of a catarrhal state, and he believed that, like asthenopia, it occurred in both neurasthenia and hysteria. In testing for smell he used ten phials, containing from one one-hundred-and-sixtieth to six tenths of a grain of vanilline.

Turning to the anatomy of the olfactory nerve, the speaker remarked that all other sensory nerves, at least before entering the nerve centers, connected first with a collection of bipolar cells, such as were seen in the spinal ganglia, the retinal rods and cones, or the cells of Deiters's nucleus in the auditory nerve-root. They then passed up toward the brain and, after crossing, connected with a collection of cells in the central gray matter of the cord or in the optic thalamus, and finally went out to the cortex. Sensory impulses never passed directly from periphery to cortex, and no nerve of special sense had its end-organ in direct continuity with the cortex.

The peripheral end-organ of the sense of smell was the olfactory bulb, with its terminal filaments and olfactory cells in the nasal mucous membrane. It was comparable in nervous structure to the eye. In some fishes the olfactory bulb was outside the cranial cavity. Then came the medullated nerve fibers connecting the bulb with the first ganglionic layers of nerve cells, and finally the olfactory cortical regions, which were widely separated and distributed, especially in the lower mammals. The olfactory areas consisted of the olfactory tract (a modification of the cortex rather than a nerve), the uncinate and hippocampal gyri, and the cornu Ammonis. All these parts were usually described as belonging to the inner and lower part of the temporo-sphenoidal lobe. There were, however, still other olfactory areas, somewhat rudimentary in man, but well developed in the lower animals. One was placed in the anterior end of the gyrus fornicatus, and was connected with the olfactory tract by the inner root of the olfactory nerve. From this part thin strands of gray matter (gyrus geniculi) passed up over the upper surface of the corpus callosum, where they were known as the striæ mediales et laterales of Lancisi. They ended posteriorly in a small convolution (callosal gyrus) and in the fascia dentata, itself intimately connected with the cornu Ammonis.

Another strand of olfactory tissue (mostly fibrous) started from the cornu Ammonis as the fimbria, and passed backward and upward and forward under the corpus callosum (here known as the fornix) and descended as the pillars of the fornix. Some fibers passed forward over the anterior commissure and connected with the outer root of the olfactory tract, but others seemed to continue in the pillars of the fornix, and passed down to end with them in the corpora mamillaria. From there fibers seemed to pass up into the optic thalamus. Both from the outer root and from the hippocampal region some fibers bent inward and passed through the anterior commissure. There was, however, no decussation of fibers in the case of the olfactory nerves, as at the optic chiasma.

In man the outer root of the olfactory nerve was the only one practically existing, and the center in the gyrus fornicatus and the connecting loops of gray matter were rudimentary. His olfactory area then consisted of the olfactory tract, its outer root, and the hippocampus, uncus, and cornu Ammonis. There was a commissural union, and some further connections in the temporal lobe by the fornix and associated fibers.

However, many facts in pathology compelled us to believe that olfactory sensations, like others of special sense, crossed; and we could hardly suppose that these impulses passed directly from periphery to cortex. Consequently the problem was not settled by our finding a center in the hippocampus and adjacent areas. His own belief was that the hippocampus and uncus were not really parts of the temporal lobe, but were atrophied remnants of a special lobe which at one time had been as prominent as the cerebral hemispheres. Just so the optic lobes, so large in birds, were represented in man only by the corpora quadrigemina.

The gray matter of the hippocampal regions and olfactory tract differed decidedly from that of the rest of the cerebral areas, and in this respect also these areas were analogues of the corpora quadrigemina. They were the seat of the sense of smell, but not of ideas of order and flavor, just as the corpora quadrigemina were the centers for vision, but not for visual ideas.

It was believed that all the special senses had some kind of representation in the optic thalamus. Focal lesions in the latter had been found to have caused anosmia in four recorded cases. Olfactory impulses must reach it by the outer root of the olfactory tract, the fimbria, fornix, and corpus mamillare. The fornix was small in the seal and dolphin, but large in animals having a keen sense of smell. We must suppose that from the optic thalamus the olfactory impulses radiated outward to the cortex. The lower centers of smell might have another cortical connection, through the intertemporal and occipito-temporal and association tracts.

It was interesting to note that the layers composing the olfactory bulb resembled the four outer layers of the retina; thus the olfactory cells in the nasal mucous membrane, with their pigment and their limiting membrane, were like the pigment, rods and cones, and limiting membrane of the outer layer of the retina. This tended to show that, like the olfactory bulb, the retina was a modified spinal ganglion, and also that the cortical centers usually assigned to the first cranial nerve were not its ultimate centers. Professor Haycraft had shown a relation between the molecular weight and vibration of bodies and the odor they exhaled, and that the rate of vibration of gaseous particles determined the production of different odors, just as variations in color depended upon the rate of vibration in the ether. It might therefore yet be possible to construct harmonies and discords in smell, and to produce actual symphonies in smell, which should awaken as deep emotion as the musical compositions of Beethoven or the paintings of Corot. The speaker had constructed a qualitative olfactometer for testing the sense of smell much as we tested color-sense or appreciation of musical pitch, consisting of two sets of phials, In the first set were the monatomic alcohols of gradually increasing molecular weight (methyl, ethyl, propyl, and amyl alcohols), and also increasingly pronounced odor; and in the second set were the fatty acids (formic, acetic, propionic, butyric, and valeric acids), whose odor varied from a purely acetic smell to one in which flavor alone was present. A person with a normal sense of smell should be able to distinguish each of those odors and their relative place in the series. Some might be found having a keen sense of smell but odor-blind, just as we found people with keen vision who were color-blind.

Diseases of the intracranial olfactory tracts occurred in locomotor ataxia, general paresis, senile decay, and (of a functional sort) in hysteria. Olfactory neuritis was rare. The tracts might sustain injury in various ways, as from tumors, thrombi, hæmorrhages, and meningitis in the adjacent pia. Syphilis was probably the leading cause of anosmia.

He believed tests of the sense of smell might aid in the diagnosis of central organic diseases of the brain after the rhi-

nologist had determined that there was no nasal condition affecting the peripheral end organs of the olfactory nerve.

The Chairman, who with others discussed the nasal causes of loss of smell, said that, where it was due to hypertrophied conditions in the parts or to polypi, recovery might be brought about, but not after the atrophic stage had been reached.

Reports on the Progress of Medicine.

SURGERY.

By MATTHIAS L. FOSTER, M. D.

Iodoform Collodion.—Schmid ("Ctrlbl. f. Chir.," 1888, No. 19) furnishes an excellent article on the antiseptic protection afforded by iodoform collodion when applied over a wound after closure with sutures instead of the bulky dressings usually employed. He uses it very extensively, and denies the need of drainage when it is used, if strict antiseptic precautions are observed. When the wounds are of sufficient depth to require it, he introduces deep covered catgut sutures, one over another, to bring the cut surfaces into close contact and prevent any secondary hæmorrhage or accumulation of serous discharge. The edges of skin are then accurately coaptated with silk, and a layer of iodoform collodion is placed over all. This dressing he professes to have used in between two and three hundred operations of various kinds, including amputations of the breast, with cleaning out of the axilla; hip, knee, and shoulder resections, amputations, exarticulations, extirpations of various kinds of tumors, goitre, etc., with good success. He recommends it especially for use in operations for the radical cure of hernia and in laparotomies, unless contra-indicated by peculiar conditions present in a particular case. In all operations for hernia in which the surgeon does not feel certain of asepsis he advocates tamponing the wound with iodoform gauze, rather than attempting to close it—a method preferable in certain cases.

This method of antiseptic closure of a wound is also applicable in cases where closure by means of the usual dressing is impracticable, as after operations on the mucous membranes, or where mucous membrane is sutured to the integument, where, besides the air, germ-laden liquids or solids come into contact with the wound—as in operations on the tongue, mouth, rectum, or vagina, or after operations on the face. Under this dressing in most of his cases the wounds healed primarily. Out of twelve kelotomies and thirty laparotomies it was necessary to reopen the wound in only two cases—one of each of these operations. A great advantage of this method is that the surgeon has constant visual control of the field of operation, and, when the wound is not doing well, he has not only the usual symptoms to guide him, but also the actual appearance of the tissues.

Collodion does not adhere well to raw surfaces. It is not the preferable dressing for children, because they can scratch it off too easily. It must not be applied around a finger, because in such case it would be apt to interfere with the nutrition. Before it is applied, the wound should be ascertained to be perfectly aseptic, as, if it is not, severe inflammation will develop, which will necessitate the removal of the collodion. To do this, wet cotton should be laid for a couple of hours over the collodion to soften it; otherwise its removal will cause pain. The wound can then be reopened to the necessary extent and allowed to granulate.

Occasionally, after the final removal of the collodion, one may find a quite superficial ulceration, which may be the result of the slight interference with the nutrition of the skin by the tension caused by the collodion, especially when an oblique incision has been made through the skin.

The Disinfection of Surgical Instruments.—Redard ("Rev. de chir.," May, June, 1888), by an extensive series of experiments, professes to show the inadequacy of a five-per-cent. solution of carbolic acid to disinfect instruments. This he proves in two ways—by obtaining cultivations from instruments infected with some septic material and then immersed for a longer or shorter time in the solution, and by inoculating sensitive animals with instruments treated in the same manner. In most of the cases he succeeded in proving the non-disinfection of the instruments. Still further, he demonstrates that pathogenetic organisms may live in the solution, and that the water used in making the solution may remain unsterilized for some time. Bichloride of mercury is more powerful and better for sponges, but is objectionable for instruments on account of its chemical action upon them. At some length he discusses the whole subject of disinfection, by means of various antiseptic solutions, by passing through a flame, and by boiling. All of these are, for one reason or another, objectionable, so he advances the proposition to sterilize instruments and dressings by exposing them for half an hour to steam at the temperature of 110° C. For this purpose he has devised a cylindrical copper boiler, which he fills about one eighth full of water; baskets with feet to keep the contents above the surface of the water, into which the instruments and dressings are placed, with a lid provided with a manometer and safety-valve. Heat is obtained from an alcohol lamp. The air is allowed to escape until the water begins to boil, the stop-cock is then closed, and the pressure is increased until the temperature of 110° C. is attained. He says that disinfection by this means is certain and practicable, that the apparatus is simple and safe, and that neither instruments nor dressings are changed if the temperature is not allowed to exceed 110° C.

Rather opposed to M. Redard's experiments regarding the disinfecting power of boiling water are the observations of M. Terrillon ("Le progrès médical," May 12, 1888). He acknowledges that spores resist the temperature of boiling water, but asserts that they lose their power of rapid development, and that a second boiling, after an interval of some days, will destroy all the microbes. He recommends that before and after every operation the instruments should be immersed for ten minutes in boiling water. Silk should be again plunged into the boiling water at the moment of using. He asserts that all the surgeons who have used this means of antisepsis have had wonderful results.

Red Sulphuro-carbolic Acid as a Disinfectant.—Laplace ("Deutsche med. Wochenschrift"; "Ctrlbl. f. Chir.," 1888, No. 30) makes a mixture of 25-per-cent. red carbolic acid with an equal part of red sulphuric acid, and obtains a black, thick fluid, which is very soluble in water. Its antiseptic strength he has shown by treating anthrax spores with solutions of various strengths; those placed in a four-per-cent. solution were dead in forty-eight hours; those placed in a two-per-cent. solution were dead in seventy-two hours. It is more effective than solutions of the same strength of pure carbolic acid, for the same reason that acid solutions of bichloride of mercury are more effective than those that are neutral, because the mixture of acid renders the disinfecting material more soluble in water.

Actinomycosis.—Afanassjew ("St. Petersburger med. Wochenschrift," Nos. 9–10, 1888) alleges as the result of his investigations that the actinomyces is not a mold fungus, but is a branching, thread-like bacterium of the genus cladothrix. He obtained pure cultivations in blood-serum, agar-agar, and bouillon, in which they formed colonies like those found in actinomycosis. Injections with these pure cultivations produced the characteristic lesions.

To determine regarding the pus of actinomycosis he treated one of the actinomycotic granules with a drop or two of a 1- to 5-per-cent. solution of caustic potash, in order to remove the pus-corpuscles. He found then two different sorts of collections, some of which have club-shaped formations at the periphery, and others which show a row of branching threads which radiate from one another. Both can be distinguished from the leptothrix by the threads of the latter being thick, straight, not branched, and arranged in tufts, rather than radiating from each other. Like the actinomyces, they are found in the excretions. Besides these large actinomycotic colonies, one can find in pus or sputum much smaller colonies, scarcely or not at all visible to the naked eye. These little colonies consist of very small accumulations of twisted, branched threads, which, according to Babès, sometimes occur alone in the pus, and are of much importance in diagnosis.

Braatz (*ibid.*, Nos. 14–15, 1888) reports a case of actinomycosis in which he found the branching bacteria in the urine. His description of them does not differ materially from that of Afanassjew. The treatment he employs for the sores is the use of equal parts of salicylic acid

and absolute alcohol to make a paste, rubbed energetically into the granulating surface. After two days this comes away, leaving a healthier-looking surface. The paste is then reapplied. The sores heal after only a few of these applications.

Israel ("Berliner klin. Wochenschrift"; "Ctrlbl. f. Chir.," No. 29, 1888) describes a case of this disease. The diagnosis first made was that of syphilis of the muscles on account of a swelling on the inner side of the thigh. Afterward little abscesses appeared in various parts of the body, and the correct diagnosis was made. On autopsy, the internal organs were found to be involved; particularly, numerous little abscesses were found in the heart, lungs, spleen, kidneys, liver, and intestines. In the spleen the most characteristic appearance was found. It contained a great number of very small, thick-walled abscesses collected in masses, so that each fungus occupied its own little abscess, and could be separated from its surroundings. So the action of the actinomycetes stands between the granulation formation found in tuberculosis and syphilis and the formation of large abscesses by the action of the pyogenic bacilli in the tissues. In the liver and kidneys scars resembling those of syphilis were found, the appearance of which Israel thinks is characteristic of actinomycosis. The determination of the point of infection is made more difficult by the cicatrization of the parts first attacked while the process is spreading.

As in only a few cases is the point of entrance of the actinomyces into the system known, the case reported by E. Müller ("Mittheilungen zur klin. Chir."; "Ctrlbl. f. Chir.," No. 36, 1888) is of peculiar interest. In this case a splinter of wood was driven into the palm of the hand. After healing, a hard place remained, which two years later became enlarged, painful, and inflamed. The swelling was excised, and was found to contain the splinter of wood, the fibers of which were thickly interwoven with the threads of actinomyces. The length of the period of incubation, two years, is worthy of note.

Cocaine in Amygdalitis.—Dr. Hall ("Lancet," May 19, 1888) advises the application of a twenty-per-cent. solution of cocaine in cases of acute parenchymatous amygdalitis to relieve the dysphagia and lessen the tendency to suppuration. It should be painted on rather than sprayed, because sometimes its application in the form of spray produces attacks of syncope. It is advisable, previous to applying the cocaine, to spray the throat with a solution of bicarbonate of sodium, gr. x to ℥j. In the follicular form of amygdalitis cocaine is of no value.

Erythrophlœine.—Karewski ("Deutsche med. Wochenschrift," No. 8, 1888) does not have a high opinion of the value of this drug as a local anæsthetic. After a number of subcutaneous injections of various amounts into several healthy persons he has decided that its action differs in different persons; that it does not produce complete anæsthesia, but a well-marked analgesia lasting often twenty-four hours over a small area about the point of injection; and that the application of Esmarch's bandage certainly increases the efficacy of the new anæsthetic. To test its efficacy upon the mucous membranes he saturated tampons with a half-per-cent. solution and placed them in the nose. After eighteen minutes there was complete analgesia. Inflammation and pain sometimes result from the injection. In operative cases he says that in two cases of paronychia it had no effect, but in six cases where non-inflamed tissues were involved and the Esmarch bandage could be applied analgesia could be made to last an hour. Of six extractions of teeth, four were painless after injection of the anæsthetic under the gum. As a local narcotic he finds it of more value, and cites cases of lumbago, brachial neuralgia, intercostal neuralgia, and sciatica in which he induced a cure by injection. For this purpose he favors the mixture of cocaine and erythrophlœine recommended by Schöler.

Cleft Palate.—Mr. Howard Marsh ("Lancet," July 7, 1888) says that success in operations to remedy this deformity mainly depends on circumstances regarding which little is usually said. The age is very important. Often the mistake is made of operating too early. It may be possible to cure the slighter forms in children a few months old, but even then failure will be more frequent than success. It is usually better not to operate until the patient is four or five years old. The age at which risk of failure is least, if the mere closure of the palate were the only question, would be between nine and twelve. The patient must be in good general health when the operation is performed. The slightest deviation from health should suffice to postpone it. Next come the shape of the fissure and the conformation of the bones of the mouth. Here the important points are the width of the fissure, the shape of its anterior end, and the height or pitch of the arch of the hard palate. Closure is the more difficult as the cleft is wider, as the anterior end is rounded like the bow of a hair-pin, and as the arch of the palate is lower. He also regards the points of operative procedure to be of the greatest importance. When the edges of the cleft have been pared the soft parts should be separated, not only from the bones they cover, but especially from their line of attachment to the posterior border of the horizontal plate of the palate-bone—*i. e.*, along the transverse line of junction of the soft and hard palate. When the cleft is extensive the detachment should be carried outward and forward nearly to the teeth. To relieve tension, lateral incisions should be made midway between the sutures and the alveolar border, dividing the mucous membrane posteriorly, and the whole thickness anteriorly. The length must be sufficient to relieve the tension entirely. The sutures should be of silver for the hard palate, of horse-hair for the soft. The first suture should be of silver, at the junction of the hard and soft palates, and then the others should be inserted, beginning at the tip of the uvula.

After the operation no solid food should be allowed until the palate has healed. No good can be done by looking to see how the palate is getting on, but, as harm may be done by opening the mouth, it should not be examined for a week. The best chance is obtained by giving the palate complete rest. No local applications are usually needed. The sutures should remain *in situ* from ten to fourteen days. Closure by granulation may occur in cases in which primary union has partially failed.

Cancer of the Tongue.—Jacobson ("Am. Jour. of the Med. Sci.," Sept., 1888) emphasizes the need of recognizing the precancerous stage at the beginning of tongue cancer and the early removal of the growth. The precancerous stage he defines as "a stage in which inflammatory changes only are present, any ulcerative and other changes in the epithelium which may be present not amounting as yet to epithelioma, but on which epithelioma inevitably supervenes." To recognize this stage he considers the duration of the ulcer, its obstinacy to treatment, the age of the patient, absence of duration or fixity, careful scraping of the surface of the sore, and microscopic examination. For the small percentage of permanent cures he blames both the surgeon and the patient for delaying the operation and cultivating the cancer. Even where permanent cure is impossible, not only are months of life gained by the operation, but much comfort, because death from recurrence in the cervical glands is less painful and noisome than from the original lesion.

He considers four methods of operation—Whitehead's, Syme's, Kocher's, and that by means of the écraseur. Of these he prefers Whitehead's, of which he has made some modifications. He prefers to perform a preliminary laryngotomy and to plug the fauces in cases where the growth extends back into the posterior third of the tongue, when the surgeon is doubtful regarding his ability to control the hæmorrhage, and when the floor of the mouth is at all involved. He also splits the tongue before removal, because it is then easier to control hæmorrhage, and in certain cases it may be safe to leave half of the tongue. He combats the opinion that leaving half of the tongue is useless, and maintains that, on the contrary, the patient has most serviceable control over the half which is left. When the disease is very far back and unusual difficulties are present, he slits the cheek as far back as the anterior border of the masseter. He does not approve of preliminary ligation of the linguals.

A brief description is given of Syme's and Kocher's methods. Both are severe and should be reserved for cases in which Whitehead's operation would be insufficient to remove the disease on account of the involvement of the floor of the mouth or of the cervical glands.

The écraseur he does not recommend, because, however well behind the disease the loop is placed, it tends to come forward, as it is tightened, closer and closer to the diseased tissue, until, if it does not encroach on this, it may upon tissue in its close contiguity, ready to take on disease, and also because of its failure to successfully divide the lingual arteries. The galvanic écraseur is mentioned only for condemnation.

For some days before the operation Mr. Jacobson makes the patient practice washing out his mouth frequently with Condy's fluid, sitting

up, with the head alternately dependent on either side. Also he makes the patient accustomed to feed himself with a tube attached to a feeder-spout and passed by himself to the back of the throat. After the operation he brushes over the surface with a solution of zinc chloride, gr. x to ℥ j, or of iodoform ether. Morphine is given freely, and ice to suck. Food is administered by means of a soft œsophageal tube.

The causes of failure as he enumerates them are: Septic diseases of the lungs, hæmorrhage, cellulitis, erysipelas, pyæmia, exhaustion, more rarely shock, œdema glottidis, suffocation from falling back of the tongue, and recurrence.

Thoracotomy for Sarcoma of the Chest-wall.—Park ("Annals of Surg.," Oct., 1888) relates a case of sarcoma of the chest-wall involving the fourth, fifth, sixth, and seventh ribs and the pleura, with adhesions to the lower border of the upper lobe of the left lung, which he removed by taking out a portion of the thoracic wall, five inches by three inches and a half, and tying off the adhesions. Numerous nodules were scattered through the lung, but there was no single sarcomatous mass. The patient endured the operation very well, but died a week later. An autopsy showed the left pleura filled with bloody serum in which the lung seemed to have macerated. The fluid had no odor. Both lungs were found to be studded with sarcomatous nodules.

Hydrocele.—It is usually considered that excision of the sac is a radical cure for hydrocele, but, according to the experience of Mr. Morris, this is not universally true ("Am. Jour. of the Med. Sci.," Aug., 1888). He reports two cases of recurrence after excision and says that as yet no true radical cure has been devised. The object of all treatment directed to a radical cure is to obtain obliteration of the sac. This may be done by inducing adhesion between the walls by means of injection with iodine as well as by granulation after incision or excision, but in a certain number of cases all forms of treatment fail to produce this desired result. As a rule, the method by injection is as satisfactory as any, except when there is doubt as to the precise nature or relations of the hydrocele sac, when it is complicated by a hernia, when a foreign body in the tunica vaginalis is the cause of the hydrocele, when there is reason to think that the testis is the seat of disease, for which castration would be the correct treatment, or when a vaginal hydrocele is associated on the same side with an encysted hydrocele of the cord and a bubonocele. In these cases the open operation is to be preferred.

Amputation of the Leg.—Several German surgeons have lately proposed modifications of the method of performing amputation of the leg, with a view to avoid necrosis of the soft parts over the sawn anterior edge of the tibia. They differ somewhat in detail, each aiming to form flaps which will produce the desired result.

Von Mosetig-Moorhof ("Wiener med. Presse"; "Ctrlbl. f. Chir.," No. 21, 1888) makes two lateral musculo-integumentary flaps, the outer being the larger, formed so that when united from behind forward there is some superabundance of tissue over the crest of the tibia, and so tension and the resulting necrosis are prevented.

Fuhr ("Münchener med. Wochenschrift," No. 15, 1888) favors a circular incision through the skin, then longitudinal incisions, in front a finger's breadth external to the crest of the tibia, behind, exactly opposite, thus forming two rectangular flaps. The outer flap consists of skin and fascia, the inner one of skin, fascia, and the periosteum of the anterior surface of the tibia. These flaps are reflected, the muscles cut, the bones sawn through, and the edges of the flaps united. The cicatrix at first extends obliquely from above and externally downward and inward, but finally comes to lie on the posterior surface. The skin of the stump remains movable over the crest of the tibia and its sawn surface.

A Modification of Pirogoff's Amputation.—Dr. Shiel reports a case in which he amputated the right foot according to a modification of Pirogoff's operation introduced by Günther ("Australasian Med. Jour.," March 15, 1888). An incision was made through the skin, beginning a little in front of the malleoli, reaching to the bone and extending over the sole of the foot. A small semilunar flap was next formed, reaching nearly to the scaphoid bone. The ankle-joint was then opened and the soft parts on both sides of the astragalus and the upper part of the os calcis were severed, the knife being kept close to the bone. At the insertion of the tendo Achillis the os calcis was sawn obliquely from above and behind downward and forward to where the os calcis articulates with the cuboid. Then a slice was cut from the ends of the tibia and fibula parallel to the section through the os calcis. The cut surfaces were then coaptated and fastened together. The result was quite satisfactory, a good stump being obtained.

Osteo-dermatoplastic Amputation of the Foot.—Rydygier ("Beilage zum Ctrlbl. f. Chir.," No. 24, 1888) proposes the following operation in cases where an ulcer occupies the anterior and lateral aspects of the lower part of the leg: The incisions resemble Pirogoff's, except that a large flap is formed of the entire thickness and length of the sole as far forward as the commissure of the toes, which, after the necessary cleaning and freshening of the ulcer and its borders, is applied as a cover to it. To make the flap fit neatly into the wound he takes two narrow lateral flaps from the bridge of tissue between the lower border of the freshened ulcer and the transverse dorsal incision. These little flaps he doubles back on either side so as to cover the surface. In the case related both these side flaps sloughed, but the main flap adhered and the result promised to be good when reported. This method he prefers to Keetley's modification of Syme's amputation for the same purpose, because the leg is not so much shortened and because there is better nourishment for the flap.

Skin Transplantation.—Thiersch (*ibid.*) reports two cases in which he transplanted extensive flaps of skin to fill the space left by the removal of malignant disease. The first case was one of carcinoma of the forehead involving the bone, of about the size of the palm of the hand. This was removed together with the pericranium and the affected bone. A portion of the dura mater, as large as the end of the finger, was exposed near the root of the nose. The exposed edges of the bone were chiseled away, because, according to his experience, skin flaps do not adhere well to compact bone. Hæmorrhage was stopped by pressure, and the wound was covered by long, rather broad flaps. In ten days it was healed, except in a few places where the chiseling of the bone had been neglected. Three weeks later the flaps had disappeared, the wound was granulating, and three cancerous nodules were found in the adjoining skin. These were removed, the wound was scraped, new flaps were applied, and a good result was obtained.

[It can hardly be supposed that Herr Thiersch presented this patient before the German Congress of Surgeons and did not explain the mode in which he obtained the flaps to cover so large a surface upon the forehead, but the description has been omitted in the report made of the case in the "Centralblatt." In the first operation the wound is said to have been covered with long and rather broad *flaps*, hence it may be that they were furnished from the surrounding tissues. But in that case, at the time of the second operation, the neighboring tissues would be in a cicatricial condition, very unfavorable for transplantation, and it would seem as though it would be necessary to obtain a flap from one of the limbs. If this was done it would be desirable to know which limb was employed, from what part the flap was taken, the means used, if any, to accustom the limb to a cramped position, and whether the ultimate effect upon the limb was injurious or not.]

The second patient had cancer of the right half of the face involving both the soft and bony portions, opening the cavities of the mouth and of the nose, and implicating the eye. All the diseased parts were extirpated and the wound was closed by a flap taken from the frontal and temporal regions, of the size of the palm of the hand, with a pedicle in front of the ear two fingers broad. The area exposed by the removal of this flap was covered by strips of skin. In eight days both wounds were healed.

Deep Circumrectal Abscesses.—Zeller ("Beiträge zur klin. Chir."; "Ctrlbl. f. Chir.," No. 26, 1888) strongly advocates opening deep circumrectal abscesses, including the prostatic, by an incision in the perinæum. The usual prognosis of these cases is not very good. Of one hundred and fourteen patients whose cases were collected by Segond, seventy recovered, ten had fistulæ remaining, and thirty-four died. Hence it is not best to wait for spontaneous rupture into the urethra or rectum. Opening the abscess through the rectum is open to the objections that the incision is not large enough, the deepest part of the abscess frequently can not be reached, antisepsis is not possible on account of the communication of the abscess cavity with the rectum, a recto-urethral fistula may result, and there may be dangerous hæmorrhage.

Extirpation of the Rectum.—Bardenheuer operated in the following manner before the German Congress of Surgeons ("Beilage zum Ctrlbl. f. Chir.," No. 24, 1888): He exposed the coccyx and lower part of the sacrum by an incision in the middle line, not dividing the sphincter. The exposed bones were then removed with cutting forceps, the unopened rectum was isolated, and provisional ligatures were placed above and below the tumor, which was then excised. After closure of a rent made in the peritonæum while isolating the tumor, the continuity of the bowel was restored by suturing the upper and lower parts together. Iodoform gauze and iodide-of-bismuth gauze were then packed into the wound and about the rectum. A thick rubber tube was passed into the rectum. The time occupied in the removal of the tumor was eight minutes, and in uniting the portions of bowel thirty minutes. Only two or three ligatures were necessary.

Gastro-enterostomy.—The danger of exclusion of a large portion of the small intestine is illustrated in a case reported by Lauenstein ("Ctrlbl. f. Chir.," No. 26, 1888). In this case a loop of ileum only a short distance from the ileo-colic valve was opened and sutured to the stomach. As soon as food was given by the mouth copious watery evacuations containing undigested food began, and continued until the patient's death from inanition, eleven days after the operation. The unreliability of Nothnagel's test is also shown, as on autopsy the intestine was found passing in the opposite direction to that indicated by the test. The operation was performed upon the lines laid down by Rockwitz (see this Journal, July 21, 1888), as observed by Lücke, who has been unusually successful, and it exhibits clearly the difficulties under which the surgeon labors and the dangers which at present attend such operations.

Surgery of the Brain and Spinal Cord.—Dr. Macewen delivered an address at the last meeting of the British Medical Association ("Lancet," Aug. 11, 1888) upon his own work and observations in this branch of surgery. He has operated in twenty-one cerebral cases, exclusive of fractures and brain lesions the immediate effects of injury, with three deaths and eighteen recoveries. All the patients who died were *in extremis* when operated upon. Two of these had abscesses of the brain; in one the pus had already burst into the lateral ventricles; in the other suppurative thrombosis had previously led to pyæmia and septic pneumonia. In the third fatal case there was a large subdural cyst over one hemisphere, with extensive softening on the opposite hemisphere, accompanied by œdema of the brain. The first case he reports was one in which no operation was permitted until after the death of the patient, when the accuracy of diagnosis, locating an abscess of the brain in Broca's lobe, was demonstrated. The second was a case of effused blood in the lower part of the ascending convolutions. The third was a tumor of the frontal lobe. Several of the cases are of special interest, such as one of Jacksonian epilepsy caused by a cyst situated partly in the cortical and partly in the white substance in the lower part of the ascending frontal convolution. In most of the cases the diagnosis was determined by a consideration of the motor symptoms; but in one case sensory phenomena, in the form of psychical blindness, were the guides to the hidden lesion—that is, physically the patient could see, but what he saw conveyed no impression to his mind. He had received an injury to the head a year before, and since then had suffered from deep melancholy and strong homicidal impulses, relieved by very severe paroxysms of pain in the head. The psychical blindness indicated the angular gyrus as the seat of the lesion, and, on operation, a portion of the inner table was found detached from the outer and pressing upon the posterior portion of the supramarginal convolution, while a corner of it lay imbedded in the angular gyrus. This was removed, and recovery was complete.

The removal of large wedges from the brain, especially in a motor center, will induce serious effects upon the brain as a whole, causing during cicatrization a dragging and displacement of the neighboring parts, with final anchoring of the cerebrum to the cicatrix. This is an important consideration in this form of treatment of epilepsy. Few would attempt the removal of such a large wedge as to induce permanent hemiplegia in the case of a stationary cicatrix, or of a slow-growing neoplasm occasionally producing fits, and it is serious to contemplate even in the worst cases, for it is equivalent to disarticulation of the upper and lower limbs of the same side at the proximal joints. In one case a tumor was exposed the removal of which would have led to a worse degree of hemiplegia than was present; the nutrient vessels were therefore ligatured in the hope of retarding its growth. Improvement followed, the fits becoming less severe and altered in character.

Anchoring of the brain by a plastic effusion and cicatricial formation consequent upon injury interferes with its free play to expand and contract according to the varying states of the circulation. Any sudden physical effort produces a momentary disturbance. The gray matter about the cicatrix is apt to become unstable and produce fits, and, finally, if the irritation is continued, encephalitis is occasionally produced. The consistence of false hernia cerebri is identical with the red softening of the brain which occurs in idiopathic affections not due to operation. The reimplantation of bone is noted, and it is suggested that the note elicited on percussion of the skull may be an aid to diagnosis.

To relieve paraplegia caused by pressure on the spinal cord he has removed the posterior arches of the vertebræ in six cases. In five of these the pressure was due to a tumor, in one to traumatism. Four patients recovered, one died some months later of tuberculosis, and one a week after the operation. The successful cases were so to an eminent degree. Previous to operation the patients were quite helpless, with incontinence of urine and fæces. The disappearance of this incontinence was one of the first results. One patient, a boy nine years old when operated on, was able, five years afterward, to take part in all the games at school, including football, and felt quite strong. Another patient, eight months after operation, was able to attend to light duties around the house.

A case of successful evacuation of an abscess in the posterior mediastinum, pressing upon the heart and bronchi and threatening life, was also reported.

Traumatic Subdural Abscess of the Brain.—Sir William Stokes, in an article on this subject ("Annals of Surg.," October, 1888; "Dublin Jour. of the Med. Sci.," October, 1888) calls attention to the fact that a considerable length of time may intervene between the reception of the injury and the appearance of the symptoms of cerebral abscess. In the two cases which he reports this was not so marked as in the majority of the recorded cases which he cites. In the first case occasional headaches occurred for some weeks after a blow on the head, and then the decided symptoms of cerebral abscess supervened. In the second case there seems to have been an absence of symptoms for about a month. In Dupuytren's case several years intervened. Lawrence recorded a case in which the injury preceded death from abscess of the brain by five years. Others have recorded cases with shorter intervening spaces of time. This latency of the symptoms may be due to the occurrence of the abscess in particular situations and the ability of the brain to endure, up to a certain point, gradually applied pressure. Their appearance is, as a rule, sudden, and, if not interfered with, they run a rapidly fatal course.

Regarding the ætiology of these cases, he accepts the view of Dr. McDowel that they are mainly due to a primary inflammatory condition of the veins of the diploë and a secondary death of portions of the cranial wall, resulting finally in cerebral abscess. To aid in distinguishing this condition from meningeal or encephalic inflammation, he notes that the formation of pus resulting from cerebral traumatism may not be accompanied by fever.

The color and consistence of the contents of these abscess cavities vary greatly. Operation is indicated even when the patient is *in extremis*, with antiseptic precautions and exploratory puncture and aspiration when the trephine-opening does not correspond to the situation of the abscess. Drainage is desirable in the after-treatment of these cases. The occurrence of this lesion is rare, only eleven cases being on record.

Tolerance to Foreign Bodies in the Tissues.—Archer ("Lancet," Nov. 10, 1888) records a case illustrating the great amount of tolerance sometimes shown by the tissues to foreign bodies which have become lodged in them. A piece of white marble, of about the size of a small bean, was removed from an abscess over the carpo-metacarpal joint of the little finger. The patient was unable to explain its presence, but her mother stated that, fourteen years before, she had fallen on a newly

made asphalt path and cut her hand severely. It healed readily after washing and strapping, and no further trouble was noticed until a week before she came under observation, when she struck her hand against a table. The stone was deeply lodged just above the joint, and had lain there quietly until the blow started fresh inflammatory action.

Miscellany.

Dr. Fordyce Barker's Paris Diploma.—In a letter from Honolulu, published in the "Medical Record," Dr. P. A. Morrow says: "Dr. George H. Trousseau, to whom I have alluded, is the son of the famous Trousseau, of Paris, and inherits many of the brilliant and admirable qualities of his distinguished father. In giving me some reminiscences of his former life in Paris, he mentioned having met Dr. Barker as a guest at a dinner given by his father in Paris, and distinctly recalled the fact of his father having mentioned on this occasion that the diploma of the Faculté de médecine had been conferred upon Dr. Barker. He also declares that he not only *saw* the diploma, but that, at his father's request, he personally carried the document to Dr. Barker's hotel and left it there, to be delivered to him upon his return. It was a matter of great regret to him that he had not heard of the charge against Dr. Barker until many months after it was brought before the Academy, and thus had not the opportunity to refute it, which he would gladly have done. This direct statement, coming unsolicited from such an undoubted source, although not necessary to Dr. Barker's reputation, will be pleasant to his numerous friends."

Vaccination.—The "Bristol Medico-chirurgical Journal" for March, 1889, reviewing some books on vaccination, says: "Vaccination has got into undeserved discredit by the way in which its details have been carried out by thoughtless or careless operators. It is much to be desired that all vaccinations should be taken out of the hands of private practitioners, and allowed to be performed only by public vaccinators. The difficulties in the way of this much-needed reform could be easily overcome. Vaccination, as an important branch of preventive medicine, should be under Government inspection. Not only is there great difficulty, privately, in obtaining trustworthy lymph, often necessitating a resort to unauthorized sources, but, in deference to the sentimental objections of ill-informed parents, there are many practitioners of good social standing who are not ashamed, by vaccinating by one or two small insertions, to earn a cheap popularity, although thereby a serious danger is added to the life of a child thus made unfit to successfully resist a possible attack of small-pox. There are also doctors of a lower grade who set themseves up in unwholesome opposition to the public vaccinator, and, by performing the operation for a degrading fee of sixpence or a shilling, with a vaccination also much reduced in quantity—and therefore in quality—draw off a considerable number of ignorant mothers from the vaccination station, the efficiency of which becomes impaired through a greatly diminished attendance seriously limiting the selection of lymph, and the proper management of which becomes well-nigh impossible. In the light of Marson's figures (Seaton's 'Handbook of Vaccination,' ed. 1868, p. 216; McVail, p. 36; Woodward, p. 15), confirmed by all after-experience, conduct such as this, in various walks of professional life, seems little short of criminal, and has now reached such appalling magnitude as to urgently call for Government interference. If vaccination is to be a reality, and not merely something which leads its subjects into a fool's paradise, the state must insure, by an inspection through properly qualified officials, that it is carried out in all ranks of society in a thoroughly efficient manner."

THERAPEUTICAL NOTES.

The Topical Use of Acetanilide.—According to the "Lancet," Dr. A. H. Newth, of Hayward's Heath, has used acetanilide as an external application for a few months, and reports favorably of it as an adjunct to other remedies. He has used it in psoriasis, in association with mercurials, and has found it to work like a charm. He has employed it also in chronic irritable ulcer, erysipelas, urticaria, herpes, and a few other conditions of the skin where there has been considerable irritation. The strength of these applications has been, for the most part, twenty grains of the drug to an ounce of lanolin or vaseline.

Phenacetine in Whooping-cough.—Dr. Heimann, of London (in an article in the "Munchner med. Wochenschrift"; "Lancet"), has resorted to this remedy, after some very unsatisfactory experience with antipyrine, and the results have led him to entirely discard the latter in pertussis. He has given as much as fifteen grains to children of three and four years of age with no ill effects.

A Swiss Cure for a Fresh Cold.—Camphor, says the "Lancet," has often been recommended for colds in the head, although Dr. George Johnson and others have long since indicated the dangers from concentrated alcoholic solutions. A Swiss pharmaceutical journal gives the following method: Into a jug half filled with boiling water put a drachm of powdered camphor; over it place a funnel-shaped paper from which the apex has been torn off so as to admit the nose. The camphorated steam may thus be drawn in through the nares for ten to fifteen minutes. Any coryza, it is maintained, however severe, will yield to three such applications.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

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Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Lectures and Addresses.

THE PLANS AND PURPOSES OF THE JOHNS HOPKINS HOSPITAL.*

BY JOHN S. BILLINGS, M. D.,
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THE third paragraph of the letter of instructions communicated by Johns Hopkins to the trustees whom he had chosen to carry out his plans for a hospital in the city of Baltimore states that "it is my wish that the plan . . . shall provide for a hospital which shall, in structure and arrangement, compare favorably with any other institution of like character in this country or in Europe." What do you suppose the writer was thinking of when he penned that sentence? Had he in view any definite ideal, any mental picture of the institution which he proposed to establish, or was it merely an expression of a desire to give to his city the best thing that could be devised? I have read that letter many times, have heard much of the ideas, hopes, and wishes which were expressed in the numerous conversations which preceded its preparation, and it seems to me that the writer had an ideal, and not a mere vague desire—an ideal which was no doubt somewhat misty, but which did not correspond to any existing hospital, and one which he did not attempt to define except in a few prominent points to which I shall presently refer. In most respects Johns Hopkins took the same course with his hospital which he did with his university, and deliberately refused to trammel with specific directions those whom he had chosen to carry out his plans; but this letter of instructions indicates, nevertheless, a conception of much more definite character, and one which had been the subject of more discussion and reflection than his scheme for a university. Whether this be so or not, I am at all events sure that his trustees have endeavored to comply with this letter of instructions, and to do so in the broadest and best sense of the words.

The beginning of the results we have before us to-day—results which even now are not confined to these particular aggregations of bricks and mortar, as will be presently explained, and the end of which will be, as we hope and believe, to make life happier for millions now living and yet unborn. Only those who took part in the early deliberations of those charged with this trust can fully realize the anxieties, the doubts, the manifold perplexities which at first attended their decisions and movements. Only one or two of them had any knowledge of hospital matters; most of them were business men, bankers, lawyers, judges, railway managers, men who knew something of the management of men and money, but who were now brought face to face with a new problem—viz., how to build, organize, and manage a hospital so that it should compare favorably with any other hospital in this country or in Europe.

To "compare favorably with," what does that mean? It is a peculiar phrase, which, coming from a shrewd business man and a member of the Society of Friends, signifies, I think, to excel, if possible; at all events, that is the safest interpretation. And it was not this or that hospital which was to be surpassed or equaled, but all other hospitals in this country or in Europe; Africa, Asia, and Australasia being put out of the question. It was a large contract.

The location was fixed—that had been done by Johns Hopkins; but they had to decide whether the structures to be erected should be temporary or permanent, of wood, brick, or marble, in one large building or in many, and many other like points, before even the preparation of plans could be commenced. They followed the instructions of the donor and got advice, of which a great abundance was available. They visited the large hospitals of our eastern cities, employed five men, supposed to be skilled in hospitals, each to write an essay giving his plans and suggestions, published these essays in a book which had a wide circulation, and studied the criticisms and reviews to which this book gave rise.

Having duly considered the multifarious and widely divergent suggestions thus obtained, they finally selected one of the essay writers and asked him if he was satisfied with his own plans now that he had seen the others and the published criticisms upon them. He promptly said that he was not, whereupon they asked him to try again and do better. He set to work, aided by the architect of the board, and the result was a set of sketch plans which he took abroad and obtained much counsel and criticism on, examining at the same time the model hospitals of Europe. He was much less satisfied with the sketch plans when he came back than he was when he started, and again the building committee, the architect, and himself reviewed the whole matter, and finally settled on the general arrangement which you will see to-day. Many details remained to be worked out; even the façades had not yet been designed; but the general scheme was settled, and the rest was comparatively easy for the time being.

Let us now for a few moments consider the broad general principles which governed the trustees in the adoption of this plan. The first hospitals were established to give shelter and food to the sick poor, especially those who gathered in cities. Gradually physicians found that they could learn much in these aggregations of suffering and that they afforded the means of teaching others; but this last use of them is only about two hundred years old. Gradually, also, it came to be known that the knowledge thus obtained in the care of the sick poor was of use in treating the diseases of the well-to-do; and finally, within the last twenty-five years or so, people are beginning to find out that when they are afflicted with certain forms of disease or injury they can be better treated in a properly appointed hospital than they can be in their own homes, no matter how costly or luxurious these may be. In the hospital they can have not only all the comforts of home, but more; not only skilled medical attendance and skilled nursing, but the use of many appliances and arrangements specially devised for the comfort and welfare of the sick which can hardly be found in any

* An address delivered at the opening of the hospital, May 7, 1889.

private house, and also freedom from noise and many petty annoyances, including in some cases too much sympathy and in others too little. This hospital, then, is to provide for the rich as well as for the poor; for those who can, and ought to, pay for the help given, as well as for those who can not.

A second cardinal principle to be observed in such a hospital as this is, that it shall do as little harm as possible. A hospital may do harm by its foul air, by spreading contagious disease among its inmates, by neglect or carelessness of its nurses or attendants; and in years gone by hospitals have, no doubt, caused nearly as much sickness as they have relieved. This is now rarely the case, and in this hospital the arrangements for ventilation, isolation, and nursing are such as to entirely do away with this danger. There is another danger connected with free hospitals and dispensaries which is of quite a different kind and to which I can here only allude, namely, the danger of promoting negligence, shiftlessness, laziness, and vice by offering free relief from their consequences—the danger of pauperizing people. This is a danger connected with organization and management rather than with construction, and I can only say here that it has been foreseen and will be, as far as possible, guarded against.

The third principle to be kept in view in such a hospital as this is, that it should provide the means of giving medical instruction, for the sake of the sick in the institution as well as of those out of it. It is well known to those familiar with the subject that the sick in a hospital where medical instruction is given receive more constant, careful, and thoughtful attention than do those in a hospital where no such instruction is given. The clinical teacher must do his best; keen eyes will note every error in diagnosis, every failure in results of treatment. Moreover, the very act of teaching clarifies and crystallizes his own knowledge; in attempting to explain, the dark places become prominent and demand investigation, and hence it is that those cases which are lectured on receive the best treatment. I need say nothing here on the other side of the question, the value of properly trained physicians to the community and the necessity for hospital instruction in such training; Johns Hopkins understood all this and specially directed that "in all your arrangements in relation to this hospital you will bear constantly in mind that it is my wish and purpose that the institution shall ultimately form a part of the Medical School of the University."

Now there are medical schools and medical schools, and in obeying this direction of the donor the trustees had to consider what sort of a medical school this school of the university was likely to be. As the majority of the trustees were also trustees of the university, they knew well the principles which underlie the organization of that institution, and that the same principles would govern the organization of the medical department when that came to be taken in hand. One of these principles is the thorough teaching of that which is known, another is to increase that which is known, and to furnish the men and means for doing this. So also the hospital should not only teach the best methods of caring for the sick now known, but aim to increase knowledge, and thus benefit the whole world by its diffusion. Another point which had to be kept in view was the direction of Mr. Hopkins that there should be established, "in connection with the hospital, a training school for female nurses, not only to care for the sick in the hospital but to benefit the whole community by supplying it with a class of trained and experienced nurses."

It is also highly desirable that a hospital of this kind should have connected with it a well-appointed dispensary for the treatment of those who need medical aid, but not a bed, in the hospital. Through such a dispensary much good can be done at small cost, the selection of proper patients for the hospital is facilitated, the means of medical investigation and teaching are greatly extended, and the scope of the nursing system can be made to reach the poor and ignorant in their own homes.

The last point to which I shall refer, which was kept in view by the trustees in deciding upon the plans, was the general appearance of the buildings and grounds.

Mr. Hopkins gave no specific directions as to the buildings, but he directed that the grounds should be properly inclosed by iron railings, and so laid out and planted as to be a solace to the sick and an ornament to the city, and it was evident that the buildings should be of the same character so far as their purpose would admit. It was therefore decided that, while no utility should be sacrificed for the sake of architectural ornament, and the main purpose which I have referred to should be fully worked out in the plans before any attention was paid to external appearance, it was fit and proper that the buildings should form an ornament to the city, and a suitable monument to the memory of the donor.

Bearing in mind, then, these main principles, to provide for the proper care of the sick, both rich and poor, to provide for the highest class of medical education, to increase and diffuse knowledge, to provide trained nurses for both hospital and city, to provide a dispensary, and to make the buildings and grounds ornamental and attractive, let us see how the problem has been thus far worked out.

I will begin with the arrangements for securing that article of prime necessity in a hospital, viz., pure air. Air supply and ventilation in this climate are inseparably connected with heating for a considerable portion of the year, for comfortable warmth must be secured, and on the means of doing this must largely depend the methods of ventilation and their success. The temperature of Baltimore may vary from 103° in the shade to 17° below zero F., hence its perfect hospital must be one which would answer for the tropics or for northern Russia. To secure this, double walls, with air spaces, were given to the buildings, and a system of heating by the circulation of hot water was adopted for the wards. This system consists of central boilers, from which flow and return pipes extend beneath every building, connected with heating coils, of which there is one for every two beds in the ward above. The temperature in these coils can be exactly regulated to any temperature between 150° F. and the temperature of the external air by simply regulating the velocity of the flow of water by the valves attached to each coil, and thus it is quite possible to give one pair of beds a temperature

of 70° and another pair in the same room, at a little distance, a temperature of 60° F., to suit the needs of different cases. The 80,000 gallons of water contained in this heating apparatus go round and round, carrying heat from the furnaces to the wards; but every building has its own independent means of ventilation, and it is not possible to go from one ward into another without going into the open air on the way, so that foul air, if any forms, can not spread from one building to another. Nevertheless, the buildings are so connected by corridors and underground tunnels that in passing from one to another there is no exposure to rain or snow, and the least possible to cold air, while the food is not exposed at all. This is not the place to describe the ventilation. I will only call your attention to the fact that the temperature of the incoming air by any bed is easily changed by turning a valve, while the quantity of air is not changed; to the arrangement for taking foul air from either the bottom or top of the ward, or from both, and to the fact that all this has been thoroughly tested during two winters and found to give the results hoped for.

One of the peculiarities of the wards is that all the service rooms are collected at the north end, leaving the south end free of obstruction and fully exposed to the sun, the end of the ward being a large bay window looking out on the central garden, and with a floor which can be warmed so that the patients, able to sit there, can be thoroughly comfortable. Another peculiarity of the sick wards is the arrangements for easy cleansing, and to prevent possible accumulations of dust in corners and crevices. Corners are to a great extent done away with, and easy curves given in their place; even at the junction of the floor and walls there is a curve instead of the usual right angle, and I advise you to look at it and see how it has been produced, for it ought to become fashionable, and take the place of the old mop-board in all well-constructed houses. So, also, the doors have not the usual molding about the panels, giving recesses which it is almost impossible to clean.

One of the wards is especially arranged for cases which may be either contagious or offensive. In this building each patient is in a room by himself, and all these rooms open into a corridor through which the wind is always blowing. There are many details about this isolating ward which are worth looking at, but which I have not time now to refer to, and I must omit details about the pay ward, the octagon ward, and the peculiar fittings and conveniences of the kitchen, laundry, apothecaries' building, etc., for the same reason.

Let us pass now to the second object of the hospital, the giving means for higher medical education, and see what has been done for that. In the first place, there is a large amphitheatre with appended rooms for the reception of accidents and emergencies of all kinds. In the second place, provision is made for at least thirty students to reside constantly in the hospital and devote themselves under proper guidance to the study of disease and the practical care of the sick. It is intended that these places shall be open only to those who have had a thorough previous training, and who have shown themselves to be fitted to undertake this important part of their studies. As a rule, not more than five per cent. of medical graduates have had any opportunities worth speaking of to study and treat diseases in the living man when they receive their diplomas. They have to get this experience on their first patients, and sometimes the experience is rather hard—for both doctor and patient. This hospital has provided for the class of the medical school in the last year of their studies good rooms with bath-rooms, a dining-room, and other conveniences, and here they can be taught the actual daily work of a physician, for which all their previous studies are only preparatory. Many of the arrangements of the hospital have been constructed with reference to this instruction; it is a great laboratory for teaching the practical applications of the laws of hygiene to heating, ventilation, house-drainage, and other sanitary matters. All pipes and traps are either exposed to view or can be seen by merely opening a door, and in the tunnel beneath the corridor you can study at your leisure the complicated and yet simple arrangement of pipes for gas, steam, water, sewage, etc., which are usually buried and remain a profound mystery to every one except the plumber, and often puzzle even him.

Closely connected with this subject of teaching is that of increasing our knowledge of the causes, symptoms, results, and treatment of disease; in fact, one can not be thoroughly and well done without the other, and hence many of the provisions for the one are also useful for the other. For example, to go back to our system of heating and ventilation, there are many points connected with it which are destined for experimental work, to compare steam with hot-water heating, to determine the velocity of water at different temperatures, to compare ventilation by aspiration with that by propulsion, or by upward currents with those drawn downward.

One structure is very largely devoted to and fitted for experimental research, and that is the pathological laboratory, where the causes, processes, and results of disease are to be studied. Upon the results obtained in that laboratory may yet depend the saving of many lives, the relief of unspeakable agony, the warding off of pestilence from the city, and, to put it in a strictly business light, the value of real estate and the rate of taxation of this community. We are on the verge of great advances in our knowledge of the causes and methods of disease, and I feel sure that these will be only preliminary steps to far greater and better knowledge of how to prevent or to treat them than we now have. The probable length of life of the new-born infant to-day is not much more than half what it ought to be; the practical productive period of the life of our men and women is shortened and interrupted by unnecessary disease and suffering; but remember, if these things are to be amended, it is not merely by teaching old doctrines; we must open fresh windows and let in more light, so that we can see what these obstacles really are. It is in this work of discovery that it is hoped that this hospital will join hands with the university, and it is in this hope that some of the structures around you have been planned and provided.

A word now on the fourth object kept in view in this hospital, viz., the training school for nurses.

Some of you probably have had some personal experience of the difference between an educated, properly trained female nurse, and one of the old-fashioned sort, but if you have not, it would take much more time than I now have to describe it. I can only say that in many cases a competent trained nurse is as important to the success of treatment as a competent doctor, and that one of the greatest difficulties in treating well-to-do patients in their own homes in this city is the want of proper nurses. Affection and zeal may do much, but they can not take the place of knowledge, and this kind of knowledge is not to be acquired in a day or in a month. It is a work best carried out by women, though not one woman in ten is fit for it, or should undertake it. But the woman who is fit for it, who has physical health and strength, sound sense, loving kindness, patience and tact, and who has been thoroughly taught the art of nursing the sick, with all its thousand details, has the power of doing good and increasing happiness to a degree which few others possess. In a properly conducted hospital ward she is a necessity, but her field of usefulness and helpfulness is by no means limited to that. She is needed outside the hospital, in the home of the rich to nurse and care for the sick; in the home of the poor, to teach prevention as well as nursing. To gather here such women, to have them thoroughly instructed, to furnish them with the attractive and comfortable home which they deserve, and to send them where they are most needed, with provision for their return when the work is done, is the object of the training school of this hospital.

For this purpose the trustees have provided a large and handsome building, separated from the others, and exclusively appropriated to the female nurses, where each can have her own comfortable room, and where a common parlor, library, dining-room, bath-rooms, and, in short, the arrangements of a first-class hotel are provided for their use. Here also is a training-kitchen and a lecture-room to aid in the work of instruction. The intention is that when the nurse has finished her six or eight hours' tour of duty with the sick, she shall come quite away from the ward and all that pertains to it, and take her rest and recreation in a totally different atmosphere, and special effort has been made to have this home attractive and pleasant.

The fifth object which I mentioned as having been kept in view in the plan and construction of these buildings is the dispensary. This is a large building on the north front, consisting of a large central waiting-room, surrounded by a number of smaller rooms for the use of the physicians and surgeons who are to examine and prescribe for the patients, and having bath-rooms, and a small apothecaries' establishment for the issue of the medicines ordered. This building is connected with the amphitheatre by a short covered corridor, and is specially arranged with reference to teaching. It, as well as the amphitheatre, is heated by steam instead of hot water, partly because they are not in constant use, and a rapid means of warming is desired, partly for the purpose already referred to of giving the means of experimental comparison of the two systems. The means of supply of fresh warm air in these two buildings, and of removing the air made impure by exhalations, are somewhat peculiar, and merit examination.

With regard to the architectural design and external appearance of the buildings, and the laying out and ornamentation of the grounds, I can only say that you must see and judge for yourselves whether Mr. Hopkins's wish that they should be an ornament to the city has been successfully complied with. So far as external ornamentation is concerned, it is confined almost entirely to the large buildings on the west, or Broadway, front, which it was felt should harmonize in style of decoration. These central buildings, consisting of the administration, with the one pay ward on either side, are constructed of pressed brick with ornamentation of a dark blue, fine-grained, hard, and durable stone, known as Cheat River stone, and of molded terra-cotta of the color of the brick. The external designs for these, as for all the other buildings, were furnished by Messrs. Cabot and Chandler, of Boston, and I think we have good reason to be well satisfied with the results they have produced. The grounds are laid out and planted in accordance with designs furnished by Mr. E. W. Bowditch, of Boston.

As regards construction, I do not hesitate to affirm that these are the best built buildings of their kind in the world. The material is the best, the most skilled and careful workmen were employed, and, above all, the work received the most careful, conscientious, and intelligent supervision as it progressed. For this supervision we are indebted Mr. John Marshall in the beginning and to Mr. William H. Leeke for the remainder and conclusion of the work; and we are also indebted to the latter for many valuable suggestions as to modes and details of finish which are so important in a hospital. The details of the complicated and extended system of heating, ventilation, and plumbing were designed and the work executed by Messrs. Bartlett, Hayward, & Co., of this city. I should like to go on and mention a number of other names of persons who have done good work here, but want of time forbids. I will only say that these buildings embody the counsels and suggestions of many men and women in this country and abroad, but among them all there is no one who from the very beginning of the conception of the idea of this magnificent gift in the mind of Johns Hopkins down to this present moment has had more to do with shaping the results, who has furnished more valuable suggestions, who is more thoroughly acquainted with all that has been done and why it has been done, who has worked so unselfishly, and who more deserves honor in this connection than the president of the board and chairman of the building committee through the whole progress of the work, Mr. Francis T. King.

Briefly and incompletely as I have sketched these salient points of the plans and purposes of this hospital, I hope I have, nevertheless, shown you that it is intended for other purposes besides providing shelter, food, and drugs for the sick. In saying this I have not the least wish to undervalue or disparage those institutions which do make this their main or only object. There is abundant need of their existence and work also; but this institution should not be judged by the rules which apply to them; it can not be managed after their fashion; if it does not produce re-

sults different from theirs it is a failure and the expenditure upon it a mistake.

Thus far I have been speaking of the buildings only, and trying to give you some idea of the motives which led to their being as they are, and what they are, and not otherwise. From the beginning, however, it has been recognized that the buildings and machinery are only means to an end, tools which must be handled by skilled workmen to produce the desired result; and throughout all these years of planning and building the question of organization and of the sort of men and women who were to use and work with these things has not been lost sight of. It is true that no attempts were made to select and engage individual members of the hospital staff until quite recently; but there was, nevertheless, a tolerably definite conception as to the ideas, mode of work, character, and wants of those who are to constitute this staff, and when the time came for selecting, it was made by this standard.

On the philanthropic, social, and religious aspects of this great trust I do not propose to touch, but I wish to say a very few words of the hopes and wishes of scientific men and physicians with regard to it. From the time of the first announcement of the Hopkins bequests to the present, these men, all over the world, have been keenly interested in the plans and methods adopted in carrying them out. Whenever and wherever the problems of higher medical education have been discussed within the last ten years, there has been speculation as to the probable course of the Johns Hopkins medical department, and the influence it would have upon the standard. I may even say that some of this influence has been exerted in advance, has been discounted, as it were, for the plans of this hospital have stimulated changes in some of our best medical schools, and have been copied with more or less modification in some of our latest hospitals.

What is it, then, that the physicians want? Is it more physicians, more family practitioners, more surgeons, more specialists? Not at all. They know very well that there is no danger that the supply will not be equal to the demand; when they become overburdened with practice they do not at present find it difficult to obtain assistants; they have no fear lest the seventy or eighty medical schools of this country should fail to produce a sufficient number of medical practitioners to meet the wants of our increasing population; and they know also that medical schools of Great Britain and Germany are sending to us quite as much of their product as we can conveniently dispose of. They hope that the Hopkins medical school and hospital will do two things. The first is, that it will demand of those who propose to become its students evidence that they have a sound basis of preliminary education before they commence, and that its standard in this respect shall be little below that of the requirements for granting the degree of bachelor of arts in the university. It is hoped that the men thus selected will go through a carefully graded course of study, including actual work in properly fitted laboratories, and that after this they will be brought into contact with the sick, and thus obtain practical experience of the duties and responsibilities of the practitioner of medicine before they offer their services as such to the public.

So much our physicians desire of every medical school, for the sake of the honor and dignity of the profession, and for the good of the public, and they desire especially that this school shall form an example to which they can point as showing how medical education should be conducted, and what should be required of the candidate for the degree of doctor of medicine.

The very general interest in the combined Hopkins trusts felt by physicians and scientific men, not only of this country but of the whole civilized world, is largely due to the belief that the relations which will here exist and be maintained between the university as a whole and its medical department, of which this hospital is to be an important part, will be close and intimate, so that the true university spirit will pervade, stimulate, and encourage the hospital work. In this country medical schools have either had no connection with universities properly so called, or the connection has been slight and nominal—such as depends upon the formal conferring of medical degrees by the university. Here, however, through the influence of the biological department, there are secured common interests and mutual influence, and it is hoped, therefore, that the necessary details of technological instruction will be arranged in accordance with and subordinate to the broad principles of scientific culture upon which this university is organized.

It is because it is believed that this will be the case that there is a widespread hope and expectation that these combined institutions will endeavor to produce investigators as well as practitioners, to give to the world men who can not only sail by the old charts, but who can make new and better ones for the use of others. This can only be done where the professors and teachers are themselves seeking to increase knowledge, and doing this for the sake of the knowledge itself; and hence it is supposed that from this hospital will issue papers and reports giving accounts of advances in and of new methods of acquiring knowledge, obtained in its wards and laboratories, and that thus all scientific men and all physicians shall share in the benefits of the work actually done within these walls. But, however interesting and valuable this work may be in itself, it is of secondary importance to the future of science and medicine, and to the world at large, in comparison with the production of trained investigators, full of enthusiasm, and imbued with the spirit of scientific research, who will spread the influence of such training far and wide. It is to young men thus fitted for the work that we look for the solution of some of the myriad problems which now confront the biologist and the physician.

Do I seem to ask too much? to be too sanguine as to what human thought and study and skill may accomplish? to forget that there is one event unto all; that the shadow of pain and death comes on the wise man as on the fool? I have two answers. As surely as our improved methods of prevention and treatment, based on the advances in knowledge of the last fifty years, have already extended the average duration of life in civilized countries nearly five years, have prolonged thousands of useful and productive

lives, and have done away with the indescribable agonies of the pre anæsthetic period, so surely we are on the verge of still greater advances, especially in the prevention of infectious and contagious disease, in the resources of surgery against deformities and morbid growths, and in the mitigation of suffering due to causes which can not be wholly removed. But the second answer is more important, and it is this: It is our duty to try to increase and diffuse knowledge according to the means and opportunities which we have, and not to rest idle because we can not certainly foresee that we shall reap where we have strewn. "It is not incumbent on thee to finish the work, but thou must not therefore depart from it," says the Talmud, and "Of him to whom much is given much shall be required," says the Scripture.

To you, the officers of this institution, and to you, men and women of Baltimore, there is now given the opportunity of giving powerful aid in this increase and diffusion of knowledge of the laws of human life, disease, and death. Surely those who are working in the wards and laboratories of the hospital and university will do their best; surely, also, the citizens of this great city of a great nation, which at no distant day will take the lead in scientific work, will encourage, sustain, and sympathize with these workers. I would have this hospital become famous, not for fame's sake, but because this will be evidence of the good work which has been done in it; but we must not be impatient. There are difficulties to be overcome, delays which must be submitted to. We can not at once have the medical school which is essential to the plan which I have sketched; but there is plenty to do for the present, and I am certain that in time all these present obstacles to full development will be happily overcome.

Success in this, as in all other enterprises in this world, is to be obtained by unselfish work for the good of others, by wise counsel, by co-operation, and by persistent effort.

A hospital is a living organism, made up of many different parts, having different functions, but all these must be in due proportion and relation to each other, and to the environment, to produce the desired general results. The stream of life which runs through it is incessantly changing; patients and nurses and doctors come and go; to-day it has to deal with the results of an epidemic, to-morrow with those of an explosion or a fire; the reputation of its physicians or surgeons attracts those suffering from a particular form of disease, and as the one changes so do the others. Its work is never done; its equipment is never complete; it is always in need of new means of diagnosis, of new instruments and medicines; it is to try all things and hold fast to that which is good.

"Et quoniam variant morbi, variabimus artes."

It has been said that "hospitals are in some sort the measure of the civilization of a people," but a hospital of this kind should be more than an index. It should be an active force in the community in which it is placed. When the mediæval priest established in each great city in France a Hôtel Dieu, a place for God's hospitality, it was in the interests of charity as he understood it, including both the helping of the sick poor and the affording to those who were neither sick nor poor an opportunity and a stimulus to help their fellow-men; and doubtless the cause of humanity and religion was advanced more by the effect on the givers than on the receivers. It is the old lesson so often expounded, apparently so simple and yet so hard to learn, that true happiness lies in helping others; that it is more blessed to give than to receive.

In some respects we to-day have a much wider outlook than the men of a thousand years ago. This hospital is designed, as I have told you, to advance medical science as well as to give relief to the sick poor, but the fundamental motive is the same—to help others.

We have here the beginning of an institution which shall endure long after the speakers and the audience of to-day shall have finished their life-work and have passed away. Founded in the interests of suffering humanity, intimately connected with a great university, amply provided with what is at present known to be essential to its work, we have every reason to predict for it a long and prosperous career, with steadily progressing improvement in its organization and methods, and enlargement of its activity and influence.

Let us hope that before the last sands have run out from beneath the feet of the years of the nineteenth century it will have become a model of its kind, and that upon the centennial of its anniversary it will be a hospital which shall still compare favorably, not only in structure and arrangement, but also in results achieved, with any other institution of like character in existence.

Original Communications.

THE TREATMENT OF LOCOMOTOR ATAXIA AND OTHER DISEASES OF THE NERVOUS SYSTEM BY SUSPENSION.

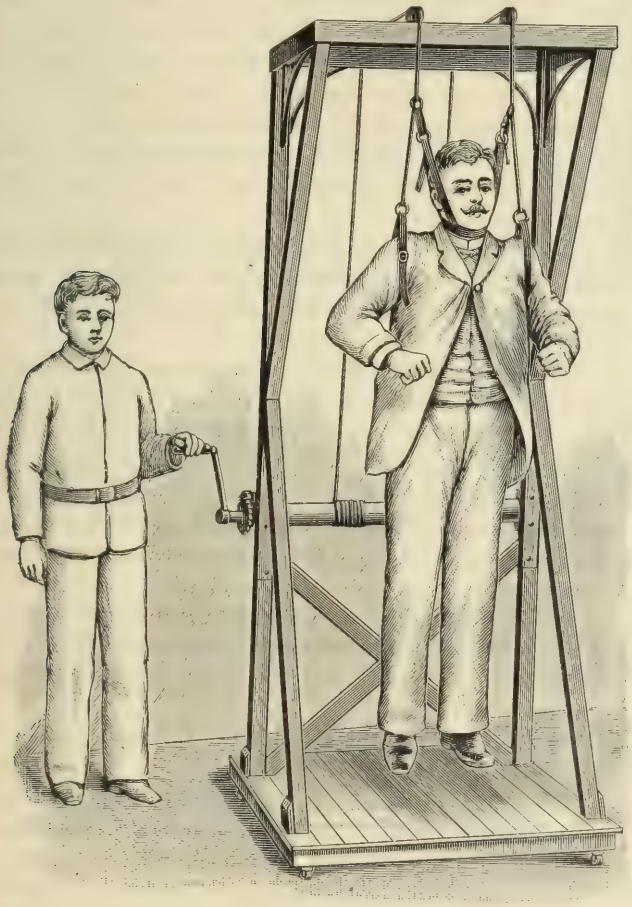
By WILLIAM A. HAMMOND, M. D.,
WASHINGTON, D. C.

The fact that locomotor ataxia can be mitigated in the severity of its symptoms, if not entirely cured, by suspension, was accidentally discovered by a Russian physician, Dr. Motchowkowsky, of Odessa, in 1883. While treating a patient for Pott's disease of the spine who at the same time was suffering from locomotor ataxia, he ascertained that after each suspension for the adjustment of the plaster jacket the ataxic symptoms were more or less relieved. He then applied it to other patients suffering from locomotor ataxia and found that in all considerable benefit was experienced. He found also that the sexual power of other patients was restored through this means. Dr. Motchowkowsky published a paper on the subject, but it, like many others announcing important discoveries to the medical profession, attracted no attention for several years—not, in fact, until 1888, when a French surgeon, Dr. Reymond, while visiting Odessa, obtained personal knowledge of the Russian physician's method. Returning to France, Dr. Reymond brought the matter to the attention of Professor Charcot,

who at once put this system of treatment in operation. On the 15th of January, in a clinical lecture at the Salpêtrière, M. Charcot stated that for several months he had been experimenting in cases of locomotor ataxia with the new method of treatment, and that he had obtained remarkable results.

No publication of either Motchowkowsky's or Charcot's observations was made in this country until the latter part of February, when a short cablegram on the subject appeared in the New York "Herald"; this was followed in a few days by a more detailed account.

Immediately on reading the first notice in the "Herald" I had an apparatus constructed so that I could make use of the method for several ataxic patients in my sanitarium. The accompanying wood-cut, made from a photograph, will give a better idea of the arrangement than any description. It is intended that ordinarily about one third of the weight of the body should be supported by the head-gear and the other two thirds by the arms; but I have sometimes found it expedient to vary this proportion according to circumstances. I am inclined to think that the most beneficial results are obtained in severe cases by increasing the weight borne by the neck. Care, however, must be exercised in so doing, for I have several times found that vertigo was produced and that the patient had to be immediately let down.



Though perfectly safe when due care is exercised, suspension should never be made use of except under the immediate supervision of a physician.

I have employed the method in five cases. In all, the most marked benefit has been experienced. The electric-like pains have disappeared in every case. The inco-ordination has been so far relieved that while, when the treatment was begun, the patients could not stand for a second with the eyes closed, they now do so without difficulty for an indefinite length of time. In one patient in whom there was continual incontinence of urine this condition disappeared after three suspensions. The sexual power, which was markedly diminished in all, is evidently being restored. In one case, that of a gentleman from Pennsylvania, there were almost constant vertigo and pain in the head, but these symptoms are no longer manifested.

While, of course, it is too soon yet to speak definitely in regard to curing locomotor ataxia by suspension, I am well satisfied with the results thus far obtained, and I hope ere long to speak even more decidedly on the subject. I may add that I am treating one case of antero-lateral sclerosis by the process, and that there has been satisfactory improvement in all the essential symptoms.

In two cases of functional impotence decided evidences of amelioration were shown after three suspensions, and the improvement has continued up to the present time.

One minute is a long enough period for the first suspension, and this may be increased from five to ten seconds each time subsequently. I have thus far carried it up to three minutes; I shall probably go very much further than this.

Relative to the *modus operandi* of suspension in the treatment of locomotor ataxia and other affections, I presume it acts by stretching the spinal cord, but why this should be beneficial it is impossible for us to say in the present state of our knowledge. Several years ago stretching the sciatic nerve was in vogue as a means of treating locomotor ataxia, and I several times performed the operation with the effect of relieving the pains and improving the co-ordination, but the relief was not permanent. In several clinical lectures I pointed out the fact that in order to be of any service the sciatic nerve should be stretched so as to pull upon the spinal cord and to stretch it. In some remarks before a meeting of the American Neurological Association I insisted upon this point, and stated that I had satisfied myself by experiments upon animals that the spinal cord could be stretched by pulling on the sciatic nerve. I did not, however, attempt to obtain this result by the method hit upon by Motchowkowsky and which promises to be a much more efficient means of effecting the object.

It is necessary to state that in no case was suspension the only means relied upon for the treatment of locomotor ataxia or the other diseases mentioned, but I am only at present writing of this particular method, and not of their therapeutics in general.

Of the accidents that may attend upon suspension, I have already referred to vertigo. In one case the power of motion was lost in both arms after a suspension of two minutes. The patient did not weigh over a hundred and twenty pounds, and yet the pressure upon the axillary plexus was

sufficient to cause the result mentioned. The paralysis, however, disappeared in two or three days under the use of electricity and massage.

It is proper to state that in the construction of the apparatus and for valuable suggestions relative to its management, as well as for its practical application, I am indebted to Dr. E. L. Tompkins, the resident physician of the sanitarium.

Since the foregoing was written I have considerably modified the method by which I employ suspension as a therapeutic agent. Convinced that the spinal cord can only be stretched by force being applied to the neck and head, I dispense with the arm supports altogether and hang the patient up entirely by the chin and occiput. The rings attached to the straps by which these parts are supported are passed through the hook of a spring balance, so that when traction is made I know just how many pounds are applied. In the beginning of the treatment I do not raise the patient entirely from his feet, but exert a tractive power of from seventy-five to one hundred pounds, as the case may be. From day to day this is increased, until at last the whole weight of the body draws upon the spring-balance. I should not hesitate if the body was of light weight to attach weights to the feet or fasten them to the floor. It has been clearly shown that by this modified method, as I have employed it, improvement is much more rapid than when a portion of the weight is taken off by the arms. A body supported wholly or in part by the arms causes no stretching whatever of the spinal cord. A man might hang from his elbows or his armpits or his hands indefinitely, without the cord being affected in the slightest degree. I have one patient now in my sanitarium who has been subject to locomotor ataxia for several years, who has been under treatment for about six weeks, and who is now free from any symptom of the disease whatever, except contracted pupils, absence of the patella-tendon reflex, and a slight degree of incontinence of urine. This latter symptom is gradually disappearing. He is now being suspended from the chin and occiput for ten minutes daily, and his weight is one hundred and thirty-eight pounds.

Of course, the utmost possible care must be used to adjust the straps properly and to apply traction gradually. Several persons, to my knowledge the subjects of locomotor ataxia, are treating themselves by the methods of suspension. I am quite confident that we shall some day hear that a neck has been dislocated and sudden death produced by the unskillful use of this method.

THE INFLUENCE ON A NASO-PHARYNGEAL GROWTH OF SIMULTANEOUS LIGATURE OF THE EXTERNAL CAROTIDS.*

By JOSEPH D. BRYANT, M. D.

The case that forms the basis of this paper is thought by the writer to be of sufficient interest to entitle it to a brief consideration, at least, by the members of this society. At a previous meeting of this society, held in the early part of the year 1887, it was both a duty and pleasure for me to present a paper entitled "Three Cases of Ligature of the External Carotid, in Two of which Both Vessels were tied simultaneously."

In that paper eighty-three cases of ligature of the external carotid were collected, in not one of which had the patient died from hæmorrhage at the seat of the ligature. Of the eighty-three cases, in but three had the patient died, and in but one of these (my own) could death be reasonably attributed to the operation alone. Since this case is one of unusual interest by reason of the origin of the facial artery from the point of bifurcation of the common carotid usually allotted to the superior thyreoid artery, for which vessel it was mistaken at the time of the operation, I will briefly state it again.

The patient was suffering from extensive carcinoma of the lower jaw and floor of the mouth, attended with severe pain and much difficulty in swallowing and speaking. The external carotids were ligated simultaneously. The malignant growth diminished rapidly in size, the pain ceased, and the ability to swallow and to speak was also markedly improved. On the fifth day following the operation a slough occurred on the right side at the former situation of the submaxillary gland, and extended down to the diseased lower jaw. On the ninth day after the operation the patient died from the effects of a hæmorrhage from the seat of the slough.

As implied but a moment ago, the submaxillary gland had been removed some time before the ligature of the carotids, on account of involvement from the primary seat of the disease.

The removal of the gland at that time required the ligature of the facial artery *before* the giving off of the branches that are distributed to the tissues contiguous to it, and for this reason the tissues about the stump of the remaining —the cervical—portion of the vessel depended on other sources than the right facial for their nutrition, and the same can also be said of the extreme end of the arterial stump itself.

In my observations no instance of a similar abnormity of the facial has occurred, nor does anatomical literature, so far as I have been able to ascertain, present a parallel instance.

The propositions then submitted to the consideration of the society were the following :

1. Ligature of the external carotid artery, together with independent ligature of the branches arising from the first inch of its course, is a safe and commendable operation.

I can now report eighty-six cases of ligature of this vessel (seven of which are my own), and in this number but one death can be justly attributed to the operation, and even this one was due to an abnormity heretofore unobserved. Surely this exhibit is sufficient to entirely warrant the establishment of the first proposition.

2. When the facial and lingual arteries do not arise singly or by a common trunk from the first inch of the course of the external carotid, the branches arising at the point of the bifurcation should be tied.

* Read before the New York Surgical Society, March 13, 1889.

The reason for the latter part of this proposition is obvious when the unparalleled origin of the facial in the fatal case just described is considered.

3. Simultaneous ligature of both external carotids is a rational preparatory measure for operations involving the parts supplied by their branches when dangerous hæmorrhage is feared. If the pharynx is involved, the ascending pharyngeal branches should be ligated also.

In connection with the case which is to follow I did not ligature the pharyngeal branches, since their presence could not be determined with a reasonable degree of celerity and manipulation.

4. Simultaneous ligature may be advisable to diminish the rapidity of the development of extensive malignant growths when they are nourished by the branches of the external carotids.

5. Ligature of one or both of the external carotids for the cure of anastomosing aneurysmal formations of the branches of the same is not feasible as an independent curative measure.

6. Ligature of the common carotid should not be done for the cure or for the arrest of morbid conditions involving the external carotid or its terminal branches, except as a final resort.

Each of the propositions that were submitted at that time has now been stated. To-night, however, we have to deal only with the third and fourth of the series, and I now beg leave to submit some of the steps of the treatment of the following case to your consideration as exemplifying their presumptive worth at least:

W. B., aged twenty-two, single, printer, family and personal histories good. In 1884 B. noticed the usual symptoms indicative of the existence of a polypoid obstruction of the left nostril. In 1885 the actual existence of such a growth was demonstrated by a medical gentleman, who soon after removed a portion of it with forceps. From this time until 1888 portions of the growth were removed at varying intervals with forceps and snare; and during this time, too, the extent of the attachment and the nature of the growth were frequently determined. It was a myxo-sarcoma, as determined by microscopical examinations. It was attached to the basilar process of the occipital bone, to the posterior and left wall of the pharynx, also to the palate bone and the internal pterygoid plate of the sphenoid bone. In November, 1886, a spontaneous and very severe hæmorrhage occurred from it.

At this time the growth was increasing in size more rapidly. A little later a second and severer hæmorrhage occurred; this, too, was spontaneous and was checked only after the anterior nares and the pharynx were tamponed. In fact, the patient was nearly exsanguinated by this loss of blood. In February, 1888, a third attack occurred at night, which was arrested in the similar manner as the preceding. This attack confined the patient in bed for eight days.

As before remarked, the growth had been operated upon repeatedly with snare and forceps with varying success, but sufficient at least to limit the extent of it substantially to the pharyngeal vault. In no instance, so far as I am informed, did the manipulation of the growth bear a causative relation to the severe hæmorrhage.

On May 5, 1888, the patient suffered more severely than usual from pressure symptoms referable to the hard and soft palate, and also to the supramaxillary and auriculo-temporal branches of the fifth pair. For months before this time, and with increasing severity, pain had existed in the pharynx. At this time the patient could not breathe through the nostrils. The tumor filled the upper part of the pharynx so completely that the index finger could be introduced only with difficulty between it and the right side of the wall of the cavity, and the act was often followed by quite severe temporary hæmorrhage. The pressure of the growth on the hard and soft palate caused a well-marked inferior convexity of these structures, especially of the latter. A small bony spiculum was seen protruding from the inferior surface of the soft palate at the junction of this structure with the hard palate. Anodynes were required at this time to quiet the patient, and often to insure sleep on account of pain and nervous irritation. The appetite decreased; marked and increasing emaciation was apparent. The patient now refused further attempts with the snare and begged for a radical operation—which had been promised him—irrespective of the outcome.

Recalling the fourth proposition of the series—a proposition that had met with not a little adverse criticism from the members of this society at the time of its presentation—I determined to carry it into effect at once.

Therefore, on June 19, 1888, the external carotids were ligated simultaneously in the presence of many of the house staff of Bellevue Hospital. The wounds healed by primary union. At the end of a week all pain had ceased and the size of the tumor had diminished to such a degree that not only had the previous bulging of the palate caused by it disappeared, but the index finger could easily explore the dimensions and determine again the attachments of the growth. And, too, these examinations were followed by slight oozing only, barely sufficient to discolor the finger. Surely these facts appear to justify the validity of the fourth proposition as applied to this case. On the 28th of June the left superior maxilla was removed below the orbital plate, thus exposing freely the left side of the tumor quite completely. And, although the bone was removed nine days after the ligating of the external carotids, but one arterial spurt of sufficient size to require ligature occurred during the entire procedure, and this was at the situation of the anastomosis of the facial and ophthalmic arteries. This, the second step of the procedure, appears to establish, so far as a single case can, the importance of the third proposition of the series.

The final step—the step that would have completed the practical test of the application of the third proposition in this case—would have been the removal of the tumor at once. However, this was not done, nor can I now say that I regret the omission, in view of the subsequent developments. The reasons for the non-removal were politic ones entirely, and foreign to any contingency that was apprehended from the attempt.

The snare was employed again, and also strong injections of carbolic acid. The latter removed portions of the structure of the growth quite rapidly by a process of inoffensive sloughing and disintegration. Finally the injection caused such a severe pain that the use of it was discontinued. For the last three months the growth has diminished slowly in size without treatment of any kind. The patient suffers but little inconvenience and no pain whatever from the tumor.

I now intend to watch the retrogression of the growth as long as it may continue, but if any increase of the present dimensions occurs, or if annoying symptoms arise again, it will be removed at once.

It is not my intention to enter into direct or indirect theorizing as to whether or not the circulation of a growth,

malignant or other, has to do directly with the development of that growth. While it is true that theories are ingenious means often employed to push aside the veil of mystery that frequently hides important facts from incredulous minds, still it is equally true that theories not supported by facts, while they may be interesting as toys, are none the less dangerous as guides.

In this case the results on the pharyngeal growth that followed ligature of the external carotids were due either to coincidence or to modification of the circulation of the growth. The fact that a rapid diminution of the size and painfulness of the tumor followed ligature is indisputable, and seems to me to remove these results from the realm of coincidence entirely. The fact that the regions occupied by the growth are supplied principally by branches of the external carotids is too well established to entitle it to the dignity of a defense.

The fact that the lessening of the arterial supply of a vascular growth will diminish, temporarily at least, its size, and consequently the pain due to pressure from it, must also be admitted.

These facts conceded, it follows that the third proposition is supported by this case at least.

As to the causes for the continued decrease in the size of the growth I am uncertain.

Surely the establishment of collateral circulation should have long ere this supplied it with a liberal allowance of blood, irrespective of its inherent demand for this fluid. If the cell activity, from malignancy or another reason, had been greater at the onset, the effects of the ligation on it would have been, no doubt, exceedingly transient. It is possible that the use of the carbolic-acid injection and the snare since the ligation has led to continued retrogression of the tumor. However, the snaring had no such effect before the ligation, and it is therefore unfair to attribute it to snaring *after* ligation. The early and somewhat liberal use of carbolic-acid injections *may* have caused condensation of the tissues of the growth, modified the nature of it, or otherwise discouraged the development; or is the change due to coincidence entirely? It is not worth while to assert that ligation of the external carotids will diminish in a very large degree the loss of blood following removal of the superior maxilla. This case showed it conclusively. Equal amounts of anatomical knowledge and of common sense will be convincing in this respect without actual demonstration. However, it is important to consider whether or not it is advisable to ligate the external carotids simultaneously before removal of a superior maxilla as a preliminary to a direct attack on a pharyngeal growth.

It is my opinion that this should be done, for the following reasons:

1. The loss of blood attending the preliminary act of removal of the superior maxilla will then be reduced to a minimum.

2. The amount of blood going to the pharyngeal growth will be temporarily reduced to a minimum at the same time by ligating the vessels that principally supply the structures from which it springs.

3. Ligature of the external carotids simultaneously can be done quickly and without difficulty, and is not attended with any special danger to the patient.

4. Operations for removal of pharyngeal growths are attended by great mortality from the immediate loss of blood; hence the advisability of a step that lessens the loss of blood while it exposes the patient to no unusual danger.

CEREBRO-SPINAL DECUSSATIONS,

WITH PARTICULAR REFERENCE TO THE MOTOR TRACT.

By L. HARRISON METTLER, A. M., M. D.,

LECTURER ON MENTAL AND NERVOUS DISEASES AND ELECTRO-THERAPEUTICS IN THE MEDICO-CHIRURGICAL COLLEGE OF PHILADELPHIA.

Extreme views are always characteristic of the earliest advances in science, but calmer reasoning and closer investigation soon put to flight the exaggerations common to the first successes and afford us truths more in consonance with the facts of nature. Our knowledge in regard to the cerebro-spinal localizations is already passing through its refining stage. It is well known that even at the present day there are three distinct schools in regard to these localizations. Goltz, following the teachings of Flourens, believes that the cerebro-spinal center is a *single uniform* organ and that its component parts, brain and cord, can only act as a whole. On the other hand, the views of Ferrier, Luys, Munk, and their followers, are that certain clearly defined areas can be mapped out, these areas being capable of certain special forms of activity, and therefore constituting the brain, in the strictest sense of the word, a *composite* organ. The most recent physiological and pathological investigations are discovering the truth contained in both of these opposing views and inclining us to follow the teachings of Exner and Luciani, who believe that there are certain special centers and tracts concerned in certain special forms of activity, but that there is such an overlapping and intimate communication among them as to produce a more uniform action throughout all parts of the brain and cord than would be inferred from the teachings of Ferrier and his followers. Hence there are no distinct boundaries between the motor and sensory areas of the cerebro-spinal axis; for, while there are certain foci, so to speak, with their greatest intensity concentrated in a small spot, this intensity diminishing with the lines of radiation into the neighboring nerve-protoplasm, the marginal overlapping and close communication between these various foci are such as to cause a most delicate harmony of action between the various parts of the central nervous system.

Clinical observation has already pretty clearly established the fact that the center for the *muscular sense* is most intimately involved in, if indeed it is not identical with, the cortical motor centers. The centers for sight and speech, both motor and sensory, it must be admitted are more intimately connected in many ways than we have hitherto been taught, to explain the many anomalous and concomitant symptoms resulting from very definitely defined lesions within them. In the ordinary form of aphasia, it is a familiar fact that, by education through the ear, eye, and hand-movements, the right speech-center can be quickly made to assume its appropriate function, whereas before the injury

it took the left speech-center many months, and even years, to acquire the same facility. It is possible, though hardly probable, that the right speech-center was being educated at the same time as the left, though ordinarily the left only is put into use. However we may regard this, clinical observation proves the extreme intimacy, if not partial identity, of these various centers for speech (right and left), sight, hearing, and manual movements. Note the juxtaposition of the centers for the sense of sight and the movements of the eyeball. Certain prominent foci, of course, can be indicated as the points of maximum intensity for these, respectively, but an injury to one has not far to extend, and in a few cases not at all, before the other manifests symptoms of involvement.

How intimate must be the connection between the sensory centers of the two hemispheres, if indeed there is not a partial identity between them in relation to corresponding parts of the body, to explain in hysteria the singular but real transference of various sensory symptoms from one part of the body to another! And this is not an uncommon phenomenon by any means.

Much of the difficulty in determining the precise functions of certain tracts in the cord is doubtless due to the fact of overlooking the close connection there may be between them. Thus Brown-Séquard believed that the anterior columns carried some fibers of sensation. This was disputed by Ott, who also objected to Schiff's statement that, in regard to the gray matter of the cord as a medium of conduction, sensory impulses may be carried in all directions. But Starr has partly confirmed Schiff's idea after experimenting upon animals (Ranney). Doubtless before long we will learn that though there are in the cord special fibers for the conduction of afferent and efferent impulses, their mutual relation is so close through the gray matter, as is already partly shown by the reflex phenomenon, that we must regard the cord more as a unit than has been recently done. We will have to consider it not simply as a conveniently condensed bundle of motor and sensory fibers, capable of distinct separation into its component parts, a sort of underground set of wires packed away out of sight and danger within the vertebral column. Its architecture is far more complex than this.

We find in the *Articulata* that each bodily segment has a double ganglion; that these ganglia are connected together by nervous fibers, running parallel with the caudo-cephalic axis of the animal; that the ganglia of the segments to which the limbs are attached are much larger than the others; and, finally, that the ganglion which occupies the position most frontad has in connection with it the nerves of special sense, and thus, to a certain extent, assumes the function of a brain. Now, if we remember that man himself is practically an articulate—for, as Owen says, every vertebrate is but a clothed sum of segments—we can form a general conception of the structure of the spinal cord.

In the first place, we can conceive of it as a series of discs resting upon each other, each disc giving origin to four nerve-roots—two motor, anteriorly; two sensory, posteriorly. In the center of each disc is a ganglionic mass, the so-called gray substance of the centrum and cornua of the cord. Each of these discs is capable of exercising an independent automatic control over that part of the body to which its four sets of nerve-fibers proceed. But these spinal dics are intimately connected with each other, just as the various parts of the brain are, by associating fibers. These associating fibers constitute the chief part of Burdach's columns, the anterior columns exclusive of the direct pyramidal tract, and the lateral columns exclusive of the crossed pyramidal and direct cerebellar tracts. None of these fibers exhibit the Wallerian degeneration, and are therefore supposed to be connected with nutritive cells at both of their extremities. Some physiologists assert that they connect the gray matter of the cord with that of the medulla. At any rate, they belong integrally to the cord, and correspond in a general way to the fibers connecting the series of ganglia making up the nervous system of the articulates. It is doubtful if there is any direct decussation of these commissural fibers; but, as they connect cells upon the same side of the cord, and as these cells are transversely connected by means of their processes through the gray commissure, a sort of decussation finally obtains.

The remaining columns of the cord connect these various segments with the higher centers of the brain. Here the vertebrates begin to exhibit the superiority in their nervous structures over the articulates. These fibers, *sensory* and *motor*, are of various lengths, since they start at the same level—namely, the cerebral cortex—and terminate in the cellular structure of the various superimposed segments of the cord. The afferent or sensory transmissions proceed along the columns of Goll, through the gray matter, and possibly in the anterior part of the lateral columns. It is pretty clearly established now that the fibers conveying these afferent impulses decussate soon after their emergence from the posterior nerve-roots into the gray matter, where they cross over to the opposite side through the gray commissure. Hence they decussate all the way up and down the cord.

The efferent or motor impulses are believed to be confined to the uncrossed and crossed pyramidal tracts only. The fibers of Türck's column extend usually only midway down the cord, and, before terminating in the cells of the anterior cornua, cross over to the opposite side through the anterior white commissure; hence they decussate up and down the cord. The crossed pyramidal tract, it has long been known, decussates at the lower part of the anterior pyramids of the medulla. According to the general view, therefore, the entire motor tract decussates before it reaches its terminations in the motor cells of the anterior cornua. But, just as we said in regard to the commissural fibers of the cord undergoing a sort of decussation through the transverse connections of the cellular structures, so here a sort of redecussation, if we may be allowed the expression, is accomplished for the motor fibers. This may in part explain some of the anomalous motor symptoms which sometimes appear in the unparalyzed limbs in cases of typical hemiplegia. At any rate, it demonstrates the intimate connection between the various parts of the cord, as well as the fact of its general unity as an organ.

The cerebro-spinal system of nerves, therefore, is made

up of two great divisions, while each of these divisions is again subdivided into certain component parts. The first of the prime divisions consists of the brain or voluntary center with its spinal fibers connecting it with the cells of the spinal cord. The second consists of the cellular structure of the cord or automatic center and its nerve-root fibers connecting it with the outlying parts of the body. The former of these divisions is again capable of subdivision into motor and sensory centers, all intimately connected, and probably more or less mutually involved by certain associating or commissural fibers. The latter is also capable of a subdivision into a fixed number of superimposed segments, each of which contains motor and sensory elements also intimately connected and more or less mutually involved by certain associating or commissural fibers. Thus we are beginning to recognize the functional localizations within the cerebro-spinal axis; but we are also learning that so intimately connected are all these parts that no one of them can be affected without the others becoming sooner or later involved.

In the last number of the "Archives de physiologie" Brown-Séquard brings forward some strong arguments, based upon physiological and pathological observations, to prove that not all the fibers of the motor tract decussate, as is generally supposed, but that some of these fibers must necessarily connect the same sides of the brain and cord. There are two general opinions held concerning the place of decussation of the motor tracts. The one, recognizing that section of one lateral half of the medulla above the decussation of the anterior pyramids causes paralysis on the same side, is that the motor fibers cross above the medulla, and, from various other data, it is believed that this crossing occurs within the pons. On the other hand, those who reason from the results of pathological observation and descending degenerations maintain that the decussation occurs in the lower part of the medulla in the anterior pyramids. Finally, a few support the view that the motor fibers, like the sensory, decussate up and down the entire length of the cord. Hence, that there is a complete decussation of the motor tract, is the point of agreement in all these views, and doubtless it is true so far as the main mass of the tract is concerned, and in the vast majority of individuals. A cortical lesion, therefore, produces hemiplegia of the opposite side, but cases have been frequently reported in which the autopsy showed the lesion to be upon the same side as the paralysis. Flechsig's explanation of such cases—that there was an unusual development of the direct pyramidal tract—is not satisfactory, firstly, because the number of cases reported with paralysis and lesion on the same side bear no proportional ratio to those in which Türck's columns have been found so unusually developed; and, secondly, because the general consensus of opinion to-day is that the fibers of Türck's column do decussate in the cord, and thus do not connect the same sides of the brain and body.

The following experiments of Brown-Séquard clearly establish the non-decussation of some of the motor fibers at least: After cutting the *right* crus or the *right* lateral half of the pons or medulla above the decussation of the pyramids, he found that galvanization of the *right* cortical motor area, instead of being absolutely powerless to cause movements of the *left* extremities, produced, on the contrary, more violent movements than before, or even the normal movements, if the galvanic excitation were less severe. Furthermore, Eugène Dupuy has found that, after section of the crura cerebri, galvanization of the cortical motor area of the same side is capable of producing an attack of epileptiform convulsions in the extremities of the opposite side, just as though the crus had not been cut ("Comptes rendus de la soc. de biol.," 1886, p. 19), a fact which Brown-Séquard has also noted many times. There seem to be but two explanations for this singular fact. The first is that there are other as yet unknown motor fibers connecting one side of the brain with the opposite side of the cord than those which pass through the cerebral crura. This is the least plausible. The second is that by means of the cerebral commissural fibers the irritation upon one side of the brain is transferred to the corresponding parts of the opposite side, and there affects the corresponding motor cells. This explanation would include the fact that upon the side thus secondarily affected there were direct motor fibers connecting that side of the brain with the corresponding side of the cord, but it would fail to explain the absence of symptoms on the opposite side of the body, or, in other words, the same side of the body corresponding with the hemisphere primarily irritated.

Again, irritation of various parts of the base of the brain on one side, either by incision, puncture, or galvanization with the poles in close proximity to each other, caused movements upon the same side of the body instead of producing them only upon the opposite side. The experiment was still further modified thus: After exposing the anterior surface of the medulla and irritating or galvanizing each of the anterior pyramids in the rabbit, cat, dog, monkey, and other creatures, distinct movements resulted nine times out of ten in the limbs of the corresponding side. Finally, transverse sections were made, for instance, in the right lateral half of the medulla, at different levels a short distance apart, in such a way that the intermediate portion could be removed for the exposure of two surfaces to be acted upon. Mechanical irritation or galvanization—sometimes of one surface, sometimes of the other—gave the same results in both instances; nine times out of ten it was the *right* anterior limb alone or the two *right* limbs that manifested movement. According to Brown-Séquard, in both these cases—that is to say, when the irritation was made now upon the inferior and now upon the superior exposed surface—it was transferred from the *right* to the *left* side of the encephalon, and from thence to the *right* side of the cord and so to the muscles of the right limbs.

These experiments seem to prove, therefore, that when the motor tract from one half of the brain is severed anywhere within the crus, pons, or medulla above the anterior pyramids, the parts in which physiologists usually locate the decussation of its fibers, excitation of the cortical motor area of one hemisphere is nevertheless capable of causing movements upon the same side of the body. The impulse is most probably transmitted directly to the opposite hemisphere and thence down the cord through the

crossed and uncrossed columns to the corresponding nerve-fibers. It is an instance of reflex activity; but what is remarkable about it is that the *motor* as well as the *sensory* centers within the fourth ventricle and other parts of the pons and medulla should act precisely alike as to the side upon which the movements occur. It is rather singular that the presence of purely motor nerve-fibers has never been revealed in these localities.

Three striking conclusions may be drawn from these experiments:

I. All the fibers composing the motor tract within the cerebro-spinal axis do not decussate. Some of them at least connect corresponding sides of the brain, cord, and nerve-roots.

II. Motor fibers are probably intermingled with sensory in those parts of the pons and medulla formerly supposed to be given to sensory functions solely.

III. Irritative lesions upon one side of the brain can so affect the corresponding part of the opposite half as to produce the appropriate symptoms upon the same side of the body as the half of the brain originally affected. This affords us an explanation of the hemiplegia upon the opposite side with paresis of the same side in unilateral cerebral lesions. It furthermore tends to demonstrate what we spoke of in the beginning in regard to the extreme intimacy and unity of action between all parts of the central nervous system.

These views have a clinical as well as an experimental basis. We have already indicated one of the phenomena frequently accompanying ordinary hemiplegia. Brown-Séquard himself cites seventeen cases reported by distinguished American, British, French, and Dutch physicians, along with the post-mortem revelations in each particular instance. Though the lesions were not all of the same nature in these seventeen cases, the results, so far as the motor and sensory symptoms were concerned, corresponded so closely that we will here only present the one that impressed us most forcibly, and leave the reader to study the others as they are found in Brown-Séquard's own paper ("Arch. de physiologie," 1889, Nos. 1, 2, p. 219):

Case I.—Reported by Dr. A. T. H. Waters, of Liverpool, and printed in the "Transactions of the Medico-chirurgical Society," London, vol. xlvi, 1863, p. 116.

A sailor, twenty-three years of age, received a blow upon the *left* side of the face from one of the bars of the windlass. Lifted off his feet by the blow, he fell upon his back. The next day he answered all questions rationally, but his articulation was imperfect. He complained of numbness in the face and limbs of the *right* side. He could not swallow, hiccough was frequent, respiration even, pulse 100 and regular. The tongue protruded to the *right*, but the uvula was drawn to the *left*. There was a partial loss of motor power in the face and limbs of the right side. He had no difficulty in opening and closing his eyes; the pupils were abnormally dilated, and there was nystagmus. The temperature of the face and limbs of the *right* side was clearly higher than that of the opposite side. He declared he felt distinctly when his foot, leg, arm, or both sides of his face were touched. But the sensibility everywhere seemed less perfect upon the *right* than upon the *left* side. Deglutition was impossible, and there was vomiting. He was able to sit up in bed; but he fell, and died very suddenly twenty-four hours after the accident.

Autopsy was made twenty-four hours after death. There was no fracture; the cerebrum was intact; there was no serous effusion; a considerable quantity of colored fluid was found at the base of the brain and in the spinal canal. The *right* cerebellar hemisphere was slightly lacerated where it rests upon the medulla, which exhibited upon the *right* side and upon the posterior surface an extravasation of blood beneath the pia mater and within the restiform body. The extravasated blood extended about an inch and a quarter up and down, but not continuously. The restiform body exhibited a transverse laceration, extending almost to the median line of the fourth ventricle, and externally to the line of origin of the pneumogastric nerve. There was an infiltration of blood into the parts surrounding the laceration. The tear involved the fibers of the restiform body (*right*) and a part of the gray matter of the fourth ventricle. The roots of the pneumogastric were not injured, but the laceration being so near to these roots as well as those of the glosso-pharyngeal, some fibers of these nerves within the medulla were injured. Another rent, smaller than the preceding, was discovered near the calamus scriptorius, to the right of and a little below it, or half an inch from the superior laceration. It had cut the posterior pyramid and neighboring column, which is the continuation of the posterior column of the spinal cord. It extended from the median line to the line of insertion of the spinal nerve-roots. Here there was much less blood than in the upper laceration. An internal laceration extended from one to the other of these tears just described, passing along the internal border of the restiform body.

In this case the lower part of the lesion was situated too high up and too superficially to have involved the fibers coming off from the *left* anterior pyramid. It included the posterior part of the *right* lateral column of the cervical part of the cord. Hence we may conclude from this case that the so-called non-motor parts of the medulla are capable of producing a paralysis of the limbs, and that the medulla can be the central origin of a *direct* paralysis. In the remaining sixteen cases, as in this one, the lesion was situated outside of the usual motor tract, and yet in all there was a paralysis or paresis of the same side of the body.

In Case II a tumor occupied the whole *right* half of the medulla, excepting a part of the anterior pyramid. Furthermore, it extended into the *left* half of the medulla, destroying the posterior pyramid and a part of the restiform body as well as the gray matter at the level of and just above the calamus scriptorius. This is exquisitely illustrated by a plate accompanying the report. Here the right half of the medulla was destroyed, with the exception of a part of the anterior pyramid, and yet there was paralysis upon the right side, with preservation of movement upon the left. The position of the tumor having caused a destruction of the decussating fibers of the two anterior pyramids, we should have expected an incomplete paralysis upon both sides of the body, upon the ground that the direct columns still remained intact, and, as is believed by some, they did not decussate in the cord. A tumor in Case IV pressed upon one of the anterior pyramids and the corresponding lateral column of the medulla, and still the paralysis was limited to the same side. Vulpian's case, reported by Hallopeau (No. V), manifested a paralysis of the *right* side as the result of softening, and the formation of a cavity in the *right* side of the medulla. Embolic obstruction of the *left* vertebral artery determined a *left-sided* hemiplegia, followed by ataxia as the result of cerebel-

lar softening in the case (VIII) examined by Charcot. And so on for the rest of the cases, a lesion upon one side of the base of the brain resulted in motor phenomena upon the same side of the body.

From these proofs Brown-Séquard himself concludes that those parts supposed to be non-motor are nevertheless capable of producing paralysis; secondly, that destructive lesions, and very considerable ones, too, sometimes, of the supposed motor areas of the medulla and pons can not give rise to paralysis of the limbs; thirdly, that paralyses which are usually very slight but occasionally very pronounced, if not complete, may and can appear upon the same side as the lesion when the latter is in the posterior or lateral part of the medulla, in the interior of this nervous center, or even in the anterior pyramid; fourthly, that not only do irritative tumors determine these direct paralyses, since, in many of the cases, they resulted from ischæmia, softening, and destructive hæmorrhages; and, fifthly, that we can not admit that these direct paralyses have depended upon lesions elsewhere than in the medulla, since in a certain number of the cases the medulla alone was affected.

It is quite insufficient, for many obvious reasons, to assert that in *all* of these cases there was no decussation of the anterior pyramids. The proportion of cases exhibiting direct paralysis to those exhibiting the indirect with disease of the cerebral lobes is as one to a thousand, while the same proportion with disease of the medulla is as more than a thousand to a thousand. Hence, to declare that in such cases as those just cited there was no decussation of the pyramids is to admit the absurdity that persons without this decussation always escape cerebral organic lesions.

Hence, according to this author again, these clinical cases show that paralysis is not only due to destruction of nerve-tissue, but that the irritation of the nervous elements in the immediate neighborhood of the lesion is propagated to a distance, and there involves the nervous elements endowed with motor properties. These properties thereupon disappear, causing, through inhibitory influence, a loss of the power upon which the motor function of these cells and fibers depends. This he promises to elaborate in a future paper.

But the more immediate conclusions to be drawn from these clinical cases are about the same as those which we drew from the experiments of this distinguished physiologist. Remembering, then, the probability of certain direct fasciculi constituting a part of the motor tract at least, and the involvement of other corresponding parts of the encephalon when some particular part is injured, as well as the partial intermingling of sensory and motor areas, we shall doubtless be able to explain many of the frequent anomalous and secondary symptoms accompanying those more typical of unilateral lesions within the cerebro-spinal axis.

1938 North Broad Street.

The Newport Meeting of the American Medical Association.—For the accommodation of exhibitors at the next meeting, June 25th, the local committee of arrangements has decided to erect a one story frame building. It will be built on the lot adjoining that upon which the hall in which the general sessions are to be held, stands.

SPIRIT OF NITROUS ETHER.

By EMLEN PAINTER, Ph. G.

It is a well-known fact that spirit of nitrous ether as found in the market is one of the most variable products used in medicine. Besides being deficient in the strength of its peculiar ether, it is always to a greater or less degree contaminated with other compounds, even when made strictly after the official process and by the most skillful operator.

It is also held that other constituents of this preparation besides the ether perform a more or less important part in its physiological effect, and I have heard on good authority that spirit of nitrous ether which contained merely a trace of this ether still produced in a considerable degree the peculiar effects ascribed to this preparation.

The questions now arise, To what constituent or constituents of spiritus ætheris nitrosi of the pharmacopœia is its medicinal effect due? Are the other compounds aside from nitrous ether essential to its producing the desired result, and, if so, which of the other constituents, and in what proportion?

The aim in changing the official method of preparing this spirit from time to time appears to have been to make a product approaching more nearly to *pure* nitrous ether. Hence the official and other assay processes which have been introduced for determining the strength and value of specimens of spirit of nitrous ether are all based upon the determination of the real nitrous ether present; by which it is implied that this ether alone is the medicinal agent desired. But if this is true, why have all the different pharmacopœias, as well as all the different manufacturers of this important and so universally used remedy, continued to employ such methods in its manufacture as can not yield a pure product? Besides, it is well known that the different processes employed necessarily yield products variable in the quantity of this ether, as well as in the quality of aldehyde and other by-products contaminating the finished preparation. The reason of this is that all methods now in practical use involve the direct action between nitric acid and alcohol, which not only produces nitrous ether, but also invariably produces aldehyde,* and the change in temperature as the operation progresses, the change in strength of the acid and of the alcohol, produce various and varying compounds, which distill with the ether more or less, contaminating the final product.

In addition to nitrous ether and aldehyde, different experimenters have found spirit of nitrous ether to contain acetic acid, acetic ether, hydrocyanic acid, and nitrogen acids, the latter resulting, no doubt, from decomposition of the nitrous ether.

That pure nitrous ether can be readily prepared has been fully demonstrated by Professor Dunstan in an article recently published in the "Pharmaceutical Journal" for April 14, 1888, and by other experimenters. I have tried Professor Dunstan's method with satisfactory results, and more recently I have employed the method described by

* See article by the writer, "Proc. of the Am. Pharm. Assoc.," 1886, p. 61.

myself, in a paper read before the American Pharmaceutical Association in 1886, which also works quite satisfactorily. The last-mentioned process yields a pure product, is more economical, and, with slight modification, is well adapted to a manufacturing scale.

I have made a number of experimental batches of pure nitrous ether, and from this prepared a spirit containing five per cent. of this ether (the official strength). I shall be pleased to furnish samples of this product, free of cost, to any physician who will give it a trial, confidently anticipating that the results will be equal, if not superior, to those obtained by the use of the best samples of commercial spirit of nitrous ether. Should the results, however, prove less satisfactory than expected, I propose a mixture of pure nitrous ether and aldehyde in definite proportions—for instance, a spirit containing four per cent. of the former and one per cent. of the latter. This mixture would doubtless come somewhat nearer in composition to the official spirit of nitrous ether.

It may appear desirable to the committee of revision of the U. S. Pharmacopœia to give a working formula for preparing spirit of *pure* nitrous ether, should it prove to be a more satisfactory therapeutic agent than the present official spirit.

In contradistinction between the official spirit of nitrous ether and the spirit of *pure* nitrous ether here suggested, I propose that for the present the latter be known by its chemical name — ethyl nitrite, five-per-cent. solution, or spirit of ethyl nitrite.

Broadway and Thirty-fourth Street, N. Y., *April, 1889.*

REMARKS ON PROLONGED GESTATION IN THE HUMAN FEMALE,

With Notes of a Case extending over a Period of 334 Days.

By L. MERVIN MAUS,
CAPTAIN AND ASSISTANT SURGEON, U. S. ARMY.

Probably there is no question among obstetrical observers that has elicited a greater variety of opinion from time immemorial than that of prolonged gestation in the human female. The principal difficulty, I presume, arises from the impossibility of securing reliable information concerning the date of insemination. Observation on this point, however, of a very reliable character among the lower creation—cattle, horses, swine, and sheep—where a single coitus could be noted, has established the great latitude in the length of normal pregnancies in animals, while isolated cases reported by many reliable practitioners have shown that prolonged gestations are also common to the human race. Ten lunar months, generally speaking, is regarded as the period necessary for the complete development of the human fœtus from the date of conception, at which time labor usually occurs. This fact was thoroughly recognized by Hippocrates, was incorporated in the Roman laws, and was frequently alluded to by the Latin poets. Notwithstanding the mass of testimony in support of prolonged human gestations, there are many eminent authorities who dispute the fact as well as instances in which the theory has been negatived in courts of justice. The French and Austrian laws admit of a contest for legitimacy in cases where the child is born 300 days after the dissolution of the marriage contract. The Prussians extend the period to 302 days, while the American and English laws have no fixed period, though the verdict rendered in the celebrated Gardener peerage case would make it appear that English accoucheurs at that date did not support the theory of prolonged gestation, especially when the period reached 311 days, as was maintained in the above-mentioned case. It may be interesting in this connection to briefly refer to a few recorded instances published by reliable authorities. Simpson mentions four cases occurring 336, 332, 324, and 319 days after cessation of the last menstrual periods. Allowing one week to elapse before conception in each of these four cases, we have gestations respectively terminating 329, 325, 317, and 312 days from conception. Faye cites two cases of 330 and 329 days from the date of coitus; Hodge one case which he thinks extended over 322 days; Hester one case of 11 months; Maurice one case of 11 months and 8 days; while Ahlfield, in a tabulated list of 645 pregnancies, states that six per cent. of them extended over 41 weeks; he does not specify the most prolonged case. Although these cases have been recorded by careful observers as *bona fide* instances of prolonged gestations, the greatest care may not have been practiced in collecting sufficiently reliable data to establish their authenticity in every case. Lusk has so little confidence in extended pregnancies that he declares Faye's cases as belonging to the realm of fable, and Ahlfield's tabulated list as of questionable authority; he furthermore states that gestations prolonged beyond the two hundred and eighty-fifth day are of very rare occurrence. Playfair, in his valuable "System of Midwifery," places the extreme limit at 295 days. Charpentier, in the "Cyclopædia of Obstetrics and Gynæcology," asks whether pregnancies are ever extended beyond the conventional period, and in reply says, agreeing with all other authors on the subject, prolonged gestations do not exist as a physiological condition, but may occur in the following abnormal conditions: (1) In extra-uterine pregnancy; (2) in the case of a dead fœtus retained in the uterus, as with abortive ova; (3) finally, in cases where the dead fœtus is retained by obstacles to parturition seated at the cervix. Even in these cases, he says, prolonged pregnancy is very exceptional. With all due respect to the eminent authorities cited above, I feel justified in reporting the following case, which occurred in my practice, as a reliable instance of a very prolonged gestation—one extending over a period of 334 days.

Mrs. M. T., American, white, aged twenty-nine, husband living, was taken sick with her catamenia May 13th, extending over the usual period of four days. Early in June, the following month, she complained of intense nausea, or morning sickness, and distaste for food, with inability to retain it. She also stated that the odor of food being prepared for the table was more pronounced at this time, a symptom almost always present in early insemination. These early developments, together with absence of future menstrual epochs, were sufficient for an opinion of impregnation. I saw Mrs. T. several times during the summer and was informed by her that she felt motion September 17th, and regularly after the 24th inst. Preparation was made for her expected labor the latter week in February, the

proper date fixed by the ordinary methods of calculation. I was called to see her from time to time during the following March, and found her very large, but suffering no special pain. On account of the protraction of pregnancy and her immense size, I fancied that hydramnion might be the cause of her retarded labor, and made preparation to aspirate the amnion, but abandoned the attempt on account of the difficulty of inserting the aspirator. Matters continued, however, unchanged until April 14th, when she was delivered of a healthy male infant weighing nine pounds, which apparently was not prematurely developed.

There is no doubt in my mind but that conception occurred shortly after her last menstrual period in May, and in fixing the date for delivery by Naegele's method we have the following: Add 7 days to May 13th, and counting backward three months we have February 20th, which should be about the time for delivery. Adding to this period the 54 days until April 14th, we have the gestation lasting 334 days. Or, calculating by Matthews Duncan's method, in taking the last day of menstruation, April 17th, and adding 275 days, unless February is included, in which case 273 days, and to this add 5 days, we have again February 20th as the date set for labor, which again gives us the 334 days as the duration of pregnancy. By Montgomery's method of adding 280 days to any day in the first week after the last menstrual period, we have, in taking May 17th as that day, 332 days as the period of gestation in this truly remarkable case.

Fort Porter, N. Y., *April 4, 1889.*

Correspondence.

LETTER FROM LONDON.

The Anti-vaccination Agitation.—Dr. Barry's Report on the Recent Epidemic of Small-pox at Sheffield.—Post-graduate Instruction in London.—The Societies.

London, *April 9, 1889.*

The anti-vaccination agitators are no doubt in high feather just now, as they have gained what they will consider to be a triumph. They have asked for a royal commission to inquire into the working of the vaccination acts, and their request has been granted. But it has not been granted by the Government from any doubt as to the efficacy of vaccination, but simply as a means of satisfying the public mind, which has been much perturbed by the reiterated and perfectly unfounded assertions of the anti-vaccination societies on the subject. As a writer in one of the daily papers has very well put it, there has been so much nonsense poured into ignorant ears and paraded in print before ignorant eyes that there has been work made for a commission to counteract the harm that has been done. The report of the commission will only reiterate established truths. The case in favor of vaccination was settled long ago, but, if a restatement of it serves in some measure to dispel the mist created by prejudice and ignorance and by a reckless perversion of facts, the purpose of the commission will be attained and its issue will be justified by the result. The fear is, however, that the majority of the agitators are men who do not in the least wish to ascertain the truth and who will refuse to be convinced by facts, no matter how conclusive the demonstration of them may be to other eyes.

Dr. Barry's report to the Local Government Board on the recent outbreak of small-pox at Sheffield appeared very opportunely for the debate in question, and it is perhaps hardly necessary to say that the anti-vaccinators did not make any use of the facts it contained. Dr. Barry's report dealt with 6,088 cases, of which 590 were fatal; he investigated the circumstances of every fatal case, of every case alleged to have occurred in children under ten who had been vaccinated, and of every case alleged to have taken place after previous small-pox or re-vaccination. He found that the attack-rate of the vaccinated children under ten was 5 in a thousand, and that that of the unvaccinated children of the same age was 101; the death-rate of the vaccinated children under ten was 0·09, and that of the unvaccinated 44. The experience in reference to those over ten was similar. For every 100,000 of those twice vaccinated, there were 8 deaths; of those once vaccinated, 100 deaths; and of the unvaccinated, 5,100 deaths. The outcome of the report was that, if the vaccinated children had been attacked at the same rate as the unvaccinated, there would have been 7,000 attacks in place of 353 and 3,000 deaths in place of 6, or, up to the conclusion of the epidemic, there would have been 4,400 deaths in place of 9.

The movement in favor of making more definite and systematic arrangements for post-graduate instruction in London, to which I have alluded in former letters, has of late taken definite shape. A meeting was held recently at which several resolutions were agreed to as to the desirability of providing more facilities for post-graduate teaching at the special hospitals in London, and certain hospitals were invited to nominate representatives to form a committee to consider how this object could best be attained. The specialties which have been chosen are diseases of the nervous system, represented by the Queen Square Hospital; diseases of children, by the Great Ormond Street Hospital; consumption and diseases of the chest, by the Brompton Hospital; diseases of the skin, by the Blackfriars Hospital; diseases of the eye, by the Moorfields Hospital; and diseases of women, by the Samaritan Hospital. The amount of clinical material that will be available at these hospitals must be something enormous, and when the scheme is once in working order I shall be much surprised if practitioners do not find it better worth while to stay in London than to go on to Vienna or the other great continental schools. I ought to add that whatever success this movement may attain will be largely due to the energy of Dr. J. F. Little, who has certainly been the prime mover so far; he organized the course at Charing Cross which has now been going on for a year and a half with conspicuous success, and he had previously set in motion a very successful post-graduate course at Leeds, after the staff of the hospital had tried it on their own account and failed.

The work at our societies has not been of great interest of late, but the Clinical Society has just appointed a committee to go through the back volumes of these "Transactions" and endeavor to obtain further reports relating to any of the cases in which it may seem desirable. This was done by the Pathological Society a few years ago, at the suggestion of Mr. Hutchinson, with very interesting results, and I should think that even better results might be expected from this inquiry, for the patients are nearly always living at the time the cases are communicated to the society, and therefore a further report ought to be almost always possible. The Medico-chirurgical Society has decided upon a step which has often been discussed, and has long been foreseen to be necessary—viz.: the removal to more commodious premises; a large house in Hanover Square, a most central situation, has been bought by the society, and I suppose the migration will take place as soon as the necessary alterations have been made.

THE
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Edited by FRANK P. FOSTER, M. D.
NEW YORK, SATURDAY, MAY 11, 1889.

WEIL'S DISEASE.

THIS subject is considered at length in the "Province médicale" for March 2d by Dr. George Lemoine, who puts the question seriously, and in evident good part, whether there is really a morbid entity manifested by the assemblage of symptoms described by Weil and belonging to the typhoid type. A careful study of the literature of the subject and close observation of cases render the author's work at once valuable and suggestive. In 1886 Weil published records of four cases that bore certain marked resemblances to typhoid fever, yet at the same time presenting features justifying, he thought, a distinct classification. With the intention of leaving the question open, the cases were simply presented as examples of an acute infectious disease accompanied by tumefaction of the liver and spleen, together with jaundice and nephritis. The onset is sudden, usually without prodromes, beginning with a fever of some severity that reaches its maximum within from three to five days, up to which point there are vague distress, prostration, headache, insomnia, and muscular pains of a severe character. The tumefaction of the liver and spleen is rapid, the right hypochondrium is painful on pressure, jaundice appears, and albumin in the urine suggests an acute nephritis. When these phenomena are at their height a sudden amelioration takes place and there is gradual and complete cessation of all the symptoms. The temperature falls, the jaundice disappears, and the pains diminish. In duration this remission is variable. It is followed by a rise in temperature and a reappearance of the former symptoms in a less severe degree. These subside gradually as before. Convalescence is slow, and, as in other infectious diseases, restoration to health is a tedious process.

Since Weil's publication observations similar to his own have been numerous in Germany. Goldschmidt publishes the following account of a case: A man of thirty-four, after a fainting fit, was suddenly seized with fever, malaise, then jaundice, painful tumefaction of the liver, and nephritis. In a few days the conditions improved; then a relapse occurred, presenting all the features of the first clinical picture, minus the albuminuria. Aufrecht has reported two cases that are not conclusive. To accept them as examples of Weil's disease requires some imagination and no little generosity. Febrile icterus is a name that Wagner gives to conditions somewhat similar to Weil's disease. But diarrhœa is here present, without tumefaction of the splanchnic organs, and convalescence is rapid. Roth records an instance presenting some points similar to the foregoing, in which there were vomiting and excessive albuminuria. Haas, Hueber, and Pfuhl note isolated cases. In forty-nine cases of typhoid fever Pfuhl observed jaundice nine times. The temperature rose abruptly, the fever lasting a week, subsiding by oscillation, and without relapse. Fiedler, in 1888, cited thirteen sporadic cases observed in Dresden during a period of thirteen years. They were minutely described, and the author set forth the following conclusions: Weil's disease results from poisoning or infection, and is not to be confounded with typhoid fever or any other known disease; it is a malady *sui generis;* the usual symptoms are fever, headache, gastric disturbances, jaundice, and muscular pains, particularly in the calves of the legs. The fever has a typical curve, and lasts from eight to ten days. Sometimes there is a reversion of temperature. The pulse is rapid at the onset; afterward it is slow. Generally, but not always, there is tumefaction of the liver and spleen. The liver is painful. Sometimes nephritis, herpes, and erythema are present. The disease attacks preferably men in the prime of life. Out of twelve patients, nine were butchers. All were attacked during the heat of summer. Brodowski and Dunin, of Warsaw, recently reported a case that is of particular interest on account of the autopsy and the histological examination that were made with great care. In this instance there were prodromes—chills and tremor, headache, and abdominal pain lasting for nearly ten days. When the patient entered the hospital there was pronounced jaundice, with tumefaction of the liver and spleen, which were sensitive on pressure. The lymphatic glands of the groin and axilla were enlarged to about the size of filberts and somewhat painful. The sternum and the long bones were also sensitive. There was bilious, albuminous urine, that abounded in hyaline casts. In the blood there was an increase of white corpuscles, but the number of red corpuscles was normal; there were no bacteria or spirilli. A temperature of 102·5° F. persisted for several days. Then the condition became greatly aggravated, and the patient died in collapse. After some hesitation between a diagnosis of typhoid fever, of acute atrophy of the liver, of continued malarial fever, and of leucæmia, the authors confess themselves confronted by an unclassified disease resembling that described by Weil. The autopsy, of which the following is a *résumé*, is more complete than any yet reported: The lungs were found hyperæmic and œdematous, and hepatized at the base; the bronchial glands were enlarged, soft, and red; the spleen was increased one fifth in size, dark red, much softened, and of almost liquid consistence; the kidneys were of twice the normal size and grayish red, with white spots on the surface, and the cortical substance was much thickened; the mucous membrane of the stomach and intestines presented nothing of importance beyond some swelling of Peyer's patches; the lymphatic glands of the mesentery, the axilla, the inguinal region, etc., were large, soft, and very red. The histological examination revealed these interesting but by no means pathognomonic features: The lungs were infiltrated with blood, numerous alveoli being filled and distended with blood corpuscles; the endothelium had been shed, and numerous endothelial cells mixed with blood filled the alveolar spaces; the interstitial tissue was completely infiltrated with embryonic elements, and to an excessive degree; there was a

similar infiltration into the liver, along the ramifications of the portal vein, while the central lobular vein presented scarcely any trace of such a condition; this infiltration was abundant at the periphery of the lobule, penetrating the organ by separating the hepatic cells and disappearing in proportion as the center was approached; there were certain points of apparent atrophy in the liver, which everywhere presented a yellow, bile-stained appearance. The kidneys gave evidence of analogous lesions, the white spots upon the surface corresponding to the zones of embryonic-cell infiltration; the intercanalicular stellar spaces were distended and the tubules widely separated, the intervening spaces being filled with a considerable number of young cells, and Bowman's capsules presented frequent points of infiltration; the tubules were the seat of epithelial lesions characterized by granular degeneration of the investing epithelial cells, the nuclei of which had lost their color and fallen into the lumen of the tubule. The bacteriological examination gave but indifferent results. Among the embryonic cells there were found certain large ones of irregular shape in which the protoplasm was filled with micrococci. The number of these large cells was small, and their presence was thought to have no special significance. Gelatin and agar-agar in which portions of the spleen were placed remained sterile, while the lymphatic glands afforded cultivations of the *Staphylococcus albus*.

A careful review of the observations made by Weil and others shows that the disease under consideration manifests itself in two distinct forms, the severe and the mild. The severe form is invariably accompanied by nephritis, and nearly always there is a relapse. In the mild form, on the contrary, albumin is absent from the urine or only transiently present in it, and there is no relapse. This broad classification into serious and light attacks is more arbitrary than rational, for there are intermediate varieties of the disorder that merit special attention, and each indicates, in a certain sense, a variety by itself. The symptoms of the severe form as described by different writers may be summed up thus: Sudden onset, as a rule, without prodromes; frequent chills; extreme prostration; headache; and a fever that ranges between 103° and 105° F. on the second day, and remains at that height for three or four days, the morning remission being slight. On the fourth day the temperature begins to decrease, and falls within the next three to six days to normal. During this period the difference between the morning and evening temperature is about 1·8° F. There is a longer or shorter interval of improvement that continues until the period of relapse. The temperature curve is then exactly repeated, except in regard to intensity. This time the maximum rarely exceeds 102·5° F. The relapse lasts about as long as the initial fever. With the disappearance of the fever convalescence begins. The pulse-rate corresponds with the temperature, being rapid when the latter is high. Weil noted two instances of slowing of the pulse, due to the onset of jaundice. Others record the same observation in grave cases, in which it is feeble, compressible, and decidedly dicrotic at times. The fever period is characterized by headache, vertigo, insomnia, dreams, prostration, and even delirium. These symptoms disappear with the fever toward the sixth or eighth day, to return in a milder form at the time of relapse. Sometimes at the commencement of the illness there is diarrhœa; or constipation may exist, with meteorism and discomfort, or even pain in the abdomen. The skin presents no constant symptom. In a few cases only, rose-colored spots have been noticed upon the abdomen and in the dorso-lumbar region. Jaundice is generally an early feature, and varies in intensity, light stools and bilious urine being common accompaniments. The tongue is foul, and gastric disturbances are frequent, especially vomiting. The jaundice sometimes disappears with the first attack of fever, to return with the second; but it often persists till a late period of convalescence, in which case there are severe muscular pains. The spleen is always enlarged. Nephritis is the rule, the urine being diminished, cloudy and reddish, containing much albumin, hyaline casts, epithelium, blood, etc. The renal inflammation undergoes immediate improvement upon the fall in temperature. Convalescence is slow, and the nutrition remains impaired for a long time. When death occurs, it appears to be due to renal insufficiency. The mild form of Weil's disease is the most common. There is transient jaundice with albuminuria, and there is no relapse. The general symptoms are equally pronounced and the fever is as high as in the grave form, but the cessation of all morbid processes is rapid, the cause that gave rise to them being less profound. Convalescence is as slow as in the severe form of the disease. The organism finds the greatest difficulty in rallying from the blow which it has received.

Whether new or old, the disorder known as Weil's disease is a sufficiently serious matter. When it is a question of a marked constitutional derangement, of a toxic or infectious nature, like the condition just described, some boldness is required, to say the least, in order to classify it as a new morbid entity without a firmer basis than clinical symptoms and lesions that are revealed post mortem. The pathognomonic factor, whatever it may be, is justly considered of prime importance in the discovery of isolated morbific processes. It is the criterion of their real existence. Weil's disease, so called, is separated from other well-known disorders only by shades of almost inappreciable difference. It seems scarcely entitled to be considered a distinct affection, though it is difficult to judge of facts at a distance, especially when eye-witnesses hesitate to pronounce upon their significance. It evidently belongs to the obscure class of diseases due to organic poisons. If by chance there are to be discerned in the reports already published certain sound reasons for supposing the complexus of symptoms therein described to be the expression of a hitherto unrecognized malady, a definite ultimate cause must be isolated and proved to be present before any such allegation can be maintained. In the mean time, it is easy to find striking analogies between the condition under discussion and definite diseases already classified. Some of the published observations suggest aborted typhoid fever; others, tuberculosis; certain of them resemble catarrhal jaundice; and several point to icterus

gravis or icterus pseudo-gravus, of which Bouchard and Brouardel have published one report. Longuet gives his reasons, in the "Semaine médicale," 1888, p. 348, for considering this condition a bilious typhoid fever. Griesinger, Murchison, and nearly all authors who occupy themselves with typhoid fever have recognized an abortive bilious form that includes jaundice, albuminuria, and a relapse. Chauffard has published accounts of catarrhal jaundice with albuminuria at the outset, and a relapse at a later period. Others besides himself have witnessed and written of similar conditions without the slightest idea of having dealt with a new disease. It may be affirmed without a shadow of hesitation that certain forms of icterus gravis are identical with Weil's disease. Thus it would appear that this is not a question of one morbid entity, but of several—not a consideration of Weil's disease, but of Weil's diseases, a series of disorders that were christened long ago. To put it plainer, according to hard, cold facts, Weil's disease is sometimes aborted typhoid fever and sometimes a manifestation of tuberculosis, of catarrhal jaundice, of icterus gravis, possibly of continued malarial fever, or even of leucæmia. Medical skepticism is better than medical credulity, and it is wise to remember that the case at issue is decidedly not proved.

MINOR PARAGRAPHS.

THE HEMLOCK OF CALIFORNIA.

Our indigenous medicinal plants deserve far more study than they have yet received. A notable impetus to their further investigation ought to have resulted from the excellent work done lately by the Lloyds, of Cincinnati, and their collaborators. It is true that now and then a contribution on the subject of considerable value is made. For example, at the recent annual meeting of the Medical Society of the State of California, Dr. W. P. Gibbons, of Alameda, read a report of the society's Committee on Indigenous Botany, devoted to the indigenous and naturalized *Umbelliferæ* of the Pacific coast. It seems that the hemlock is extensively diffused in that region, and Dr. Gibbons showed fresh specimens of two varieties, the *Cicuta virosa* and the *Cicuta californica*. These varieties, he said, were practically identical for therapeutical purposes, although analyses showed a considerable variation in their constituents. He thought that the comparative disuse into which hemlock had fallen was due to the lack of proper analyses and the consequent extreme uncertainty of the preparations.

THE NEED OF PROFESSIONAL CO-OPERATION.

So difficult is it to rouse the slumbering *esprit de corps* of the American medical profession that something like the dramatic incident of the president of a State society in session receiving a telegraphic dispatch from a member announcing his lodgment in jail for the offense of declining to give his time and skill to a court without compensation was needed to call forth such prompt and effective action as the society in question, the Medical Society of the State of California, took, as will be seen in another column. Wrongs like Dr. Mays's imprisonment, although not always so strikingly outrageous, are not uncommonly inflicted upon medical men in the United States. In almost any other civilized country an endeavor to obtain redress would at once be entered upon, and the injured person would be sustained by his colleagues' moral and pecuniary support; but here it is among the rarities for any concerted action to be taken. It is to be hoped that the example set by our California brethren will awake the profession to a due sense of its rights in the community and of the duties of its members to each other.

THE NEW COMMISSIONER OF HEALTH.

Mr. Charles G. Wilson has been appointed to the presidency of the Health Department by the Mayor. Mr. Wilson is a lawyer by profession, and his experience has not lain altogether in sanitary channels, but he has been in a presidency before, namely, that of the Consolidated Exchange. He is represented as saying: "The position has come to me entirely unsolicited. I realize the importance of the office, and will immediately set to work to learn something about its duties." Is it not about time that the law was changed which prevents the appointment of a medical man to the headship of this vastly important department?

THE BRITISH AND THE AMERICAN PINT.

According to the "British Medical Journal," the attention of the Midland Counties Chemical Association was lately called to the indeterminate character of the pint measure in use among pharmacists, or, as it was put, the doubt as to the meaning of the abbreviation *Oss.* Our contemporary remarks, however, that all ambiguity ought to have been cleared up by the General Medical Council's distinct statement that twenty fluidounces constitute a pint. Inasmuch as our American apothecaries' pint consists of only sixteen fluidounces, it will be well for prescribers and dispensers to bear the disparity in mind.

DACTYLITIS SYPHILITICA.

In a recent number of the "Lancet," Mr. Frederick W. Lowndes, of the Liverpool Lock Hospital, gives a short account of a case of this affection. He adduces his own experience and the statements of well-known syphilographers to show its rarity. He says that, when he first saw his patient, he was "at once reminded of the engravings of the various forms of dactylitis syphilitica in Bumstead and Taylor's 'Pathology and Treatment of Venereal Diseases.'" He further says: "Until Dr. Taylor, of New York, gave it the prominence of a separate chapter in his work, previously alluded to, only isolated cases had been recorded by various authors." It is now twenty years or more since Dr. Taylor published his masterly essay on the subject, and no greater tribute to the accuracy of his pictorial representations of the lesions and the vividness of his descriptions of the affection could be had than is to be found in these simple statements coming from an observer who, during the twelve years from 1875 to 1887, "never saw a case among the patients in the Lock Hospital," but was able to recognize one at the first glance by his remembrance of Dr. Taylor's article.

FARADIZATION IN CATARRHAL JAUNDICE.

The "Internationale klinische Rundschau" gives an abstract of an article by Dr. E. Kraus, of Vienna, published in the "Archiv für Kinderheilkunde," in which there is a summary of his experience in the faradaic treatment of catarrhal jaundice in the cases of seventeen children. In all of them, seven or eight applications sufficed, and improvement always began after three or four. The applications were made once a day, each one being of five minutes' duration. In some of the cases, Gerhardt's method was employed, a strong current being used, with one electrode placed by the side of the vertebral column at the level of the gall-bladder; in others, both electrodes were placed over the gall-bladder, and a current too weak to provoke

contractions of the abdominal muscles was used. The effect is ascribed to evacuation of the gall bladder by contractions of its muscular fibers, but the author thinks it not improbable that strong faradaic currents may prove serviceable by means of a catalytic action.

ANTIPYRINE IN THE TREATMENT OF HEMORRHOIDAL ULCERS.

In the "Therapeutische Monatshefte," quoted in the "Centralblatt fur Chirurgie," Dr. J. Schreiber gives an account of the case of a man, seventy-two years old, who had suffered for ten years with the most obstinate haemorrhoidal ulcers. By dusting the ulcers for twenty days with finely powdered antipyrine, Schreiber produced a perfect cure. Each application caused moderate pain lasting for about half a minute, but the effect of the drug on the pain and continual itching of the ulcers was very favorable.

FLOOR-DEAFENING.

This is a material laid between a floor and the ceiling beneath, to deaden the passage of sounds. The material used in many parts of Europe for this purpose is supposed to be a mixture of coarse mortar and smith's ashes, but, according to Miss Etta Johnstone, of Dundee, and Professor Thomas Carnelley, of Aberdeen, who have recorded their observations in the "Proceedings of the Royal Society," it is generally of a more questionable nature, particularly in low-class houses, and constitutes a favorable nidus for the multiplication of micro-organisms. It is apt to be loaded with nitrogenous organic matter, and the authors infer that it may often impair the health. It is more noxious in old houses than in new ones, and more harmful in houses with few rooms than in those with many.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending May 7, 1889:

DISEASES.	Week ending Apr. 29.		Week ending May 7.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	5	2	6	1
Scarlet fever	281	43	319	36
Cerebro-spinal meningitis	5	5	4	4
Measles	174	12	146	9
Diphtheria	158	49	179	62

The Medical Society of the State of California held its nineteenth annual meeting in San Francisco on the 17th, 18th, and 19th of April, the president, Dr. James Simpson, of San Francisco, in the chair. For an account of the proceedings we are indebted to the "Occidental Medical Times." Judging from the report furnished by our excellent contemporary, we conclude that the scientific proceedings were particularly interesting and instructive. The report of the Board of Examiners stated that the board had added acts involving moral turpitude and intemperance to the list of acts constituting "unprofessional conduct." On the second day the president informed the meeting that he had received a dispatch from Dr. W. H. Mays, of San Francisco, stating that he was in jail at San Bernardino for having refused to give skilled testimony in court without remuneration. The president said that he himself had had some experience in such matters; as the law now stood, a physician could be taken to any part of the State on a writ issued by a Superior Court judge and compelled to testify without remuneration. The society, he thought, ought to take some action in the matter. Thereupon Dr. G. F. G. Morgan, of Olema, submitted the following preamble and resolutions: *Whereas*, This society has heard with pain and regret of the imprisonment, at San Bernardino, Cal., of one of its respected members, Dr. W. H. Mays, of San Francisco. We deeply sympathize with him in the wrongs he now suffers. We recognize the justice of the claims he asserts. We urge him to stand firm, and to bring the matter once for all before the highest courts of the State. We hereby pledge him, and all similarly placed, our active sympathy and financial support. We can not find words adequate to express our condemnation of this action of the San Bernardino judge, so contrary to all true ideas of justice and equity, by which a disinterested professional citizen has been summoned from one end to the other of the State, and then ordered to give up his professional time and acquirements without compensation therefor, or be thrown, as he now is, in jail. We properly call this act an outrage on justice. *Resolved*, That the president of this society immediately telegraph the following to Dr. Mays: "Yours read before the society, which greets you and says, 'Stand firm,' and pledges you its financial and moral support in legal settlement of this wrong." *Resolved*, That the society hereby authorizes the president thereof to appoint a committee to take such measures as may seem best calculated to support Dr. Mays in his just position—namely, employment of counsel, etc., to carry the matter up to the Supreme Court of this State. *Resolved*, That this society will bear the necessary expenses of all legal action involved in the settlement of this question now pending between Dr. Mays and the court of San Bernardino. The resolutions were warmly seconded by several members and unanimously adopted.

At a subsequent stage of the proceedings, Dr. Morgan read a paper on "The Relation of the State to the Medical Profession," in which he said that these were days of organization in all professions and callings. Pharmacy as a profession was alive to the needs of a universal standard of proficiency, the acquirement of which would allow the holder to practice in any State. He thought that the profession should endeavor to procure a proper organization and enforce a recognition of its rights. The present condition of the State toward the medical profession was one of neglect; there were laws regulating the practice of medicine, but they were not enforced. The law demanded that medical men should be properly qualified to practice. The health boards required reports of births and deaths, and notification of contagious diseases from them. The law courts compelled the attendance of physicians as experts, and their services were demanded without remuneration. No other profession or calling occupied the same position. It was an axiom of law that there was "no obligation without consideration." The expense of special education and of the support of the professional student were not borne by the State, but by private individuals; the physician therefore owed the State nothing, and it had no right to demand gratuitous service of him. On the other hand, the State was a debtor to the profession for these services, and was bound to respect its rights and privileges, especially against unprincipled, incompetent charlatans. He believed that there should be a duly salaried State or county official appointed to enforce the laws regulating the practice of medicine; and that due compensation should be rendered to medical witnesses when testifying in courts of law as experts.

Officers for the ensuing year were chosen as follows: Dr. Walter Lindley, president; Dr. W. F. McNutt, Dr. Charlotte Blake Brown, Dr. Wallace A. Briggs, and Dr. Elizabeth R. C. Sargent, vice-presidents; Dr. W. Watt Kerr, secretary; Dr. H. M. Sherman and Dr. H. J. Brainerd, assistant secretaries; and Dr. G. C. Simmons, treasurer. The retiring president spoke of

his successor's well-known ability as a writer and of his prominence as a practitioner in the southern part of the State. It was voted to hold the next meeting in Los Angeles.

Dr. D. Hayes Agnew is reported to have been taken with a temporary loss of consciousness on the stage, during the commencement exercises of the University of Pennsylvania, on May 1st, when he was about to deliver an address. Although he had resigned from the medical faculty, the graduating class had felt impelled to mark the occasion in a special manner by the presentation of a portrait of Dr. Agnew to the faculty. It was in immediate connection with this presentation that his temporary faintness occurred. After a short time he recovered and was able to deliver his address.

The Right to Advertise.—The "American Practitioner" for April cites a recent decision of the Illinois Court of Appeals which prohibits the State Board of Health from withholding the license to practice of the practitioner who advertises. A specialist whose license the board had revoked in 1885 contested the case, and in March last got a decision which virtually declares that in the eye of the law advertising is no bar to practice.

Changes on Randall's Island.—The Infants' Hospital on Randall's Island has been enlarged by the erection of two brick pavilions, each a hundred feet in length. On the north side of the hospital there have been placed a number of tents for the reception of infants with contagious disease.

The "Times and Register" is the title of the consolidated "Philadelphia Medical Times" and "Medical Register." It is edited by Dr. William F. Waugh, and published weekly.

The Toner Lectures.—The next lecture is to be given at the National Museum, Washington, on Wednesday evening, the 29th inst., by Dr. Harrison Allen, of Philadelphia, on "The Clinical Study of the Skull, especially undertaken in connection with the Morbid Conditions of the Jaws and Nasal Chambers."

The late Dr. Samuel W. Gross.—At a meeting of the Philadelphia County Medical Society held April 24, 1889, the following minute was unanimously adopted: By the death of Dr. Samuel W. Gross this society has lost an industrious colaborer and a wise counselor, and the profession one of its most brilliant ornaments. As a student, practitioner, and teacher he possessed, with remarkable surgical acumen, unusual power of analysis and deduction, and his lectures, like his mental workings, were conspicuously clear, concise, logical, and vigorous. He was an earnest student of the progress of surgery in all countries, with more respect for the experience of the present than the traditions of the past; never satisfied to stand still, and ever advancing with the progress of science, he kept his teaching always apace with the rapid strides of surgical knowledge. As an operator he was bold, conscientious, and successful. Possessed of broad views, he was quick to recognize merit and to welcome truth by whomsoever presented. He took an active interest in all that pertained to the welfare of the profession and was ever ready to work for its promotion. He possessed positive convictions and was frank in their expression. As a companion he was genial and entertaining; as a friend, generous and true.

An International Medico-legal Congress is to be held in New York on the 4th, 5th, 6th, and 7th of June, under the auspices of the New York Medico-legal Society.

The Obstetrical Society of Boston.—At the meeting to be held this (Saturday) evening, by invitation of Dr. Cotting, Dr. Townsend will read a paper on "An Epidemic of Measles, with Remarks on Rötheln."

Changes of Address.—Dr. Louise Fiske Bryson, to No. 41 West Thirty-fourth Street; Dr. J. Swinburne Hopkins, to No. 150 West Eleventh Street; Dr. James B. Hunter, to No. 55 West Thirty-sixth Street.

Recent Deaths.—Dr. Thomas Layton, of New Orleans, died suddenly on Monday, the 6th inst.

Dr. A. S. Dandridge, of Cincinnati, died on Saturday, April 27th, of chronic Bright's disease.

Dr. William H. Pinkney, a son of the late Dr. Howard Pinkney, died suddenly at his home in New York on Thursday, the 2d inst.

The Tennessee State Medical Society held its annual meeting at Nashville on April 30th and May 1st and 2d, the president, Dr. T. J. Happle, of Trenton, in the chair. A report was made that, after forty years of solicitation, the Legislature had at last passed a law regulating the practice of medicine. Though it was far from perfect, yet it was a great gain and should receive hearty support. The society recommended the following-named gentlemen for appointment as a board of examiners: Dr. C. Deadrick, of Nashville; Dr. J. B. Murfree, of Murfreesboro; and Dr. D. D. Saunders, of Memphis. A resolution requesting the Legislature to pass the bill now pending requiring the registration of births and marriages was carried. Officers for the ensuing year were elected as follows: President, Dr. Duncan Eve, of Nashville; vice-presidents, Dr. Henry Berlin, of Chattanooga; Dr. J. B. Neil, of Marshall; and Dr. J. P. C. Walker, of Dyersburg; secretary, Dr. E. D. Nelson, of Chattanooga; treasurer, Dr. Richard Cheatham, of Nashville. The next meeting will be held at Memphis, beginning on the second Tuesday in April, 1890.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the two weeks ending April 13, 1889:*

Godfrey, John, Surgeon. To proceed to Poughkeepsie, N. Y., on special duty. April 10, 1889.

Mead, F. W., Passed Assistant Surgeon. To report in person to the Supervising Surgeon-General, April 3, 1889. Detailed as Acting Chief Clerk, Marine-Hospital Bureau, and Attending Surgeon, port of Georgetown, D. C. April 10, 1889.

Wheeler, W. A., Passed Assistant Surgeon. Relieved from duty at Buffalo, N. Y.; to assume charge of the Service at Norfolk, Va. April 3, 1889.

Devan, S. C., Passed Assistant Surgeon. Relieved from duty as Acting Chief Clerk, Marine-Hospital Bureau, and Attending Surgeon; to assume charge of the Service at Buffalo, N. Y. April 3 and 12, 1889.

Pettus, W. J., Assistant Surgeon. Granted leave of absence for four days. April 6, 1889.

Stoner, J. B., Assistant Surgeon. To rejoin station (New York) as soon as practicable. April 11, 1889.

Society Meetings for the Coming Week:

Monday, *May 13th:* New York Academy of Medicine (Section in Surgery); New York Ophthalmological Society (private); New York Medico-historical Society (private); New York Academy of Sciences (Section in Chemistry and Technology); Lenox Medical and Surgical Society (private); Boston Society for Medical Improvement; Gynæcological Society of Boston; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private); Baltimore Medical Association.

Tuesday, *May 14th:* New York Medical Union (private); Medical Societies of the Counties of Albany (semi-annual), Greene (annual—Cairo), and Rensselaer, N. Y.; Newark, N. J., and Trenton (private), N. J., Medical Associations; Medical Societies of Camden (annual—Camden), Morris (annual), and Sussex (annual) Counties, N. J.; Norfolk, Mass., District Medical Society (election—Hyde Park); Franklin, Vt., County Medical Association (annual); Baltimore Gynæcological and Obstetrical Society.

Wednesday, *May 15th:* Iowa State Medical Society (Keokuk); Northwestern Medical and Surgical Society of New York (private); Harlem Medical Association of the City of New York; New Jersey Academy of Medicine (Newark).

Thursday, *May 16th:* New York Academy of Medicine; Brooklyn Surgical Society; New Bedford, Mass., Society for Medical Improvement (private).

Friday, *May 17th:* Chicago Gynæcological Society; Baltimore Clinical Society.

Saturday, *May 18th:* Clinical Society of the New York Post-graduate Medical School and Hospital.

OBITUARY NOTES.

Dr. Frank W. Rockwell, of Brooklyn, died on April 30th, aged forty-five years, after an illness of a few days. He was born in Albany, being the son of the Rev. Dr. Rockwell, formerly of Brooklyn. He was educated at Amherst, in the class of 1865. His medical degree he received three years later from the College of Physicians and Surgeons. He spent a year at the Kings County Hospital, and then took up his residence in Brooklyn permanently. He was an attending surgeon at St. John's and St. Mary's Hospitals. His predilection was for surgery, and he was rapidly acquiring a position in the front rank of consultants, in that department, when death cut short his promising career. He was of a scholarly, refined, and generous nature, and, although not robust in physique, he evinced a tireless capacity for professional work. His fatal illness began as a laryngeal abscess, upon which pleurisy and pericarditis supervened.

Proceedings of Societies.

NEW YORK SURGICAL SOCIETY.

Meeting of March 13, 1889.

Dr. Charles T. Poore in the Chair.

The Influence of Simultaneous Ligature of the External Carotids on a Naso-pharyngeal Growth.—Dr. Joseph D. Bryant read a paper with this title. (See page 512.)

Dr. J. A. Wyeth said that he had no doubt of the value of the operation as a means of controlling the nutrition of the parts about the upper jaw or in the naso-pharynx. To lessen the blood supply going to tumors would naturally cause a retrogression in their growth. He saw no danger in ligation of both external carotids. As a preliminary to the removal of the upper jaw, where very great hæmorrhage was to be feared on account of the nature of the diseased process, or when tumors were to be removed from the pharynx, he thought the operation would be an entirely justifiable one. However, there were one or two points in the anatomy of this region that might have a special bearing on the result to be obtained by tying the two external carotids, and they related to the source of the blood supply to the tonsil and the back part of the pharynx. Many years previously he had worked out the anatomy of the neck for a special purpose quite elaborately, and he had been struck by the variations sometimes occurring in the origins of the arteries supplying the parts in question. Thus, in 121 dissections, the ascending pharyngeal had been found to be given off from the bifurcation of the common carotid in only 12, the average distance of its point of origin from the bifurcation being three fifths of an inch, or at a point about opposite the lingual artery. In seven of the 121 examinations he had found it arising from the internal carotid, and in three the pharyngeal arteries had been derived from both external and internal carotids. It would therefore be advisable to examine into the particular arrangement of the arteries existing in each case as soon as they were exposed.

Dr. R. Abbe asked how much of the tumor had been injected with the carbolic-acid solution used by Dr. Bryant in the case referred to in his paper, and whether any benefit seemed to have resulted.

Dr. Bryant replied that the injection had been made only into the left side of the growth. There had been no reason to suppose that anything had been gained while this procedure was kept up; the tumor had grown harder, but he hardly thought this due to the effects of the acid.

The Genesis of Tubercular Hip-joint Disease.—Dr. V. P. Gibney presented a series of sections made through the femora and iliac bones of a boy who had died of tubercular meningitis, and who had during the last years of his life suffered more or less from lameness referable to the left hip. The specimens were interesting as showing a pathological condition that was rare in tubercular disease of the hip joint in children, that differed materially from that which was ordinarily believed to exist, and that resembled more the condition found in adults so affected. The patient was twelve years of age at the time of death, four days before, and had come under his care at the hospital a year previously with a history of hip disease extending over two years, the signs of which had been very obscure. The general health had been fair, but for a long time the boy had been lame. The speaker had adjusted a hip-splint two years and a half ago which the boy had worn for a few months, when his father had removed it, believing it uncalled for. Some months after this there had been an exacerbation of the signs of disease in the joint, but it had passed off and for a time only a slight halt in the walk had persisted. Then the signs had become a little more marked, pain had been suffered at night, the reflex spasm had been more marked, and the lameness had somewhat increased in severity. In this condition he had been admitted into the hospital in January, 1888, and during the year had remained under protective treatment with practically unchanged conditions in his affected joint, and still in good general health. Then, without any immediate exciting cause, much pain had been felt in the joint, the temperature had risen to 103° F., and the hip had become very tender when handled or voluntarily moved. An extension splint and then a weight and pulley had been employed in the hope of relieving the muscular spasm, but they had only made the pain worse. The temperature for the next two weeks had varied between 103° and 99°, without other disturbances unless the patient was moved in bed, or tried himself to move the limb. Then an exacerbation had followed during which the pupils had become dilated for the first time, and thereafter they had remained so. Vomiting and restlessness had appeared, and, nine days before death, there had been convulsions, stupor, a drawing of the head to one side, retraction of the abdomen, and paralysis of the left side continuing till death, which was evidently from tubercular meningitis. The speaker had removed the bones of both hips, to allow a comparison to be made. Sections through the structures of the right joint showed the normal appear-

ances. In the cavity of the left joint there was a small amount of pus. There was some dry erosion or nicking of the cartilages, with areas of complete destruction. The synovial membranes were thickened and infiltrated with tuberculous inflammatory products. The ligamentum teres was large, injected, and apparently fatty. There was no lesion in any of the centers of development, but the epiphyseal line was thickened and wavy in outline, and the epiphysis was flattened and reduced in size. There was a rupture of the capsule of the joint. At the junction of the neck and shaft of the bone there was a small abscess, not communicating with the medullary cavity. The acetabulum was eroded in its posterior half and partially filled with tuberculous synovial tissue around the insertion of the ligamentum teres. There were no soft points or caseous deposits in the bony structures of the joint, the only pathological change present being a general congestion. The process had begun in the synovial membrane. In most specimens of beginning disease in the hip of this sort the pathological changes were looked for in the trochanters or in the head or neck of the femur. The specimen had not been examined microscopically.

Successful Cholecystectomy.—Dr. ABBE presented the entire gall bladder of a lady upon whom he had recently operated for a persistent sinus and renewed biliary colic after the removal of fifty gall-stones by cholecystotomy six months before. The mouth of the sinus was encircled by a skin incision and clamped, to prevent leakage. The abdomen was then opened by a vertical incision, and the colon, adherent over the entire gall bladder, was carefully dissected off. The gall bladder itself, shrunken to about half its original size, was dissected from the liver, and the cystic duct was ligated with silk near the common duct. The cystic duct was found to be constricted by inflammatory action at a point close to the gall bladder, and a good-sized calculus was found impacted in the duct near it. Beyond this the ligature was placed. A small drainage-tube was left in along the site of the dissection, and the abdomen was closed. The patient had made a prompt recovery. The speaker thought that in many cases of operation for gall-stone impaction this complete removal of the viscus might advantageously be done at the outset; the risks to the patient would not be increased.

Reports on the Progress of Medicine.

ANATOMY.

By MATTHIAS L. FOSTER, M. D.

Result produced upon the Muscles, Bones, and Ligaments by the Habitual Exercise of Excessive Strain.—Lane ("Brit. Med. Jour.," Dec. 1, 1888) says that the variations in the form of the skeleton which may be noticed between individuals of the same race, and, further, that the variations peculiar to the various races of mankind, are due to the mechanical relationships which have existed and do exist between the organism and its surroundings. Excessive strain, supported habitually by a certain muscle, induces enlargement of the bony surface to which it is attached, bone extending along the tendinous attachment in the direction in which traction is habitually exerted. He illustrated this by exhibiting the shoulder-girdles of a shoemaker, a sailor, and a porter. In each case certain bony prominences were very marked, corresponding to the origin and insertion of the muscles which had been habitually called into excessive use. Thus, in the case of the shoemaker the breadth of the free outer margin of the acromion was greater than in the others, and the rest of the origin and the insertion of the deltoid muscle was more prominent. This he explains to be produced by the great strain habitually maintained by the deltoid of a shoemaker, who is engaged in the heavy work of pulling waxed threads through holes in thick leather for, perhaps, twelve to fourteen hours a day. Similarly, in the case of the sailor, who had been constantly engaged in climbing, pulling ropes, or turning a heavy wheel, much strain was thrown upon the outermost tendon of the subscapularis and upon the teres major; hence the anterior of the two ridges on the axillary border of the scapula was remarkably prominent, so that its lower portion projected outward beyond the posterior ridge, and the tubercle, at its lowest limit, formed a very sharp, projecting, rough angle. The prominence of surfaces or ridges does not afford much indication of the bulk of the muscle, but varies directly as the amount of strain habitually sustained by it, as does also the amount of tendinous tissue in its substance.

When a constant and considerable strain in one direction is thrown upon a ligament, its fibrous structure shows a tendency to become converted into bone. This takes place either by the development of a separate piece of bone in its substance, which may subsequently articulate or fuse with the adjacent bone or bones, or by the growth of bone into the substance of the ligament from the bony surfaces to which it is attached. These processes of bone sometimes fuse with each other, sometimes with the separate developments in the ligament. These are well shown in the supraspinous and interspinous ligaments, and in the ligamentum nuchæ of the coal-heaver or other heavy porter. When the normal mechanical condition of the body is changed, the weight of the body may suffice to produce ossification of the ligaments which habitually sustain an abnormal amount of weight.

Congenital Diaphragmatic Hernia.—Paterson ("Brit. Med. Jour.," Dec. 1, 1888) employs a case of congenital diaphragmatic hernia, in which the left half of the diaphragm was wanting, as a text of an article of much interest to both the surgeon and the anatomist, particularly to the latter on account of the consideration of the development of the diaphragm.

There are three varieties of this form of hernia—viz., those due to defective formation of the diaphragm, those occurring through one of the natural openings, and those due to distension of the fibers of the diaphragm. The two latter are very rare indeed. Total absence of the diaphragm is also very rare, but partial absence is the most frequent cause. The deficiency is usually on the left side, of greater or less extent. Usually the muscle is left in a rudimentary condition, as a crescentic fold attached to the ribs and contracting the size of the opening. Sometimes one crus is wanting, or one or more costal attachments, from last to first in order of frequency. Dugnet states that the most frequent seat is one side of the vertebral column. In rare cases one half of the diaphragm is entirely wanting. A few cases are recorded in which it occurred on both sides, and one case, reported by Bednar, seems to have been placed mesially, although the possibility has been denied. In the case described the left half of the diaphragm was wanting, and the left pleural sac was continuous with the abdominal cavity. The opening was bounded on the left by the ribs, over which a continuous membrane passed on to the deep surface of the abdominal muscles; on the right by a strap-like band of muscle, stretching between the spine and the sternum, which represented the sternal and vertebral portions of the left half of the diaphragm. Round the left border of this slip the mediastinal pleura was continuous with the peritonæum on the under surface of the diaphragm. The pericardium was separated from the hernial cavity by the mediastinal pleura. Between these two membranes lay the left phrenic nerve, which took its usual course, and supplied the above-mentioned slip on the left side. It appeared as large as the right nerve. The right half of the diaphragm was developed in a normal manner. Between the xiphoid cartilage and the vertebral column there were two muscular bands—one was the above-mentioned slip—with no tendon separating them; but between them was the œsophageal opening in front, the aortic behind. The left lobe of the liver was larger than usual, and bent at right angles to the right lobe, and lay in the thoracic cavity along with most of the abdominal viscera. No other coincident congenital deformities were present.

From these facts the writer infers that the diaphragm is developed from at least three separate foci; one, mesially placed, may be called the sterno-vertebral, and two, costal or lateral. From the relative frequency of different degrees of deficiency one would judge that the mesial portion is the first formed and that the lateral portions develop

as folds which grow from the mesial part as well as from the costal wall, the center of development being placed anteriorly. Growth then appears to be from the front to the back of the body cavity and from the periphery toward the center—along the mesial part on the one hand, along the thoracic wall on the other. Stoppage of growth at any time will give rise to a congenital hernia, which will usually be opposite the point which is ordinarily the last to be closed—*i. e.*, either in the center of the muscle or near one of its posterior costal attachments. The greater frequency of a deficiency on the left side than on the right the writer does not attempt to explain. This theory combines the two diametrically opposite theories hitherto advanced to account for the development of the diaphragm, the centripetal and the centrifugal. The first explains the formation of the diaphragm as two crescentic folds which grow inward from the costal margin and meet in the center, the second maintains that the formation commences in the middle line, in the tissues surrounding the structures lying in the splanchnopleure, and that its further growth is by means of two folds which grow from this mesial part toward the periphery.

Finally, Paterson suggests that the dorsal part of the muscle may possibly belong morphologically to the hyposkeletal system of muscles, and that the anterior and lateral parts of the muscle, considered developmentally, may be parts of muscular strata which form also the infrahyoid muscles. This suggestion he bases upon a consideration of its innervation. The phrenic nerve is developed early, at the same time as the nerves of the upper limb, and acquires connection with the primitive diaphragm long before the development of muscular fibers. At this time the diaphragm is adherent to the somatic wall just opposite the brachial plexus and developing limbs, and the backward course of the nerve is caused by the increased size of the heart and lungs and the consequent pushing backward of the diaphragm.

Development of the Heart.—Lockwood exhibited before the Section in Anatomy at the annual meeting of the British Medical Association ("Brit. Med. Jour.," Dec. 1, 1888) a series of histological specimens illustrating the early development of the pericardium, diaphragm, great veins, and respiratory organs. The first sections showed that the mammalian heart was developed in splanchnopleure and in two separate parts, situated on either side of the situation of the future pharynx. The gradual approximation of the halves of the heart was illustrated until it became a single median organ attached to the ventral wall of the pharynx by the mesocardium posterius. From its commencement the splanchnic heart protruded into the foremost part of the cardio-pleuro-peritoneal sac. Numerous specimens demonstrated that the cardiac division of the cœlom was demarked from the pleuro-peritoneal by the passage of the vitelline veins across its ventral boundary, that these vessels were fixed by the mesocardium laterale, and that their cardiac ends were converted into the sinus reuniens. A series of specimens to trace the appearance of the somatic veins showed that the umbilical veins developed first, and passed through the mesocardium laterale into the sinus reuniens; the anterior cardinals appeared next and opened into the umbilical, then the posterior cardinals which opened into the anterior cardinals. The portion of the anterior cardinal below the junction of the anterior and posterior cardinals was the Cuvierian duct, which was shown to run through the body-wall, past the side of the passage leading from the cardiac into the pleuro-peritoneal part of the cœloma (iter venosum). This passage was occluded by the gradual approximation of the Cuvierian ducts to the sides of the pharynx.

Membranous Occlusion of the Larynx.—Seifert and Hoffa ("Berliner klin. Wochenschrift," March 5, 1888) report a case of occlusion of the larynx by a membrane so tough as to break the point of a knife with which an attempt was made to divide it. Attempt to divide it with the electro-cautery failed. High tracheotomy was then performed and the membrane, together with the thyreoid cartilage, was divided with a probe-pointed knife. It was then found that in the posterior portion the membrane united the vocal bands, but anteriorly it formed a curtain which fell obliquely forward and was attached to the anterior wall of the larynx a finger's breadth below the vocal bands.

Deficient Œsophagus.—Steele ("Lancet," October 20, 1888) reports a case in which there was a deficiency of an inch and a half at about the middle of the œsophagus. Each end terminated in a blind extremity and no cord or other connection existed between them. The diagnosis of impassable obstruction was made twenty-four hours after birth and gastrotomy was performed the next day. It was found to be impossible to connect the two portions of the œsophagus, and so the patient died of inanition a day later. The condition above stated was then found on autopsy.

Closure of the Cardiac Orifice of the Stomach.—Von Gubaroff ("Archiv f. Anat. u. Physiol."; "Cribl. f. Chir.," 1888, No. 22) has found the valve-like closure at the cardiac orifice under a moderate degree of pressure to be due to the oblique insertion of the œsophagus into the stomach. In children there is much less obliquity than in adults, and there is a correspondingly less degree of valve-like closure of the orifice. In adults also the obliquity of union differs. This accounts for the difference which exists regarding difficulty in vomiting between adults and children, and between adults as well.

The Epiglottis.—Howard gives as a summary of the results of prolonged and repeated investigations the following points regarding elevation of the epiglottis ("Lancet," October 27, 1888):

Contrary to general belief, traction of the tongue does not and can not raise the epiglottis, because (*a*) the tractile force supposed to be exercised upon the epiglottis is arrested chiefly by the frenum linguæ, and through the muscular fibers within is expended upon the inferior maxilla, into the genial tubercles of which they are inserted; (*b*) the surviving force is expended almost entirely upon and intercepted by the anterior pillars of the fauces; (*c*) for any tractile force which might survive a continuous and sufficient medium for its transmission to the epiglottis is wanting. To prove this, the subject was so placed that the floor of the glosso-epiglottidean fossa was formed in part by the fallen epiglottis itself, the fossa was filled with water, and traction was applied to the tongue; but, however forcible the traction might be, it did not cause the water to be spilled.

The only way by which the epiglottis can certainly be raised is by extension of the head and neck. By this means its elevation is immediate and complete, because by a three-linked chain—of which the hyo-epiglottic ligament is the lower link, the body of the hyoid bone the central link, the combined genio-hyoidei and mylo-hyoidei muscles the upper link—the epiglottis is so coupled to the inferior maxilla, just where it has its greatest range of motion, that above a certain point, as the lower jaw is moved upward, the epiglottis inevitably moves upward until it is erect. The customary wrenching asunder of the clenched teeth in proportion as it depresses the body of the lower jaw antagonizes a distinct effort of nature to maintain the elevation of the epiglottis and favors its depression.

When the head and neck are completely extended, the tongue, the dorsum of which before fell by gravitation upon the horizontal posterior wall of the pharynx, falls upon the now horizontal arch of the palate; the velum palati, by means of the tension of the palato-pharyngeal muscles, is pulled away from the posterior wall of the pharynx, the entire membrane stretched forward and downward behind part of the dorsum of the tongue, forming a partition which helps to keep the tongue out of the pharynx, and with part of the dorsum forms the anterior wall of a new post-oral air-way; the pharynx anteriorly is stretched far forward by the tense steno-thyroidei muscles acting through the thyreoid cartilage. By the genio-hyoidei and mylo-hyoidei acting through the hyoid bone, the base of the tongue and the velum palati are shifted forward, and the posterior nares are shifted by the extension of the head about sixty degrees. Posteriorly, the wall of the pharynx is shifted back by the extension of the cervical vertebræ upon each other in all about thirty degrees, the extension being greatest opposite the glottis. Thus the upper air-passages are rendered quite free. To obtain these full effects the extension must be complete, but frequently a slight elevation and extension of the chin will at once check stertor or irregularity of breathing. The various modes of treatment of apnœa, as inversion, chucking under the chin, and pressing forward the angle of the jaw, are, he claims, successful, as they succeed in producing the elevation of the epiglottis.

The Nature of the Vocal Bands and the Hyo-epiglottic Muscle.—Bland Sutton ("Lancet," Nov. 17, 1888) maintains that the true vocal bands are the result of the tendinous metamorphosis of a portion of the thyreo-arytænoideus muscle; that the false vocal bands, with the cuneiform cartilages of Wrisberg, are the degenerate representatives of a

piece of cartilage which originally connected the epiglottis with the cornicula laryngis (cartilages of Santorini); that the hyo-epiglottic ligament is the degenerate representative of the hyo-epiglottic muscle so largely developed in whales, horses, ant-eaters, many monkeys, and other mammals, sometimes appearing in man.

Abnormity of the Clavicles.—Walsham has exhibited before the Medical Society of London ("Lancet," Nov. 3, 1888) a boy, aged eleven, with a peculiar abnormity. He had suffered from rickets and had lateral curvature of the spine. The sternal two thirds of the clavicles were normal, but the acromial thirds were apparently absent, the finger in this situation coming upon the coracoid process. They terminated in blunt ends which were either free or loosely attached by some indistinct fibrous bands to the coracoid process. There was no history of injury, pain, or trouble indicative of fracture. The arms could be raised to their full extent, in which position he was able to support considerable weight. There was no tendency of the shoulders to drop forward. The case is of much interest as showing how little disability was caused by the absence of the support of the clavicles.

The Angle of the Neck of the Thigh Bone with the Shaft.—Professor Humphrey deduces the following conclusions from his observations ("Lancet," Nov. 17, 1888): The angle formed by the neck of the thigh bone with the shaft varies considerably in different persons of the same age. It is smaller in short bones than in long bones, and is usually small when the pelvis is wide, the combination of these two conditions rendering it usually smaller in women than in men. The angle decreases during the period of growth, before and after birth; but after growth has been completed it does not usually undergo any change, even if life is prolonged to extreme old age, the commonly received opinion on this point being erroneous. Some change may take place in rare cases; but, as a rule, the angle remains the same from the adult period till death. If during growth the limb is relieved of the weight of the body, as in paralysis or after amputation in the thigh, the angle of the neck with the shaft usually retains the open form of early life, or may become wider, as it not infrequently does.

A Fœtal Malformation.—Hardwicke ("Lancet," Nov. 17, 1888) records the birth of a fœtus in which the parietal and frontal bones, as well as the cerebrum, were entirely absent. In the basin of the calvaria was found the smooth surface of what appeared to be the dura mater, covering the inner surface of the bones, cerebellum, pons Varolii, and orbits, the eyes being in their normal positions. It was impossible to obtain a detailed investigation by dissection. The mother had been married six years, had had one child four years previously, had had no miscarriages, and there was no history of syphilis on either side.

A Rare Abnormity of the Aortic Arch.—Brodie relates this case (*ibid.*): The innominate artery was absent, being replaced by a short, thick trunk, which gave off two branches ascending on either side of the trachea to the place of the common carotids, that on the right giving off one corresponding to the vertebral. Next in order from the arch was the left vertebral, which entered the foramen in the transverse process of the fifth cervical, and gave a branch to the thyreoid. Another branch arose from the first part of the subclavian on the left side. The right subclavian arose from the arch as a fourth branch and passed behind the œsophagus and trachea.

Relations between the Superficial Origins of the Spinal Nerves from the Spinal Cord and the Spinous Processes of the Vertebræ.—Reid (*ibid.*) finds from the examination of a number of spinal cords, the investigation being conducted with the body in the horizontal and then in the upright posture, that the posterior and the anterior roots of nerves belonging to the same segment leave the cord at the same level, and that the superficial origin of any individual spinal nerve has no fixed and definite relation to the apex of one, or the apices of two spinous processes, or to the space intervening between two, as might be supposed from the tables of Nuhn and Jadlot. He gives the following summary of the limits within which he found that the posterior and anterior nerve-roots took their superficial origin from the cord in relation to the posterior ends of the spinous processes—*a* signifies the highest point, *b* the lowest point of origin: Second cervical: (*a*) a little above the posterior arch of the atlas; (*b*) midway between the posterior arch of the atlas and the spine of the axis. Third cervical: (*a*) a little below posterior arch of atlas; (*b*) junction of upper two thirds with lower third of the spine of the axis. Fourth cervical: (*a*) just below upper border of spine of axis; (*b*) middle of spine of third cervical. Fifth cervical: (*a*) just below lower border of spine of axis; (*b*) just below lower border of spine of fourth cervical. Sixth cervical: (*a*) lower border of spine of third cervical; (*b*) lower border of spine of fifth cervical. Seventh cervical: (*a*) just below upper border of spine of fourth cervical; (*b*) just above lower border of spine of sixth cervical. Eighth cervical: (*a*) upper border of spine of fifth cervical; (*b*) upper border of spine of seventh cervical. First dorsal: (*a*) middle of interval between spines of fifth and sixth cervical; (*b*) just above spine of first dorsal. Second dorsal: (*a*) lower border of sixth cervical; (*b*) just above lower border of spine of first dorsal. Third dorsal: (*a*) middle of spine of seventh cervical; (*b*) lower border of spine of second dorsal. Fourth dorsal: (*a*) just below upper border of spine of first dorsal; (*b*) junction of upper third and lower two thirds of spine of third dorsal. Fifth dorsal: (*a*) upper border of spine of second dorsal; (*b*) junction of upper fourth and lower three fourths of spine of fourth dorsal. Sixth dorsal: (*a*) lower border of spine of second dorsal; (*b*) just below upper border of spine of fifth dorsal. Seventh dorsal: (*a*) junction of upper third and lower two thirds of spine of fourth dorsal; (*b*) just above lower border of spine of fifth dorsal. Eighth dorsal: (*a*) junction of upper two thirds and lower third of interval between spines of fourth and fifth dorsal; (*b*) junction of upper fourth and lower three fourths of spine of sixth dorsal. Ninth dorsal: (*a*) middle of interval between spines of fifth and sixth dorsal; (*b*) upper border of spine of seventh dorsal. Tenth dorsal: (*a*) middle of interval between spines of sixth and seventh dorsal; (*b*) middle of spine of eighth dorsal. Eleventh dorsal: (*a*) junction of upper three fourths and lower fourth of spine of seventh dorsal; (*b*) just above spine of ninth dorsal. Twelfth dorsal: (*a*) junction of upper fourth and lower three fourths of spine of eighth dorsal; (*b*) just below spine of ninth dorsal. First lumbar: (*a*) middle of interval between spines of eighth and ninth dorsal; (*b*) lower border of spine of tenth dorsal. Second lumbar: (*a*) middle of spine of ninth dorsal; (*b*) junction of upper third and lower two thirds of spine of eleventh dorsal. Third lumbar: (*a*) middle of spine of tenth dorsal; (*b*) just below spine of eleventh dorsal. Fourth lumbar: (*a*) just below spine of tenth dorsal; (*b*) junction of upper third and lower two thirds of spine of twelfth dorsal. Fifth lumbar: (*a*) junction of upper third and lower two thirds of spine of eleventh dorsal; (*b*) opposite middle of spine of twelfth dorsal. First sacral: (*a*) lower border of spine of eleventh dorsal; (*b*) lowest point of origin of the fifth sacral, the lower border of spine of first lumbar. Coccygeal: (*a*) lowest border of first lumbar; (*b*) just below the upper border of second lumbar.

Histological Events on the Borders of Ossification.—The explanation of the mode of formation and growth of the osseous system as understood at present is almost universally acknowledged to be correct, but still some special questions are in dispute, particularly whether the cells of the epiphyseal cartilage are changed at the line of ossification into cartilage covered-osteoblastic cells—the so-called endochondral ossification—are unchanged, or perish. To elucidate this question, Leser ("Beilage z. Ctrlbl. f. Chir.," No. 24, 1888) has instituted researches upon dogs, cats, and rabbits, with the following results:

In the epiphyseal cartilage the new growth of cells follows the same rules that are acknowledged to be characteristic of the new growth of cells in other tissues. A number of typical changes in form exhibited the division of the nucleus and then of the cell. The product of the process of growth in the epiphyseal cartilage is a great number of peculiarly smooth cells, which by their arrangement in long columns take part in the longitudinal growth of the bones. In the neighborhood of the medulla there are changes noticed with the newly formed cells which seem to throw light upon their actual transition; the protoplasm of the cells is pale, it looks watery, the nucleus loses its encapsulating substance and appears like a small bubble. Quite close to the line of ossification, sometimes in the midst of it, are many of the often very large cartilaginous hollows, quite empty or filled with the remains of the protoplasmic cell substance. Every trace of caryocinetic figures is wanting in the cells of this zone. Vessels and their branches enter the capsule-like spaces, which may be either empty or full of cells; they are filled very quickly, as they are in immediate connection with the blood-vessels, full of red corpuscles, which pass out from the medullary canal. Im-

mediately after the vessels one notices relatively large, clearly granular cells of various forms, which fill the spaces first left vacant. They (the cells) originate in the medulla and appear to be identical with Gegenbauer's osteoblasts.

Congenital Recto-urethral Fistula.—Mr. Page ("Brit. Med. Jour.," Oct. 29, 1888) reports this curious case: A man, aged fifty four, applied for relief, and gave the following history: Immediately after birth it was discovered that faeces and urine were passed from the meatus urinarius, and that the anus was imperforate. An unsuccessful operation was performed to establish an anus. At the age of ten years the urethra became blocked with hardened faeces, and an incision was made into the urethra immediately in front of the scrotum. A fistula remained in this situation, through which he continued to pass his urine and fæces with much difficulty and discomfort, until finally the urethra became blocked and he had to seek assistance. The fistula in front of the scrotum was enlarged with so satisfactory a result that the patient refused to submit to any other operation.

Miscellany.

The American Pharmaceutical Association.—At the thirty-seventh annual meeting, to be held in San Francisco on the 24th, 25th, 26th, 27th, and 28th of June, the following list of queries will be considered:

1. A pharmaceutical comparison of the extracts of *Acacia catechu* and *Uncaria gambier*. As "catechu" the U. S. P. directs the extract of *Acacia catechu;* the Br. P. directs extracts of *Uncaria gambier*. Which of the two is preferable for pharmaceutical uses?

2. Is it feasible to improve the syrups in the Pharmacopœia? An essay on the subject is desired, with practical suggestions for improvement, particularly for syrupus aurantii corticis, syr. tolutanus, syr. zingiberis, syr. rhei, syr. rhei aromaticus, syr. sarsaparillæ compositus.

3. Is it desirable and practicable to abolish the present tinctures and fluid extracts of the Pharmacopœia, and to establish in their stead a single class of preparations styled tinctures, of uniform strength, and of 50 per cent. of drug value, or of such proportion as can be exhausted by the combined process of maceration and percolation without subsequent concentration?

4. Is it not advisable to drop from the United States Pharmacopœia all compound galenical preparations?

5. Further researches on the alkaloids of *gelsemium*. Is the alkaloid *gelsemine* the only constituent of the drug having medicinal value?

6. What is the quality of belladonna root as obtained through reliable dealers? How does it compare with belladonna leaves in regard to uniformity in strength?

7. What is the natural combination or association of the alkaloids and resinous constituents of *Veratrum viride?*

8. Further researches on the crystalline precipitate that occurs in tincture of white agaric.

9. Do pharmacists generally follow the Pharmacopœia in the preparation of tincture of nux vomica? What bearing, if any, has the result of this inquiry upon introducing into the Pharmacopœia assay methods in other processes?

10. What is the influence of heat and moisture as a preparatory step in the extraction of some drugs?

11. It has been proposed to introduce into the next United States Pharmacopœia processes of assay for such drugs and their preparations (besides those already thus provided for in the last revision) as contain important active principles which may be estimated quantitatively. As it is important that the method of assay shall be as simple, concise, and free from refined technicalities as possible, it is desired that the text for working processes of a series of these drugs be drawn up so that it may be thoroughly tested in advance of the appearance of the work.

12. Colchicum seed contains a fixed oil which renders its alcoholic preparations unsightly. Has this oil any medicinal value? If not, can it be removed without detriment to the preparation?

13. What amount of the drug sold in commerce under the name of *Berberis aquifolium* is of the other species of *Berberis*—*i. e., B. repens* and *B. nervosa?*

14. What is the comparative value of *yerba santa*, licorice, and saccharin in masking the taste of quinine and other bitter substances?

15. It has been asserted that under the name "Hungarian daisies" an adulterant for insect powder has been introduced. To what extent is this adulterant imported?

16. It has been observed that fluid extract of belladonna is a neutral solution when first made, and that by age it acquires an acid reaction. What is the cause of this change, and does it affect the medicinal value of the preparation?

17. Examine some of the more important solid extracts of the market for mineral impurities, chiefly copper, and ascertain the conditions under which this metal may be most accurately estimated, in such cases, by electrolysis.

18. What is the nature of the change which solutions of morphine salts (notably the hydrochloride) undergo by time, and what is the crystalline body which makes its appearance?

19. How many new albumin products result in pepsin digestion? Can these products be isolated? and by what tests can they be distinguished?

20. Gelatin has been suggested as a superior emulsifying agent for cod-liver oil. Can this be verified? If so, give working formula for a permanent emulsion.

21. Has syrup of dextrin a use in pharmacy? Give formula and instances where it could to advantage replace cane-sugar syrup.

22. A further consideration of maize oil. Can it be advantageously employed in pharmacy in place of cotton-seed oil or other oils now in use?

23. What are the present sources of commercial oil of wintergreen? and what proportion is derived from each source? Is the synthetical product ever sold as natural oil? To what extent does the artificial oil of wintergreen replace the natural oil or oil of birch?

24. Essential oils are said to be adulterated before reaching the dispenser to a greater extent than any other medicinal products, and also to materially differ in quality even when pure. What are the best methods of detecting adulterations and of determining the quality of the principal volatile oils?

25. It has been stated by competent authorities that the characteristics and physical or chemical properties ascribed to many essential oils by the U. S. or other pharmacopœias often do not fit the commercial oils, even when the latter are known to be genuine. It is desired that as many of the more important official essential oils as possible be carefully re-examined, account being taken of all facts that may be rendered available by those who manufacture and handle these products on a large scale.

26. Complaints have been made that several brands of terebene offered in the market differ but little in physical or medicinal properties from oil of turpentine. Examine all available brands as to their optical properties.

27. Is the reaction of methozin (antipyrin) with spirit of nitrous ether owing to the free acid present in the spirit? It is said not to react (with coloration at least) with some specimens of spirit of nitrous ether.

28. What directions should be given in the pharmacopœias for the care and preservation of spirit of nitrous ether?

29. The official method of assaying spirit of nitrous ether having been shown to be unsatisfactory, and better methods having been announced during the last few years, it is very desirable to have drawn up an improved assay process, giving all the details as concisely as possible, but not referring the reader to other works to be consulted.

30. Acetic ether of the market varies greatly as to strength and properties. It is desired that experiments be made to ascertain the limit of range of absolute acetic ether, and also to determine the nature and proportion of the other constituents.

31. What are the products of the reaction in preparing the decolorized tincture of iodine of the National Formulary? To what substance is the peculiar alliaceous odor due which develops in it on standing?

32. Sulphonal, which has acquired some reputation as an efficient ypnotic, is pharmaceutically very intractable. It is desired that work-ng formulæ be devised which will admit of its use, if possible, in solu-ion, but at all events in such a manner that absorption will take place nore rapidly.

33. A series of very soluble compounds of caffeine has been an-ounced under names similar to those applied to regular double salts, or instance, sodio-cinnamate of caffeine, sodio-benzoate of caffeine, odio-salicylate of caffeine. Can it be shown whether true double salts f this composition can be prepared? Or can some light be thrown n their constitution?

34. Hypophosphorous acid has been found to greatly retard, and nder certain conditions to entirely prevent, the oxidation of ferrous alts to ferric, even when only minute quantities of the acid are pres-nt. It is desirable to ascertain: 1. What rôle the acid bears in this reservative action. 2. What are the limits as to the quantity of acid hich will preserve ferrous solutions and as to the time during which uch preservation extends. 3. What becomes of the hypophosphorous cid? 4. Will hypophosphites answer the same purpose? 5. May his preservative agent be used in the case of other chemicals besides errous salts?

35. Solution of chloride of iron is declared by the United States harmacopœia, when prepared by the official process, to have the spec. rav. 1·405. Other authorities state that this figure is scarcely ever eached. Is it possible to so reconstruct the formula that all doubt as o the amount of iron in solution may be eliminated?

36. It has been observed, in preparing the syrup of citro-iodide of ron according to the National Formulary, that the solution does not urn green upon adding the potassium citrate and iodine, but after be-ng mixed with the sugar and exposed to the sunlight for a few hours he reddish color is gradually changed to the characteristic green color, hich seems to be permanent. What is the reaction that takes place?

37. Should a working formula for "green soap" be introduced into he Pharmacopœia, similar to that of the German Pharmacopœia, in rder to insure more uniformity?

38. An essay on corrosive sublimate as a disinfectant is desired. o the advantages derived from its use outweigh the disadvantages?

39. In what quantity and to what extent is arsenic present in wall aper? Is the public health thereby in any degree affected?

40. Give a glossary of practically obsolete botanical, chemical, and harmaceutical terms, but such as may still be occasionally met with by harmacists.

41. Can not the nomenclature of the Pharmacopœia be improved? paper is desired on "Pharmacopœial Nomenclature."

42. What system of weights and measures should be adopted in the ext revision of the United States Pharmacopœia?

43. With what degree of accuracy are powders ordinarily divided in ispensing?

44. Do pharmacists give the public all the protection it should have their hands in the way of adulterated, poor, and dangerous drugs nd preparations?

45. An essay on "How to conduct Quiz Classes" in our pharma-eutical educational institutions.

46. Is it practical or desirable to have a recognition and interchange f pharmacy certificates by the different State boards of pharmacy? nd, if so, how can this end be accomplished?

47. What should be the true aim of boards of pharmacy in their xaminations, and how can it be best accomplished?

48. What is the policy of the patent and trade-mark laws in rela-on to the science of medicine and the useful arts of pharmacy and herapy?

49. It has been asserted on good authority that inventions and dis-overies not patented are public property, and that any attempt on the art of an inventor to monopolize his invention, except by means of the equirements imposed by the patent laws, is a usurpation of public ights. How can the pharmacist be taught that it is his privilege and rerogative to manufacture any and all medicines not patented, and to all them by the names known to the public, all claims to the contrary otwithstanding?

50. Under the present code of ethics of the American Medical As-sociation, can pharmacists be given creditable recognition as a section in this organization?

51. The membership of the American Pharmaceutical Association is said to comprise but a small proportion of the qualified druggists of America, and even less than five per cent. of the whole number of those engaged in the drug business. What means can be devised to bring about a more liberal representation?

52. Is the college training in pharmacy after two years' practical experience better for the student than the reverse—viz., theoretical first and practical afterward?

The Canadian Medical Association.—The twenty-second annual meeting will be held at Banff, N. W. T., on the 12th, 13th, and 14th of August next. The following circular has been issued: "The Canadian Pacific Railway Company has agreed to carry members and delegates with their wives or members of their families at the following rates: From points in Ontario or Quebec to Banff and return at $95 each, including a double berth in sleeping car for each person, and meals in the dining cars on the way west from Montreal or Toronto and back, and four days' living at the Banff Hotel. The passage tickets will be made good from and to any points on the Canadian Pacific Railway, in either Ontario or Quebec, to Montreal or Toronto, but berths and meals will begin at these two places only. From other points in the Dominion the rates will be as follows: From Halifax to Banff and return, $110; from St. John, N. B., to Banff and return, $100; but the tickets from these points will not include sleeping-car accommodations nor meals east of Montreal in either direction. From Port Arthur to Banff and return the rate will be $60; from Winnipeg or Brandon, $50; from Regina, $35—including meals and berths from all these points. From Calgary the rate will be $4.50, without meals or berths. From Victoria or Vancouver to Banff and return, including meals and dining car and double berth in both directions, $30, exclusive of hotel accommodation at Banff, or $40 including four days' hotel accommodation at Banff. Owing to the provisions of the Interstate Commerce Law, it will be impossible to get reduced rates from points in the United States, with the exception of St. Paul, Minn., from which the following rate is offered: $60 to Banff and return, including meals and sleeping-car accommodation *between Winnipeg and Banff only*. Delegates fromt he United States are therefore requested to make their own arrangements between their homes and Montreal, Toronto, St. Thomas, or other points on the Canadian Pacific Railway. An effort is also being made to secure special rates from Liverpool to Montreal by the Canadian steamship lines for Transatlantic delegates. It is intended that the party shall leave Montreal on the evening of the 6th of August, by the regular Pacific Express, and arrive in Winnipeg on the 9th and stop over one day there; leaving Winnipeg on the 10th of August, they will arrive at Banff early on the morning of Monday, August 12th. The meetings of the association will then be held in the hotel (*accommodation being provided by the Canadian Pacific Railway Company*) on the 12th, 13th, and 14th, after which the members of the party can either return at their convenience or take a trip to the coast, leaving early the following morning (August 16th), for which special terms have been arranged as follows: From Banff to Victoria and return, not including meals or berths, $20; or $30, including meals in the dining car and berths. The tickets for this excursion will be on sale at Banff to members and delegates and their families only. The special tickets issued by the Canadian Pacific Railway to Banff and return will be good for sixty days, and the holders will be allowed stop-over privileges on the Canadian Pacific Line in either direction at pleasure. They will also be exchangeable at Port Arthur and Owen Sound, so as to enable members to travel in either direction by steamer between these points. Meal and berth coupons will be issued in connection with these tickets, and will be available as part payment of expense of any who wish to make additional stops and spend longer time on the line. It is considered desirable, however, by the executive officers of the association that, as far as possible, the party should travel together by the all-rail route as far as Banff, so that all may be present at the opening of the meeting. In addition to the members of the Canadian Medical Association to whom this circular is specially addressed, a cordial invitation is hereby extended to all members of the regular profession in good standing in the Dominion of Canada, the United States, and Great Britain, to whom the necessary

certificates will be sent on application to the secretary. Members and delegates are requested to notify the secretary of the points on the Canadian Pacific Railway from which they intend to start at a sufficiently early date to enable the railway company to forward special tickets to the aforesaid points. It will also be necessary to present a certificate from the general or provincial secretary to enable members or delegates to secure the abovementioned special tickets. Members who intend to present papers at this meeting are requested to inform the secretary at as early a date as possible of the subjects which they propose to bring forward."

The British Medical Association.—At the fifty-seventh annual meeting, to be held in Leeds on the 13th, 14th, 15th, and 16th of August, the following discussions have been arranged for the Section in Obstetric Medicine: "The Treatment of Placenta Prævia," by Dr. Braxton Hicks, Dr. Robert Barnes, Dr. Gervis, Dr. Aust Lawrence, Dr. Malins, Dr. Playfair, Dr. Priestley, Dr. Wallace, Mr. Hall, and Mr. Wright; and "Corporeal Endometritis: its Frequency, Diagnosis, and Treatment," by Dr. Herman, Dr. Braithwaite, Dr. Byers, Dr. Halliday Croom, Dr. Gervis, Dr. Aust Lawrence, Dr. Playfair, Dr. Priestley, Dr. Wallace, and Mr. Pridgin Teale.

Mortality in Cities in the United States.—The following table represents the mortality in the cities named, as reported to Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, and published in the abstract of sanitary reports received by him during the week ending May 3d:

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—									
				Cholera.	Yellow fever.	Small-pox.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y.....	April 27.	1,563,452	830	..	..	..	..	..	3	51	54	12	19
Philadelphia, Pa....	April 20.	1,040,245	423	..	..	..	1	..	8	2	10	2	2
Philadelphia, Pa....	April 27.	1,040,245	395	..	..	..	..	..	15	5	6	2	4
Chicago, Ill.....	April 27.	830,000	256	..	..	..	..	..	2	8	18	4	1
Brooklyn, N. Y.....	April 27.	821,525	324	..	..	..	..	..	..	9	28	15	4
Baltimore, Md.....	April 27.	500,343	132	..	..	..	..	..	..	1	2	..	2
San Francisco, Cal..	April 19.	330,000	121	..	..	..	..	..	4	..	2	..	....
Cincinnati, Ohio....	April 27.	325,000	128	..	..	..	..	..	2	..	7	1	1
New Orleans, La....	April 20.	254,000	118	..	..	..	..	..	..	..	7	..	....
Cleveland, Ohio	April 6.	235,000	80	..	..	..	..	..	2	1	2	..	....
Cleveland, Ohio	April 13.	235,000	88	..	..	..	..	..	2	1	1	..	....
Pittsburgh, Pa.....	April 27.	230,000	96	..	..	..	..	..	2	1	1	..	....
Detroit, Mich.....	April 20.	230,000	57	..	..	..	..	..	..	..	..	1	....
Washington, D. C ..	April 27.	225,000	85	..	..	..	..	..	1	4	1	..	..
Milwaukee, Wis.....	April 27.	210,000	49	..	..	..	..	..	..	..	2	..	....
Minneapolis, Minn..	April 20.	200,000	54	..	..	..	..	..	1	1	6	..	....
Newark, N. J.....	April 23.	181,351	82	..	..	..	..	..	..	2	2	..	1
Kansas City, Mo....	April 27.	180,000	36	..	..	..	..	..	2	..	..	..	....
Rochester, N. Y.....	April 27.	120,000	50	..	..	..	..	..	..	..	2	..	....
Richmond, Va.....	April 20.	100,000	20	..	..	..	..	..	..	..	..	..	....
Richmond, Va.....	April 27.	100,000	32	..	..	..	..	..	..	..	..	..	....
Denver, Col.....	April 26.	100,000	30	..	..	2	..	..	..	..	1	..	....
Toledo, Ohio	April 26.	83,500	23	..	..	..	..	..	..	..	..	..	....
Nashville, Tenn....	April 27.	65,153	19	..	..	..	..	..	1	1	..	..	....
Fall River, Mass....	April 27.	65,000	21	..	..	..	..	..	..	..	..	1	....
Charleston, S. C....	April 20.	60,145	28	..	..	..	..	..	1	..	..	..	....
Charleston, S. C....	April 27.	60,145	25	..	..	..	..	..	1	..	..	1	....
Lynn, Mass.....	April 27.	50,000	18	..	..	..	..	..	..	..	..	..	....
Portland, Me.....	April 27.	42,000	.....	..	..	..	..	..	..	..	..	..	....
Manchester, N. H...	April 20.	42,000	13	..	..	..	..	..	..	..	..	..	....
E. Saginaw, Mich...	April 27.	40,000	9	..	..	..	..	..	..	..	..	..	....
Galveston, Texas...	April 12.	40,000	13	..	..	..	..	..	..	..	..	..	....
Galveston, Texas...	April 19.	40,000	8	..	..	..	..	..	..	..	1	..	....
Council Bluffs, Ia...	April 13.	35,000	4	..	..	..	..	..	..	..	..	..	....
Council Bluffs, Ia...	April 20.	35,000	.....	..	..	..	..	..	..	..	..	..	....
Davenport, Iowa....	April 20.	33,715	7	..	..	..	..	..	..	..	4	..	....
Davenport, Iowa....	April 27.	33,715	3	..	..	..	..	..	..	..	2	..	....
Altoona, Pa.....	April 20.	30,000	6	..	..	..	..	..	..	..	..	..	....
Auburn, N. Y.....	April 27.	26,000	12	..	..	..	..	..	..	..	1	..	....
Newport, R. I.....	April 25.	22,000	4	..	..	..	..	..	..	..	..	..	....
Newton, Mass.....	April 27.	21,553	7	..	..	..	..	..	1	..	..	..	....
Keokuk, Iowa.....	April 20.	16,000	1	..	..	..	..	..	..	..	..	..	....
Keokuk, Iowa.....	April 27.	16,000	6	..	..	..	..	..	..	..	2	2	....
Pensacola, Fla.....	April 20.	15,000	5	..	..	..	..	..	1	..	..	..	....

So-called French Brandy.—An article entitled "Cognac," by H. Barton Baker, published in the February number of "The English Illustrated Magazine," after describing the dreary and desolate condition of the trade in real brandy in Cognac, closes with the following statements: "'Fin champagne' brandy of the finest quality, that is to say, forty years old, is worth twenty francs a bottle in Cognac; by the time the duty is paid, and the two or three hands it passes through before reaching the consumer have received their profits, the cost must rise to at least twenty-five shillings a bottle. . . . But, while an utter stagnation of business prevails among the large houses, some of the smaller ones are driving a brisk trade—not, however, with the production of the *grape*. From Holland and Germany large consignments of spirit obtained from grain, potatoes, beet, or any refuse from which alcohol can be distilled, are sent into Cognac. This new, fiery liquor is doctored, watered, flavored, colored, put into bottles or casks, branded 'cognac,' and is received as such all over the world. The writer of this article has been in the Dutch distilleries where this poison was being distilled for the French markets. This is the stuff the English publican vends, sometimes pouring it out of old bottles bearing a well-known label to deceive his customers. In fine, it is this decoction that is generally drunk in this country and Germany and in all parts of France as well, especially in the Parisian cafés, under the name of cognac. Those who drink pure brandy nowadays have to pay very dearly for the article."

ANSWERS TO CORRESPONDENTS.

No. 262.—The code says: "It is derogatory to the dignity of the profession to resort to public advertisements or private cards or handbills inviting the attention of individuals affected with particular diseases."

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the persons sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

A TONIC FORMULA.

BY AUSTIN FLINT, M. D., LL. D.,
PROFESSOR OF PHYSIOLOGY IN THE BELLEVUE HOSPITAL MEDICAL COLLEGE, NEW YORK; VISITING PHYSICIAN TO BELLEVUE HOSPITAL.

IN the "New York Medical Journal" for July 31, 1886, Professor Allard Memminger, of Charleston, S. C., published a short article on "Bright's Disease of the Kidneys successfully treated with Chloride of Sodium." The salt is given in doses of ten grains three times daily, the doses being increased by ten grains each day until they amount to fifty grains each. It is then diminished to sixty grains in the day and continued. I employed this treatment in a few cases, but did not meet with the full measure of success noted in four cases reported by Professor Memminger, although in some instances there was considerable improvement. The suggestion by Professor Memminger, however, and his theory of the mode of action of the sodium chloride, pointed to a possible deficiency in certain cases of disease in the saline constituents of the blood. Under this idea I prepared a formula in which most of the important inorganic salts of the blood are represented, with an excess of sodium chloride and a small quantity of reduced iron, the various salts, except the sodium chloride, being in about the relative proportion in which they exist in the normal circulating fluid. I first used this preparation in the form of powder, giving ten grains three times daily after eating. It was afterward put up in gelatin capsules, each containing five grains, but these absorbed moisture so that they would not keep well in warm and damp weather. With the assistance of Fraser & Company, 208 Fifth Avenue, New York, I finally modified the formula so as to avoid this difficulty. The preparation is now in the form of compressed tablets made by Fraser & Company, tablets made by Caswell, Massey, & Company, 1121 Broadway, and sugar coated tablets made by Wanier & Imgard, 1322 Broadway —all under the name of saline and chalybeate tonic. I usually prescribe two tablets three times daily after eating. Of these preparations I prefer the sugar-coated tablets, the others occasionally producing slight nausea. In a few cases six tablets daily have produced some "fullness" of the head, when I have reduced the dose to one tablet three times daily.

The following is the formula that I finally adopted, the product of which may be put up in capsules:

Saline and Chalybeate Tonic.

℞	Sodii chloridi (C. P.)	ʒ iij;
	Potassii chloridi (C. P.)	gr. ix;
	Potassii sulph. (C. P.)	gr. vj;
	Potassii carb. (Squibb)	gr. iij;
	Sodii carb. (C. P.)	gr. xxxvj;
	Magnes. carb	gr. iij;
	Calc. phos. præcip	ʒ ss;
	Calc. carb	gr. iij;
	Ferri redacti (Merck)	gr. xxvij;
	Ferri carb	gr. iij.

M. In capsules, No. 60.
Sig.: Two capsules three times daily after eating.

I first used this tonic in a case of simple anæmia in Bellevue Hospital in July, 1887. In this case the anæmia was profound and the pallor excessive. It had existed for several weeks, there was loss of appetite, and the patient, a female about thirty years of age, was very weak and unable to leave the bed. A powder of ten grains was given three times daily, and this, with good diet, constituted the only treatment. In forty-eight hours the patient was sitting up, with a fair appetite and improved in appearance, notably in color. At my next visit, two days later, she had left the hospital and was greatly improved.

Since the summer of 1887 I have given the tonic in nearly every case in private practice in which a chalybeate was indicated. In many cases I have not been able to watch the effects of the remedy, and in many I kept no records. In thirty-three cases which I have noted as cases of anæmia, with loss of appetite, etc., I have more or less complete records. In twenty-two cases I noted very great improvement, in twelve cases improvement not so well marked, and in one case no improvement.

I have also records of five cases of chronic Bright's disease of the kidneys in adults in which the tonic was the only medicinal remedy employed. The following is a brief report of these cases:

CASE I.—Male, intemperate, height five feet seven inches, weight in health two hundred and sixteen pounds, age twenty-eight. He had lost about sixty pounds in weight within nine months, weighing now one hundred and fifty-five pounds. The urine had a specific gravity of 1·012 to 1·015, and was loaded with albumin. There were granular casts in abundance. He was put upon the "tonic," ten grains three times daily, and told to stop drinking. After about six weeks of "moderate" drinking, but constant use of the tonic, he had greatly improved. He then began drinking heavily and stopped the tonic. About a week after this the urine had a specific gravity of 1·021, there was a very small quantity of albumin, with no casts. He then resumed the tonic and drank less. In three days he was much improved. The urine had a specific gravity of 1·024, with a faint trace of albumin, and no casts. I saw the patient about five months after the beginning of treatment. He had been taking the tonic regularly for the past three months, but had frequently drank to excess. He was, however, much improved and had gained seven pounds in weight. His urine had a specific gravity of 1·022, with no albumin (or the faintest trace), and no casts. About ten weeks after this he had been drinking heavily and had a mild attack of delirium tremens. His urine had a specific gravity of 1·010½ with six grains and a half of urea to the ounce. There was no albumin and there were no casts. Under treatment for alcoholism he improved rapidly and was out in three days. Within the last year I have seen the patient casually from time to time, but have not had an opportunity of examining the urine. He looks well and says he is in perfect health, but he still drinks, and sometimes to great excess.

CASE II.—This patient was about fifty years of age, looking in fair health, whose urine I examined in September, 1886, and found a trace of albumin. In February, 1888, I examined the urine and found a specific gravity of 1·012 and a considerable quantity of albumin, but no casts. I then ascertained that for several months he had drank about a bottle of whisky daily. He was directed to stop drinking and take of the tonic two capsules three times daily. Three weeks after he had taken the tonic regularly the urine was normal and had a specific gravity

of 1·024. I had reason to think that the patient continued to drink to excess, but I could not keep the case under observation.

Case III.—The patient was a widow, thirty-eight years of age. About six weeks before she came under observation she noticed that her sight was failing; she could not distinguish faces and did not go alone in the streets. The urine was abundant, with a specific gravity of 1·011½ and a small quantity of albumin. She had lost considerable flesh within the past two months. There was a mitral systolic with an aortic diastolic murmur, but no enlargement of the heart. There was slight œdema of the feet. She was put upon the use of the tonic, two capsules three times daily. In a week I saw her again. There was no marked change. She complained of want of sleep, and was directed to take five grains of acetanilide at night and to reduce the tonic to one capsule three times daily. She left the city and went to a village in Ontario for the summer. In January, 1889, eight months after, she wrote for a renewal of the tonic prescription, and said she had been perfectly well until within a few days, but gave no details.

Case IV.—A clergyman, fifty years of age, of perfectly temperate and regular habits, had become "run down" from overwork and had lost twenty-three pounds in weight within seven or eight months. Within a few weeks albumin had been discovered in the urine. On physical examination, I found nothing abnormal except the urine and a reduplication of the first sound of the heart. The urine had a specific gravity of 1·022, with albumin in considerable quantity, and a few hyaline casts of medium size. He was put upon the use of the tonic, two sugar-coated tablets three times daily after eating. He went to Bermuda, January 20, 1889. On April 1, 1889, he returned from Bermuda, feeling "perfectly well." He brought a report of a number of examinations of his urine, which showed a small quantity of albumin and no casts. On April 1st the urine had a specific gravity of 1·021 with a moderate quantity of albumin. He had taken the tonic regularly since January 29th.

Case V.—A widow, fifty-nine years of age, about ten years ago began to lose weight rapidly. Since that time she had lost about twenty pounds. About five years ago she noticed a considerable increase in the quantity of urine, with excessive thirst. The history was that of dietetic diabetes, but the disease was recognized only a few days before she came under my care. The urine had a specific gravity of 1·016½, with a large quantity of albumin and six grains and a half of sugar to the ounce. There were no casts, and the quantity of urea was four grains to the ounce. There was slight œdema of the feet.

Under a strict antidiabetic diet for two days the sugar disappeared from the urine, the specific gravity was 1·013, and the quantity of albumin was slightly diminished. The quantity of urea was six grains to the ounce. The œdema had disappeared. She was then put upon the use of the tonic, one capsule three times daily.

Four days after, the tonic was increased to two capsules three times daily, and the patient was allowed to have a little bread. The urine contained no sugar, but the quantity of albumin was unchanged.

Nine days after she came under treatment the urine had a specific gravity of 1·015½, with a faint trace of sugar, and the quantity of urea was six grains and three quarters to the ounce. The quantity of albumin was very much diminished.

Two days after, the quantity of urine was normal, specific gravity 1·012½, urea six grains and a half to the ounce, albumin in small quantity, a trace of sugar, no casts.

The general diabetic symptoms disappeared on the second day of treatment.

These five cases of albuminuria are reported with reference only to the effects of the "saline and chalybeate tonic." In all the cases the tonic seemed to exert an influence on the quantity of albumin in the urine, which was specially marked in Case I.

In the great majority of the cases of anæmia, etc., in which iron was strongly indicated, the tonic seemed to act much more promptly and favorably than the chalybeates usually employed. In a certain number of cases in which patients stated that "they could not take iron in any form" the tonic produced no unpleasant effects.

COMBINED OPERATIONS IN GYNÆCOLOGY.*

By PAUL F. MUNDÉ, M.D.

Many of the lesions and pathological conditions of the female sexual organs which require surgical interference for their relief are produced more or less directly by parturition; and as the same factors (hasty or protracted labor, narrow vagina and rigid perinæum, instrumental delivery, too early getting up, etc.) are prone to influence different portions of the genital tract at the same time, we frequently meet with two or more lesions in the same case at the same time. Thus, nothing is more common than to find with a lacerated perinæum a torn cervix; with a torn cervix and perinæum, a subinvoluted, retroverted, and prolapsed uterus; with a ruptured perinæum, a prolapsus or redundancy of the posterior vaginal wall, often combined with the same condition of the anterior vaginal wall; with a lacerated cervix, a villous endometritis, accompanying a subinvolution produced and maintained by the cervical lesion. And occasionally an injury of the bladder or rectum in the shape of a fistula may exist, together with one or more of the other injuries named. Thus in one case I found a lacerated cervix, a lacerated perinæum, a retroversion with descensus, and a vesico-vaginal fistula.

Naturally, with the view to saving the patient a repeated anæsthesia and confinement in bed, and thus, if it is a private case, additional expense for a nurse and professional services, as well as to economize the operator's time and trouble, our impulse would be to combine several of the operations necessary to restore the injured parts to their normal condition at one sitting, and this would at first glance appear easy and simple. Thus to repair the cervix and the perinæum, or the rectocele and cystocele, at one sitting, certainly is perfectly feasible, and does not take much time. And there is no objection on the ground of practicability to curetting a uterus, and sewing the torn cervix and perinæum immediately afterward.

Still there are certain reasons why a combination of these operations may not always be wise or successful. I will briefly mention them:

1. Prolonged anæsthesia is not always borne well. I have several times been compelled to defer the second or third operation to another sitting, because alarming cyanosis or a weak heart made me fear to continue the narcosis.

* Read before the Section in Obstetrics and Gynæcology of the New York Academy of Medicine, March 28, 1889.

2. The serous or sanious discharge from a curetted uterus or a sewn cervix may interfere with the union of the cervix or perinæum, respectively, by insinuating itself between the edges of the new wound, and thus the object of the combination of the two operations, a saving of time, is frustrated.

3. If wire or silk is used on the cervix or vaginal wall, several weeks must elapse before the newly repaired perinæum will bear the stretching of the Sims speculum required to remove the stitches. And during this time of waiting the patients, even though not necessarily confined to bed, have the uncomfortable feeling that the operation is not yet concluded and that something still remains to be done. Besides, unless the ends of the wires are carefully bent down, they may cut into the neighboring parts. I believe there is one case on record where a vesico-vaginal fistula was formed by such a carelessly applied suture of the cervix.

4. In some patients with very vascular organs the amount of blood lost during a series of plastic operations lasting from one to two hours may be greater than they can bear.

All these objections and risks had their weight with me in former years, and while I, as long as fifteen years ago, did trachelorrhaphy and anterior and posterior colporrhaphy in one sitting, I still in the second edition of my book on "Minor Surgical Gynæcology," 1885, pp. 413 and 414, advised against the routine combination of plastic operations on the female genital organs, and restricted the practice to particularly favorable or urgent cases. Since then, however, my experience has increased so much, and with it the rapidity with which I am able to operate safely, and my results with combined operations have been so excellent, that I have completely reversed my judgment of four years ago, and now do the combined operations whenever I possibly can. The objections above enumerated have eventually proved less serious in practice than they appeared in theory, at least those relating to the length of the operations and the late removal of the sutures. Whether a patient will bear a prolonged anæsthesia well, we can not, of course, foretell. That is a problem which can only be solved by trial. I myself confess that I usually feel more concerned about the possible danger from the anæsthetic than I do from the operation. Still, for two years I have used chloroform almost exclusively, even in operations lasting two hours and longer, and have seen but one case which gave me anxiety, and that was when not more than two drachms of chloroform had been used for dilatation and discission of the uterus.*

In giving ether I always use the Clover inhaler, which not only saves ether but also spares the patient and the etherizer the drenching with the anæsthetic which is unavoidable with the cone or Allison's inhaler. As regards the loss of blood, I have only once—in a very anæmic patient with lacerated cervix, retroversion, vesico-vaginal fistula, and lacerated perinæum—found it advisable to postpone the Alexander operation and perineorrhaphy to a later sitting, after sewing up the cervix and the fistula at one time.

By increased practice a greater dexterity and rapidity are gained, without a loss of accuracy or safety, and the time required for three or four of the above-mentioned operations is materially shortened, seldom exceeding an hour and a half. Of course all antiseptic precautions are carefully observed, and in consequence I have scarcely a failure of primary union to record in my plastic operations during the past three years.

The objection against removing the stitches in the cervix or vagina some weeks after those in the perinæum can easily be obviated by using catgut for all the internal sutures, as has been my custom for several years in all my proctocele operations, and in those lacerations of the cervix where the uterus is prolapsed and the sutures can easily be tied. To tie slippery catgut sutures high in the vagina is by no means easy, and the knot is apt to be loose and approximation of the wound imperfect. By using perforated shot or lead clamps, however, catgut and silk may both be employed on the cervix, the clamps escaping when the catgut has been dissolved or the silk has cut through. Nevertheless, I continue to use silver wire in trachelorrhaphy, because I am accustomed to it, have more practice with it than with silk or gut, and have found that if the ends are properly bent down the sutures can be left undisturbed for a month or longer, and can then be removed at the office without pain or trouble. In fact, I have of late adopted the plan with great satisfaction of allowing the patient to rise, walk about, and even go out, before removing the stitches from the cervix, letting her in some cases even come to my office for that purpose. I was induced to make this change from the usual and my former practice of removing them about the tenth day by two cases about three years ago in which the apparently healed wound broke open again as soon as the support of the sutures was removed.

Silkworm gut I have not employed on the cervix (although using it with preference now in perineorrhaphy), since it has to be removed like the wire and must be tied or shotted. In place of silk, however, I now use the silkworm gut for the abdominal wound in all my laparotomies with great satisfaction.

* On the very day this paper was read, and after it was written, I met with a case—the very worst I have seen—of chloroform asphyxia. The operation was for a deep laceration of the perinæum; the method was Tait's; but two drachms of chloroform were given, and none had been administered for several minutes, when the patient's pulse and respiration suddenly ceased, she became livid, the jaws were firmly closed, and death seemed imminent. The head was at once depressed, the jaws were forced open, and artificial respiration was induced. After a few anxious minutes respiration was re-established, and the danger gradually disappeared. The operation was concluded without further use of chloroform. It seems to me that a spasmodic contraction of the glottis must have caused the cyanosis in this case. The heart was apparently sound. I abandoned ether chiefly because, two years ago, I had two cases of ovariotomy done under ether which did well until three weeks after the operation, when both patients were sitting up. Suddenly, without apparent cause, an acute pyelonephritis set in, which almost killed my patients, neither of whom had had symptoms of renal disease before. I thought that possibly the ether might in some mysterious way have been to blame, and decided to give chloroform a trial, and the results were so satisfactory that I continued its use. But I confess that a repetition of the accident mentioned in this foot-note would induce me to return to ether.

For about a year and a half I have performed Tait's method of perinæorrhaphy in all cases where the perinæum only required repairing and no proctocele was present. One great advantage of this operation is its rapidity of execution, which recommends it particularly for combined operations. I recently performed such an operation for complete laceration in *eleven* minutes, the time being taken by one of the spectators. Perfect union was achieved.

My results have been excellent, first intention being secured in all cases but one, in which septic symptoms ensued, and, through my confinement by illness at home, the stitches were not removed so early as they should have been, and the patient died on the eleventh day. This accident was very much deplored, and should never have occurred or occur again.

Where there is a proctocele, I always employ Hegar's operation in preference to Tait's. A few times I have removed hæmorrhoids by the clamp and thermo-cautery before sewing up the torn perinæum. As I have always been careful to thoroughly stretch the sphincter ani before operating on the piles, I have had no complaint of rectal tenesmus and there has been no interference with the healing of the perinæum or of the cervix, if that also was operated upon.

Several times I have operated on a fistula in ano by the usual method, after sewing a lacerated cervix, and have also cut out such a fistula when present with a complete laceration of the perinæum, including the excised fistula in the perineal sutures.

During the last few years I have successfully operated in many cases for two or more of the above-mentioned lesions at one sitting. Thus, of twenty-six Alexander's operations for shortening the round ligaments, only in seven cases was that operation alone performed; in nineteen, the lacerated cervix or perinæum or prolapsed anterior or posterior vaginal wall or fistulous bladder was operated on at the same sitting.

Of more unusual operative combinations, I will but refer to two from my own practice:

1. Prolapsus uteri; lacerated cervix sewed with catgut; Alexander's on one side; ligament found, but broken; laparotomy; stitching of fundus uteri to abdominal wall; complete recovery; uterus in normal position.

2. Inverted uterus; ineffectual attempts at reparation by vagino-abdominal taxis; laparotomy; further ineffectual attempts with vaginal taxis and glove-stretchers through the abdominal incision; oophorectomy; elastic ligature to uterus in vagina; sloughing away of body of uterus; recovery.

Other operators have reported cases of attempted vaginal hysterectomy, and eventual removal of the uterus by laparotomy, as well as attempted removal of a uterine fibroid *per vaginam*, followed by its enucleation through an abdominal incision, all at the same sitting.

While I have made no effort to have this short paper complete, I trust I have succeeded in pointing out the advantages of combined operations in many cases where the saving of time, suffering, and expense is an object.

I need scarcely say, in conclusion, that I have not attempted to give all the details of the operations referred to in this paper, nor to lay any claim to priority for the combinations mentioned, since the details are well known to all gynæcologists, many of whom have, no doubt, practiced the very same combinations which I have here described.

20 West Forty-fifth Street, *March 28, 1889.*

THE THEORY AND PRACTICE OF HYPNOTISM.*

By ALBERT L. WAGNER, M. D.,
SOUTH BEND, IND.

The subject we have for discussion at this time is no new one, but perhaps some new phases of it may be offered. I am aware that this is a subject in which the medical profession has never taken a general interest. In fact, until quite recently, what interest they did manifest was of a destructive character. Some few have evinced a pseudo-interest in it since the experiments of Charcot, Hammond, and some others.

Hypnotism, animal magnetism, mesmerism, or syggignoscism (Hammond) are all almost synonymous, signifying an abnormal state of the nervous system in which personal consciousness is lost, the senses perverted, and the mind wholly under the control of the operator. I prefer to use the term hypnotism, as it denotes the primary condition with which we meet in a subject under such influence. As the history of Mesmer is more or less generally known, I will say but a few words relative to the history of hypnotism. Prior to the birth of Mesmer some authors aver that this condition was known and practiced. It is true that von Helmont exhibited a knowledge of some such condition in his writings in the early part of the seventeenth century; also that one William Maxwell, a Scotchman, developed and announced by his writings a knowledge of some similar force about the year 1675—quite three quarters of a century before Mesmer. The Indians allege a much greater antiquity for, and a far more profound learning concerning, this power, as is shown in the writings of the Orientals.

Then came Mesmer, who advocated it in Paris about the year 1778, and professed to be able to cure all manner of disease with this wonderful influence. The Government ordered an investigation of Mesmer's methods, and, as the tale goes, our renowned Franklin was one of the committee. At any rate, an unfavorable report was made, with the exception of the separate report of one Jessieu, a physician of some prominence, who was convinced of there being some truth in the great mass of pretensions of Mesmer.

Since then attention has been paid to the subject by, Sprengel, Reil, Authenrieth, Chenevix, Dr. Elliotson, Colquhoun, Baron Dupotet, the Rev. C. H. Townshend, Lafontaine, Lang, Sir William Hamilton, Braid, Dr. Simpson, Esdale, and, still later, by the Academy of Medicine of Paris, with Charcot in the lead; Mr. Myers and others of the Society for Psychical Research, London; and in this country Dr. Hammond, Dr. Beard, Dr. Rockwell, and many others. This list represents eminent men in the professions of medicine, science, religion, and the arts. Many

* Read before the Indiana State Medical Society, June 5, 1888.

of the governments of Europe offered prizes for the exposition of this new process, and enacted laws regulating it and restricting its practice to the medical profession. I predict that this will be done in this country, and the law will stand the same as all other laws relative to the practice of medicine and surgery.

We will consider in succession the method of producing this condition, its physiology, tests for its genuineness, and its application to medicine and surgery, with some few cases illustrative.

Method of Production.—In the writings of the different authors from the time of Mesmer to the present we see recommended the process of steadily fixing the gaze upon some bright object until sleep or unconsciousness supervene. We also see mentioned certain and divers passes which are said to produce sleep, but nothing definite is said about the particular efficacy of particular passes. This, I hold, is the pitfall into which most operators have fallen. Some authors say one, some two, some four, out of every ten can be hypnotized. Just here I wish to say that I have failed in only three cases in the hundred, and I am quite prepared to give satisfactory reasons for these failures. The first step, then, to become a successful hypnotist is to use passes instead of



Fig. 1.



Fig. 2.

fixation of gaze. The passes are made as follows: After the subject is seated with his head leaning back against the wall, both feet squarely upon the floor, the palms of the hands upon the knees, the hand of the operator is held about a foot in front of and about a foot above the level of the eyes of the subject, with the injunction that the subject look at the hand, and while thus looking is directed to close the eyes. The operator then begins the passes by starting in the middle of the brow, touching the forehead lightly with the tips of the fingers, carrying them outward to the right and left, over the brows to the temples, some ten or twelve times, as in Fig. 1. While doing this the subject is directed to keep the eyes rolled back, and to breathe deeply and regularly.

After making the passes as in Fig. 1, the tips of the fingers are passed down from the middle of the forehead over the cheeks, touching the shoulders, down the arm, touching the hand and, finally, the fingers. The touch must be light, that the subject may not be disturbed (Fig. 2). These passes to be repeated some ten or twelve times, in easy succession; then the passes as in Fig. 1 are repeated. Then the tips of the fingers are started higher up on the head, passing down back of the ear, over the angle of the jaw on to the neck, compressing somewhat the carotids and accelerating the flow in the jugulars (Fig. 3). This is re-



Fig. 3.



Fig. 4.

peated as above, reverting to a few (five or six) passes of Fig. 1. Then the same passes (Fig. 3) are continued, but the finger-tips pass down the arm and off the fingers, as in Fig. 2. This is repeated about ten or twelve times (Fig. 4).

After going over the first, second, and third set of passes, but a less number of times, the thumbs (*a*) are started over the brows, down the temples, over the angle of the jaw on to the blood-vessels of the neck, while the finger-tips (*b*) pass down the back of the head over the occiput, around the neck, down the shoulders and arms, and, finally, touching the fingers (Fig. 5). This some dozen times; then as in Fig. 1 and Fig. 2; then repeat Fig. 5. After a respite of a minute or two, resort to Fig. 1 and Fig. 2 several times. Now, if the eyelid is quiet—*i. e.*, not quivering—and the



Fig. 5.

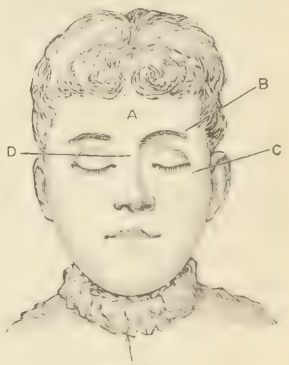


Fig. 6.

respirations are deep and full, the thumb (*a*) of the operator is placed over and above the origin of the corrugators and passed down with a little pressure to a little below the junction of the nasal and frontal bones (*d*), while the finger-tips

start at *b*, pass down over the temple a few inches, to *c*, as in Fig. 6. This is repeated five or six times, with lightly and gradually increasing pressure, till there is considerable pressure being made, when the operator says: "Your eyes are tight, you can not open them, *you can not*," etc., and at the same time pass the fingers of the left hand rapidly down over the brow and eyes a number of times close to but not touching the face. This is called fanning, and is useful in confusing the subject, and often keeps the eyes shut where without it they would be opened. In four or five cases out of ten the subject is now under control. It requires one, two, or three, sometimes more, séances to "get" the remainder of the ten.

To awaken the subject, make reverse passes over the face and brow. A half-dozen passes usually awaken. Or they are readily awakened by snapping the fingers near the ear, saying at the same time "You're all right," etc. Michael Foster says passing a stream of cold air into the face has the same effect. Sometimes, if the subject is not fully aroused, he will speak a few words and fall into a deep sleep again.

Anatomy and Physiology of Hypnotism.—In giving the anatomy and physiology of this condition I will consider in order:

1. Its action and manner of action upon the nerves.
2. Result of this action.
3. As shown by the sphygmograph.
4. Natural sleep incompatible with pain and (*a*) is a slight degree of anæsthesia, and (*b*) renders the whole system anæsthetic to the extent of the depth of the sleep; (*c*) the process of production of natural sleep compared with hypnotic sleep.

1. The passes bring about a condition which results in sleep, sleep bringing unconsciousness and anæsthesia proportionately. The condition which brings sleep must primarily act through the nervous system. Therefore the passes must act directly upon the nerves. The force generated or liberated in hypnotism is one which I do not understand, but I consider it to be, from its phenomena, electric, or perhaps magnetic. From the experiments of Augustus D. Waller, M. D., lecturer on physiology, St. Mary's Hospital Medical School, London ("British Medical Journal," Oct. 6, 1888), we can readily appreciate how it may be electric.

If a piece of vulcanite, ivory, bone, or glass is vigorously rubbed with the hand, the end toward which the hand passes will attract bits of wood, paper, and the like, while the opposite end does nothing of the kind; in fact, repels them. This is called static electricity. By making the passes over a human body there is brought about the same condition of things. The passes serve to demagnetize the brain, rendering it negative or impressionable. Where a patient seats himself for hypnotization and desires to avoid pain, he becomes passive or receptive. The operator is relatively positive. In electro-therapeutics, to gain an upward flowing current, the positive pole is placed on the periphery and the negative pole on the center, giving a large amount of absorptive irritation at the center. To produce a quiet and soothing effect, this is what we do not want and precisely what we do not get from downward passes from the head to the hands.*

The action of the force thus generated is to quiet the vaso-dilators or to stimulate the vaso-motors, as is seen in galvanizing the sympathetic.†

2. The result of this action is next seen upon the blood-vessels, or rather the arteries. The arteries, as shown by the sphygmograph are, contracted, giving a high arterial pressure. The carotids show a *marked* increase in arterial pressure, and by the ophthalmoscope the retinæ are seen to be very anæmic. The hands and feet are very cold, and also the brow and ears.

3. In nearly every subject operated on I have taken sphygmographic tracings and find that high arterial pressure is the rule. In Cases XXV, XXVI, and XXVII, the tracings of pregnant women ("British Medical Journal," Dec. 4, 1886), and considering the variation from normal in pregnancy, the difference is not marked. The following are tracings taken from subjects, and represent (Fig. 8) the natural carotid pulse. Fig. 9 is the tracing taken immediately after sleep, and Fig. 10 represents a tracing after eight or ten minutes of repeated downward passes from the head to the hands. In Fig. 9 we see the amplitude much less than in Fig. 8, the tidal wave less marked, and the dicrotic wave more marked, while the wavelets following are less marked, showing a greater resistance to the flow of blood. In Fig.

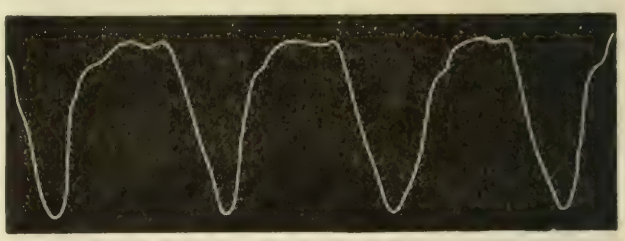


Fig. 7.—Respiratory tracing from Marey's pneumatograph.

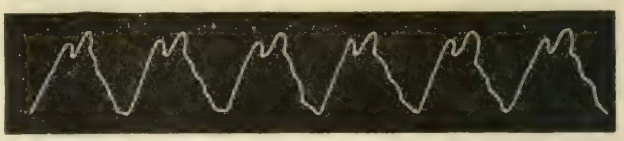


Fig. 8.

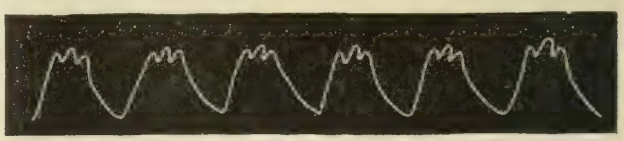


Fig. 9.

* Since writing the foregoing I have produced sleep in a subject by a very mild galvanic current with the negative pole on the head and the positive pole in the hands. Strength of current, two milliampères or two and a half.

† I may be getting the effect for the cause here, as the passes themselves may be the cause of the anæsthesia, and the anæsthesia of the nerve may cause the action on the circulation, as in Section 2. Local anæsthesia is very easily produced and is as marked as that from cocaine.

10 we see Fig. 9 more intensified and exaggerated. The amplitude is two thirds of Fig. 8, and about nine tenths of

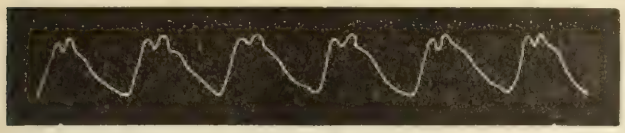


Fig. 10.

Fig. 9. The dicrotic wave is less precipitous, the plateau following the first elevation slightly more marked, and the

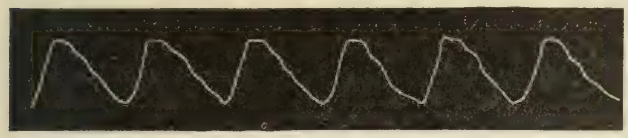


Fig. 11.

post-dicrotic wavelets hardly perceptible. Fig. 11 is typical of the radial pulse while asleep, and Fig. 12 is about the

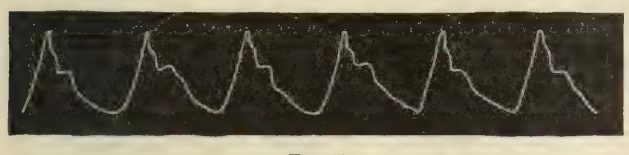


Fig. 12.

average of the normal pulse in the young and middle-aged. Now, in Fig. 13 we have the normal tracing of a lady aged

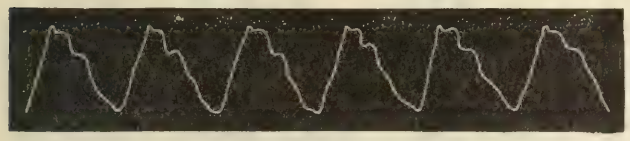


Fig. 13.

forty-two. The tidal follows so soon after the first elevation in Fig. 13 as almost to leave the plateau of the calcified

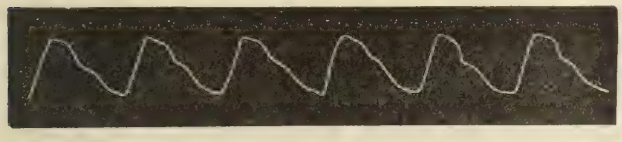


Fig. 14.

artery. Fig. 14 represents the pulse tracing brought about by downward passes from the shoulder to the hand some twenty times while the lady was awake. It represents a much higher arterial pressure, the amplitude being only about half of the normal. The plateau is quite marked, the extra tension totally obliterating the pre-dicrotic wave,

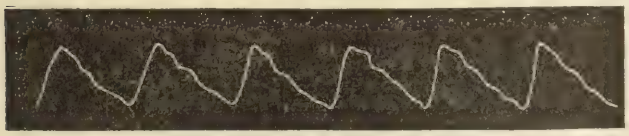


Fig. 15.

and also the post-dicrotic. In Fig. 15 the amplitude is about two thirds of that in Fig. 13, the pre-dicrotic and post-dicrotic waves reappearing. Fig. 15 represents tracing from upward passes on left arm on a lady, a very sensitive subject, while she was asleep.

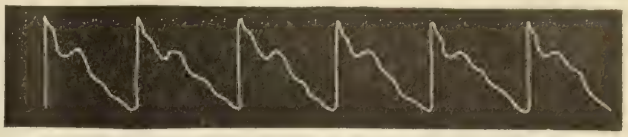


Fig. 16.

Figs. 16 and 17 represent tracings from the radial of a young man, aged twenty-five, who had never been hypnotized, and who at the time was perfectly normal in all respects except the circulation in the arm acted upon. Fig. 16 is the normal pulse, and Fig. 17 is the pulse-tracing after

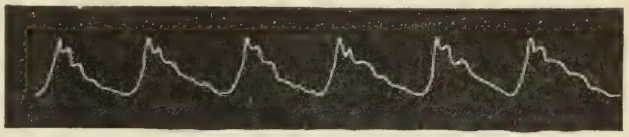


Fig. 17.

about thirty passes from the shoulder to the hand. The amplitude is about one half of that of normal and the line of elevation denotes a very high tension from the slanting to the right, showing slow dilatation of the vessel.

In four or five cases I have examined very minutely the blood-vessels of the retina and have found them plainly anæmic during hypnotic sleep. Dr. A. F. Shafer was kind enough to make an ophthalmoscopic examination for me, and he reported the retinæ as being much more anæmic than while awake.

4. All this goes to show, in my mind, that there is in hypnotic anæsthesia the same anæmia of the brain that is seen in chloroform anæsthesia or in natural sleep. This is again proved by the fact that those conditions which are seen in natural sleep are also seen in hypnotic sleep. They are the following: The eyes are rolled upward, the breathing is deep and regular, the circulation is quiet, the temperature (nocturnal) slightly below the diurnal, and the vessels of the brain and retinæ bloodless. Also that those conditions which favor natural sleep (except the recumbent posture, about which I do not know) favor equally the hypnotization of a subject, and are the following: Quiet, closing the eyelids and rolling the eyes upward, deep and regular breathing, and the voluntary exercise of the brain. When the subject is seated he is told to shut his eyes and roll them up, and he also involuntarily converges them. This is done in natural sleep for the purpose of both shutting out the light and stretching and contorting the arteria centralis retina and the ciliary arteries, cutting off their blood-supply. This renders the excitability of the retina much less, and no doubt contributes the initiatory impulse to the vaso-motors of the brain to diminish its blood-supply.

The subject is further told to breathe deeply and regularly as in anæsthetizing by chloroform, but for a different purpose. Deep and regular respiration promotes sleep by lengthening the inspiratory and shortening the expiratory effort. With the inspiration the flow of blood in the veins

to the thorax is accelerated, and the flow through the arteries to the brain is retarded. This is noticed in the respirations of the child with open fontanelles or after cases of trephining. Fig. 7 gives us the tracing of Marey's pneumatograph, showing the inspiratory depression as being less abrupt than the expiratory elevation, leaving a plateau of very weak expiratory effort, and during this time the blood-pressure is gradually decreasing but still greater than in waking hours. The respirations during sleep are as 6 to 7 in waking, or thereabout. With the deep inspiration, which is longer than in the waking state, we have the maximum in favor of anæmia of the brain, and after the minimum of expiratory effort of short duration we have the medium of resistance to anæmia, which resistance is almost *nil*, represented by the plateau of the tracing. Then, again, if Sommer's theory of storing oxygen is correct (and many physiologists look on it with great favor), we can appreciate how the deep and regular respirations, by the complete change of the air in the lungs, allows the reserve and residual air to remain the purer, that the interchange of gases may be the more rapid and effective. We know by personal experience that when we are sleepy we yawn and sigh, and as we surrender to sleep we cease yawning and sighing, and deep breathing is soon followed by sleep. In making the passes over the neck, allowing the fingers to press the blood-vessels is surely an efficient measure in rendering the brain bloodless.

The circulation of thoroughly hypnotized patients is very quiet, the pulsation of the heart being reduced from three to ten per minute. The sublingual temperature in some twenty-three cases showed a decrease from normal of about one fifth of a degree after thirty or forty minutes of hypnotic sleep.

5. I am aware that there is another element said to enter into chloroform anæsthesia besides anæmia of the brain. If chloroform or ether harden for the time being the brain and nerve-fibers and cells, thus prohibiting the transmission of impressions by them, it does not prove that simple anæmia would not be sufficient to intercept any efferent or afferent nerve-wave. It is the office of sensory nerve-fibers to carry impressions to the brain, and, although it is not capable of demonstration, I believe the action of the hypnotic passes down from the head, not only acts on the nerves controlling the circulation of the blood, rendering the brain bloodless, but that it reverses or stops in some manner the nerve-current itself from the periphery to the center. In local anæsthesia by hypnotism the local circulation is interfered with. The phenomenon which Dr. Hammond thinks mysterious ("New York Medical Journal," July 30, 1887) is due to the anatomical arrangement of the circulation of the brain. This paralysis of the will of hypnotized subjects where they are unconscious, but will keep up a conversation and perform any act the operator may suggest, is due to the fact that in making the passes, as in Figs. 1, 2, 3, and 4, we first control the circulation of the carotids and their branches supplying the cerebrum, shutting off all effort of the will, leaving it under the control of the operator; but, as the cerebellum is supplied by the vertebral arteries, the vegetative functions are not interfered with till the subject is fully under hypnotic influence from passes made down the occiput and spine, when we see very deep sleep, the pulse slowed, and the temperature slightly lowered. Also the subject is in too deep sleep to hear and obey. In the production of the state Hammond terms syggignoscism, the subject gazed at a bright disc held before the eyes. This finally produces fatigue of the retina, the vessels begin to contract, and the eye becomes anæmic. This impulse is then carried to the cerebral vessels reflexly, while the cerebellar vessels are not at all influenced. In very rebellious subjects, where all the passes have to be resorted to repeatedly to produce sleep, I have sometimes found that it was impossible to produce the state of waking somnambulism, owing to producing as profound an impression upon the basilar vessels as upon the cerebral, putting the subject into deep sleep by very few passes or even by fixation of the gaze. Again, to show that the continued gaze paralyzes the retina, I will cite the condition and position of the eyes of a subject "fascinated" after having become a sensitive. By steadily gazing at the subject for a few minutes he becomes "fascinated," or syggignoscized, or in the waking-somnambulic state. Just as he goes into this state he throws the body forward on the thighs (Fig. 18), the neck



Fig. 18.—(Approximately.)

stretched forward, and the head thrown slightly backward, and in this stooping position he starts for the operator. As he approaches the operator it will be seen that the eyes are converged and rolled upward, and, notwithstanding the possibility of his being taller than the operator, his eyes will be on a level with the operator's chin till he approaches quite near. The subject will follow the operator any place while in this condition, and, if the operator turn around, the subject will immediately run around him, seemingly with the one object in life—to gaze or stare into the eyes of the operator.

The conditions of the sleeper have been variously divided by the different writers. The following have been the changes I have observed:

1. The fingers and hands become numb and tingle. (First evidence of gaining control of the subject.)
2. The subject feels sleepy.
3. The eyelid and ball become more quiet, and the respiration, unconsciously, regular.
4. Paralysis of the eye muscles.
5. Waking somnambulism.
6. Deep sleep.

7. Fascination.

8. Suggestion.

Further than this I have not gone, and do not think there can be any interest to the physician or surgeon to go into the subject of thought transference or clairvoyance. I believe the division of the conditions as given by Kluge is about as follows:

1. No perceptible change. (?)

2. Half sleep; no change except in the eye, which seems to draw away from the will.

3. Magnetic sleep, all the senses having drawn away from the will.

4. Perfect crisis or somnambuliam. The patient is said to awake within himself. Is not asleep or awake. (Here my appreciation of the classification ceases.)

5. Lucid vision or clairvoyancy. (In which the subject *is said* to see his own mental and bodily state and that of others, to predict his diseases to come, and to suggest the remedies appropriate. This, no doubt, would be of great use to us *sometimes*.)

6. Universal lucidity. This is No. 5 greatly magnified, and reaches to infinity. It is said to be of *very* rare occurrence.

Dove's classification is the following:

1. Contemplative abstraction.
2. Ordinary vigil.
3. Ordinary reverie.
4. Ordinary dreaming.
5. Ordinary sleep.
6. Lucid dreaming.
7. Lucid reverie.
8. Lucid vigil.
9. Devotional ecstasy.

Of course it is almost impossible to classify the different states, as one runs almost imperceptibly into another. The classifications of Kluge and Dove relate to conditions brought about by fixed staring at an object.

There is no doubt that there is a psychical condition to be considered. The operator must be positive in all he does, so as to impress the subject with the belief that he is in the hands of his master. However, this makes but little difference, provided the operator is granted a number of sittings. If at the first sitting I am able to make the fingers tingle and produce a sensation of drowsiness, I am sure of sending the subject off into sleep in one or two more trials. And, again, when the subject is told he can not open his eyes; it must be said as if the operator meant it. If one should say: "There, now, I don't believe you can open your eyes, can you?" they would fly open immediately, provided the subject had never been put to sleep before. Positiveness bears the same relation to hypnotizing a subject as it does to raising a patient from a bed of sickness. That the element of will has but little to do in hypnotism is shown in sending animals to sleep. Dr. Hendricks, of Ann Arbor, I understand, has done this, and Dr. Wilson, Physician to the Middlesex Hospital, London, performed with success upon cats, dogs, ducks, fish, horses, lions, elephants, etc. I have experimented with only two dogs, which in about thirty minutes, on the second and third trials, slept soundly and did not notice having a needle thrust through the ear or being raised bodily off the floor by the tail.

The description the subjects give of their sensations is that they first feel their fingers tingle and their hands and feet get cold; then they become sleepy; and when told that they can not open their eyes; they say they hear and know all but can not open them; then comes deep sleep, unless we sometimes wish to extract a tooth or do some other such work, when the subject is not entirely unconscious. Then they know and do as bidden, but suffer no pain. They say if the skin is cut it feels as if something were being drawn gently over it, and they feel the forceps applied to the tooth, but that pulling the tooth feels like pulling a peg out of a hole.

Are there any tests that will prove the subject to be a real subject or an impostor? We have all very likely heard of the Hindoo sage who could stop his respiration and circulation for an indefinite time by the force of his will, but we have never seen any one with this power. Neither have we seen any one who could so alter his circulation as to produce anæmia of the retina or produce high arterial tension in the radial or the carotid at will. In the discussion of hypnotism by Beard and Hammond, before the Medico-legal Society of New York, they said it was impossible to prove that one in this condition was not shamming. Now, it occurs to me that the difference shown by the sphygmograph would be sufficient to convince any judge of the truth or falsity of the assertion. Added to this we would have the ophthalmoscope, the anæsthesia, and the pulse as altered by local passes on a single arm.

The following cases will perhaps represent the utility of hypnotism to some extent:

Case I.—R. L., a subject of mine for experiment upon while in London, before some of the students there, came to me in about two weeks after the first séance with a large boil or carbuncle on the back of his neck and a tumor of the lower eyelid. The carbuncle was lanced after putting him to sleep; no pain felt. The tumor of the eyelid was about as large as a pea, or a little larger. It was an accumulation in the glands of the lid, and I cut down on it after everting the lid. This was done with local passes around the eye, the subject awake.

Case II.—J. R. came with R. L. (Case I) with double pterygium. I tried him the third time before I made him sensitive to local passes. While doing the operation I used no eye speculum and did nothing to steady the globe, fixing the lids wide open and the eye looking directly into mine. The lids or globe did not quiver while snipping the membrane off nor while taking the stitches. I noticed that there was but little soreness or redness afterward.

Cases III, IV, and V.—Extraction of teeth while in London. Case III, one molar. Case IV, three molars. Case V, two molars and one bicuspid. From the fact that the subject has to be tried three or four times sometimes before sleep comes, hypnotism is not very useful to the dentist, who has to pull the tooth immediately or often not at all.

Case VI.—J. B.; circumcision; local anæsthesia by rubbing the skin from the prepuce to the pubes, groins, perinæum. No soreness of any consequence followed.

Case VIII.—Miss P.; dilatation of the cervix for dysmenorrhœa; used Peaslee's dilators. The operation was fifteen or

twenty minutes in duration, and was done in deep sleep. The amount of soreness following was of no consequence. The cause of this lack of soreness and inflammation, which is pretty generally noticeable, is beyond my ken. The patient, if he ever had a tooth pulled before, usually says: "Why, it was not one bit sore afterward." And there is always less blood lost than under chloroform or without an anæsthetic.

Case IX.—Mrs. A.; dyspareunia. She consulted me on account of the terrible pain caused by sexual intercourse, and I found that the parts were very hyperæsthetic—so much so that a digital examination caused intense pain, which would come on like child-birth pains, and when intercourse was indulged, the pain would last for four or five hours. As it happened, she was a very sensitive subject, and went to sleep nicely on the first trial, thus allowing a vaginal examination in the hypnotic state. I dilated the vagina with a speculum, and the next week dilated the os with Truax's dilator. She complained of no soreness afterward.

Case X.—A lady came into the office of Dr. J. B. Greene, of Mishawaka, Ind., for the extraction of a tooth. I had just been telling him of the above-mentioned cases, and I believe that the doctor, thinking he would have some sport at my expense, invited me to hypnotize her. Fortunately, she proved to be a very tractable subject, and her eyes refused to open after half a dozen passes. She told Dr. G. that when she felt herself "going" she was frightened almost to death, and tried to get up and to scream. Also that when I told her to open her mouth she thought she did not, and when she felt the forceps on her tooth she thought she pulled Dr. Greene's hands away. She felt the tooth come out, but it felt "like pulling a wooden plug out of a hole."

Case XI was one of my unsuccessful attempts to hypnotize. It was for a dentist of this city, and the subject was fifty-five or sixty years of age. I had but a few minutes in which to operate, and I only succeeded in making her fingers tingle, when I had to give up the case. Old people are much harder to control than young ones, for the reason that their arteries are hardened and do not readily contract.

Case XII.—Epithelioma of face. Mr. B., aged fifty or thereabout, suffered very much pain from the cancer. Had resort to hypnotism to relieve the pain. For a week I made the face locally anæsthetic night and morning. Then for a fortnight only once a day, the anæsthesia lasting sixteen, eighteen, up to twenty-four hours progressively.

Case XIII.—T. S., aged twenty-two, biliary calculus. Finding him suffering with gall-stone, I injected morphine, etc. In about a week T. S. came to my office, and I told him what relief I could give him by using hypnotism, as he was afraid of becoming addicted to the morphine habit. The first trial he went off beautifully. In about nine weeks I was again summoned and found another stone passing. Put him to sleep in a few seconds. I let him sleep about forty minutes, and when he awoke the pain returned in about five minutes. After this I put him in the waking-somnambulic state and told him that he had no pain, and for three hours he lay on his bed and conversed with his friends, and when he awoke he knew nothing of having talked, and supposed he had been asleep naturally.

Case XIV.—Dog Tim. I attempted to hypnotize him, and at first he thought I was trying to play with him, but soon he began acting queerly, trying to get away from me. Then he would yawn frequently, as dogs do, his eyes would close partly and then open, and then he would scratch his ears with his feet and nibble at his paws. The next day I put him fast to sleep in about thirty minutes. I could run a needle through his ear or nose, and he would take no notice of it in the least. I rolled him over and lifted him by the tail and ears, but he did not awake.

Case XV is similar, the dog waking naturally in about two hours and a half. I succeeded in making him drink water and eat a piece of bread while still asleep. The dog did not notice either capsicum in the mouth or turpentine in the rectum, therefore I thought he was not shamming.

Case XVI.—M. S., girl, aged twelve, was brought to me suffering with incontinence of urine. She would wet the bed every night, and the parent said that everything had been done, and, from the physicians by whom she had been treated, I thought it likely that she had had all done for her that is usually done in such cases. After making a thorough examination I could find no apparent cause, and told the mother that the only thing I could suggest was hypnotism. I placed the child's hand in that of the mother, to quiet any fears she might have, and began the passes. She soon slept, and then I produced the condition of waking somnambulism, and while she was in it I talked to her about wetting the bed. I told her that for a week she could not and should not wet the bed. I awakened her and told her the same thing, and directed her mother to return in a week. She did not wet the bed that week, and I again went over the same grounds, but told her that she should never *dare* to do so again, and she never has. This is what is called suggestion, and the lady from whom I took the tracing of the carotids was so sensitive that I could keep her awake by telling her that she would not go to sleep that night till a certain hour. Here I will take occasion to say that these hypnotic passes are the most reliable measures one can adopt for the different forms of headache and neuralgia.

Cases XVII and XVIII were those of young men who desired to see whether I could produce sleep in them. They were secured in a short time, and, as I felt like trying some experiments, I produced in them the condition known as catalepsy, in which all the voluntary muscles of the body are in tonic spasm and the subject will remain in any position the operator puts him, or will sustain prodigious weights on his body while the heels are on one chair and the head on another. To produce this condition the subject is stood upright, or is stretched at full length upon the floor. The passes are made the whole length of the body, from the head to the heels. In Case XVII I fixed the muscles of respiration for about forty seconds, and he made no effort to breathe. The heart can be slowed and, I believe, could be stopped outright. The law may have this to deal with some time.

Case XIX.—Mrs. J., aged twenty-three, pregnant. She and her husband applied to me for treatment, as Mrs. J. expected to be confined in a week or ten days, and she desired to be hypnotized to avoid the pain of childbirth. She had never been sick except with the tertian ague, and at the time of calling on me was in most enviably good health. On the first trial she only experienced a sleepy sensation at the end of six or seven minutes' operating. Next trial she dropped off to sleep in about three minutes. On waking her I produced local anæsthesia of the ears, fingers, and face, and local paralysis of the arms or hands at pleasure. The next sitting I produced fascination, somnambulism, and the condition some call the electro-biological state, in which, by simply looking in the eye and saying to her that her name was Jim, she said Yes, her name *was* Jim. The circulation was easily controlled. The sphygmograph gave the following tracings on the radial. Fig. 19 gives her normal pulse in the right arm, while Fig. 20 gives the tracings of the left after downward passes from shoulder to the hand. Fig. 21 gives the tracings of the right radial after upward passes from hand to shoulder. In Fig. 19 we see a condition of increased arterial pressure, but not nearly that in Fig. 20. Ac-

cording to J. W. Ballantyne, M. B., Assistant Professor of Midwifery, Edinburgh ("Brit. Med. Jour.," Dec. 4, 1886), we always

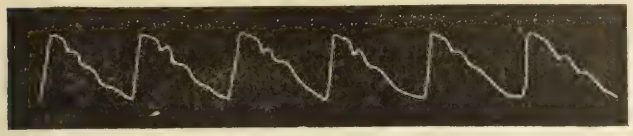


Fig. 19.

find the tension higher in the pregnant, and after confinement the pulse gradually drops to normal. Fig. 21 shows a decreased tension. Fig. 22 shows tracing three months after confinement.



Fig. 20.

Confinement.—Labor-pains began at 11 A. M. Arrived at 12 M. and found the os dilated to the size of a quarter-dollar.

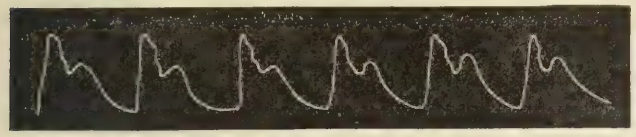


Fig. 21.

Pains steadily increasing in severity, and at 2 P. M. I produced hypnotic sleep for forty minutes. While asleep the pains came

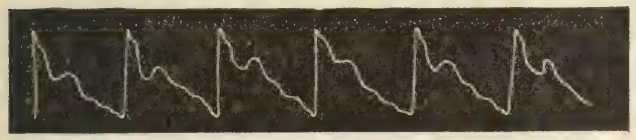


Fig. 22.

stronger, the abdominal muscles contracting well, and the patient helping herself as much as when awake. While asleep there were some fifteen or sixteen strong pains, the pulse was regular and strong, and the respiration normal. On being awakened, the pains came less frequently and not so severe, about the same as before sleep, for an hour. Then I produced sleep again during a severe pain. Asleep, the pains became more severe and expulsive. In the severe pains the patient moaned, clinched her hands, and strained as if awake, but when awakened she said she had felt no pain. The vertex was now at the vulva and the patient refused to be put to sleep again, owing to the fault found by the "old women" who were there and who did not believe in "these new-fangled notions." The child was born the third pain after awaking the sleeper. The last pains before she was aroused would almost awaken her; the eyes would open, but presented the vacant stare of waking somnambulism, and would close by making passes down over them. She would stop moaning on being told that she had no pain. Three or four pains were all she had that seemed to partly arouse her. From the fact that the uterus was somewhat tardy in contracting after awaking, I was afraid to attempt to remove the placenta while she slept lest post-partum hæmorrhage should occur. Accordingly, in the two cases following, I left the expulsion of the placenta to the good offices of nature.

Cases XX and XXI were that of a primipara and that of a multipara. In these cases I noticed the same phenomena as in the above. The abdominal muscles contracted and the patients helped themselves as much as if they had been awake. I awakened one once and the other twice before the birth. As soon as the child was born I awakened the sleeper, fearing to remove the placenta, as the whole procedure was somewhat of an innovation. Really I do not think that the uterus would relax, but I was content to wait for older practitioners to enter the same field and give us younger men some precedent to cite in view of accidents.

These cases will perhaps illustrate in a feeble way some of the uses to which hypnotism may be put. In operating upon women I always have a third person present for my own protection, and I have not used it in as many cases as I should if there were more operators using it and there were not the prejudice against it caused by the traveling mesmerizers. This traveling, I think, should be stopped.

SOME REMARKS ON THE OPERATIVE TREATMENT OF HÆMORRHOIDS.

By JOSEPH B. BROWN, M. D.,
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SURGEON, U. S. ARMY (RETIRED).

An article in your issue of February 23d, entitled "Operative Treatment of Hæmorrhoids," by Mr. Walter Whitehead, F. R. C. S., etc., is evidently intended by that gentleman as a crushing reply to a most temperate and judicial comparison by Dr. Kelsey of Mr. Whitehead's method of treatment by excision with the other operations now in use by surgeons.

But it is in no sense of the word a reply to Dr. Kelsey, because it most completely avoids meeting the issues made by him, and, after a most "illogical" attempt to convict him of inconsistency and "reckless disregard of fact," degenerates finally simply into a tirade of illiberal and unprovoked personalities. On this account it is highly probable that Dr. Kelsey will not notice it at all, although the manner in which Mr. Whitehead ignores the issues made by him and perverts the authorities he quotes in support of his assertions certainly seems to demand attention.

The points made by Dr. Kelsey are:

1st. That Mr. Whitehead alleges superiority for his method in the operative treatment of hæmorrhoids by excision, because the ligature and the clamp and cautery "by no means produce a radical cure."

This latter statement Dr. Kelsey asserts is not warranted by fact or experience.

2d. That Mr. Whitehead's operation is "a naturally difficult, tedious, and bloody operation."

Dr. Kelsey also asserts that the clamp-and-cautery operation will radically cure, and will cause less pain, less vesical disturbance, and less danger of surgical accident than any other known method.

To meet the first point, Mr. Whitehead makes exhaustive quotations from Mr. Henry Smith, specifying page and gleaning various and sundry mishaps from the ligature—*e. g.*, "death," "prolonged convalescence," "painful suffering, necessitating perhaps some other operation," "secondary hæmorrhage and sloughing," "abscess," "intense pain and constitutional disturbance," and "delirium," but fails to find

recurrence as following the application of the ligature—yet, in summing up in one paragraph all these accidents enumerated by Mr. Smith, he inserts "recurrence" among them!

Mr. Whitehead then most logically quotes largely from Dr. Kelsey to show that the latter quite agrees with himself in condemnation of the ligature in all respects except the point at issue—"recurrence."

Mr. Allingham's opinion of the clamp and cautery is next given by Mr. Whitehead, but he finds no charge of "recurrence" there either. Next he finds, on further search of Mr. Smith's work—page 115—"a case of a lady who had undergone one or two operations with the ligature with only partial success!" Then he quotes Dr. Kelsey and Mr. Allingham both to testify that in certain complications "small ones [piles] may be overlooked and not tied, which are likely to grow, and a return of the piles may be confidently anticipated in a few months." Is this Mr. Whitehead's idea of a "recurrence"?

So much for "hypercriticism" and "reckless disregard of facts"—polite terms which Mr. Whitehead permits himself to use toward Dr. Kelsey.

Dr. Kelsey's second specification—that "excision is a naturally difficult, tedious, and bloody operation"—Mr. Whitehead disposes of most summarily by saying "many young surgeons, early in their professional careers, have assured me that they found no difficulties in the operation." As to its being "tedious," Mr. Whitehead remarks: "All I have to say is that it can be completed in an average case in ten minutes."

Does Mr. Whitehead "expect us to accept his assurance" that he, or any other surgeon, can "remove the whole pile-area"—which he distinctly states [previous column] "is one of the conditions of success in his operation"—in ten minutes? This certainly was not the experience of so skillful a surgeon as Dr. Weir in the cases reported by him, though he made manifest improvements in the method of operating recommended by Mr. Whitehead.

In defending his operation from the charge of being "bloody" Mr. Whitehead quite loses his temper, and descends to personalities and egotistic sneers.

It is difficult to conceive how he can proceed to say that Dr. Kelsey "reluctantly makes the concession that he agrees with Weir that after excision the recovery is quicker, and the reaction, as shown by pain and difficulty in urination, is less than that following the ligature." What Kelsey really does say is this: "Weir compares these results very favorably with those of the ligature, and I think with perfect justice"; but why does Mr. Whitehead stop short here and ignore the words of Dr. Kelsey which immediately follow—"but with regard to the clamp-and-cautery method the same certainly is not true"?

Here Mr. Whitehead abandons all pretense of argument, and berates Dr. Kelsey with abusive epithets, which only demonstrate that he can not appreciate the candor and sincerity of one who, in his investigation of a method which for a time promised so much for suffering humanity, had published two hundred consecutive cases of success with carbolic-acid injection, yet, when further experience convinced him that his hopes were unfounded, frankly said so.

Such conscientiousness apparently so confounds Mr. Whitehead that he calls it at first "vacillation," and finally "audacity."

Now permit me to say a few words on what I know of the clamp-and-cautery operation as practiced by Dr. Kelsey. For more than twenty years I suffered from hæmorrhoids in such a way that at times life became a burden which I almost wished to lay off. But circumstances debarred me from the opportunity of availing myself of the chances of relief from an operation, and I confess that the fearful agony which I often saw following the use of the ligature made me still longer delay, until when carbolic injection began to attract the attention of the profession I put myself under the hands of a careful and judicious surgeon, and for two years faithfully followed that treatment, not continuously, of course, but giving it a fair and persistent trial. At first I was much relieved, but it failed at last, and my case became so serious that I consulted Dr. Kelsey. I have no intention of reporting my case here. Suffice it to say that Dr. Kelsey removed successively six very large hæmorrhoidal tumors with the clamp and cautery—one of them so large that it could not be embraced in one grasp of the clamp, but required a second cut. Dr. Kelsey pronounced it the largest internal hæmorrhoid he had then seen. Expressing a doubt of my ability to bear ether, Dr. Kelsey permitted me to venture the operation under local anæsthesia by cocaine, having his assistants ready to put me under the influence of ether should the pain prove greater than I could bear.

Six minims of a fifteen-per-cent. solution of cocaine were therefore injected at the base of each tumor, and the operation was commenced and finished in a few minutes, I being fully conscious of every touch of the instruments, and of each step of the operation, but feeling no pain that I could not easily bear.

The operation was finished at about 3 P. M. At eight o'clock the same evening, as I was suffering chiefly from bladder tenesmus, Dr. Kelsey directed me to get up and go to the water-closet to try to relieve myself by an effort to urinate. I did so, and after considerable waiting and straining succeeded, and twice before morning I did the same, walking across the bedroom to the bath-room and back to bed after relieving my bladder.

In forty hours I had my first passage from the bowels, suffering far less pain than at any previous defecation for weeks before the removal of the tumors. From that day I was walking about the room as I pleased, and in ten days from the operation was able to return, without suffering, to my home from New York city, which involved a twelve hours' ride by rail.

These results, which are the average from the clamp-and-cautery method by Dr. Kelsey, I can not find approached by either those of the ligature, excision, or even the alluring but delusive promise of carbolic-acid injection, either in rapidity of performance, comparative immunity from after-pain, or vesical disturbance, rapidity of recovery, perfect

restoration of the functions of rectum and anus, and the whole crowned by almost absolute impossibility of recurrence.

A SANITARIUM OF SOUTHERN CALIFORNIA

IN THE VICINITY OF LOS ANGELES.

By WILLIAM H. DUKEMAN, M. D.,
LOS ANGELES, CAL.

The questions naturally arise in every one's mind, How can I gain good health? or, What shall I do to keep well?

I will answer these questions in this manner: Live where the death-rate is lowest; live where the sun shines three hundred and forty days in the year; live where the climate is mild and warm and comfortable; live where epidemics of contagious diseases are unknown; live on dry soil; and live where there is pure air and pure water.

Among the principal causes of disease are bad climate, impure air, impure water, confined and sedentary occupation, intemperance of various kinds, living in ill-ventilated and badly located houses, worry, excitement, etc.

In most cases two or more of the various causes are combined in producing a disease, and the main cause of disease is not knowing how to live or where to live. And all diseases, I may say, except certain hereditary diseases, are brought upon one's self by carelessness or ignorance of hygienic attention.

A man's health depends very much upon the location of his dwelling and the character and condition of the surroundings. A dry soil stands first, and if dry it should be porous. Nearly one third of the volume of some dry soils consists of air, and the absence of organic matter in this soil with its free porosity makes it a perfect location for dwellings. In this section of southern California certain locations are of such composition. And for a perfect location for a sanitarium we must also inquire into the purity of the air and water as well as into the state of the temperature and humidity of the climate. Here the air in every sense of the word is pure and free from obnoxious and poisonous gases such as arise from decomposed organic matter. The air has its maximum proportions of oxygen and ozone conducive to health.

We have two prevailing winds. In the morning the wind comes from the mountains, which is fresh, pure, and exhilarating; and in the afternoon a refreshing breeze comes from the ocean. Here there is no stagnant water or damp soil for the development of malaria.

During the wet season we have only from twenty to thirty rainy days. Our rains are heavy and flushing, so that all refuse matter that may have collected on the surface of the ground is carried to the ocean. There is a gradual slope of the land to the ocean of three hundred feet in the fifteen miles. We are now having a sewer built to the ocean.

I have lived here two years, and during the rainy season of 1887 and 1888 we had in all thirty-two different days or nights that rain fell, on eighteen of which rain fell heavily, while the others were what one would term rainy or showery; perhaps part of the day the sun would shine. The heaviest rain-fall usually occurs at night. For the season of 1888 and 1889 we have had only twenty-seven different days or nights during which rain fell, on only eleven of which rain fell heavily, while on the others the rain fell at night or the days were showery. This constitutes our rainy season. Occasionally we have a light shower during the summer. Last summer we had several very light showers.

Our water supply is derived from the mountains and from artesian wells, and is pure and fresh and free from contamination of sewage or decomposed vegetable or animal matter. Mineral springs of good medicinal properties abound in various sections.

Our climate is comfortable and warm the year round, as signal-service reports will show, with an almost even daily temperature. The nights are always cool, during which one gets perfect rest from good, sound sleep, from which he awakes refreshed. It is at all times comfortable to sleep under blankets. The mean daily temperature for the warmer six months averages about 67° F. The highest temperature for these months is from 83° to 98°, which is always during midday. The mean daily temperature for the colder six months averages about 55°. The highest temperature for these months is from 70° to 85°. The temperature at times during the night will fall to 40°, and a very few times as low as 32° or 30°. During the summer at the highest temperature it is always cool and comfortable in the shade, and wholly unlike a hot summer's day in New York. Here arises every day, about 2 P. M., an ocean breeze, cool and refreshing. The laborer does not complain of fatigue from his work. The horse may be driven twice as far as in the East. While on a summer's day the sun is hot, that depression from the sun's rays so universal in the East is not felt along the Pacific coast in this section. We can account for this only as owing to our prevailing winds and pure, exhilarating atmosphere, with a low relative humidity during the hotter part of the day.

The relative humidity of the atmosphere ranks next to the temperature in the estimation of a climate for health. We have here a moderately dry climate. The daily relative humidity for the warmer six months at 7 A. M. is from 70 to 90 per cent., while the temperature at this time of day averages from 60° to 70° F. During the hottest part of the day—which is from 10 A. M. to 1 P. M., when the temperature may be from 75° to 95°—the relative humidity will be as low as 51 to 69 per cent. In the evening it always grows cool again from the ocean breeze, and then the humidity will be almost as high as in the morning. What better could we have than this, for it is about the same daily with very little variation? For the colder six months the relation of the temperature and humidity is about the same, while in some sections it is excessively dry. The reader is referred to signal-service reports for further details of the temperature and humidity. Taking the average temperature and relative humidity, this climate is admirably adapted to consumptives, and alike to many nervous affections as well as to kidney diseases.

In this climate yellow fever is unknown. Epidemics in general of the more common zymotic diseases so prevalent

in the East are comparatively rare in this section. Hydrophobia is unknown. To show that the heat is not oppressive, sunstrokes are unknown.

While at certain times in the year we have fogs in Los Angeles, eastward toward the mountains, at a distance of ten miles, fogs do not occur. Along the foot hills, within a few miles of this city, is one of the most glorious places for a home. Here everything favors health. The consumptive lives in ease, and, if he comes here in due time, he is in almost perfect immunity from further progress of the disease; and, being only a few miles from the city, he can conjoin country or mountain life with city life by a pleasant drive daily to the city. Seventeen miles farther westward will take him to the ocean, where, if it is acceptable to his constitution and health, he can bathe in the surf of the Pacific. An ocean voyage of thirty miles lands him on Catalina Island, which is becoming a popular resort for health and pleasure seekers. Here he can enjoy swimming in the bay and fishing, which is most plentiful, and also rowing. If he is strong enough, he can enjoy climbing over the hills of the island, and the sport of shooting wild goat and deer. If the ocean breeze is not conducive to his health, some of the various towns inland from the ocean along the foot hills, within a few miles from Los Angeles, will offer many inducements. At the beautiful city of Pasadena, of twelve thousand inhabitants, nine miles from Los Angeles, where the well-known Raymond Hotel is located, he can have all the advantages and pleasures of country and city life. If he desires to be more secluded, the town of Sierra Madra, several miles further toward the mountains of the Sierra Madre, is a most delightful location. Situated at the foot of the mountains, dry and warm, free from fog, where grow semi-tropical fruits and plants and flowers of all descriptions, at an elevation of about 1,200 feet, a home here is a most delightful one. The air is pure, dry, and exhilarating. From this spot the view is one of grandeur. The great productive San Gabriel valley below is covered with immense vineyards and orange groves and barley fields. The beautiful towns of Pomona, Monrovia, Ontario, Riverside, etc., are studded in every direction. Here also grow the palm and banana, the date and the fig, the peach and the apricot, and the olive. Here are wild flowers of various descriptions, among which perhaps the most beautiful is the golden poppy.

Casting the eye further southward, the Pacific is plainly in view, and the ship-masts in the harbor of San Pedro mark the port.

Turning to the northeast, the eye is cast toward Wilson Peak and the snow-capped Mount Baldy, forty miles beyond. Wilson Peak is an elevation of about 6,000 feet. There is a graded trail leading up to the top of this peak, winding round and round along the mountain side, with the deep gulches below, which is a most charming trip. Here on this peak is to be located the great telescope, with a lens six inches larger than that of the great Lick telescope. It is about ten miles by way of the trail to the top of the peak, and the journey is made very pleasantly on the back of a "burro" by those who can not endure the walk.

Than here in this section of country of a most glorious climate—where it never snows, where the sun shines three hundred and forty days in the year, where the atmosphere is pure, dry, exhilarating, and aseptic, where, within a radius of forty miles, we can combine city and country life for our patients, as well as sea and mountain life, and where health meets you in every channel of life—I ask, where on the face of the globe is there a more perfect sanitarium?

BILATERAL BLEPHAROSPASM WITH DIVERGENT STRABISMUS,

CURED AFTER DIVISION OF THE EXTERNAL RECTUS MUSCLE. SUBSEQUENT RESTORATION OF STEREOSCOPIC VISION.

By WILLIAM M. LESZYNSKY, M. D.

John O., a school-boy, fourteen years of age, consulted me October 6, 1888, and gave the following history:

He was well until his sixth year, when, after an attack of scarlatina, the left eye became divergent. A few months later bilateral clonic blepharospasm appeared, and was temporarily relieved by the instillation of atropine. The spasm has continued at varying intervals to date, and he complains of frequent diplopia.

He is anæmic. Clonic blepharospasm is pronounced and frequent. The eyelids suddenly and forcibly close with a "snap," involving the upper facial muscles and the occipito-frontales. There is divergent strabismus (non-paralytic) affecting the left eye, leaving about two lines of the cornea exposed. With effort he succeeds in converging, but as a rule he "fixes" with the right eye, the other eye diverging.

Pupils normal. Palpebral conjunctivitis of a mild type. Ordered atropine, astringent spray to eyelids, and strychnine, iron, and cod-liver oil internally.

October 10th.—Under atropine three days. Right eye. vision $= \frac{2}{20}$; accepts no glass. Left eye, vision $= \frac{4}{200}$; $\frac{2}{40}+$ with $-\frac{1}{7}$ s. $-\frac{1}{60}$ C. ax. 150°. Ophthalmoscopic examination: No fundus lesion. Right eye, emmetropic; left, myopic astigmatism.

20th.—Still under atropine and "spray." Spasm decidedly diminished. Crossed diplopia. Fuses images with prism of 33°. Discontinue atropine.

30th.—Relapsing into former condition.

November 1st.—With correction over left eye there is right "hyperphoria" 14°, and "exophoria" 30°.

December 7th.—Blepharospasm only occurs occasionally, but he frequently "blinks." Complete division of the left externus was done under cocaine, and the glass accepted while under atropine was ordered to be worn over left eye, with window-glass over right.

March 10th.—He wears the glasses with comfort, and has been perfectly well since last note.

Examination shows that there is 5° of "exophoria," with restoration of binocular single vision.

The unusual features in this case are the relief and cure of the blepharospasm, the glasses being worn without discomfort, and the recovery of stereoscopic vision.

Note.—*April 20th.*—Patient has been constantly employed during the last three months. The glasses have been worn continuously and he remains well.

636 Lexington Avenue.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
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NEW YORK, SATURDAY, MAY 18, 1889.

THE TRANSMISSION OF TYPHOID FEVER FROM THE MOTHER TO THE FŒTUS.

A recent number of the "Fortschritte der Medicin" contains an interesting article by Dr. C. J. Eberth, of Halle, concerning the transmission of the typhoid-fever bacillus from the mother to the fœtus. Numerous observations and experiments upon this subject have previously been made with apparently positive results, but none of the observations have been entirely free from objection; and in none of them has the character of the organism found in the fœtus been fully determined.

The first reported case of the apparent transfer of the typhoid process from the mother to the child was published by Reher in 1885. In this case a woman in the sixth month of pregnancy, while sick with typhoid fever, aborted on the nineteenth day of the disease. Soon after the abortion occurred the temperature fell and convalescence was established. The fœtus seemed to have died either shortly before or during birth. There was no swelling of the solitary follicles in the intestines, there were no ulcers, there was no swelling of the mesentery glands, and there was no increase in the size of the spleen. But inoculations from the liver and spleen upon nutrient gelatin gave cultivations of isolated colonies of typhoid-fever bacilli. No bacilli, however, could be found in cover-glass preparations made from the spleen or liver. This observer explained the absence of the characteristic lesions of typhoid fever on the ground of the altered avenue of entrance of the bacilli, since here they must have entered directly into the circulation, and their multiplication and colony formation would, he thought, be different from those occurring when they had effected their entrance through the alimentary canal or the respiratory passages.

The second case was reported by Neuhauss, and in that case abortion took place in the fourth month of pregnancy and in the fourth week of the disease, four days after the temperature had fallen to the normal point. Inoculations were made with particles of the lung, the liver, the spleen, the kidneys, the brain, and the contents of the intestines upon nutrient gelatin. After two days a growth of the typhoid-fever bacilli was found in the tubes which had been inoculated with particles of the lung, spleen, and kidney. The spleen of the fœtus was not enlarged, and there were no swollen patches or ulcers in the intestines.

Chantimesse and Widal found typhoid bacilli in large numbers in the blood of the placenta of a woman who had aborted at the fourth month of pregnancy and the twelfth day of the fever. Cultivation tubes inoculated with this blood gave numerous colonies. The cultivations were afterward used for the inoculation of animals.

In none of these observations as reported have there been careful descriptions of the organisms found, so that their identity with the typhoid-fever bacilli could be determined. Eberth, however, details the history of a case which apparently affords proof of the possibility of the transmission of typhoid fever from the mother to the child. In this case, a woman, thirty years of age, the mother of six children, at the end of the third week of typhoid fever and about the seventh month of pregnancy, gave birth to a child. The fever continued for several weeks after. The diagnosis of typhoid fever was confirmed by the whole course of the disease as reported. Eleven hours after the birth, after cleansing of the outer skin and complete sterilization of the operator's hands and instruments, the thorax of the fœtus was opened and the heart was removed. Then tubes were inoculated from the heart-blood, other tubes were also inoculated from particles from the lung and spleen, and preparations were made from these for microscopical examination. There were no perceptible changes in the placenta or in any of the organs of the fœtus. In the preparations from the heart-blood, after long searching, a few isolated bacilli, four or five in a field, were found; they corresponded in appearance to the typhoid-fever bacilli. These were also found in preparations made from the lung and from the spleen, but in sections from the spleen no organisms could be found. At the end of the second day, in the gelatin cultivations a perceptible growth was apparent, which afterward showed all the characteristic appearances of cultivations of the typhoid-fever bacilli in gelatin tubes. On transfer of these to gelatin plates, to potatoes, and to other media, they presented always the characteristic appearances of the typhoid-fever cultivations on these various substances. Their staining reactions also corresponded with those of typhoid-fever bacilli. In order to exclude the possibility of error from the presence of some organism of decomposition similar in appearance to the typhoid-fever bacillus, that might have found its way into the fœtal blood, eight other cases were examined in which abortion had occurred from other causes than typhoid fever at various periods of pregnancy. In none of these did any organisms develop that in any way resembled those found in the first case; and in the inoculations made from the fœtus in perfectly fresh cases of abortion no cultivations were obtained.

When we compare, then, the results obtained by Reher, Neuhauss, Chantimesse, and Widal with the results obtained by Eberth in these eight cases, we must conclude that the organisms they found in their cases were the typhoid fever germs, and that these germs may be transmitted from the mother to the fœtus. For the complete identification of the organism found by him with the typhoid-fever bacillus, Eberth sent cultivations to Gaffky, of Giessen, and these were carefully examined by him and also declared to be typhoid-fever bacilli.

Eberth concludes that it is not possible with the scanty material at hand to say whether the typhoid-fever bacillus is always transferred from mother to child or only under certain conditions. It seems probable, however, that disturbances in the placental circulation, especially hæmorrhages, favor transfer of the bacilli to the fœtal body.

THE "PORTATIVE TRACTION" TREATMENT OF HIP-JOINT DISEASE.

In our issue for April 27th we published an article entitled "Orthopædic Surgery in England and the United States," which was called forth by a pamphlet published by Mr. Thomas, of Liverpool, in which that gentleman spoke disparagingly of American orthopædic practice, especially in so far as it related to the "portative-traction" principle, and flippantly of an esteemed contributor to our own columns. Our article therefore naturally had reference chiefly to these two matters. It has been represented to us that some of our readers have drawn the inference that our article was intended to be laudatory of one man, rather than a defense of American orthopædic practice in general. We disclaim any such intention, except so far as it was made unavoidable by the fact that the English pamphlet was aimed chiefly at that one man.

We are perfectly well aware of the fact—and properly proud of it—that American orthopædists do not all agree on every point of doctrine or of practice; and we do not forget that their individual efforts have resulted in giving so wide a range to orthopædics in America that the "portative-traction" principle can not be considered as the embodiment of American practice or even as its major manifestation. We still think, however, that its adoption was a distinct step in advance, and that it has a value that is not utterly done away with by the consideration that hip-joint disease begins, not on the articular surfaces, but at the epiphyseal line. As to how it accomplishes its object, whether by traction or by fixation, it seems to us that that is a question that admits of solution according to the features of the case, and not in strict conformity to any hard and fast rule.

As to Dr. Shaffer's article on "The Ultimate Results of the Mechanical Treatment of Hip-joint Disease," etc., we have simply to repeat that we consider it "a scientific essay of importance." But we are quite of the opinion that an orthopædic surgeon may dissent on solid grounds from some of the views inculcated in it. The whole truth will ultimately be worked out, and those who aid in its attainment, whether by espousing one or another of the various hypotheses and experimental methods of procedure that will at last lead up to it, are all deserving of commendation. In particular, there is no occasion to decry Mr. Thomas's views or his practice; it may be that we have more to learn concerning his "flexion test" in diagnosis and concerning the value of his method of treatment. A correspondent has kindly furnished us with a description of Mr. Thomas's apparatus. According to our correspondent, it is made of soft iron, not of steel, which would be too elastic; it is not bent to conform to the outline of the body; and it does not terminate at the lower end of the thigh bone, but extends to the lower third of the leg. "Thus," our correspondent adds, "it prevents voluntary flexion at the knee, and controls the twitching of the quadriceps and hamstring muscles, and, when the patient is supine, gives the added weight of a rigid lower extremity to overcome flexion of the thigh, as in the Taylor (but more perfectly in the Judson) hip splint." It is very certain, however, that American practice must not be gauged by Mr. Thomas's ideas alone, and it was against that that we contended.

Several unwarrantable inferences have been drawn from our article—for example, it is not true that, in enumerating some of the chief American institutions in which orthopædics was taught and practiced, we sought to imply that the teachers and practitioners were all engaged in exploiting the "portative-traction" idea, or even that they all held to it; we know that that is not the case. Neither is it true that we meant to represent Mr. Thomas's apparatus as a modification of the late Dr. Hutchison's. Its use is said to have antedated that of the Hutchison device.

MINOR PARAGRAPHS.

TREPHINING OF THE PELVIS FOR SUPPURATIVE PSOITIS

In the "Revue de chirurgie" for March, M. Michel Gangolphe, of Lyons, has a noteworthy article on this subject. He gives the histories of two cases of his own and a case of Boucher's, and refers to articles by Weiss, Fischer, Rinne, and Condamin. His conclusions are that infectious and even traumatic psoitis is of exceptional gravity, whether on account of the patient's general condition or of the extent of the local trouble, especially the possibility of implication of the hip joint; that early evacuation of the pent-up pus is the best means of preventing a fatal issue; that trephining of the pelvis, as practiced by him, is easily and rapidly done, is free from danger, and admits of the establishment of perfect drainage of the iliac cavity; and that, according to the features of the particular case, it may be associated with one of the classical lumbar, inguino-crural, or posterior crural incisions. The situation that he considers most eligible is a point nearly three fingerbreadths below the crest of the ilium and three fingerbreadths behind the anterior superior spine.

THE PNEUMONIA OF PARALYTICS.

Dr. Bianchi and Dr. Armanni have contributed to the "Rivista clinica e terapeutica" an article on the nature of the pulmonary affections of paralytics. It appears from an abstract in the "Deutsche Medizinal-Zeitung" that the authors have found that in the subjects of general paresis pneumonia is always associated with degeneration of the pneumogastric nerves, and is of the sort produced in animals by division of those nerves. Its exciting cause may consist in the entrance of particles of food and the fluids of the mouth into the bronchial tubes.

FALSE RABIES DUE TO WORMS.

"Lyon médical" gives a summary of an article in the "Journal des connaissances médicales," by Dr. A. Silvestrini, in which the author states that he has observed several cases of disease in dogs, especially hunting dogs, in Tuscany, infested with the *Strongylus gigas*. Among the symptoms is a disposition to bite, the animal avoids the light, its mouth is red and frothing, its voice is hoarse, and its gait is vacillating. Its expression is that of suffering, rather than of ferocity. The condition is somewhat difficult to distinguish from rabies, but the occurrence of hæmaturia, from the lodgment of the parasite in the urinary passages, establishes the diagnosis. The disease is fatal, except in the rare cases in which the worm is expelled by the urethra.

AN HONOR DECLINED.

The president of the Medical Society of the County of New York, Dr. Alexander S. Hunter, wishes it to be understood by the medical profession that a certain pamphlet entitled "Observations and Experiences involving Rectal Disease," published with the statement that it had been "read before the New York County Medical Society, February 14, 1889," was never read before the society that he represents, and, further, that the society declines to accept the proffered honor. The author's motive, as expressed in reply to a letter from Dr. Hunter—"I printed it so as to command more uniform attention"—can hardly be accepted as a justification. He is said to have read his production before the Homœopathic County Medical Society.

VAGINO-FIXATION.

This is the name given by M. Péan to a procedure that he proposes as a better one than abdominal hysterorrhaphy in cases of prolapse of the uterus that prove rebellious to colpo-perinæorrhaphy. According to an abstract given in the "Archives de tocologie" of his article in the "Bulletin médical," M. Péan founds his opinion on the fact that the lateral part of the vagina in the normal condition is fixed to the side of the pelvis with considerable firmness by means of dense connective tissue. In cases of procidentia, he says, this natural fixation is relaxed, and he proposes to re-establish it. Having replaced the uterus and adjacent structures, he passes a double row of sutures along each side of the vagina, through the recto-vesical septum and the vesico-vaginal septum respectively. Their application is facilitated by the use of long forceps with one blade in the vagina and the other in the rectum or the bladder. The sutures are removed in three weeks. They will be found to have cut the tissues, with the formation of enough cicatricial tissue to act as a sufficient support. The operation is concluded, however, by the performance of colpo-perinæorrhaphy.

A COUNTRY RESORT FOR CHILDREN THAT ARE NOT POOR.

It has been said that in some respects the children of the poor have been better provided for than those of the well-to-do, and one of these exceptional privileges has been the sea-side sanitarium in hot weather. We learn with pleasure that Dr. Jerome Walker, of Brooklyn, has varied this state of things, and will hereafter give the sick child that is not poor a chance to recuperate at his resort, on the north shore of Long Island, near Port Jefferson, at a place called Crystal Brook.

COTTON-SEED OIL AS FOOD.

At a recent meeting of the New York State Board of Health, the State analyst, Dr. W. G. Tucker, made a report upon the use of cotton-seed oil as a food substance. He had made a thorough examination of the oil and had been able to find no injurious effect upon the health from its employment as food.

THE INDIGENT INSANE BILL.

The bill before the New York legislature providing for the removal of the pauper insane from the county poor-houses to the State asylums has been defeated in the assembly. This must be considered a repulse, however, rather than a defeat, since the moral and medical sentiment supporting the measure is a powerful and growing one. The bill will, without doubt, be renewed year after year until it becomes a law. The proposed reform was initiated by the State Charities Aid Association, and has been fully indorsed by the State and county medical societies and the Neurological Society. The failure of the measure to become a law this year is said to have been accomplished by the efforts of the superintendents of the poor in the various counties affected by the bill, their opposition being ostensibly on the score of economy, not on the grounds of better care and treatment. Under the present system, some petty profits accrue to these superintendents, which will be taken from them when the reform measure passes.

VITAL STATISTICS FOR THE CENSUS.

The Census Office has begun the work of circulating its notices to the public press that the census year begins on the first of June next, and ends May 31, 1890, and that physicians are requested to keep a duplicate record of all deaths occurring in their practice during that period, for the decennial report on vital statistics.

AN ACCIDENT WITH THE SUSPENSION APPARATUS.

During the week the melancholy occurrence has taken place of the death of a medical practitioner while practicing self-suspension alone. The accident is not unparalleled in this community, which still remembers the death of an estimable young lady in the same way, and orthopædic surgeons are cognizant of many instances in which only assistance coming in the very nick of time has warded off a like fatal disaster. There is danger that public knowledge of these matters, especially in the light of the sensational manner in which one of the newspapers has seen fit to lay the latest occurrence of the sort before its readers, will lead to a popular prejudice against the use of suspension. But it should be borne in mind that physicians accustomed to its employment have again and again given their warning against the use of the apparatus in the absence of adequate assistance. So recently, indeed, as last week, in our own columns, Dr. Hammond said: "Though perfectly safe when due care is exercised, suspension should never be made use of except under the immediate supervision of a physician. . . . I am quite confident that we shall some day hear that a neck has been dislocated and sudden death produced by the unskillful use of this method." The only safeguard seems to us to lie in the use of an apparatus that can not be worked by one person alone.

A REMARKABLE FISTULA.

In the "Deutsche Monatsschrift für Zahnheilkunde" for December, 1888, Dr. Nicolai, of Stuttgart, gives the history of a case in which a fistula opening at the nipple was found to be connected with a diseased molar tooth. According to a summary in the "Centralblatt für Chirurgie," the connection was first inferred from the fact that the discharge from the opening just above the left nipple ceased at once after proper treatment of the diseased left lower first molar, and it was afterward proved by an injection of cochineal into the alveolus of the tooth, which caused a red coloration of the pus discharged at the nipple. Further examination showed that the pus had made its way through the maxilla, descended along the border of the sterno-cleido-mastoid muscle, perforated the fascia of the platysma myoides, and coursed over the pectoral muscle into the substance of the mammary gland. The fistula closed in twelve days after the removal of the diseased tooth.

HYDROXYLAMINE.

In the "Proceedings of the Royal Society," vol. xlv, No. 277, Dr. T. Lauder Brunton and Mr. T. Jessopp Bokenham adduce

the researches of Raimondo and Bertoni, Binz, and others to show that hydroxylamine might be expected to act like the nitrites in reducing the blood pressure. This they have found by experiment that it actually does, resembling the nitrites so closely in its action that sphygmograms taken after intravenous or intraperitoneal injections of the hydrochloride are so nearly identical with those taken after like injections of amyl nitrite that it is almost impossible to tell the one from the other by mere inspection.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending May 14, 1889:

DISEASES.	Week ending May 7.		Week ending May 14.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	6	1	14	4
Scarlet fever	319	36	308	34
Cerebro-spinal meningitis	4	4	1	2
Measles	146	9	145	3
Diphtheria	179	62	154	43

The Society of the Alumni of Charity Hospital, a new organization already numbering between forty and fifty members, held its first regular meeting on Tuesday evening, May 7th. The officers are as follows: President, Dr. Ramon Guiteras; vice-president, Dr. C. W. Stimson; secretary, Dr. W. L. Baner; treasurer, Dr. Granville M. White. Ex-internes of the hospital who wish to join the society are asked to communicate with the chairman of the committee on new members, Dr. Walter L. Carr, No. 54 West Thirty-eighth Street, giving the dates of their terms of service.

A New Medical College in Tennessee.—A medical college has been organized in Knoxville, with the following-named faculty: Dr. J. C. Cawood, dean and professor of theory and practice of medicine; Dr. C. M. Drake, professor of anatomy and pathological anatomy; Dr. C. C. Lancaster, professor of physiology; Dr. W. E. Moses, professor of chemistry; Dr. J. W. Hill, professor of surgery; Dr. W. M. Bowen, professor of orthopædic and operative surgery; Dr. R. M. C. Hill, professor of materia medica and therapeutics; Dr. C. E. Ristine, professor of obstetrics and gynæcology; Dr. J. M. Masters, professor of diseases of the eye, ear, nose, and throat; Dr. M. Campbell, professor of mental and nervous diseases; the Hon. H. R. Gibson, professor of medical jurisprudence; and Dr. C. M. Cawood, demonstrator of anatomy. It is announced that there is to be a chair of dental surgery.

The June Medical Meetings.—A number of the State medical societies hold their annual meetings in the month of June. Those of the societies of Pennsylvania and New Jersey begin on the 4th prox.; those of Massachusetts, Maine, Delaware, and Oregon on the 11th; that of Rhode Island on the 13th; those of New Hampshire, Tennessee, and Colorado on the 18th; that of Minnesota on the 20th; and that of Vermont on the 27th.

An Asylum for Feeble-minded Children, at Frankfort, Kentucky, was completely destroyed by fire on the 3d of May. It was a State institution accommodating 160 children and twenty or more attendants. There was no loss of life.

The Episcopal Hospital, of Philadelphia, has been offered a fund of $200,000 for a retreat for incurables. One half the sum will be put into the building, while the other half will be invested for maintenance. This annex will bear the name of the late George Harrison, whose family have contributed the entire fund, with a view to commemorate his name and his many benefactions to the hospital during his life-time.

The John Wells Memorial Hospital, of New Brunswick, N. J., has recently been completed and handed over to the trustees of the City Hospital, which will abandon its old quarters in a hired building. It will adopt the new name above given in recognition of the gift to the public by Mrs. John Wells by whom the new hospital has been erected in memory of her deceased husband.

The Population of the United States.—The present estimated population of the United States is 64,000,000. The rate of increase, exclusive of immigration, is estimated at 1·8 per cent. per annum—about 100,000 a month. By immigration, the increase of population averages over 43,000 a month, or over half a million yearly. The aggregate annual growth from both causes will not fall much short of a million and three quarters. The estimated foreign population is not far below 14,000,000.

The British Medical Association.—The "British Medical Journal" announces that, at the fifty-seventh annual meeting, to be held at Leeds, on the 13th, 14th, 15th, and 16th of August, the address in medicine will be given by Dr. J. Hughlings Jackson, the address in surgery by Mr. T. Pridgin Teale, and the address in psychology by Sir J. Crichton Browne.

An International Atlas of Skin Diseases.—The editor of the "Monatshefte für praktische Dermatologie," Dr. P. G. Unna, announces the collaboration of Dr. L. A. Duhring, of Philadelphia, Dr. Henri Leloir, of Lille, and Mr. Malcolm Morris, of London, with himself in the preparation of an atlas of rare diseases of the skin, to be published in Hamburg.

The Woman's Hospital.—Dr. Clement Cleveland has been appointed one of the surgeons to the hospital. Dr. Cleveland has served the institution for many years as an assistant surgeon.

The "Kansas Medical Journal" is the title of a new monthly journal published at Topeka, edited by a committee consisting of Dr. W. L. Schenck, of Osage City, and Dr. J. E. Minney and Dr. S. G. Stewart, of Topeka. The editors say that, like babies, "this periodical has come into existence unsolicited, but not without a cause."

The Death of Dr. Duane B. Simmons, a well-known American physician of many years' residence in Japan, is announced in the "Albany Medical Annals" as having occurred at Tokio on the 19th of February.

Changes of Address.—Dr. Joseph C. Clark, to Olean, Cattaraugus Co., N. Y.; Dr. Henry J. Kelly, to No. 267 Lexington Avenue.

The New York State Medical Association.—The Fifth District Branch will hold its fifth annual meeting at No. 177 Montague Street, Brooklyn, on Tuesday, May 28th. There will be an address by the president, Dr. William T. Lusk; remarks on the late Dr. J. S. Andrews will be made by Dr. R. M. Wyckoff, and on the late Dr. I. H. Ashton by Dr. R. J. Southworth; and papers will be read as follows: "The Genesis of Tumors," by Dr. T. H. Manley; "Calcification of the Cardiac Left Ventricular Wall following Subacute Verrucose Endocarditis," by Dr. F. E. Martindale; "Traumatic Pelvic Cellulitis," by Dr. T. H. Allen; "Some Recent Surgical Cases, with Comments and Deductions," by Dr. J. A. Wyeth; and "The Treatment of Pneumonia," by Dr. J. G. Truax.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from April 28 to May 11, 1889:*

FORWOOD, W. H., Surgeon, Medical Department, Fort Snelling, Minnesota, is granted leave of absence for one month, based on surgeon's certificate of disability, with permission to leave the limits of the department. Par. 1, S. O. 35, Headquarters Department of Dakota, St. Paul, Minnesota, April 8, 1889.

BORDEN, WILLIAM C., Captain and Assistant Surgeon. Relieved from duty at Fort Ringgold, Texas, and ordered to report to the commanding officer at San Antonio, Texas, for duty at that post. Par. 7, S. O. 100, A. G. O., May 1, 1889.

AINSWORTH, F. C., Captain and Assistant Surgeon, will, by direction of the Acting Secretary of War, proceed to Albany, N. Y., on business connected with the Medical Department. Par. 7, S. O. 105, A. G. O., May 7, 1889.

BROWN, PAUL R., Captain and Assistant Surgeon, is, by direction of the Secretary of War, relieved from further duty in the Department of the Platte, and will proceed to Fort Thomas, Arizona, and report in person to the commanding officer of that post for duty, and by letter to the commanding officer, Department of Arizona. Par. 10, S. O. 105, A. G. O., May 7, 1889.

APPEL, D. M., Captain and Assistant Surgeon. Relieved from duty at Fort Sill, Indian Territory, and ordered to Fort Bliss, Texas. Par. 25, S. O. 104, A. G. O., Washington, May 6, 1889.

COWDREY, S. G., Captain and Assistant Surgeon. Relieved from duty at Fort Bliss, Texas, and ordered to Fort Marcy, New Mexico. Par. 25, S. O. 104, A. G. O., May 6, 1889.

FINLEY, JAMES H., Captain and Assistant Surgeon. Relieved from duty at Fort Assiniboine, Montana Territory, and ordered to Fort Totten, Dakota. Par. 25, S. O. 104, A. G. O., Washington, May 6, 1889.

DE LOFFRE, AUGUST A., Captain and Assistant Surgeon. Relieved from duty at Fort Totten, Dakota, and ordered to Columbus Barracks, Ohio. Par. 25, S. O. 104, A. G. O., Washington, May 6, 1889.

TAYLOR, B. D., Captain and Assistant Surgeon. Relieved from duty at Columbus Barracks, Ohio, and ordered to Fort Sill, Indian Territory. Par. 25, S. O. 104, A. G. O., Washington, May 6, 1889.

FISHER, WALTER W. R., Captain and Assistant Surgeon, is hereby granted leave of absence for one month. Par. 1, S. O. 30, Headquarters Department of California, San Francisco, Cal., April 27, 1889.

KENDALL, WILLIAM P., First Lieutenant and Assistant Surgeon, will be, by direction of the Acting Secretary of War, relieved from duty in the Department of California after he shall have complied with the requirements of Par. 2, S. O. 29, April 24, 1889, from these headquarters, and will then proceed to Fort D. A. Russell, Wyoming, for duty at that station. Par. 28, S. O. 104, A. G. O., May 6, 1889.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending May 11, 1889:*

BEARDSLEY, GROVE S., Medical Inspector. Detached from the Brooklyn, and to proceed home and wait orders.

LOVERING, P. A., Passed Assistant Surgeon. Detached from the Brooklyn, and to proceed home and wait orders.

NORTON, OLIVER D., Assistant Surgeon. Detached from the Brooklyn, and to proceed home and wait orders.

HAWKE, J. A., Surgeon. Detached from the Essex, and to proceed home and wait orders.

STOKES, C. F., Assistant Surgeon. Detached from the Minnesota and ordered to the Iroquois.

BRANSFORD, JOHN F., Surgeon. Orders to the Iroquois revoked. Resignation accepted, to take effect May 4, 1890, with leave of absence granted to that date, with permission to leave the United States.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for four weeks ending May 11, 1889:*

PURVIANCE, GEORGE, Surgeon. Detailed as chairman of board for the physical examination of candidates for appointment as cadets, Revenue Marine Service. May 3, 1889. Detailed as chairman of board for the physical examination of officers, Revenue Marine Service. May 11, 1889.

IRWIN, FAIRFAX, Surgeon. To proceed to Bath, Wiscasset, Rockland, Belfast, Bangor, Ellsworth, Machias, and Eastport, Maine, as inspector. April 22, 1889.

MEAD, F. W., Passed Assistant Surgeon. Detailed as recorder of board for the physical examination of candidates for appointment as cadets, Revenue Marine Service. May 3, 1889. Detailed as recorder of board for the physical examination of officers, Revenue Marine Service. May 11, 1889.

WHEELER, W. A., Passed Assistant Surgeon. Granted leave of absence for thirty days. April 16, 1889.

BRATTON, W. D., Passed Assistant Surgeon. Relieved from duty at San Francisco, Cal.; to assume charge of the Service at Portland, Oregon. May 8, 1889.

MAGRUDER, G. M., Assistant Surgeon. To proceed to Baltimore, Md., for duty. May 8, 1889.

PERRY, T. B., Assistant Surgeon. When relieved at Portland, Oregon, to proceed to San Francisco, Cal., and await orders. May 8, 1889. To report to the commanding officer, Revenue Steamer Rush, for special duty. May 11, 1889.

CONDICT, A. W., Assistant Surgeon. When relieved from duty at Boston, Mass., to await orders. May 8, 1889. To report to the commanding officer, Revenue Steamer Chase, for special duty. May 11, 1889.

HUSSEY, S. H., Assistant Surgeon. When relieved from duty at Baltimore, Md., to proceed to Boston, Mass., for duty. May 8, 1889.

GEDDINGS, H. D., Assistant Surgeon. To proceed to Baltimore, Md., for temporary duty. May 8, 1889.

Society Meetings for the Coming Week:

MONDAY, *May 20th:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Medico-chirurgical Society of German Physicians; Hartford, Conn., City Medical Association; Chicago Medical Society.

TUESDAY, *May 21st:* Illinois State Medical Society (Jacksonville); Missouri State Medical Society (Springfield); Nebraska State Medical Society (Kearney); New York Academy of Medicine (Section in Theory and Practice of Medicine); New York Obstetrical Society (private); Medical Societies of the Counties of Kings and St. Lawrence (annual), N. Y.; Ogdensburgh Medical Association; Hampden, Mass., District Medical Society (annual—Springfield); Baltimore Academy of Medicine.

WEDNESDAY, *May 22d:* Connecticut State Medical Society (Hartford); Ohio State Medical Society (Youngstown); New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medical Society of the County of Albany; Philadelphia County Medical Society.

THURSDAY, *May 23d:* New York Academy of Medicine (Section in Obstetrics and Diseases of Women and Children);

New York Orthopædic Society; Roxbury, Mass., Society for Medical Improvement (private); Pathological Society of Philadelphia.

Friday, *May 24th*: Yorkville Medical Association (private); New York Society of German Physicians; New York Clinical Society (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

Saturday, *May 25th*: New York Medical and Surgical Society (private).

Letters to the Editor.

HOMŒOPATHY.

Milwaukee, *April 26, 1889.*

To the Editor of the New York Medical Journal:

Sir: In your article of April 13th, p. 410, "A Judicial View," etc., you use the following language: "It is their constant and clandestine recourse to what they are pleased to term 'allopathy' that fastens on them a disgrace," etc. Is not this a little bit unfair to your homœopathic friends? If it is a disgrace for a homœopathist to resort to "allopathic" measures, why not belabor your own side for resorting "clandestinely" to homœopathy occasionally? Do you think they do not? If so, it is because the right hand has kept the left in ignorance. But can you give any good reason why I, who read your valuable journal, and endeavor to profit thereby, should not, because I am a homœopathic practitioner, occasionally make use of some suggestion that some of your well-known colleagues may make? Perhaps you imagine that we are all either "knaves or fools," as I have heard some of your brethren speak of us.

Now I can assure you that the bulk of the homœopathic practitioners are honest in their practice and treat their families and themselves as they treat others. I do not mean thereby that they never make a prescription to be filled at a drug-store (although it is a fact that some here have incurred the enmity of some of the druggists, to the extent that they refused to telephone for them for patients who wanted them, on the ground that they made no prescriptions to be filled). Of course, there are homœopaths and homœopaths. But, as allopathy (or regular medicine, if you like it better) should be judged by its best and not its worst representatives, so homœopathy should be allowed like fair play. So far as the "fool" part is concerned, I have never yet seen a homœopathic physician of reasonable ability and of honorable character who did not enjoy a sufficient practice. Of course, old women of both sexes who have only taken up a domestic book and sallied forth must expect to be beaten in the race. But canvassers assure me that the average homœopathic physician buys as many (if not more) allopathic works as his regular brother.

In von Ziemssen, vol. i, p. 82, occurs the following remarkable passage: "The use of the thermometer in private practice, showing as it does to unprofessional persons the importance of the rise and fall of temperature and the effect of treatment on the fever (typhoid), has more than anything else narrowed the field of homœopaths and charlatans." I am afraid Liebermeister saw through dark glasses when he penned this. If he had cast his eye over this way at least he would have found that homœopaths rely upon the use of the thermometer to fully as great an extent as those of the regular school, and do not find their faith diminished thereby. Joseph Lewis, Jr.

*** We do not feel called upon to defend the proposition that homœopathists are either fools or knaves, for we have never brought it forward and do not believe it to be true; furthermore, we cheerfully admit (what we have long known to be a fact) that homœopathic practitioners buy medical publications freely, and our impression is that they are quite familiar with the general run of medical literature. We do not find fault with them for the mere fact of deviating from their proclaimed "great and only" therapeutic principle, but for doing so (we must repeat the word) clandestinely, and then crediting their successes to that principle, although they were achieved by forsaking it. It is of the essence of homœopathy, as we understand it, that the doctrine of similars is all-sufficient, no exceptions being admitted; consequently, when a professed homœopathist departs from rigid conformity to that doctrine, he deserts his colors. When, however, a non-sectarian practitioner resorts to the homœopathic principle, he simply avails himself of a principle that has been recognized from the most ancient times as one of limited applicability; he does no violence to his professions, because he has made none.

Proceedings of Societies.

NEW YORK NEUROLOGICAL SOCIETY.

Meeting of April 2, 1889.

The President, Dr. George W. Jacoby, in the Chair.

Election of Officers.—The following were chosen for the ensuing year: President, Dr. George W. Jacoby; first vice-president, Dr. W. R. Birdsall; second vice-president, Dr. C. L. Dana; recording secretary, Dr. Frederick Peterson; corresponding secretary, Dr. E. D. Fisher; treasurer, Dr. G. M. Hammond; councillors, Dr. E. C. Seguin, Dr. M. D. Field, Dr. L. C. Gray, Dr. B. Sachs, and Dr. M. A. Starr.

Fracture of the Body of the Twelfth Dorsal Vertebra with Compression of the Cord.—Dr. C. L. Dana presented for Dr. J. W. S. Gouley a specimen of the spine and spinal cord in a case of this kind. The case was of special interest in connection with the subject of spinal surgery and of operative interference in cases of fracture and paraplegia. A man, aged twenty, had fallen on April 19, 1887, through a floor a distance of ten feet, striking on the abdomen and then turning on the back. Complete motor and sensory paraplegia with involvement of the sphincters had at once set in. When he was examined next day by Dr. Gouley at Bellevue Hospital, the lower limbs were motionless and there was total anæsthesia up to Poupart's ligament on the left side and half way up the thigh on the right. The fæces came away involuntarily and the urine had to be drawn. There had been no record of fever or pain, except a little of the latter in the back. The patient's condition had remained without much change, except that the legs had become atrophied and the reflexes lost, for two years, until his death in February, 1889. The autopsy had shown fracture of the body of the twelfth dorsal vertebra and forward projection of a fragment, reducing the size of the canal to three millimetres and cutting the cord almost in two. The cord was disorganized at its lower extremity, and secondary degenerations were present which would be studied subsequently.

A Case of Tumor of the Brain; Removal; Death.—Dr. Philip C. Knapp, of Boston, reported the history of a case of this affection. The patient was a man of thirty-two, a florist, with a good personal and family history. In the summer of 1886 he had had some nausea and vomiting, and the next winter his hand had begun to feel stiff. In March, 1887, he had a convulsion, and about the same time he lost power in

the left hand. Since that time he had had repeated convulsions, in many of which the left hand had been first affected, and there had been a left hemiplegia with contracture. Vision had steadily failed, the mental powers had declined, and he had had headache, vertigo, nausea, and vomiting. Physical examination had shown tactile and thermal anæsthesia on the left side, most marked in the left forearm; loss of muscular sense on that side; double optic neuritis; paralysis with contracture; and diminished cutaneous and exaggerated tendon reflexes on the paralyzed side. He was admitted into the Boston City Hospital, December 17, 1888, and on the 28th a tumor was removed by Dr. E. H. Bradford. The tumor was tubercular, weighing thirty-five grammes, and bacilli were found in it under the microscope. It was subcortical and situated in the ascending frontal and parietal convolutions of the right hemisphere, about opposite the second frontal convolution, extending downward and backward into the inferior parietal lobule. The patient had died of shock in three quarters of an hour. There had been no autopsy. The localizing symptoms had been the convulsions, paralysis, and anæsthesia. The proportion of tumors accessible to the surgeon was regarded, on comparison of statistics, as about 5 to 7 per cent. Fifteen cases had thus far been reported in which the tumor had been removed, and eight of recovery from the operation. Four cases of operation for cerebral cysts were cited, and four cases where the tumor was not found at the operation, but was discovered at the autopsy. Some measurements on skulls and heads were given showing the inaccuracy of Broca's method of cranio-cerebral topography.

Dr. C. L. Dana said that neurologists might congratulate themselves that their part in Dr. Knapp's case turned out so correctly and satisfactorily. He thought this case tended to confirm the view that the motor areas represented cutaneous sensation also to a considerable extent. Dr. Knapp's statistics showed that operations had been quite successful, yet he had made them too flattering. The mortality was somewhat larger. He thought that in cerebral surgery surgeons had not yet reached the degree of perfection in technique that was necessary. The length of time of the operation should be reduced and hæmorrhage more carefully guarded against. As to cranio-cerebral topography, no more accurate rule was needed than that of Horsley for finding the Rolandic fissure; it was more difficult to discover the fissure of Sylvius, and the rules for reaching its position on the skull were inexact.

Hemichorea following Cranial Injury.—Dr. Frank H. Ingram presented a case of this affection. An adult man had sustained, seventeen years before, a depressed fracture of the skull in the left parieto-frontal region. After two years choreiform movements had developed in the right arm, gradually extending to the right leg and the right side of the neck. The speaker ascribed the hemichorea to some organic lesion over the motor areas of the right hemisphere, indirectly traceable to the injury to the skull.

Dr. M. A. Starr remarked that the movements in this man, so far as the right side was concerned, had been almost precisely like those in a case of paramyoclonus multiplex that he had reported some time before. There were the same violence and irregularity.

Dr. B. Sachs thought there could have been no injury to motor areas in Dr. Ingram's case, because, instead of any paresis, there was actually very great strength on the choreic side. He believed it to be a functional neurosis and not organic.

Dr. Starr called the attention of the last speaker to the fact that there might be hemiathetosis without paresis, although an organic lesion might be discovered post mortem. He referred to two cases, one of his own and one at Charity Hospital, in both of which the strength had been perfect on the affected side.

Dr. Field stated that the patient whose case had been mentioned by Dr. Starr as observed at Charity Hospital had recently cured herself by prayer, and that her case had been one of hysteria. This was the second time prayer had caused cessation of the athetoid movements in her case.

Hæmorrhage into the Cervical Region of the Spinal Cord.—Dr. W. M. Leszynsky presented the history of a case of this affection: J. B., aged nineteen, clerk, sixteen months ago had wrestled violently with a room-mate, had become exhausted, had lain down and slept half an hour. He had awakened with a dull pain between the shoulders and had had wrist-drop on both sides. In twenty minutes all four extremities had become paralyzed. During the first week there was occasional loss of control of the sphincters. In three months he had been improved so that he could walk without assistance, the left hand and arm, however, being decidedly paretic. At present there was partial paralysis of the left cervical sympathetic, producing contracted pupil and increase in surface temperature; there were paralysis and atrophy of the muscles of the left hand with degenerative reaction, and those of the thenar group of the right hand also were atrophied; both hands were cyanotic; there was no sensory disturbance; the tendon jerks in the arms were increased; and there were also a few changes in the lower extremities. He thought the lesion to be intramedullary hæmorrhage into the lower cervical segment of the spinal cord, followed by transverse myelitis.

Dr. Starr thought that the diagnosis made by Dr. Leszynsky was defensible. The loss of pain and temperature sense was a very interesting point in the case. The literature of syringomyelia showed that lesion of the gray matter of the cord cut off the pain and temperature tracts below the lesion.

Book Notices.

Electricity in the Diseases of Women, with Special Reference to the Application of Strong Currents. By G. Betton Massey, M. D., Physician to the Nervous Department of Howard Hospital, etc. Philadelphia: F. A. Davis, 1889. Pp. viii–210. [Price, $1.50.]

In the introduction to this work the author states that a full test of the practical utility of electricity in gynæcology must show that it is an agent capable of being properly applied without the need of any great amount of technical skill, and further states that it is the main purpose of the book to show how the necessary skill can be gained even by the busy general practitioner. He wisely adds to this that only the most recent works upon the subject of electro-therapeutics should be consulted. While we believe that Dr. Massey is over-sanguine in his estimate of the degree to which the subject can be simplified, his book is better calculated to do this than any we have seen. It is modest and answers the question frequently asked, Where can we find a concise statement of the recent methods of using electricity in gynæcological work with a simple and elementary description of a battery? Chapter II is devoted to the work of clearing up the elementary considerations as to apparatus. The author has done this fairly well. It would appear from the attempts heretofore made in this direction that it is a most difficult task. One practical point may be mentioned in regard to the author's directions for testing the polarity of the electrodes. He speaks of the iodide-of-potassium test and also of distinguishing the poles by observing which gives the greater amount

of pain. A much simpler and readier method is to immerse the electrodes in water, when the negative electrode is quickly detected by the bubbles of hydrogen which quickly collect about it.

That section of the book devoted to the practical details of treatment is very valuable. We regret to notice that the author speaks of the electrical treatment of conditions regarded as erosions and ulcerations as being an advance upon the older methods of dealing with these states. No treatment can be said to be an advance which fails to recognize the pathological condition as being entirely an effect and to be treated by treating the cause. The writer of this review is so firmly impressed with the justice of Schultze's views regarding the pathology of uterine flexions and their frequent dependence on inflammatory action of the utero-sacral ligaments, that he feels sorry the author has not emphasized the possible dangers in this connection. We venture to say, on general principles, that the case cited on page 181, in which the woman was seized with violent pain in the back while lifting a boiler, was not a fit case for the active reposition of an anteflexion seven days later with the use of a cauterizing current. Many gentlemen can recognize an anteflexion who are not accustomed to search for inflammation behind the uterus, and it is to be feared that the passage of a current of high intensity where such a condition was present might be followed by serious consequences.

In a foot-note to page 57 the author says that he thinks the cases of atresia reported by Apostoli were probably due to leaving too much of the sound uncovered, and on page 166 the statement is made ". . . and there is no doubt whatever at the present time that in the positive cauterization we have the safest and most promising means of creating a permanently patulous canal." The two statements do not harmonize, and we are inclined to believe that the dilatation was due to the mechanical stretching of the canal. This point should be definitely settled.

The chapter on extra-uterine pregnancy is much too restricted. Nothing is said of the use of powerful currents applied gradually. We regret that the lack of space does not permit of a more extended review of the book. It is not only the best of its kind, but is the only one of its kind. The author is conservative and painstaking, and has mastered his subject. We predict that the book will prove very successful.

Commotion, contusion, tétanos, syphilis et traumatisme. Par le Dr. A. Verneuil, Membre de l'institut, professeur de clinique chirurgicale à la faculté de médecine de Paris, etc. Paris: G. Masson, 1888. Pp. 111–897. [" Mémoires de chirurgie," tome cinquième.]

This book is a collection of essays and theses written at different times by Professor Verneuil and certain of his students. It is of interest and value, as such collections often are, showing not only the work of the master himself, but also the influence of his mind upon his students.

The first paper, " Les petits prophètes de la chirurgie," read in 1859 before the *Société de chirurgie*, is a very pleasant literary effort, but is of no special value. It is laudatory of the lesser lights of surgery as opposed to the greater lights, exemplified by Guy de Chauliac, Paré, Dupuytren, and others.

The two following articles on concussion and contusion are taken from the " Dictionnaire encyclopédique des sciences médicales." Each article is written with great care. Concussion is defined as a " series of phenomena more or less sudden following a mechanical shock to the anatomical elements, tissues, or organs, characterized by temporary excitement or depression of the properties, usages, or functions of the shaken parts, and provoking anatomical changes resembling those which are observed normally in the successive phases of functional activity and repose." Considerable space is given to the pathological physiology and anatomy as well as to the complications, diagnosis, and prognosis. Visceral concussion receives a separate consideration. Contusion is defined as a " traumatic lesion in which the distinction is made by pressure and the accompanying attrition at the point of lesion." The article follows the bruise in all its varieties and complications from its inception to its final changes. In treatment, rest is considered to be of the chief importance, and the value of cold, continuous irrigation, massage, and pressure, as well as antiphlogistics, emollients, and narcotics when required, is spoken highly of.

Persistent vomiting after surgical operations is the subject of the next essay, reprinted from the " Bulletins et mémoires de la Société de chirurgie," 1878, p. 550. Nine cases are cited, from which it is concluded the certain pathological states, such as dyspepsia and abdominal, hepatic, and renal lesions, act as predisposing causes, while the traumatism serves as the exciting cause. If long continued, the prognosis is grave.

Tetanus receives a very extended notice. Cases are cited and various forms of treatment are discussed both by Dr. Verneuil and by Dr. Soubise, whose thesis on the pathogeny of tetanus and its treatment with chloral is very thorough and creditable.

The rest of the work is composed mainly of essays and theses by several students of Dr. Verneuil's. The most notable ones are by Dr. Petit, on syphilis and traumatism; by Dr. Ozenne, on cancer and syphilis; and by Dr. Ramonat, on syphilis and scrofula. Dr. Ozenne's thesis on cancer and syphilis occupies ninety pages and is based on sixty-seven cases each given in detail. It deals particularly with the combined lesion as found in the buccal cavity. The diagnosis is admitted to be very difficult in some cases, and the prognosis is not good. The treatment advocated is antisyphilitic so long as benefit is obtained, and then radical extirpation of the growth. Throughout all these writings one seems to detect the master's guiding hand. There is the same style of thought and there is the same orderly, scientific system running through all, showing the strong impression the writers have received from the mind of their teacher.

GENERAL LITERARY NOTES.

Among recent foreign publications we note the following:

F. Alcan, Paris.—Evariste Thévenin and H. de Varigny, " Dictionnaire abrégé des sciences physiques et naturelles."

J. B. Baillière et fils, Paris.—C. Vieillard, " Étude chimique de la goutte et son traitement par le vin Duflot."

Jules Céas et fils, Paris.—G. Robert, " Étude sur la médication chlorlydro-pepsique dans les dyspepsies gastro-intestinales."

Jules Delorme, Paris.—A. Judet, " De l'emploi thérapeutique de la peptone phosphatée dans la tuberculose et les maladies de consomption."

O. Doin, Paris.—M. Segrain, " Hérédité et alcoolisme." (7*fr.*) —— " Annuaire de thérapeutique. 1. année." (2*fr.*) —— A. Auvard, " Traitement de l'éclampsie puerpérale." (3*fr.*) —— Charlier, " Traitement spécifique de la phthisie pulmonaire par le cuivre." (1*fr.* 75.)

Henri Georg, Lyons.—E. Clément, " Ethnographie—Démographie—Sol—Topographie—Climatologie."

Muller, Paris.—Albert Blondel, " Étude physiologique sur l'albuminate de fer soluble."

Lecrosnier et Babé, Paris.—" Traité de pathologie chirurgicale spéciale." Vol. ii, 1st fascic. (7*fr.*) —— G. Thermes, " Traité élémentaire d'hygiène et de thérapeutique de l'hystérie." (6*fr.*) —— J. Renaut, " Traité d'histologie pratique." Vol. i, 1st fascic. (7*fr.*) —— Alfred Fournier, " Leçons sur la syphilis vaccinale." (6*fr.*) —— Serrez, " De l'ulcère simple de l'œsophage." (2*fr.* 50.) —— Combemale, " La descendance des alcooliques." (3*fr.* 50.) —— Auvard and Secheyron, " L'hypnotisme et la suggestion en obstétrique." (2*fr.*) —— Dupain, " Étude clinique sur le délire réligieux." (5*fr.*) —— Émile Goubert,

"Nouveau traitement de l'épilepsie, sa guérison possible." (0*fr.* 75.) —— L. de Wecker and E. Landolt, "Traité complet d'ophthalmologie." Vol. iv, 3d fascic. —— A. Ducamp, "Des manifestations ophthalmoscopiques de la méningite tuberculose." (2*fr.* 50.) —— A. Fournier, "Leçons sur la syphilis vaccinale, recueillies par le Dr. P. Portalier." (6*fr.*) —— J. Renaut, "Traité d'histologie pratique." 1st fascic. (7*fr.*) —— L. de Séré, "La virilité et l'âge critique chez l'homme et chez la femme." (2*fr.*) —— P. Sérieux, "Recherches cliniques sur les anomalies de l'instinct sexuel." (2*fr.*)

G. Masson, Paris.—Duboué (de Pau), "Les indications à suivre dans le traitement préventif et curatif du choléra asiatique."

Bureau du Progrès medical, Paris.—Blanche A. Edwards, "De l'hémiplégie dans quelques affections nerveuses." (5*fr.*) —— J. Charcot, "Maladies des poumons et du système vasculaire." (15*fr.*) —— Bourneville, Sollier, Pilliet, Raoult, and Bricon, "Recherches cliniques et thérapeutiques sur l'épilepsie, l'hystérie et l'idiotie." (5*fr.*) —— Lejars, "L'enseignement de la chirurgie et de l'anatomie dans les universités de langue allemande." (2*fr.*) —— W. Roth, "Contribution à l'étude symptomatologique de la gliomatose médullaire." (4*fr.*) —— Chambard, "Dermoneurose stéréographique et érythrasma chez un imbécile alcoolique." (0*fr.* 50.) —— H. Piot, "De la formation de la bosse séro-sanguine chez les fœtus morts." (1*fr.* 70.)

G. Steinheil, Paris.—Legendre, Barette, and Lepage, "Traité pratique d'antisepsie appliquée à la thérapeutique et à l'hygiène," vol. i, parts 3 and 4. —— F. Lejars, "La masse de Teichmann." —— P. Daurios, Étude clinique et traitement chirurgicale de la tuberculose génitale chez la femme." —— J. Uffelmann, "Traité pratique d'hygiène de l'enfance." —— H. Hartmann, "Des névralgies vésicales." (4*fr.*)

A. Storck, Lyons.—J. P. Henry Contagne, "La folie au point de vue judiciaire et administratif."

Ambrose Abel, Leipzig.—A. Krüche, "Specielle Chirurgie. (6*M.*)

Braumüller, Vienna.—J. Hyrtl, "Lehrbuch der Anatomie des Menschen." (15*M.*) —— J. Schnitzler, "Zur Frage der endolaryngealen Behandlung des Kehlkopfkrebses." (0*M.* 40.) —— "Sitzungs-Berichte der geburtshilflich-gynäkologischen Gesellschaft in Wien. 1889." (5*M.*) —— J. Steinbach, "Zur Frage der fakultativen Sterilität. (1*M.*) —— "Ärztlicher Bericht des k. k. allgemeinen Krankenhauses zu Wien vom Jahre 1887." (5*M.*) —— "Bericht der k. k. Krankenanstalt Rudolph-Stiftung in Wien vom Jahre 1887." (4*M.*) —— M. Brilliant, "Statistischer Sanitäts-Bericht über die k. k. Kriegs-Marine für das Jahr 1887." (3*M.*)

F. A. Brockhaus, Leipsic.—"Internationale wissenschaftliche Bibliothek." Vols. xii and lxvii. Vol. xii, by A. Bernstein, "Die fünf Sinne des Menschen," 2. Aufl.—Vol. lxvii, by Sir J. Lubbock, "Die Sinne und das geistige Leben der Thiere, insbesondere der Insekten." (4*M.*)

Ferdinand Enke, Stuttgart.—E. Baierlacher, "Die Suggestions-Therapie und ihre Technik." (1*M.* 20.)

Heuser, Neuwied. — O. v. Herff, "Beiträge zur Galaktorrhöe. Über das Verhalten der Milchsekretion bei einem Falle von Galaktorrhœa paradoxa." (12*M.*)

August Hirschwald, Berlin.—E. Gurlt, "Leitfaden für Operationsübungen am Kadaver und deren Verwertung beim lebenden Menschen." 7. Aufl. (4*M.*) —— P. Guttmann, "Lehrbuch der klinischen Untersuchungsmethoden für die Brust- und Unterleibs-Organe mit Einschluss der Larnyoskopie." 7. Aufl. (10*M.*) —— Brock, Liebreich, and Mendel, "Veröffentlichungen der Gesellschaft für Heilkunde in Berlin." (3*M.*)

Wilhelm Ifsleib, Berlin.—D. Spohr, "Die Behandlung von Wunden nach den Grundsätzen der Naturheilkunde." (1*M.*)

Lipsius & Tischer, Kiel.—P. Meyer, "Zwei Fälle von metastasischer Hauttuberkulose." (0*M.* 80.) —— A. Mueller, "Brillengläser und Hornhautlinsen." (0*M.* 80.) —— F. Otto, "Ueber bandförmige Hornhauttrübung." (0*M.* 80.) —— W. König, "Ein Fall von Pankreas-Nekrose nach Blutung und Fettnekrose." (0*M.* 80.)

J. C. B. Mohr, Freiburg.—P. Kraske, "Der Unterricht in der chirurgischen Klinik und die antiseptische Wundbehandlung." (1*M.* 60.)

G. Reimer, Berlin.—H. Laehr, "Gedenktage der Psychiatrie und ihrer Hilfsdisciplinen in allen Länden." 3. Aufl. (4*M.*)

Gazzetta degli Ospitali, Milan.—L. M. Bossi, "Due cisti ovariche dermoidi." —— L. M. Bossi, "Criteri e mezzi utili per stabilire la diagnosi di gravidanza estranterina." —— Alfredo Angias, "La Scarlattina."

F. C. W. Vogel, Leipsic.—"Jahresbericht, 19. Des Landes-Medicinal-Kollegiums über das Medicinalwesen im Königreich Sachsen auf das Jahr 1887." (4*M.*)

Filippo Olari, Naples.—Eugenio Fazio, "Trattato d'igiene." 2d ed. (24*l.*)

Francesco Vallardi, Milan.—Filippi, Severi, and Montali, "Manuale di medicina legale conforme al nuovo codice penale." Fasc. 5 and 6. (2*l.*) —— C. Sappey, "Trattato di anatomia descrittiva." 2d ed., vol. ii. (80*l.*) —— Guglielmo Morghen, "Diagnosi e trattamento delle lacerazioni dell' uretra maschile." —— Pasquale Vicenti, "Note di igiene navale."

Nordin & Josephson, Stockholm.—E. Kleen, "Handbok i massage." (1*kr.* 50.)

Alvarez & Ca, Havana.—D. Emilio Martinez y Martinez, "Curabilidad del Íctero Grave Primitivo."

BOOKS AND PAMPHLETS RECEIVED.

Psychology as a Natural Science applied to the Solution of Occult Psychic Phenomena. By C. G. Raue, M. D. Philadelphia: Porter & Coates, 1889. Pp. 8–9 to 541.

Materia Medica and Therapeutics, for Physicians and Students. By John B. Biddle, M. D., late Professor of Materia Medica and General Therapeutics in the Jefferson Medical College. Eleventh Edition, revised and enlarged, with Special Reference to Therapeutics and to the Physiological Action of Medicines. By Clement Biddle, M. D., U. S. Navy, and Henry Morris, M. D., Fellow of the College of Physicians of Philadelphia, etc. With numerous Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1889. Pp. xix–33 to 607. [Price, $4.25.]

Transactions of the American Association of Obstetricians and Gynæcologists. Vol. I. For the Year 1888. Philadelphia: W. J. Dornan, 1888. Pp. xxxviii–347.

The Diagnosis and Treatment of Extra-uterine Pregnancy. By John Strahan, M. D., M. Ch., M. A. O. (Royal University of Ireland), etc. Jenks Prize Essay of the College of Physicians of Philadelphia. Philadelphia: P. Blakiston, Son, & Co., 1889. Pp. 134. [Price, $1.50.]

A Manual of Diseases of the Ear, for the Use of Students and Practitioners of Medicine. By Albert H. Buck, M. D., Clinical Professor of the Diseases of the Ear in the College of Physicians and Surgeons, New York, etc. New York: William Wood & Co., 1889. Pp. ix–420. [Price, $2.50.]

A Clinical Atlas of Venereal and Skin Diseases, including Diagnosis, Prognosis, and Treatment. By Robert W. Taylor, A. M., M. D., Surgeon to Charity Hospital, New York, and to the Department of Venereal and Skin Diseases of the New York Hospital, late President of the American Dermatological Association. Illustrated with One Hundred and Ninety-two Figures, many of them Life Size, on Fifty-eight beautifully colored Plates. Also many Large and carefully-executed Engravings through the Text. Parts V and VI. Diseases of the Skin. Philadelphia: Lea Brothers & Co., 1889.

American Resorts, with Notes upon their Climate. By Bushrod W. James, A. M., M. D., Member of the American Association for the Advancement of Science, etc. With a Translation from the German by Mr. S. Kauffmann of those chapters of "Die Klimate der Erde," written by Dr. A. Woeikof, of St. Petersburg, Russia, that relate to North and South America and the Islands and Oceans Contiguous Thereto. Intended for Invalids and those who desire to preserve Good Health in a Suitable Climate. Philadelphia and London: F. A. Davis, 1889. Pp. 8–9 to 285. [Price, $2.]

Electro-therapeutics, or Electricity in its Relation to Medicine and Surgery. By William Harvey King, Electro-therapeutist to the Hahnemann Hospital, New York, etc. New York: A. L. Chatterton & Co., 1889. Pp. vii–13 to 153.

Diabetes: its Cause and Permanent Cure. From the Standpoint of Experience and Scientific Investigation. By Emil Schnée, M. D., Consulting Physician at Carlsbad, etc. Translated from the German by R. L. Tafel, A. M., Ph. D. English Edition, revised and enlarged by the Author. Philadelphia: P. Blakiston, Son, & Co., 1889. Pp. xv–215. [Price, $2.]

Physiological Notes on Primary Education and the Study of Language. By Mary Putnam Jacobi, M. D. New York and London: G. P. Putnam's Sons, 1889. Pp. 120. [Price, $1.]

Leprosy: an Imperial Danger. By H. P. Wright, M. A., Rector of Greatham, Hants, etc. London: J. & A. Churchill, 1889. Pp. ix–127.

Outlines of Lectures on Physiology, with an Introductory Chapter on General Biology, and an Appendix containing Laboratory Exercises in Practical Physiology. By T. Wesley Mills, M. A., M. D., L. R. C. P. Eng., Professor of Physiology, McGill University, Montreal. Montreal: W. Drysdale & Co., 1886. Pp. 5 to 200.

The Student's Text-book of the Practice of Medicine. By Angel Money, M. D. Lond., Assistant Physician to University College Hospital, etc. London: H. K. Lewis, 1889. Pp. xiv–458.

The Bacteria in Asiatic Cholera. By E. Klein, M. D., F. R. S., Lecturer on General Anatomy and Physiology in the Medical School of St. Bartholomew's Hospital, etc. London and New York: Macmillan & Co., 1889. Pp. xv–179. [Price, $1.25.]

Diseases and Injuries of the Ear; their Prevention and Cure. By Charles Henry Burnett, A. M., M. D., Aural Surgeon to the Presbyterian Hospital, etc. Philadelphia: J. B. Lippincott & Co., 1889. Pp. 6–7 to 154. [Price, $1.]

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Contribution à l'étude des syphilis graves précoces. Formes—fréquence—étiologie—pronostic. Par le Dr. Georges Baudouin, ancien interne des hôpitaux de Paris et de l'hôpital Saint Louis. Paris: G. Steinheil, 1889. Pp. 5 to 212.

On the Preventive Treatment of Calculous Disease and the Use of Solvent Remedies. By Sir Henry Thompson, F. R. C. S., M. B. Lond. Sprains: their Consequences and Treatment. By C. W. Mansell Moullin, M. A., M. D. Oxon. [Wood's Medical and Surgical Monographs.]

Warner's Therapeutic Reference Book. Philadelphia: W. R. Warner & Co., 1889. [Price, $1.]

Eleventh Annual Report of the State Board of Health of the State of Connecticut, for the Year ending November 30, 1888. With the Registration Report for 1887, relating to Births, Marriages, Deaths, and Divorces. Printed by Order of the Legislature.

Ninth Annual Report of the State Board of Health of Illinois. With an Appendix embracing Report on the State Sanitary Survey, Vital Statistics of Illinois and Coroners' Inquests, Meteorological Tables, Report on State Medicine in 1886.

On Myoma and Fibro-myoma of the Uterus and Allied Tumors of the Ovary. By Alban Doran. [Reprinted from the "Transactions of the Obstetrical Society of London."]

Further Contribution to the Study of Consumption among the Indians. By Washington Matthews, M. D., LL. D., United States Army. [Reprinted from the "Transactions of the American Climatological Association."]

A Contribution to the Study of Muscular Tremor. By Frederick Peterson, M. D. [Reprinted from the "Journal of Nervous and Mental Disease."]

Alcoholism and Pulmonary Consumption. By Thomas J. Mays, M. D. [Reprinted from the "Journal of Inebriety."]

Scarlatinous Otitis. By Charles H. May, M. D. [Reprinted from the "American Journal of Obstetrics and Diseases of Women and Children."]

The Question of Relationship between Lichen Planus (Wilson) and Lichen Rubra (Hebra). By A. R. Robinson, M. B., L. R. C. P. and S. Edin. [Reprinted from the "Journal of Cutaneous and Genito-urinary Diseases."]

Third Annual Report of the Allegheny General Hospital, Allegheny City, Pa. Charter, Rules, and Regulations.

Report of the Central Park Menagerie.

Water Supplies of Illinois and the Pollution of its Streams. By John H. Rauch, M. D. [Preliminary Report of the Illinois State Board of Health.]

Address on Medicine—Medical New York in 1800. By John Shrady, M. D. [Reprinted from the "Transactions of the New York State Medical Association."]

Clinical Lecture on Intubation of the Larynx. By F. E. Waxham, M. D., Chicago. [Reprinted from the "North American Practitioner."]

Treatment of Glycosuria. By Charles W. Purdy, M. D., of Chicago, Ill. [Reprinted from the "Journal of the American Medical Association."]

Stomach-washing in Infants, with a Demonstration on the Living Subject. By A. Seibert, M. D. [Reprinted from the "Archives of Pædiatrics."]

The Control and Care of Pauper Inebriates of Towns and Cities. By Lewis D. Mason, M. D., Fort Hamilton, N. Y. [Reprinted from the "Journal of Inebriety."]

The Significance and Detection of Traces of Sugar in the Urine, with some Reference to Life Insurance. By George B. Fowler, M. D. [Reprinted from the "Dietetic Gazette."]

New Inventions, etc.

A NEW NEEDLE-HOLDER FOR ALL KINDS OF NEEDLES.*

By W. W. Van Arsdale, M. D.,

Instructor in Surgery, New York Polyclinic; Attending Surgeon, Eastern Dispensary.

The jaws of the needle-holder represented in the accompanying cut work on the principle of Dr. G. R. Fowler's instrument, of Brooklyn. They are made smaller, however, so as to facilitate the application of buried sutures in small wounds, and, the joint being a French lock, straight needles can be retained in proper position by being placed



behind the transverse portion of the jaws against the longitudinal surfaces of the shafts. While the needle-holder, therefore, is especially intended for use with the Hagedorn needles, which are every day becoming more popular, it can be used equally well for straight needles, for needles partly or wholly curved on the flat, and for perfectly round needles.

In placing the flat Hagedorn needles in position the same precaution should be taken as in the Hagedorn needle-holder proper—namely, that of placing the portion of the needle which bears the eye in contact with the right side of the shaft of the instrument. (In the cut the needle is figured placed somewhat similarly on the left side.) The point of the needle should emerge at the point of the beak of the instrument. This position allows of greater freedom of scope and of easier rotation of the handles. The present instrument holds even the smallest flat needles so firmly, however, that this point of position need not be insisted upon, as is the case with Professor Hagedorn's holder, which is frequently too weak in its action.

The shafts are sufficiently long to permit of placing sutures inside of cavities, though not too long to preclude delicate work in plastic operations. The instrument can be used for ophthalmic work, as small

* Presented before the Section in Surgery of the New York Academy of Medicine, April, 1889.

needles curved on the flat and held between the transverse portion of the jaws can be closely approximated to the organ. The whole instrument is about seven inches in length in the present model. For use with the very largest flat needles made, it should be one or two sizes larger, the present one being intended for general use.

The handles are made of vulcanized rubber conveniently fashioned to fit the hand, and can be made of any desired size to suit the operator. The posterior one is smaller than the anterior one, in order to facilitate rotation in suturing with curved needles; moreover, it is flattened on the surface, so that one can tell the position of the holder in the hand by the feel of it alone.

The catch consists of a tongue provided with three angular ratchet-teeth, which fit into two retaining side-bars in the opposite handle. When the first tooth is caught, the needle placed between the jaws is held moderately firm, and very firmly indeed when the second tooth operates; the third tooth, however, releases the catch by allowing the tongue to pass between the bars, and the instrument opens, releasing the needle. The action of the catch is in some sort automatic. By closing the handles of the instrument after placing the needle in position the blades become locked and remain so until the needle is passed, when simple further pressure upon the handles releases the needle, thus doing away with all difficult thumb movements necessary to release the needles in most other holders. In many holders the needle can only be released if the catch happens to be opposite the thumb of the operator; the present instrument can be readily opened in every position, even when held upside down.

The advantages of having a catch of some kind on a needle-holder are that an assistant can hand the instrument to the operator without danger of the needle's falling out, and that when operating without assistance the needle placed beforehand in the jaws will be retained in the proper position till the instrument is used. If, however, the operator prefers to hold the needle in the forceps uncaught while passing the sutures, he need only free the catch by pressure before passing the needle, and can then manipulate the instrument in the same manner as if it had no catch.

The instrument is a so-called antiseptic one. It can be instantly taken apart for cleaning. The blades readily come apart by means of the French lock. The two springs which open the blades and work the ratchet-tongue, respectively, are made in one piece and can be slid laterally out of the pivot-head which retains them. The tongue is moored in cannon-bearings provided with side-slots, from which it is easily disengaged after removal of the spring.

The hard-rubber handles are vulcanized on while the steel is still hot, and the whole is afterward finished in one piece, presenting perfectly smooth surfaces. Even the name of the maker does not cause any unevenness of the surface, being made of metal and sunk into the handle so as to permit of a perfect finish, while remaining visible to the eye. The instrument is manufactured by the firm of George Tiemann & Co., of New York, and has proved very satisfactory to me and others, good workmanship being essential to its successful use.

207 West Fifty-sixth Street.

Miscellany.

The State Medical Society of Indiana held its fortieth annual meeting in Indianapolis on the 1st and 2d inst. An interesting paper on *Myxœdema* was read by Dr. James F. Hibberd, of Richmond, who gave a report of a case under his care, and went extensively into the literature of the disease.

Dr. G. W. Kemper, of Muncie, read on *Antiseptics in Normal Labor*. His experience in nine hundred cases of labor had taught him that antiseptics were uncalled for in cases where the patient was surrounded by wholesome environments, and he thought the complicated routine of the paraphernalia and details of antiseptic midwifery would be tiresome, expensive, and unnecessary.

The President's Address was delivered by Dr. W. H. Wishard, of Indianapolis. It comprised a retrospect of the practice of medicine for the past half century. He considered this period one of great progress in science as well as other things. The great thing was, Had medical men kept abreast with the times? He endeavored to make his answer convincingly in the affirmative. The primitive Indiana doctors had not had great advantages of education. In 1817 the Transylvania University, at Lexington, Ky., opened a medical department, and in 1818 John L. McCulloch was the first graduate in medicine west of the Alleghanies. This soon grew to be the second medical school of the United States. In 1819 the Medical College of Ohio, at Cincinnati, and in 1837 the Medical Department of the University of Louisville, were formed. Not ten per cent. of the physicians of Indiana in 1825 were graduates, and only twenty to twenty-five had taken one course in medicine. Ephraim McDowell was not a graduate, but after thirty years of practice the University of Maryland gave him the honorary degree of doctor of medicine. There was but one medical journal in the United States in the early part of this century, the "Medical Repository," of Philadelphia. Obstetric business was all in the hands of females. It was necessary; physicians were scarce, women were healthy, and nature needed but little aid. A confinement was quite an event among the women. Not to be invited was a great slight. The physicians were looked upon with suspicion in this line of practice, and were not summoned unless there was great necessity. When one was summoned, the news spread like wildfire, and the neighborhood turned out *en masse*, as though it was a funeral or a wedding. A log cabin 12 by 14 would be literally packed with women and children, with sometimes a few men. The early settlers were almost exempt from tuberculosis, diphtheria, and cerebro-spinal meningitis. Only the strong and healthy ventured to the front. In winter, pleurisy and pneumonia raged. The doctor was a dealer in second-hand goods. Four fifths of the fatal cases had been treated by the old women till the case was hopeless. He well remembered when quinine first came into use. He was given a mixture of thirty grains of quinine, ten drops of dilute sulphuric acid, and six ounces of water; a teaspoonful to be taken three times a day with great care. He had known an old thumb lancet to descend as an heir-loom from father to son and grandson, and to have drawn more blood than some regiments in the late war. An old theory was that, if one drew blood from the right arm when the pain was in the left, it would "draw the pain across the heart" and kill the patient. The curtain was first lifted in the treatment of fevers by Dr. Lunsford P. Yandell, of Louisville, and the light had been shining more and more ever since. The domain of surgery had made wonderful progress in the last fifty years. The good dame of fifty years ago would show her ten or twelve sons and daughters, the pride of her life, the hope of her future. To-day we were shown one son or daughter and—a poodle dog, often only the poodle dog—all the hope of a family. The speaker then made some scathing remarks about criminal abortion.

Dr. King, of Indianapolis, related the incident of his father and mother both dying within seven minutes of each other, from being bled forty years ago only a few miles from Indianapolis.

Dr. Leech, of Indianapolis, spoke on *Criminal Abortion*, and told an interesting story of how he had saved two twin girl-babies, and of what pleasure he had since derived from seeing them playing on the hillside as he drove past their home.

The *secretary's report* showed a gain of six county societies and seventy members over last year. The mortality list was not a long one, but it included the names of two ex-presidents, Dr. W. H. Field and Dr. Benjamin Newland, also those of Dr. Moses Baker, of Stockwell, the first surgeon in Indiana to perform ovariotomy; and Dr. Mary Thomas, of Richmond, the first female doctor to become a member of the society. About eighty out of the one hundred counties in the State had county societies, and all their members were members of the State society.

Dr. Kate Corey, a graduate of Michigan University and superintendent of the Methodist Hospital at Foochow, China, was introduced to the meeting, and made a brief speech. The story of her great work was related by the secretary, and a motion to make her an honorary member was passed without a dissenting voice.

Dr. E. S. McKee, of Cincinnati, was introduced as a delegate from the Ohio State Society.

Officers for the ensuing year were elected as follows: Dr. J. D. Gatch, of Lawrenceburg, president; Dr. S. T Yonte, of Lafayette, vice-president; Dr. E. S. Elder, of Indianapolis, secretary; Dr. T. C. Kennedy, of Shelbyville, assistant secretary; and Dr. F. C. Ferguson, of Indianapolis, treasurer.

The New York Academy of Medicine.—At the next meeting of the Section in Ophthalmology and Otology, on Monday evening, May 20th, Dr. E. Gruening will open a discussion on "Glaucoma," to be continued by Dr. H. D. Noyes, Dr. H. Knapp, Dr. C. J. Kipp, Dr. R. H. Derby, Dr. C. S. Bull, Dr. J. S. Prout, Dr. D. Webster, Dr. A. Mathewson, Dr. T. R. Pooley, and others.

At the next meeting of the Section in Laryngology and Rhinology, on Tuesday evening, May 28th, a demonstration will be given of "The Case of Plastic Operation for [the Formation of an] Artificial Nose," performed by the late Dr. T. T. Sabine; Dr. O. B. Douglas will read a paper on "Electricity supplied by the Edison Dynamo in place of the Galvanic Cell for all Medical Purposes"; and Dr. Charles H. Knight will read a paper on "The Diagnosis and Treatment of certain Forms of Rhinitis," to be discussed by Dr. M. J. Asch, Dr. Beverley Robinson, Dr. O. B. Douglas, and others.

Ex-internes of Bellevue Hospital.—The Society of the Alumni of Bellevue Hospital is actively engaged in the preparation of a catalogue of its members, both living and dead, with the aim of printing as full and complete biographical information as possible. The first edition was issued from the Bellevue press in 1873, covering a period of twenty-three years; it was a pamphlet of thirty-five pages and has virtually been out of print several years. The circular of inquiry sent out by the Catalogue Committee and signed by Dr. R. J. Carlisle, of New York, invites the co-operation of every house-staff since 1850. It was in 1849 that the system of competitive examinations for positions began, and it took effect on January 1, 1850. Of the staff of 1850, according to the first catalogue, Surgeon-General John Moore and Assistant Surgeon-General Charles Page, of the army, were members, also Dr. Stephen Smith; eight others are known to be deceased. Two of the latter were victims of the ship-fever epidemic of 1851, before the expiration of their term of service, Gridley and Ravenhill; and their names appear among those of the fourteen "martyrs of humanity," in memory of whom the tablet of the College of Physicians and Surgeons was erected about 1853 by the faculty of that college. The tablet recites that these fourteen died of pestilential disease while serving in the public hospitals of New York, and "that, taught by their example," the graduates of the college must "never hesitate to hazard life in the performance of professional duty." It would be fitting if the aims of this Catalogue Committee could be so extended as to include the names and sketches of as many of these heroic men as fell in those fever years from 1847 to 1853. If this is done, their catalogue will be a noble supplement to the tablet above mentioned, and will prove the most adequate record of the medical sacrifices made in those trying times, which are most worthy of being perpetuated upon the printed page. As a text and warrant for such a course, we quote from a paper written by Dr. Alonzo Clark, in 1853, a brief paragraph which shows how his large heart mourned over those devoted young medical men. "In that same year," he is writing of the year 1848, "another little body of soldiers might have been seen here at home, making defensive war against an invading enemy. One after another of that little band sunk mortally wounded on *their* field of battle; and when at length they were gathered to their graves, glory awoke no pæans for them. The public heart, cold as the earth which received their mortal remains, felt no pang. Alas! out of the desolated family circle—out of the profession that cherishes their memories—who was there to mourn for Snowden? Who was there to mourn for Graham, for Beals, Hutchinson, Porter, Van Beuren, Hedges, Blakeman, Calhoun, Worth, and Leonard? Yet these were among the men who stood between the living and the dead; these were the costly sacrifice, and yet not all the sacrifice, by which the fever pestilence was stayed." Dr. Clark draws a comparison at some length between the heroism of the soldier and that of the physician, to which we may refer at some future time, and closes with a statement that of the thirty assistant physicians on duty at Bellevue during the fever epidemic, twenty-one took the disease and five died; "yet their ranks were always full; and I speak from personal knowledge when I say that I know not where to look for a body of young men whose duty is performed with more conscientiousness and courage and intelligence."

Dr. Clark mentions eleven names of victims, six of which are on the college tablet as well; but Augustus Van Buren, with others, was the costly sacrifice from the young men of the New York University, while Gridley and Blakeman were from the school at Yale, both being sons of physicians eminent in Connecticut. From the two sources, nineteen names of the fallen are obtained, nearly all of whom got their death-blow on the battle-field at Bellevue. Curtiss, however, whose name is on the tablet, was stricken down while on duty at the Quarantine Station. There was a period, we must believe, between 1847 and 1853 when the Bellevue staff had some member down with the fever in an almost continuous series, some dying and some getting well, and "yet their ranks were always full." Let us have a record begun, at least, in regard to those gallant young men before it is forever too late.

The Catalogue Committee will welcome information with regard to Dr. Samuel H. Aitken, staff of '54; Dr. Timothy Babb, '59; Dr. Joseph Bluxome, '57; Dr. W. K. Cleveland, '62; Dr. T. H. Maddox, '55; Dr. Charles H. Suydam, '61; and Dr. Stuart White, '59.

Medical Men in Fiction.—In the first of a series of editorial articles with this title, the "British Medical Journal" says: "Passing by Chaucer's 'veray parfait practisour' who did not read his Bible, but 'loved gold in special,' and Shakespeare's 'starved apothecary' who for 'a consideration' sold Romeo poison, and advancing to the literature of the eighteenth century, we find that medical men, according to our popular literature, were very little esteemed. We find the three great humorists of that age, Sterne, Fielding, and Smollett (himself a medical man), agreeing in holding up to ridicule and reprobation the medical men they introduced into their pages.

"Dr. Slop, in 'Tristram Shandy,' is believed to be the caricature portrait of a celebrated York antiquarian physician of the day, but from the moment he appears on the scene he becomes a mark for satire and a butt for ridicule. 'Imagine to yourself,' says Sterne, 'a little, squat, uncouth figure of a Dr. Slop of about four feet and a half perpendicular height, with a breadth of back and sesquipedality of belly which might have done honour to a sergeant in the Life Guards.' He enters the room after a ridiculous adventure, all plastered with mud, and disappears from the book in an elegant scene where he bedaubs the maid with a cataplasm and in return receives something less pleasant in his own face, while his pedantry, professional and religious, his midwifery forceps, and his absurdities are the constant theme of Sterne's satire. Mr. Shandy may be philosophical, Uncle Toby benevolent, Corporal Trim pathetic, Yoric eloquent; Slop alone exhibits no redeeming quality on any occasion. In a certain passage of the same work Sterne draws a picture of what would happen if the world were turned topsy-turvy, and he says of the profession of medicine: 'In this corner of the picture you would see a son of the divine Æsculapius writing a book against predestination, or perhaps worse, feeling his patient's pulse, instead of his apothecary's, a brother of the faculty in the background upon his knees in tears, drawing the curtain of a mangled victim to beg his forgiveness, offering a fee instead of taking one.' To do Sterne justice, he never missed an opportunity of laughing at the profession. In his correspondence from France we find: 'My physicians have almost poisoned me with what they call *bouillons rafraichissants*; 'tis a cock flayed alive and boiled with poppy-seeds, then powdered in a mortar, afterwards passed through a sieve. Then there is to be one crawfish in it, and I am gravely told it must be a male one, a female would do me more hurt than good.'

"A Dr. Hill tells the following anecdote of Sterne, in the 'Royal Female Magazine' for 1760, and vouches for its truth: 'At the last dinner that the late, lost, amiable Charles Stanhope gave to genius, Yorick was present. The good old man was vexed to see a pedantic medicine-monger take the lead and prevent that pleasantry which good wit and good wine might have occasioned, by a discourse in the unintelligible jargon of the profession, concerning the difference between the phrenitis and the paraphrenitis, and the concomitant categories of the mediastinum and pleura. Good-humoured Yorick at once fell into the cant and jargon of physic as if he had been one of Radcliffe's disciples. "The vul-

gar practice," says he, "savours much of mechanical principles; the venerable Ancients were all empirics, and the profession will never regain its ancient credit till practice falls into the old track again. I am myself an instance; I caught cold in leaning on a damp cushion, and after sneezing and snivelling a fortnight, it fell into my breast. They blooded me, they blistered me, and gave me robs and bobs and lohocks and eglemata, but I grew worse, for I was treated according to the exact rules of the College. In short, from an inflammation it came to an adhesion and all was over with me. They advised me to Bristol that I might not do them the discredit of dying under their hands, and the Bristol people, for the same reason, consigned me over to Lisbon. But what do I? Why, I considered that an adhesion is in plain English only a sticking of two things together, and that force sufficient would pull them asunder. I bought a good ash pole and began leaping over all the walls and ditches in the country. From the height of the pole I used to come down *souse* upon my feet, like an ass when he tramples on a bulldog, but it did not do. At last, when I had raised myself perpendicularly over a wall, I used to fall exactly upon the ridge of it, on the side opposite to the adhesion. This tore it off at once and I am as you see. Come, fill a glass to the empirick medicine!"'

"It might have been hoped that Smollett, himself a physician, would have dealt more gently with his own profession, but, since his medical characters have less of burlesque and more of pure caricature in them, he almost treats us worse than Sterne did. It is true that Roderick Random, one of his heroes, was a surgeon-apothecary, but in one part of his career he was also a footman, and he seems to have abandoned both occupations with equal alacrity when his hour of fortune struck. Smollett describes Crab and Potion—country practitioners of the day—as villainous compounds of the rogue, the drunkard, and the shopkeeper, and Potion, who turned Random out of doors to become the slave of the more worthless Crab, is a portrait of Smollett's own master, John Gordon, a Glasgow apothecary, while Crab is the likeness of the master of a friend.

"The description of Lavement, the French apothecary in London, is little more flattering. This, for instance, was his method of compounding a prescription. 'He had a great deal of business, but, as he was mostly employed amongst his fellow refugees, the profits were small. However, his expense for medicine was not great, for he was the most expert man at a substitute of any apothecary in London, so that Random was sometimes amazed to see him make up a physician's prescription, without the least hesitation, though he had not in the shop one drug mentioned in it. Oyster shells he could invent into crab's eyes, common oil into oil of sweet almonds, syrup of sugar into balsamic syrup, Thames water into aqua cinnamomi, turpentine into capivy, and a hundred more costly preparations were produced at a moment's notice from the cheapest and coarsest drugs in the materia medica, and whenever any common thing was ordered for a patient by himself, he always took care that it should be disguised in colour or taste, or both, in such a manner that it could not be possibly recognized.'

"Random's account of his examination for the diploma of surgeon's mate at the Surgeons' Hall has a double interest for us, first as casting a strong light on the character of the examinations of the time, secondly, as regards an almost contemporary entry in the books of the college. According to the chronology of the novel, Random's examination would take place about 1740, the scene being written about eight years later. Ten years after, 'at a court of examiners held at the theatre 21st December, 1758, James Bernard [was found qualified as] a mate to a hospital. Oliver Goldsmith, found not qualified for ditto.' But gentle Goldsmith had no stone to throw; in all his works no word of satire or blame for his profession can be found. It is the successful Smollett, not the rejected Goldsmith, who loads the Company of Surgeons with such ridicule.

"There is one other of Smollett's characters who requires passing notice, the physician with whom Peregrine Pickle makes acquaintance in Paris, and who provides his fellow travelers with a classical feast. This man, with his pedantry, his ignorance, and his ill manners, is believed to be a portrait of Dr. Akenside, the then popular poet-physician, and it is probable, from Lettsom's description of him, that the portrait is not ill drawn.

"Fielding has only incidental allusions to medical men, and those not of the most flattering description. When Joseph Andrews, wounded, stripped, and half dead, is conveyed to an inn, the local surgeon is summoned. Thinking that some gentleman or lady has been hurt, this worthy is half dressed, when a maid from the inn again rings his bell to hasten his movements. 'When the wench had informed him at his window that it was a poor foot passenger who had been stripped of all he possessed and half murdered, he chid her for disturbing him so early, slipped off his clothes again, and very quietly returned to bed and to sleep.'"

Pachydermia Cretinoides.—"Professor Amalio Gimeno, of Madrid, describes and figures in 'La Medicina Practica,' a new Spanish medical journal, a case of myxœdema or cachexia pachydermica. The patient is a typical cretin, and presents a swollen condition of the head, trunk, and extremities, which it is impossible to confound with cardiac or nephritic œdema, or with elephantiasis or scleroderma. Professor Gimeno seems inclined to think this disease may have some relation to beri-beri, and remarks upon its occurrence in the person of a cretin. Is it possible, he asks, that there is any relationship between cachexia pachydermica and cretinism? It is upon the supposition that the two conditions are, in the patient alluded to, in some degree connected that he has suggested the name 'pachydermia cretinoides.'"—*Lancet.*

Mortality in Cities in the United States.—The following table represents the mortality in the cities named, as reported to Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, and published in the abstract of sanitary reports received by him during the week ending May 10th:

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—										
				Cholera.	Yellow fever.	Small-pox.	Variloid.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y.....	May 4.	1,564,324	731	..	..	..	..	..	..	2	34	56	20	....
Philadelphia, Pa....	May 4.	1,040,245	402	..	..	..	..	..	..	10	9	7	5	5
Brooklyn, N. Y.....	May 4.	821,555	333	..	..	..	..	..	..	1	8	27	3	3
Baltimore, Md.....	May 4.	500,343	152	..	..	..	..	..	..	1	1	2	..	....
Cincinnati, Ohio....	May 4.	325,000	85	..	..	..	..	..	..	2	1	3	1	....
New Orleans, La....	April 27.	254,000	104	..	..	..	..	..	..	..	..	6	..	....
San Francisco, Cal..	April 26.	330,000	117	..	..	..	..	..	..	1	..	2	..	....
Pittsburgh, Pa.....	May 4.	230,000	60	..	..	..	..	..	..	..	2	..	1	....
Detroit, Mich.....	April 27.	230,000	57	..	..	..	..	..	..	..	1	2	..	....
Detroit, Mich.....	May 4.	230,000	46	..	..	..	..	..	..	..	1	4	..	....
Louisville, Ky.....	April 27.	227,000	66	..	..	..	..	..	..	2	..	1	..	....
Louisville, Ky.....	May 4.	227,000	72	..	..	..	..	..	1	..	4	..	3	3
Milwaukee, Wis.....	May 4.	210,000	50	..	..	..	..	..	..	2	3	3	..	....
Minneapolis, Minn..	April 27.	200,000	35	..	..	..	..	..	..	2	1	2	..	1
Newark, N. J.....	April 30.	181,351	79	..	..	..	..	..	..	3	..	6	..	1
Kansas City, Mo....	May 4.	180,000	42	..	..	..	..	..	..	..	..	..	..	....
Providence, R. I....	April 27.	127,000	50	..	..	..	..	..	..	6	2	1	..	....
Providence, R. I....	May 4.	127,000	40	..	..	..	..	..	..	..	3	1	..	....
Rochester, N. Y.....	May 4.	120,000	35	..	..	..	..	..	..	..	..	1	..	....
Richmond, Va.....	May 6.	100,000	39	..	..	..	..	..	..	..	..	..	..	1
Denver, Col.....	May 3.	100,000	27	..	..	..	..	..	..	1	..	1	1	....
Toledo, Ohio	May 3.	83,500	17	..	..	..	..	..	..	..	..	..	..	....
Nashville, Tenn.....	May 4.	65,153	13	..	..	..	..	..	..	..	..	..	..	....
Fall River, Mass....	May 4.	65,000	27	..	..	..	..	..	..	2	2	1	..	....
Lynn, Mass.....	May 4.	50,000	16	..	..	..	..	..	..	..	..	3	..	....
Charleston, S. C.....	May 4.	60,145	26	..	..	..	..	..	..	..	..	..	1	....
Manchester, N. H....	April 27.	42,000	8	..	..	..	..	..	..	..	..	..	..	....
Portland, Me	May 4.	42,000	14	..	..	..	..	..	..	..	..	..	..	....
Galveston, Texas...	April 26.	40,000	11	..	..	..	..	..	..	1	..	..	..	....
Council Bluffs, Ia....	April 27.	35,000	4	..	..	..	..	..	..	..	..	..	..	....
Altoona, Pa.....	April 27.	30,000	7	..	..	..	..	..	..	..	..	..	..	....
Binghamton, N. Y..	May 6.	30,000	8	..	..	..	..	..	..	1	..	..	..	....
Auburn, N. Y.....	April 4.	26,000	5	..	..	..	..	..	..	..	..	..	..	....
Haverhill, Mass.....	April 27.	25,000	10	..	..	..	..	..	..	..	..	..	2	....
Haverhill, Mass.....	May 4.	25,000	6	..	..	..	..	..	..	..	..	1	..	....
Newport, R. I.....	May 2.	22,000	8	..	..	..	..	..	..	..	..	..	..	....
Newton, Mass.....	May 4.	21,533	1	..	..	..	..	..	..	..	..	..	..	....
Keokuk, Iowa.....	May 4.	16,000	8	..	..	..	..	..	..	8	..	..	1	....
Pensacola, Fla.....	April 27.	15,000	5	..	..	..	..	..	..	..	..	..	..	....
Pensacola, Fla.....	May 4.	15,000	4	..	..	..	..	..	..	..	..	..	..	....

The American Association of Genito-urinary Surgeons will hold its third annual meeting at the Aquidneck House, Newport, R. I., on Tuesday and Wednesday, May 21st and 22d. The programme includes the following:

An Address of Welcome, by the president, Dr. Robert W. Taylor, of New York; a discussion on the "Question of the Radical Cure of Deep Urethral Stricture," by Dr. Edward L. Keyes, of New York, Dr. John P. Bryson, of St. Louis, Dr. Robert W. Taylor, of New York, Dr. Robert F. Weir, of New York, Dr. A. W. Stein, of New York, and others; a paper entitled "The Essential Factor in the Ætiology of Stricture, and its Bearing on the Question of Radical Cure," by Dr.

Bryson (in connection with the discussion mentioned); "Cases of Nephrectomy and Nephrotomy," by Dr. R. B. Nall, of Memphis, Tenn.; "A Contribution to Renal Surgery," by Dr. Nicholas Senn, of Chicago; "Primary Syphilitic Lesions at the Meatus Urinarius," by Dr. Francis B. Greenough, of Boston; "Induration of Venereal Sores not always an Indication that Constitutional Syphilis will follow," by Dr. Edward C. Burnett, of St. Louis; "Malignant Tumors of the Inguinal Ganglia secondary to Epithelioma of the Penis," by Dr. Taylor, of New York; "The Relation of the Prostate to Chronic Urethral Discharge," by Dr. J. William White, of Philadelphia; "Report of Three Cases of Chronic Cystitis of the Neck resulting in the Formation of Hard Fibrous Rings at the Site of the Sphincter Vesicæ, with Remarks," by Dr. Bryson, of St. Louis; "A Case of Melanotic Sarcoma of the Vulva," by Dr. Taylor, of New York; "Reflex Irritations from Stricture of the Urethra in the Female," by Dr. Fessenden N. Otis, of New York; "The Treatment of Gonorrhœa, and Gonorrhœal Cystitis," by Dr. Edward R. Palmer, of Louisville, Ky.; "Cases," by Dr. Alexander W. Stein, of New York; "Cases of Suprapubic Cystotomy," by Dr. L. Bolton Bangs, of New York; "A Case of Scirrhus of the Bladder (with specimen)," by Dr. Arthur T. Cabot, of Boston; "Hereditary Syphilitic Transmission through Two Generations," by Dr. E. E. King, of Toronto, Canada; "A Case of Poisoning by Chromic Acid following its Application to Condylomata Acuminata," by Dr. J. William White, of Philadelphia; and "An Unusual Form of Vesical Calculus," by Dr. George Chismore, of San Francisco.

Lanolin.—In a recent number of the "Therapeutische Monatshefte," Dr. A. Gottstein, of Berlin, writing of sublimated lanolin as an antiseptic, refers to a former communication of his maintaining that lanolin is proof against destruction by micro-organisms, and that a layer of it, even without the addition of any antiseptic, resists the passage of germs. As a vehicle for antiseptics, it is therefore far superior to glycerin and to other fats.

THERAPEUTICAL NOTES.

Apomorphine as an Emetic.—Dr. John Brown asserts in a recent number of the same journal that few, if any, of the new drugs introduced into the British Pharmacopœia have sustained such a high repute for their therapeutical value as apomorphine, and that, when given hypodermatically, it is the emetic *par excellence* for children. Dr. Brown prepares his own solution of apomorphine as follows:

Apomorphine hydrochloride.....	1 grain;
Alcohol.....	20 minims;
Water.....	110 "

Ten minims of this solution contain a twelfth of a grain of the alkaloid. Ten minutes is the average interval between the injection and the vomiting, which generally occurs two or three times at short intervals. The depression is only what might be expected after ordinary vomiting. Dr. Brown has not observed any case approaching fatality or even serious collapse.

Ichthyol as an External Remedy in Skin Diseases.—Ichthyol, says Dr. Charles J. R. McLean, in a recent number of the "British Medical Journal," acts in three ways: 1. As a protective. A solution painted over the surface of the skin dries quickly, forms a thin layer somewhat resembling friar's balsam or collodion, and thus protects the skin from air, dust, etc. 2. By reducing congestion. When it is applied to healthy skin the effects are apparently nil, but if there is active congestion it contracts the arterioles and thus lessens the vascularity of the part. 3. As a desiccant. In reducing the vascularity of congested skin, it also reduces the outward flow of serum. Dr. McLean has used ichthyol with marked success in the following cases:

Simple Erythematous Eczema.—After washing, the parts should be carefully dried with a soft towel, and, in the case of the hands, rubbed with a little diluted glycerin (1 part to 8 parts of distilled water). Dr. McLean generally applies ichthyol in the form of a solution, varying in strength according to the situation and stage of the disease. In a case of simple erythematous eczema, before the vesicles develop, a solution of 1 part to 8 parts of distilled water is of the proper strength to use, and should be painted on with a camel's-hair brush once in every four hours. The part may be washed in warm water and dried before each application. If the itching is very severe, the solution may be applied as often as once every two hours for three applications.

Scaly Dry Eczema.—An ointment is preferable in this stage of eczema, as it softens the epithelium better. It may be made of ʒ j of ichthyol and ℥ j of vaseline, with or without a little lanolin.

Weeping Eczema.—An ichthyol solution applied at the early stage of the "weeping" will control further exudation, but, if there is much tender surface, it is better to apply the ointment for the first twenty-four hours. The best way to apply the solution in this case is first to dry the surface gently and then paint it on, repeating in three or four hours if the part is not already dried.

Simple Erysipelas.—A solution (ʒ j to ℥ j) should be painted on every four hours.

Urticaria-like Eruptions.—The solution should be applied early, before the formation of many watery blebs.

Furuncles.—A strong solution (ʒ j to ℥ ss.) should be applied once every two hours for three or four applications, and then once every four hours. With this external treatment sulphide of calcium is administered in quarter-grain doses every two or three hours for twelve hours, and then three or four times a day.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

TWO RARE DISLOCATIONS.

1. DISLOCATION OF THE LOWER END OF THE ULNA FORWARD.

2. DISLOCATION OF THE UPPER END OF THE FIBULA OUTWARD AND FORWARD.

BY LEWIS A. STIMSON, M. D.,
SURGEON TO THE NEW YORK AND CHAMBERS STREET HOSPITALS.

THE infrequency of the injuries of which the following two cases are examples makes their publication desirable:

CASE I.—Bridget G., "between forty and fifty years old," came to the Chambers Street Hospital, May 14, 1888, immediately after having received an injury of the right wrist. In the sudden descent of a dumb-waiter the hand and wrist had been caught between the upper edge of the inclosure and the lower surface of one of the shelves of the waiter. There was a slight abrasion on the radial aspect of the lower two inches of the forearm, and a contusion immediately opposite on the ulnar aspect, extending an inch higher. The hand was in complete supination, and could not be pronated. The normal prominence of the ulna at the back and side of the wrist was lost, and on palpation the ulnar border of the lower end of the radius and the portion of the upper posterior border of the carpus corresponding to the ulna could be distinctly traced. The relations of the carpus to the radius and metacarpus were unchanged. On passing the finger from the fifth metacarpal upward along the dorsum and ulnar side of the carpus, a bony lump (presumably the unciform) could be felt, and then a narrow, transversely elongated bone, which I thought to be the cuneiform. Above the latter was a deep depression, in front of which, on the front of the wrist, the lower end of the ulna could be felt. The triangular fibro-cartilage could not be recognized.

Reduction was easily made, with a distinct snap, by forced pronation combined with pressure backward upon the ulna and forward upon the radius. The dislocation could be easily reproduced by supinating the wrist and pressing the ulna forward.

The history and the bruises on the forearm indicate that the mechanism by which the dislocation was produced was not exaggerated supination, but direct pressure upon the two bones from opposite sides in a direction more or less oblique to the transverse axis of the radius. The position of full supination in which the limb was fixed is apparently not constant in all cases.

CASE II.—Thomas C., twenty-four years old, was admitted to Chambers Street Hospital April 10, 1889. Shortly before admission he had sprung sideways to the sidewalk to avoid a horse, and, his feet slipping to the left, he had fallen upon his right side. He felt sharp pain at the right ankle and then below the right knee on the outer side, and, on passing his hand over the latter region, felt an unusual bony prominence. He arose, mounted his truck, and drove it for twenty minutes, when the pain below the knee had become so severe that he could not walk. He was brought immediately to the hospital. He declared himself unable to walk, but could flex the knee to a right angle and move the ankle freely. The head of the fibula could be readily recognized by the eye and touch projecting on the outer side of the leg, with the tendon of the biceps showing prominently as it curved downward and outward, its convexity directed forward and somewhat inward. The upper, outer, anterior, and posterior surfaces of the head of the fibula could be palpated readily. The distance from the head to the tuberosity of the tibia was one centimetre less than on the other leg, and the circumference of the limb just below the patella was one centimetre greater than on the other side. The skin showed no contusion.

As the region was extremely tender on pressure, ether was administered, and then reduction was easily made by pressing the head of the fibula backward with the thumb, while the knee was flexed at a right angle. The bone returned to its place with a distinct snap.

The next day the region was still quite tender, and forcible depression and adduction of the front of the foot caused pain at the head of the fibula.

The reported cases of this injury are only six in number, and of these, three were collected by Malgaigne more than thirty years ago. It will be remembered that the head of the fibula is normally placed behind the tibia, rather than on its outer side, so that a dislocation forward must also be outward. To it are attached the external lateral ligament of the knee joint and the tendon of the biceps, coming from above, and from the front of the shaft arise many of the fibers of the anterior group of muscles of the leg—those which produce dorsal flexion of the ankle. It is easily conceivable that external violence, acting directly upon the head of the fibula, in a direction from behind and within outward and forward, might produce this dislocation, but in none of the recorded cases is there any indication that such violence came into play. Jobard, who reported the second case, suggested that the injury might have been caused by the contraction of the muscles attached to the front of the bone. His patient stumbled while ascending a staircase, and felt a snap before he had fallen. The explanation, although open to serious criticism, is strengthened by the fact that in two of the remaining cases (Savournin's and Robert's) the front of the foot was forcibly depressed at the moment of the accident, and that in mine a similar movement communicated to the foot after reduction caused pain in the region of the dislocation, and that sharp pain was felt at the ankle at the time of the accident. Savournin's patient, a woman, thirty years old, while descending a staircase, caught her heel on a step; the front of the foot was sharply depressed and turned inward, and she fell in a squatting posture. Robert's patient, jumping over a bench, fell with the foot flexed and inverted, and suffered much pain along the outer side of the leg, especially at the lower part. In the remaining cases the history throws little or no light upon this point. Thomson's patient fell into a ditch, striking upon the injured leg; Melzer's slipped sideways; and Read's, while shoeing a horse, was thrown down with his leg doubled under him.

In Read's case reduction occurred spontaneously during the struggles excited by anæsthetization; in the others it was readily effected by direct pressure upon the head of the fibula in a suitable direction.

SOME FACTS AND OBSERVATIONS RELATIVE TO THE CONGENITAL MALFORMATIONS OF THE RECTUM AND ANUS,

AND TO THE OPERATION OF COLOTOMY IN SOME SUCH CASES.

By WILLIAM BODENHAMER, A. M., M. D.

The writer was induced to make the following observations on this interesting subject from having read an excellent paper by Dr. George E. Brewer, under the head "Successful Lumbar Colotomy, with a Sphincter Formation, in a Case of Congenital Absence of the Rectum and Anus" (New York "Medical Record" of December 1, 1888, p. 643). In this paper Dr. Brewer describes the particulars of his successful operation of lumbar colotomy, according to the method of Amussat, in the case of a male child two days old. His paper contains Mr. Curling's classification of the congenital malformations of the rectum and anus, together with two statistical tables of the number of infants upon whom inguinal and lumbar colotomy had been performed up to 1888. Dr. Brewer, in his table on inguinal colotomy, which contains fifty-six cases, fails to include the following important ones: Voisin's fourth case, Duret's second case, Miriel's fourth case, Tüngel's two cases, Johnson's second case, Schlagintweit's case, Rochard's case, Leprestre's case, Curling's case, Green's case, Goyrand's case, and an anonymous author's case—thirteen cases.

All these cases are authentic and must not be omitted. They will all be found in the writer's table on inguinal colotomy, which includes fifty-one cases, according to his estimate, brought up to 1879. In 1860, now twenty-nine years ago, the writer's table contained twenty-five cases as presented in his treatise, page 322. The cases which have been reported since 1879 will not, for obvious reasons, be found in the writer's table; but these cases Dr. Brewer has presented in his table, which, as before remarked, was made up to 1888, and they are as follows: Warren's case, Campbell's case, Tuckerman's case, Humphrey's case, Redwood's case, Hashimoto's four cases, Moullin's case, Simon's case, Stott's case, Weinlechner's case, Robson's case, Pitt's case, Stretton's case, Goodman's case—seventeen cases.

Now, if these seventeen cases are added to the writer's fifty-one cases, they will number sixty-eight cases of inguinal colotomy operations up to 1888, instead of fifty-six cases reported by Dr. Brewer.

Dr. Brewer's table on lumbar colotomy was also calculated up to 1888, and contains seventeen cases, including his own. He, however, omits the important case of the late Professor A. C. Post, of New York, who on the 4th of March, 1861, reported to the New York Medical and Surgical Society the case of an infant having an imperforate rectum, half an inch above a normal anus, upon whom he had performed a double operation. In this instance Dr. Post failed to reach the rectal cavity by dissecting through the septum of the normal anus; he then performed lumbar colotomy; but the child died a few days after of erysipelas of the wound and face ("American Medical Times," vol. v, p. 64, New York, 1862). This case of Dr. Post's, as before remarked, is important as being the first recorded one in the United States, so far as the writer's knowledge extends, in which colotomy was performed on an infant for congenital imperforate rectum, and, of course, the first case of lumbar colotomy on such a patient. Dr. Pooley's case in 1869 was the first recorded one in the United States in which inguinal colotomy was performed on an infant for imperforate anus.

The writer made the following remarks in his treatise which was published in 1860, page 302: "I am not aware that any surgeon in the United States has ever performed the operation for abdominal artificial anus in the case of an infant with congenital imperforation of the rectum and anus. If there is such a case reported, I have not seen the record."

The cases of Professor Post and Dr. Pooley, being the first recorded ones in our country, are therefore highly interesting as affording some encouragement as well as giving evidence of further advance and of inspiration in this direction.

Dr. Brewer has also omitted other important cases besides that of Dr. Post in his table on lumbar colotomy, notably among them the fourth interesting and successful case of Amussat. This was the case of a male child having an imperforate rectum above a normal anus. The operation was performed on the 21st of May, 1852, by Amussat, according to his own method. The boy upon whom the operation was performed was living and quite well when seven years old, and was as bright and as brisk as any other boys of his age, and he may still be living ("Bulletin général de thérapeutique médicale et chirurgicale," tome lxi, p. 374, Paris, 1861). This was the last case in which the late distinguished and lamented M. Amussat performed the operation of lumbar colotomy; he died in 1856.

The following are the cases, then, which Dr. Brewer omits in his table on lumbar colotomy: Post's case, Amussat's fourth case, a German surgeon's case, Curling's two cases, Leslie and Pennell's case—six cases.

All these cases are authentic and are in the writer's table on lumbar colotomy, which was calculated up to 1879 and contains sixteen cases. The following seven cases of Dr. Brewer, including his own case, are not in the writer's table, they having been reported since his table was made: Farland's case, Bird's case, Weir's case, Fowler's case, Barkwell's case, Power's case, Brewer's case—seven cases.

If these seven cases of Dr. Brewer's table are added to the sixteen cases of the writer's table, they will make twenty-three lumbar colotomy operations up to 1888, instead of the seventeen cases reported by Dr. Brewer.

The writer, before giving his statistical tables, will, for the better understanding of them, give his own classification and arrangement of all the congenital abnormal conformations of the rectum and anus. All who are familiar with these congenital anomalies which the anus and the rectum present know that they assume a great variety of forms, from the most simple to the most complicated, so that it is no easy task to enumerate, classify, describe, and define them. They also afford to surgery the rare opportunity of displaying its science and its art in the most surprising manner.

The writer, a number of years ago, before making his classification, examined those of von Ammon, Boyer, and Amussat, as well as the nomenclature of these congenital vices as proposed by Papendorpf, all of which differed more or less. He then made his own classification, which accorded in some particulars with that of Papendorpf, whose arrangement, although not systematized, but merely suggested or outlined more than a century ago, he believed to be as scientific as any he had seen of a later date; it was, however, imperfect and contained some radical defects which were not adopted, but corrected.

Then, taking as a basis of classification the anatomical and the pathological characteristics which constitute the congenital vices of structure of the anus and rectum, the writer distinguished them all into nine species, each one of which comprises a greater or a less number of varieties. The desideratum, however, in constructing a classification of this character is such an arrangement as will connect things in themselves similar, so as to enable the student to study, with the least expense of time and trouble, the particular facts and united groups of facts which the subject naturally presents; beyond this the writer has nothing to say for his own classification, except that he believes it will be found to be as explicit, practical, and comprehensive as any nomenclature upon this subject extant.

The following is the writer's classification, consisting of nine distinct species or classes, as presented in his treatise on the congenital imperfections of the rectum and anus, published in 1860, page 53:

I. This species consists of a preternatural narrowing or stenosis of the anus at its margin, and occasionally extending a short distance above this point.

II. In this species there is a complete occlusion of the anal aperture by a simple membrane, or by the common integument, or a substance analogous to it, more or less thick and hard.

III. In this species there is no anus whatever; the rectum, being partially deficient, terminates in a *cul-de-sac* at a greater or less distance above its natural outlet.

IV. The anus in this species is normal, but the rectum at variable distances above it is either deficient, obliterated, or completely obstructed by a membranous septum.

V. In this species the rectum terminates externally by an abnormal anus, located in some unnatural situation, as at some point in the sacral region or at different points in the perinæum; or it may be prolonged in the form of a fistulous sinus, and terminate by an abnormal anus at the glans penis or the labia pudendi. The normal anus being generally absent, its functions are more or less imperfectly performed by the abnormal one.

VI. The rectum in this species opens preternaturally into the bladder, urethra, or vagina; or into a cloaca in the perinæum with the urethra and the vagina. In these instances the normal anus does not generally exist.

VII. In this species the rectum is normal, with the exception that either the ureters, the vagina, or the uterus open preternaturally into it.

VIII. In this species the rectum is entirely wanting.

IX. The rectum and colon in this species are both absent, and some other portion of the intestinal canal terminates externally in a preternatural anus in some extraordinary part of the body—such as the umbilicus, the left iliac fossa, the lower part of the abdomen just above the symphysis pubis, below the scapula, and at the side of the face, as it has been known to have occupied each of these situations. No normal anus ever exists.

It will be observed that each one of these different species or classes contains within itself abundant material to form a separate and distinct practical treatise upon this prolific subject.

The following syllabus or synoptical table presents at a single view the different congenital malformations of the anus and rectum, including all the species of the writer's classification, except the ninth:

TABLE I.

- The congenital malformations of the anus.
  1. Preternatural narrowing.
  2. Occlusion by a thin membrane.
  3. Occlusion by a thick, hard membrane.
  4. Partial or complete absence.
  5. Abnormal.
- The congenital malformations of the rectum.
  - Occlusion of the rectum.
    1. By one membranous septum.
    2. By two or more membranous septa.
  - Obliteration of the rectum.
    1. By the agglutination of its parietes.
    2. By the puckering of its parietes.
    3. By the thickening and the induration of its parietes.
  - Preternatural termination of the rectum.
    1. In a *cul-de-sac*.
    2. In the bladder.
    3. In the urethra.
    4. In the vagina.
    5. In a cloaca in the perinæum with the vagina and urethra.
    6. In the ano-perineal region, at different points.
    7. In the sacral region.
  - Preternatural termination of other organs in the rectum.
    1. Of the ureters.
    2. Of the vagina.
    3. Of the uterus.
  - Absence of the rectum.
    1. Partial.
    2. Complete.

In presenting the following statistical tables on this subject, the writer is prepared to verify, by the highest authority, the authenticity of each and every case represented in them. He is indebted to the valuable tables of Mr. Curling and Mr. Cripps, of London, for a number of cases reported since his own table was made in 1860, which then contained 287 cases, the largest number ever before collected in one body; his present table, No. II, contains 465 cases, an increase from 1860 to 1879 of 178 cases. The table below will exhibit the whole number of authenticated cases of the congenital malformations of the rectum and anus which the writer has collected from various sources up to 1879. It will give the number of cases; the number of each species, according to the classification of the writer; the number of males and of females, and of those in which the sex is not

stated; the number treated, and the result; and the number not treated, the result of which is generally not stated:

Table II.

SPECIES	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
First	13	4	5	4	12	9	3	1
Second	18	9		9	16	10	6	2
Third	97	54	21	22	89	39	49	8
Fourth	106	59	21	26	101	40	62	5
Fifth	36	14	13	9	24	21	3	12
Sixth	136	77	58	1	89	39	50	47
Seventh	18	5	12	1	2	2	..	16
Eighth	33	6	3	24	10	.	10	23
Ninth	8	2	..	6	2	..	2	6
Total	465	230	133	102	345	160	185	120

It will be seen by this table that out of 345 patients upon whom operations had been performed, 160 recovered. This is encouraging, especially when the desperate character of many of the cases is considered.

The Influence of Sex.—It has been supposed by some authors that sex exercises great influence in the production of defective congenital developments; but why it should, seems not easy of explanation. So far, however, as the researches of the writer extend in relation to the congenital abnormities pertaining to the rectum and anus, he finds quite a considerable preponderance in favor of the male sex. In the 363 cases as represented in the above table, 230 of the subjects were males and 133 were females. These cases are distributed among the different species of the writer's classification, as shown in the following table:

Table III.

SPECIES.	Males.	Females.	Total.
First	4	3	9
Second	9	..	9
Third	54	21	75
Fourth	59	21	80
Fifth	14	13	27
Sixth	77	58	135
Seventh	5	12	17
Eighth	6	3	9
Ninth	2	..	2
Total	230	133	363

M. Bouisson, of Montpellier, says that out of 100 cases which he had collected, he found 53 females and 47 males ("Thèse sur la question suivante: Des vices de conformation de l'anus et du rectum," p. 73, 4to, Paris, 1851).

Mr. Curling says: "According to my table, these malformations occur more commonly in male children than in female. Thus, out of 100 cases, 68 were males and 32 females. In my table, which excludes the first and seventh forms of malformation, there are 26 instances of the second form, 31 of the third, 26 of the fourth, 11 of the fifth, and 6 of the sixth" ("Observations on the Diseases of the Rectum," p. 194, 8vo, London, 1863).

In conclusion, the writer would observe that, so far as his knowledge of the subject extends, the female is much more predisposed to the simpler forms of congenital anomalies of the rectum and anus, and much less to those that are complicated with abnormities of the adjacent organs, than the male. He considers this to be the rule.

Before presenting the tables on inguinal and lumbar colotomy, the writer will make a few remarks relative to colotomy by either method.

It is well known that there is still considerable opposition to all operative proceedings in many of the cases of congenital imperforate rectum; but the arguments against operating in such rest generally upon assumption, which is not supported by either observation or experiment. These objections are certainly not in accordance with the genius and the inquiring spirit of the present day.

Now, as regards the performance of colotomy, in certain cases, the writer, since the publication of his treatise in 1860, is more than ever convinced of the importance, necessity, and propriety of performing either inguinal or lumbar colotomy, for it is now no longer a question whether colotomy can in these cases be successfully performed, for it has been in numerous instances, to the complete relief, both present and future, of the unfortunate patients, as is demonstrated beyond all cavil in the tables below.

As to the merits of either inguinal or lumbar colotomy, the writer is still decidedly in favor of the former when infants are the subjects. It is true that the method of Littre involves the opening of the peritoneal cavity, the dangers of which have always been exaggerated, but, as antiseptic surgery is now so thoroughly understood and practiced, the danger of pyæmia or peritonitis need now no longer be feared. As regards lumbar colotomy, it is admitted to be much more difficult of execution in infants than inguinal colotomy is, and possesses no superior advantages in any respect whatever over it. Colotomy, however, either inguinal or lumbar, is, in these desperate cases, the *sine qua non*—life or death—and the principles of surgery or surgical art, as well as humanity itself, command the surgeon to avail himself of it. No skillful surgeon should therefore be censured for performing colotomy in such cases, for it not only saves, but prolongs life; or for electing either the method of Littre or that of Amussat, for to each equal rights must be granted as both methods now rank in the profession.

During the last quarter of a century considerable progress has been made in our country in the investigation and treatment of these congenital defects. But the United States is far behind France, Great Britain, and Germany in this respect; in these countries this subject is being thoroughly investigated, and why should it not be here? The American surgeons, although occupying as high a rank as men of science as those of Europe, have as yet given, comparatively speaking, but little attention to the subject.

The personal experience of any one surgeon in the treatment of these comparatively rare congenital vices, however ample his opportunities may be, is not sufficient to supply data from which a satisfactory conclusion can be drawn in the consideration of so important a subject—hence the numerous authorities submitted in the tables.

The following table will present in a compendious and convenient form for reference all the cases the writer has

collected from authentic sources up to 1879 upon which the operation of Littre (inguinal colotomy) was performed for congenital malformation of the rectum and anus. It will give the number of cases, the operator, the date in chronological order, the sex, the age, the species of malformation, and the result:

TABLE IV.

No.	Date.	Operator.	Sex.	Age.	Species of malformation.	Result.
1	1783	Dubois	...	3 days.	Third.	Death 10 days after.
2	1793	Duret	M.	2 days.	Third.	Lived 43 years.
3	1794	Desault	M.	2 days.	Sixth.	Death 4 days after.
4	1798	Voisin	...	.....	Third.	Result unknown.
5	1800	Desgranges	F.	4 yrs.	Sixth.	Living 8 mos. after.
6	1802	Voisin	M.	10 d.	Ninth.	Death 4 days after.
7	1809	Duret	M.	2 days.	Third.	Death on 5th day.
8	1813	Legris	...	.....	Sixth.	Death 17 days after.
9	1813	Serrand	F.	60 hrs.	Fourth.	Alive 43 years after.
10	1813	Surgeon of Lyons.	...	.....	Third.	Successful.
11	1813	Surgeon of Brest.	F.	.....	Third.	Death.
12	1815	Freer	...	.....	Third.	Death 21 days after.
13	1816	Miriel	F.	2 days.	Fourth.	Alive 40 years after.
14	1817	Miriel	F.	.....	.....	Lived 25 years.
15	1822	Miriel	M.	3½ d.	Fourth.	Alive 13 years after.
16	1823	Miriel	F.	6 days.	Third.	Alive 2½ years after.
17	1826	Textor	...	.....	Third.	Death 8 days after.
18	1826	Schlagintweit	...	.....	Third.	Result unknown.
19	1830	Bizet	M.	.....	Eighth.	Lived 1 month.
20	1830	Bizet	...	4 days.	Third.	Death 1 day after.
21	1830	Ouvrard	F.	2 days.	Third.	Died suddenly.
22	1835	Klewitz	M.	3½ d.	Sixth.	Lived 3 years.
23	1837	Anonymous	...	.....	Third.	Successful.
24	1839	Roux	...	.....	Third.	Death in 2 hours.
25	1846	Danzel	...	3 days.	Fourth.	Death in 8 days.
26	1850	Tüngel	M.	1 day.	Third.	Lived 2 years.
27	1850	Tüngel	F.	3 days.	Fourth.	Well 2 years after.
28	1852	Goyrand	M.	2 days.	Sixth.	Lived a year.
29	1854	Nélaton	...	.....	Third.	Death same day.
30	1855	Lenoir	M.	3 days.	Sixth.	Death in 9 days.
31	1856	Rochard	M.	.....	Third.	Lived 5 years.
32	1856	Leprestre	M.	.....	Third.	Lived 14 months.
33	1860	Johnson	F.	.....	Fourth.	Death in 2 days.
34	1860	Johnson	F.	.....	Fourth.	Death in 2 days.
35	1862	Giraldès	F.	.....	Third.	Died.
36	1863	Bryant	F.	.....	Fourth.	Died.
37	1869	Pooley	M.	2 days.	Sixth.	Lived 4 years.
38	....	Curling	F.	12 d.	Third.	Lived 6 days.
39	1871	Campenon	M.	.....	Fourth.	Died.
40	1872	Goëde	F.	.....	Third.	Lived 4 years.
41	1877	Clutton	M.	.....	Fourth.	Died.
42	1879	Owen	M.	.....	Third.	Died.
43	1879	Owen	M.	.....	Third.	Died of peritonitis.
44	1879	Owen	F.	.....	Second.	Died.
45	1879	Owen	M.	.....	Third.	Well at 3 months.
46	1879	Owen	M.	.....	Fourth.	Alive 3 months after.
47	....	Green	M.	.....	Third.	Well 17 months after
48	....	Marjolin	F.	.....	Fourth.	Died.
49	....	Denté	M.	.....	Third.	Died.
50	....	Willett	M.	.....	First.	Died.
51	....	Chairon	M.	.....	First.	Died.

Whole number	51
Successful	21
Unsuccessful	28
Result unknown	2

The following table will exhibit the number of all the authenticated cases collected by the writer up to 1879 in which lumbar colotomy was performed for congenital malformation of the rectum and anus. It will give the date in chronological order, the operator, the sex, the age, the species of malformation according to the writer's classification, the method of either Callisen or Amussat, and the result, so far as any one or all of these is recorded:

TABLE V.

No.	Date	Operator.	Sex.	Age	Species.	Method.	Result.
1	1818	Dupuytren	M.	....	Third.	Callisen's.	Died of peritonitis.
2	1828	Bougon	M.	13 d	Third.	"	Died 28 hrs. after.
3	1842	Amussat	M.	2 d	Third.	Amussat's.	Lived 7 years.
4	1842	Amussat	M.	2 d	Fourth	"	Died 7 days after.
5	1843	Amussat	M.	2 d	Third.	"	Successful.
6	1844	Baudelocque	....	....	Fourth	"	Successful.
7	1852	Amussat	M.	3 d	Fourth	"	Well at 7 years old.
8	1852	German surgeon.	M.	....	Sixth.	"	Well at 8 years old.
9	1855	Guersant	M.	3 d	Sixth.	Callisen's.	Death 3 days after.
10	1858	Leslie and Pennell	M.	....	Eighth.	Amussat's.	Death in 14 days.
11	1859	Curling	F.	....	Fourth	"	Death.
12	1859	Curling	F.	....	Fourth	"	Died 9 days after.
13	1861	Post	....	....	Fourth	"	Died of erysipelas.
14	1866	Erichsen	....	....	Eighth.	"	Death 3 days after.
15	1873	Duncalfe	....	....	Third.	"	Died.
16	1879	Baker	F.	....	Third.	"	Well at 3 years old.

Whole number	16
Successful	6
Unsuccessful	10

The writer will conclude by remarking that, in the elucidation of this subject, he disclaims all pretensions to a practical and a personal experience in performing colotomy on the living body of such subjects; indeed, this seldom falls to the lot of any one surgeon, however large his practice may be; even the distinguished authors or originators of the two celebrated methods of performing colotomy, Littre and Callisen, were never during their lives afforded the opportunity of operating on a living subject of this kind. They never executed their favorite methods except upon the dead bodies of infants who had succumbed to some other malady.

27 EAST FORTY-SIXTH STREET, *April 10, 1889.*

A RÉSUMÉ OF EXPERIENCE AT THE AURAL CLINIC OF PROF. HERMANN SCHWARTZE, IN HALLE, GERMANY.*

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THE object of this article is to give, in a general way, a *résumé* of experience at the aural clinic of Professor Schwartze, in Halle, Germany, for the purpose of mentioning briefly the methods of treatment used there, and permitting a contrast with those commonly adopted in this country. It is to serve merely as a narrative, the writer not being prepared (except in the case of the operation of opening the mastoid process) to advocate the adoption of the methods about to be mentioned, on account of the absence of statistics—of figures giving the duration of treatment and the results in a large number of cases—of positive and undeniable proofs in contradistinction to personal opinion; for—whatever objections there may be to deductions based upon statistics, and notwithstanding there exists with many a prejudice against statistics owing to the ease with which the latter may, by the use of a little ingenuity, be made to present a favorable or an opposite complexion according to the side which the compiler advocates—there is no doubt that, versus individual sentiment unsupported by figures,

* In this article is incorporated the substance of a paper read at a meeting of the Section in Ophthalmology and Otology of the New York Academy of Medicine, December 19, 1887.

statistics will always occupy the higher level in influencing medical opinion.

The University of Halle is supported by the German Government and has about two thousand matriculates; its medical department has buildings which are separate from the rest and are quite new and modern in construction, with every attention given to the most approved hygienic rules. There are separate buildings for the study of each specialty; the eye and ear departments have one building in common, though the services and wards are separated. Everywhere the floors are of stone tiles or of hard wood, and the walls and ceilings of an impervious hard cement which allows of washing.

In the ear department there are several small wards, accommodating in all about twenty patients, while the rest of the aural part of the building is given to the public clinic rooms (dispensary) and the operating and lecture rooms. Everywhere there is an abundance of space, with every provision for sufficient light and air. In the wards each patient is allowed a large cubic area of air-space far in excess of the minimum of good hygienic requirements. The attention given to the carrying out of hygienic laws in the way of an abundance of light and air, cleanliness, the absence of all unnecessary articles of furniture, and a strict adherence to the rules of asepsis, is an important factor in the explanation of the very brilliant results of operative work seen there. Daylight is used for illumination and the hand-mirror as a reflector for the examination of ears; on very dark days artificial light is sometimes employed.

An important element of success in the treatment of the ears of dispensary patients is that the latter have as much time allotted to them as they would have in private practice, and on this account the same care can be taken as would be in the aurist's office; the clinic in Halle continues seven or eight hours daily, and during this time between fifty and sixty patients are treated. When we consider that a like number of patients are rushed through in two hours in most of our ear dispensaries in New York, it is not surprising that the results seen in Halle must impress one with their superiority.

One marked peculiarity in the aural therapeutics of Professor Schwartze is what might be called "boldness," but which would be better named "activity," as distinguished from the "there's-nothing-to-be-done" policy which too often is adopted in otology.

The "dry method" of treating otitis media chronica purulenta does not find an advocate in Professor Schwartze; on the contrary, he decries the method as being of doubtful value, and maintains that the free use of boric acid and its packing into the auditory canal simply forms a barrier against the escape of secretion, that thus there is a temporary improvement which lasts, in most cases, only until the plug is dislodged by a large accumulation of fluid from within, and that such hindrance to the escape of fluid is often the cause of attacks of pain; and he believes that in many cases (and professes to have conclusive evidence in some) this method of treatment is the cause of mastoid disease.

Chronic purulent inflammation of the middle ear, if it does not yield readily to the remedies in common use, is treated as follows: The ear is examined, and, a perforation having been found, the Eustachian catheter is introduced, and to it is attached a modification of Politzer's bag—Lucae's double bag; by forcing air through the tube and middle ear, the examiner satisfies himself that there is a free channel between the orifice of the tube and the auditory canal, either by the ear alone, if the perforation sound is a loud one, or with the aid of the auscultatory tube, the so-called otoscope, if it is less distinct. Then, keeping the catheter in place, but withdrawing the Politzer apparatus, he injects through the catheter a warm three-quarters-of-one-per-cent. solution of purified sodic chloride (common salt); the injection escapes from the external ear and is continued until it is no longer mixed with any secretion. If the other ear is similarly affected, the same process is repeated on the opposite side. Air is then blown through by Lucae's double bag, so as to dry the parts as much as possible and free them from excess of salt solution. The canal is dried by the use of cotton and filled with a strip of sublimated gauze. The advantages alleged for using the latter in the place of cotton are, that while it is equally effective and absorbent, it does not stick to the walls of the canal, and does not leave behind fibers which interfere with the clearness of view of the membrane obtained in subsequent examinations.

In cases of chronic purulent inflammation of the middle ear without perforation of the drum membrane, paracentesis is resorted to in the posterior inferior quadrant, the incision being of large size; then the syringing is conducted as before.

In acute inflammations of the middle ear, injections through the Eustachian tube are not practiced.

In very young children (under five years) this plan of syringing through the tube and middle ear is inapplicable, on account of the inability to control children of this age sufficiently to keep the catheter in place. Here the ordinary Politzerization is resorted to; then the canal is washed out and dried, and most commonly a warmed solution of nitrate of silver, varying from one to three per cent. in strength, is poured into the auditory canal so as to fill it; during this treatment the child's head is inclined and rests upon the table with the affected ear upward; the fluid is allowed to remain for fifteen minutes; it is then removed with cotton, the canal dried, and a strip of sublimated gauze stuffed into the ear.

When it is desired to apply other remedies besides salt solution to the Eustachian tube, especially one-per-cent. solution of nitrate of silver, this is often done by filling the auditory canal, the head being inclined as before, and then making pressure against the posterior surface of the lower part of the concha in a forward and inward direction; by alternately making and discontinuing such pressure, fluid is forced into the Eustachian tube, as evidenced by the taste in the mouth.

In cases of *otitis media chronica catarrhalis* with complete filling up of the tympanum, and in those in which the exudation only partially fills the tympanic cavity after they have been treated by other methods for a varying length of time without improvement or where little improvement is

noted, paracentesis is performed, and salt solution is injected through the tube and middle ear as in the purulent cases; a free incision is made into the membrana tympani and the cavity of the middle ear emptied of the serous exudation or stringy mucus or muco-pus, the dislodgment of mucus being assisted by syringing the external auditory canal.

In these cases the greatest care is exercised in thoroughly drying the canal after syringing, for, if this is neglected, there is a great tendency for the inflammation to change from the catarrhal to the purulent type. To avoid this, after thorough drying, the canal is filled with sublimated gauze, and the auricle covered with cotton held in place by a bandage or metallic spring. The washings are repeated daily until the salt solution escapes perfectly clear, and then the opening made by paracentesis is allowed to heal, which it does very readily; in fact, there is a constant tendency for this to occur before a cure has been effected, necessitating the repetition of the incision over and over again. Some of the cases treated in this manner showed marked improvement in hearing and no tendency to a recurrence of the trouble, though the short time that they were under the writer's observation detracted from the value of this deduction.

Whenever fluid is injected through the middle ear, care must be taken that the solution be warm; if this caution is disregarded, violent pain, dizziness, and even syncope may ensue; these results occasionally take place even when due regard has been had for the suitable temperature of the solution, but then the same thing may happen in inflating the tympanum with air by the Eustachian catheter, or even by Politzerization.

Whenever the syringe is employed, its extremity is always protected by a piece of soft-rubber tubing which embraces it and projects slightly beyond it, thus preventing injury to the drum membrane should the patient move his head suddenly during the process of washing out; Politzer employs for this purpose a specially prepared tube of soft rubber, with tapering extremity, which is slipped on to the nozzle of the syringe. Since no advantage is alleged in keeping the ear dry in chronic inflammation of the middle ear with perforation, syringing the ear is one of the procedures most frequently applied.

Besides being done in the usual way with the metal syringe, cleansing the auditory canal is accomplished with great saving of time and no sacrifice of thoroughness by the use of *Meyer's douche* (Fig. 1). This consists of a small pump about five inches in height which is fastened to the margin of the table; to its base are attached two soft-rubber tubes, the extremity of one dipping into warm salt solution, that of the other being provided with a suitable tip for entrance into the external meatus. The left hand holds the arm of the pump, and with the right the rubber tube is conducted and held in the ear. In this way a continuous stream is obtained, the force of which can be regulated by the rapidity with which the handle of the pump is worked. The patient holds a pus basin which is perforated and has attached to it a piece of tubing conducting the fluid escaping from the ear into a vessel placed beneath the table. This method of washing out the ear, whether used for cleansing or for the removal of impacted cerumen, is very practical and effective, and its use results in an immense saving of time. It is especially applicable to dispensary or clinic practice, where many patients are treated rapidly in succession; in private practice its advantage over the ordinary syringe is not so marked.

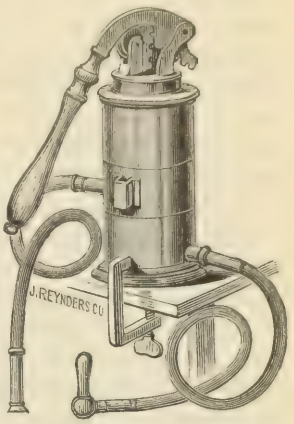


Fig. 1.—Meyer's douche.

In the large number of cases in which it is desirable to inflate the tympanum the catheter is used; less frequently is the Politzer bag employed.

The contra-indications to the use of the catheter Schwartze enumerates as follows:

a. Absolute:

1. Ulcerations of the nasal or naso-pharyngeal mucous membrane with tendency to hæmorrhage.
2. Considerable elevation of temperature.
3. Violent inflammatory pain in the ear and acute pharyngitis.
4. Traumatic emphysema of the pharynx.

b. Relative—in which individual circumstances decide whether catheterization is allowable:

1. Enfeebled state of the system in convalescence from disease.
2. Great nervous irritability due to local causes.
3. Extreme old age.
4. Infancy and childhood up to the end of the fourth year. In children older than this the catheter can usually be introduced without any difficulty.

The *method of introducing the catheter* recommended by Schwartze is as follows: By elevating the tip of the nose or drawing down the upper lip, the catheter is assisted into the anterior nares with its curved anterior extremity downward; it hugs the floor of the inferior meatus close to the septum and is pushed back gently until it impinges upon the posterior pharyngeal wall; it is now drawn forward a short distance, its anterior extremity being slightly lifted, until a faint resistance informs us that its extremity impinges against the soft palate; when this point has been reached, it is turned so that it shall point to the outer angle of the corresponding eye, the direction being indicated by the ring or mark upon the outer extremity of the instrument; it will now be found in place.

For inflating the middle ear, Lucae's double bag is used in connection with the catheter. It consists of an ordinary rubber bag and another a short distance from this protected by netting, and serving as a reservoir. The advantage alleged for this arrangement over the single bag is that the pressure is increased from one fifth or three tenths of an atmosphere to two or three fifths of an atmosphere, and that this pressure is more constant than with the usual instrument. In combination with this there was used a filtering capsule—a metal box in which is placed gauze, in

order to keep back all foreign particles from the atmosphere; although this would seem a small matter, yet examination showed that a large amount of dust and other impurities had been held back by this device after two weeks' use. The combination of Lucae's double bag and filtering apparatus is provided with a hook by means of which it is fastened to the coat of the aurist, the hook being slipped into the button-hole; by compressing the first bag, the second one is kept distended, and thus a constant pressure exerted, which can be very much increased by compressing the second or reservoir portion.

Great stress is laid upon the importance of affections of the nose, hypertrophied tonsils, adenoid vegetations, and other diseases of the pharnyx, as prominent ætiological factors in the causation and aggravation of ear disease in general; and the treatment of such accessory lesions is insisted upon. Hypertrophied tonsils are excised with Matthieu's amygdalotome. Adenoid vegetations of the vault of the pharynx are removed with Trautman's sharp spoons, in conjunction with which very often Meyer's ring-knife is employed. Trautman's instrument (Fig. 2) consists of a hol-

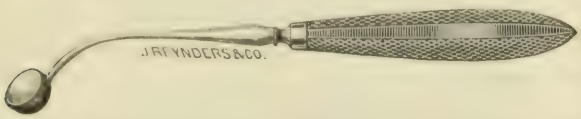


Fig. 2.—Trautman's sharp spoon for removal of adenoid vegetations of the pharynx.

low hemispherical spoon, with sharpened margins supported upon an obtuse-angled shaft; the spoon-like extremity, concave anteriorly, is made in various sizes. The cutting part of the instrument is passed behind and above the soft palate and then pressed against the superior and posterior pharyngeal wall, and is made to sweep this in a direction from above downward and from behind forward, the patient's head being inclined toward the operator after the instrument is in place; this process of scraping is performed first in the middle line and then on each side of the median line.

If additional adenoid growths are found surrounding the posterior nares, they are removed by Meyer's ring-knife (Fig. 3), which consists of an oval ring with a sharpened



Fig. 3.—Meyer's ring-knife.

inner margin, supported upon a metal shank. The instrument is introduced through the nose and the adenoid vegetations are seized between the sharp inner edge of the ring-like extremity and the finger of the operator introduced into the patient's mouth up behind the posterior nares; this instrument also comes in several sizes. The name of Meyer, of Copenhagen, will be remembered as being identified with the first operative proceedings for the removal of these growths.

To hold the mouth open during the use of Trautman's sharp spoon, and to protect the finger when Meyer's ring-knife is used, a very simple gag—Meyer's (Fig. 4)—is employed. It consists of a triangular piece of lead properly supported, which is passed between the teeth of one side.

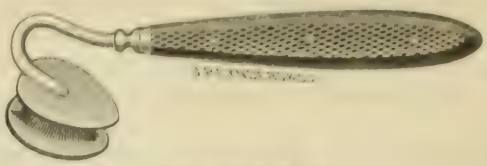


Fig. 4.—Meyer's gag.

The jointed metal finger (Fig. 5)—which, when slid over the index finger of the operator, allowing the distal phalanx to project, protects against injury, but still allows free move-

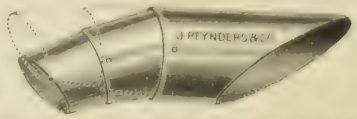


Fig. 5.—Finger protector; used in digital exploration and operation of pharynx.

ment and tactile advantages of the uncovered finger-end—is also employed.

Comparing the removal of adenoid vegetations of the vault of the pharynx by means of Trautman's spoons, aided in some cases by the employment of Meyer's ring-knife, with the same operation performed, as it usually is in this country, by Loewenberg's forceps or some of its modifications, it can not be disputed that the former is the quickest and most efficient method; it enables the operator to free the naso-pharyngeal space from all growths rapidly and at one sitting. The only disadvantage that can be urged against the plan just commended, and one that would be potent especially in private practice, is that it causes a considerable, though never a dangerous, amount of bleeding; and the sight of a considerable volume of blood flowing from the mouth and nose of the patient is very apt to frighten the mother or attendant of the child—for it is in children that the great majority of cases of adenoid vegetations are found. After the operation, the naso-pharynx is bathed daily with a three-quarters-of-one-per-cent. solution of common salt by means of a spray introduced through the nose.

Probably no one is considered a greater authority on diseases of the mastoid and the operation of opening the mastoid, and is more especially identified with these subjects, than Professor Schwartze.

The indications for the operation Schwartze gives as follows:

1. Acute inflammation of the mastoid with retention of pus if, after the application of cold by ice-bag or coil and Wilde's incision *—this treatment continued not longer than a week—the œdematous swelling, pain, and elevation of temperature do not disappear. In children, the palliative treatment may be tried a little longer, but in adults a delay until pyæmic or meningitic symptoms set in, he considers decidedly wrong; since, if in doubt, it is better to err and perform an operation which is now almost devoid of danger

* An incision down to the bone, parallel with and one centimetre behind the posterior attachment of the auricle, varying in length from two and a half to five centimetres.

to life (as is shown below). Even if no pus is found, the operation may be and often is curative in checking the further progress of the inflammation.

2. In chronic inflammation of the mastoid, where repeated attacks of swelling with consequent improvement have taken place, or where there has been the formation of abscess or fistulæ pointing or opening at or through the skin of the mastoid region, the neck, auditory canal, or pharynx. The operation is advised in these cases, even though there is no immediate danger to life, for in such cases surgical interference is less dangerous than the results of a continuation of the chronic inflammatory process.

3. In cases in which, although the mastoid appears healthy externally, there is retained pus or cholesteatoma of the middle ear which can not be evacuated by the natural channel, as soon as symptoms appear which indicate that complications dangerous to life are imminent.

4. In cases of long-continued pain in the mastoid region, although the bone is apparently healthy, when the pain is not controlled by other remedies. Here the chiseling of a funnel-shaped or boat-shaped piece of bone from the sclerosed cortical portion of the mastoid may effect a cure without the necessity of extending the opening into the antrum.

5. As a prophylactic measure against the fatal consequences which might ensue as a result of incurable purulent inflammation of the middle ear with fœtid discharge, in cases in which there are no other symptoms of retention of pus in the middle ear, except an obstinate penetrating fœtor of the pus, despite careful cleansing and disinfection through the auditory canal and the Eustachian tube. In these cases the antrum is opened and kept open for a time, in order to permit washing out of the middle ear from behind.

Schwartze's method of operation is the following: An incision is made about a centimetre behind and parallel with the posterior attached margin of the auricle, from two centimetres and a half to five centimetres in length, down to the bone. If there has already been an opening or fistula, this is made the central part of the incision through the skin, and the opening in the bone simply enlarged. If there is no such opening to serve as a guide, the central point of the cutaneous incision corresponds to the level of the external auditory meatus. Next, the periosteum is separated from the bone for a little distance on each side of the incision. Then an area is marked out upon the bone, which is bounded by the following lines: In front, the anterior border of the mastoid process at the level of the so-called "spina supra meatum" (Henle)—a small bony projection found in this situation in the majority of cases; behind, a line situated about ten or twelve millimetres from and parallel with the preceding; above, the commencement of the temporal ridge; below, a line parallel with the latter and about ten or twelve millimetres from it.

These lines serve to bound a square-shaped area of bone, about half an inch in diameter, situated just behind the above-mentioned small bony projection from the anterior border of the mastoid portion of the temporal bone known as the "spina." In this field we usually find a large number of nutrient foramina. These are the superficial limits of the area of bone to be removed, and within this space a round or oval piece of bone is chiseled off in successive layers. The chisels are eleven centimetres in length, and have a concave cutting edge varying from two to eight millimetres. They are applied almost horizontally, their direction being such that they never form an angle of more than forty-five degrees with the surface of the mastoid.

If caries and softening exist, the diseased portion of bone and the cheesy pus and fungoid granulations are removed by the sharp spoon, and no chiseling may be necessary, or only enough to remove the discolored edges of the diseased area of bone.

If no superficial caries has taken place and made an opening, a funnel-shaped piece of bone is removed by the chisels, the base corresponding to the superficial area already described, and the apex extending in a direction inward, downward, and forward, about parallel with the external auditory canal, until the antrum of the mastoid or a collection of pus communicating with this cavity is arrived at, or until the depth of two centimetres and a half is reached. Beyond this it is not safe to go, on account of the danger of wounding the external semicircular canal or the facial nerve.

After having reached the depth of two centimetres, great care must be exercised in proceeding further. Above, the temporal ridge marks the superficial limit of safety, for beyond this line we are in danger of opening the cranial cavity and injuring the dura mater. Behind, it is not safe to proceed beyond twelve millimetres from the anterior margin of the mastoid portion of the temporal bone, on account of the liability of injuring the lateral sinus. In front, a sufficient ridge of bone, corresponding to the anterior border of the mastoid, should be left, to afford proper support to the auditory canal, unless this part is involved in the diseased process. Simple exposure of the dura mater and of the lateral sinus, without injury to these structures, is not followed by any undesirable results, probably because these tissues have become thickened as a part of the neighboring inflammatory process.

Injury to the lateral sinus, though certainly undesirable, is not so dangerous as it would seem. In one of the cases seen by the writer this accident took place; the operation was left unfinished, the wound immediately packed with iodoformized gauze so as to check hæmorrhage, and a bandage applied. The child made a rapid recovery without any unfavorable symptoms, and, notwithstanding the operation had necessarily been left unfinished, a perfect cure of the disease of the mastoid, for which it had been undertaken, resulted.

In preparing for, during, and after the operation, the strictest antiseptic precautions are observed. Professor Schwartze is an extremist in this respect. Before the operation the hands of the operator and his assistants are scrubbed with soap and hot water, and then washed in one-to-one-thousand sublimate solution. The mastoid region, after being shaved and scrubbed with soap and water, is washed with one-to-one-thousand sublimate solution. During the progress of the operation one-to-five-thousand or

one-to-ten-thousand sublimate solution and one or two per-cent. carbolic-acid solutions are employed, and the wound is kept bathed with one of these antiseptics constantly. The instruments are immersed in three-per-cent. carbolic-acid solution.

It is a desideratum to establish a communication between the external auditory canal and the opening in the mastoid through the middle ear, and in most cases this is effected, for a perforation usually exists in the membrana tympani. When such communication exists, solutions of one-to-ten-thousand corrosive sublimate are syringed through the mastoid opening and pass out of the auditory canal, and absolute cleansing is thus made possible. In other cases, though at the time of operation no such communication existed, it became established in several days. In a few cases such communication could not be effected, and then no effort to establish it was made.

The wound is dusted with iodoform, and a piece of drainage-tube is placed in the center, packed in with iodoformized gauze, and gradually shortened as the granulations increase. Subsequently a leaden nail, with a flange to keep it in place, is inserted, to keep the external wound open until the deeper parts continue absolutely clean and it is thought advisable to allow them to fill up with granulations, when the nail is gradually made shorter.

The wound is covered with sublimated gauze and a bandage applied to keep the latter in place. The patient is kept in bed for at least a week. Later in the after-treatment, instead of the bandage, which, since it must pass below the lower jaw, is discomforting, the metal spring suggested and used by Carl, while convalescing from an operation upon the mastoid by Schwartze, may be used. It consists of a cloth-covered strip of metal half an inch in width, and sufficient in length to pass across the vertex of the head from one auricle to the other; the end of this band is provided with an ear-shaped expansion having the size of the auricle; the instrument is bent so that by its elasticity it applies itself closely to the head and exerts moderate pressure upon the dressings covering the ear, holding them in place, and thus doing away with the necessity of a bandage.

The opening is washed out daily, for a variable length of time, with solution of carbolic acid (one per cent.) or corrosive sublimate (one to ten thousand), and the opening not allowed to close up entirely until the discharges present nothing but the secretion due to the healthy granulation tissue of the wound. The duration of the after-treatment averages from one to three months in acute cases, from nine to ten months in chronic cases.

In cases of cholesteatomata it is desirable to establish a permanent opening in the mastoid, for there is a constant tendency for a repetition of this peculiar formation; when this occurs, and we have taken the precaution to keep the opening in the mastoid pervious, the mother-of-pearl-like masses can readily be removed. There appears to be a singular deficiency of literature upon the subject of cholesteatomata in American publications; in several of the cases operated upon these masses were found. They consist of rounded collections, varying in size, composed of successive layers, which are formed usually of epithelium, fat, granular matter, and cholestearin. There are many explanations of their formation, the one most credited being that the peculiar mass is due to changes which have taken place in decomposing pus to which epithelial cells have been added.

In Schwartze's "Lehrbuch der chirurgischen Krankheiten des Ohres," published in 1885, the mortality following the operation in two hundred and fourteen cases is given as six per cent. Since that time, however, he has succeeded in reducing this percentage of deaths very materially. The writer was informed that in upward of eighty cases seen by the assistant who had been with Schwartze for several months previous, there had been but two deaths, and one of these (which took place during the writer's service and is referred to below) was unquestionably independent of the results of the operation.

During a period of six weeks the writer saw twenty-eight cases in which the operation was done, having performed the operation himself in ten of these. Twenty-seven of the patients recovered. The fatal case was that of a child who was brought to the clinic with imperfectly marked meningitic and pyæmic symptoms; the operation was performed as a last resort; the child died several days after. At the autopsy, multiple pyæmic abscesses in various parts of the body, evidences of meningitis, and the existence of a large abscess in the cerebellum, proved conclusively that death had not been the result of the operation.

A mortality of but little over one per cent. in opening the mastoid is certainly indicative of brilliant results, and makes the study of Schwartze's method of operating and his success an interesting as well as important one.

"Hoffman Arms," Madison Avenue and Fifty-ninth Street.

CHOLECYSTOTOMY.

By R. W. STEWART, M.D., M.R.C.S.,
physician to mercy hospital, pittsburgh, pa.

On March 6th I was called to see Mrs. W., and found her suffering such acute pain that I resorted at once to the hypodermic injection of morphine before attempting to make a diagnosis of the cause of her suffering. On the following day I called to see her and found that, under the influence of morphia, her pain had become bearable. I then obtained from the patient the following history: She was fifty-nine years of age, married, and the mother of three children. About thirty years ago she began to be attacked with paroxysms of pain of intense severity, which would last from fifteen minutes to half an hour. The pain was confined to the right side of the body, never radiating to the shoulder but sometimes passing down the right thigh as far as the knee. The pain was not located in any particular spot, there being a general soreness over the right side, which was most marked, however, in the region of the right kidney. During these paroxysms there would be incessant vomiting, a rapid pulse, profuse perspiration, and a cold skin.

During the past thirty years these attacks had gradually become more frequent, so that, instead of occurring every few days, they now occurred every few hours, and their duration was more prolonged, so that her condition was a most pitiable one. To add to the misery of her condition, a chronic gastritis had developed and her stomach refused to retain nourishment

even when the paroxysms were absent. During the past two years she had been confined to the house, and when I was called to see her she was confined to the bed, and it was evident that unless relieved from her suffering death would soon ensue.

The rigidity of the abdominal muscles on the right side prevented a careful examination. There was general enlargement of the liver, but the gall-bladder could not be felt. Examination over the region of the kidney was negative except that it elicited marked tenderness over that area. The conjunctivæ were slightly jaundiced, but no jaundice had ever been noticed at any time by the patient. The urine contained abundance of pus cells and a few red blood cells; it was also slightly tinged with bile. It may be mentioned here that during the paroxysms there had never been any irritability of the bladder. A careful examination of the stools was made, but no biliary calculi could be detected.

A diagnosis of either renal or biliary calculi was made, and the propriety of operative interference suggested, to which the patient readily assented. As it was impossible to decide as to whether the kidney or the gall-bladder was the seat of the trouble, it was decided to first explore the kidney by a lumbar incision, when, if no calculus could be detected, laparotomy would be performed and the gall-bladder explored.

On the morning of the operation, however, it was noticed that the jaundice, which was at first scarcely appreciable, had become more marked and the quanity of bile was increased in the urine. This, together with the fact that a spot of marked tenderness was complained of over the region of the gall-bladder, was sufficient to turn the balance in favor of first exploring the gall-bladder.

Accordingly, the patient was anæsthetized, and, assisted by Dr. Dickson, Dr. Oldshoe, Dr. Burns, Dr. Davis, and Dr. Brockerhoff, I made an incision of about three inches in length through the abdominal walls in the right linea semilunaris, the upper portion of the incision being about one inch from the costal cartilages. The upper surface of the liver, which was enlarged, was exposed in the whole length of the incision, but the finger could be readily passed into the abdominal cavity and along the liver to its anterior border; then hooking up the liver with the finger, the lower surface could be explored. The gall-bladder was found collapsed, its fundus being at least an inch from the anterior margin of the liver. The finger, being passed along the gall-bladder toward the duct, was obstructed by a calculus of about three quarters of an inch in diameter, which was impacted in the cystic duct. An exploration of the right kidney was made before the finger was withdrawn, but it was found normal in size and no calculus could be detected. The abdominal wound was then enlarged downward, so as to admit the fingers of the left hand, with which the anterior border of the liver was pulled upward so as to expose its under surface in the wound.

An incision of about one inch in length was made in the fundus of the gall-bladder. It was noticed that the wall of the gall-bladder was abnormally thick and that no bile escaped from the incision. The extraction of the calculus was attended with considerable difficulty, as it not only seemed to be impacted in the duct, but also encysted, for a firm fibrous membrane surrounding the calculus had to be torn through before the calculus could be seized. Once exposed, the calculus was easily removed by crushing and removal piecemeal; it consisted chiefly of inspissated bile. After washing out the *débris* the incision in the gall-bladder was closed by a continuous catgut suture, and the liver allowed to assume its natural position. The peritoneal toilet was completed in the usual manner, and the abdominal wound closed with silver sutures. The subsequent progress of the case was all that could be desired. The temperature remained normal throughout, with the exception of the second evening, when it was 99° F. Relief from pain and vomiting was immediate, and her convalescence rapid. After the operation the jaundice rapidly disappeared, as did likewise the pus, blood, and bile in the urine.

There are some points of interest connected with this case to which I wish to draw particular attention.

(1) The long duration of the trouble (thirty years).

(2) The absence of marked jaundice at any time.

(3) The presence of blood, pus, and bile in the urine, which obscured the diagnosis between renal and biliary calculi.

(4) The impossibility of suturing the gall-bladder to the abdominal wound on account of its collapsed state and its distance from the border of the liver.

(5) The thickening of the gall-bladder, probably due to hypertrophy of its muscular fibers, caused by repeated ineffectual attempts to expel the calculus.

A CASE OF
CHRONIC INTERSTITIAL HEPATITIS WITH HEMERALOPIA,
SIMULATING CEREBRAL HEMORRHAGE.

By S. T. ARMSTRONG, M. D.,

PASSED ASSISTANT SURGEON, UNITED STATES MARINE-HOSPITAL SERVICE.

The appended case presents so many unusual phenomena that it may be permissible to place it on record:

William Braydon, aged forty-three, a native of the United States, sailor by occupation, was admitted to the United States Marine Hospital, New York, on March 20, 1889. He had just arrived in this city from San Francisco *via* Cape Horn. One month after his departure, trouble with his vision at night commenced, the hemeralopia eventually becoming so complete that he was not assigned to watch duty after sundown. The rations furnished were plentiful and of good quality.

The patient was a well-developed male, with dark hair and complexion. He had been drinking when admitted to the hospital. His vision was not quite normal ($\frac{2}{3}\frac{0}{0}$); but nothing abnormal was detected in examination of eye, excepting congested retinal vessels. This was rather unusual, because cases of hemeralopia occur not infrequently among sailors that have recently crossed the equator; but this condition is associated with retinal anæmia. His locomotion was irregular, and he spoke thickly; no local paralysis found. He had a chancre (?) twenty-five years ago; no secondary symptoms. He complained of no nausea or digestive trouble. Appetite fair. He was ordered ten grains of kalium iodide in water two hours after each meal.

On the morning of the 21st he felt fairly well. Had wandered about the ward during the night, apparently unconscious of his actions. As he had not fallen, nor injured himself by striking against objects in the room, the suspicion of malingering arose. He, however, gave a reasonable excuse for his actions.

At three o'clock on the morning of the 22d he fell out of bed, exhibiting convulsive movements of the arms and legs. His eyes were shut. He had involuntary evacuation of the bladder and rectum. At the ward visit, seven hours later, he

was unconscious; his breathing was stertorous; the pupils were dilated; the radial pulse full and rapid (108); temperature 37·8° C. (99·5° F.). The urine was examined for sugar and albumin with negative result. The patient remained in the comatose condition for twenty four hours, when death occurred.

The necropsy was made seven hours post mortem. On removing the calvarium, the meningeal veins were found to be congested. On section, the brain was normal.

Examination of the heart and lungs showed these organs to be normal.

On opening the peritonæum, a small quantity (about 500 grammes—one pint) of ascitic fluid escaped. The liver weighed 1,410 grammes, and presented the hobnailed appearance that exists in chronic interstitial hepatitis. The gall bladder contained about 30 grammes of bile of thin consistence, but usual color. The right kidney weighed 178 grammes; the left, 165 grammes; each showed moderate parenchymatous nephritis. The spleen weighed 606 grammes; it was normal. The stomach showed chronic inflammation of the mucous membrane, and contained a "coffee-ground" colored mucus. The intestines and bladder were normal.

The absence of ascites, œdema of the extremities, and especially of icterus, in a case of this character, is certainly rare. Nothing in the history of the case caused a suspicion of diseased liver.

The prodromal trouble in sleep, walking, and speech, as well as the hemeralopia, led to the sudden comatose condition being considered apoplectic. The convulsions were reported by the other patients, and were not noticed by the assistant, Dr. George B. Young, who was called almost at once. They did not occur a second time.

While no English text-book emphasizes the existence of hemeralopia in chronic interstitial hepatitis, yet a few such cases are recorded.

Dr. J. Cornillon reports ("Rapports de l'héméralopie et de l'ictère dans les hypertrophies du foie," "Prog. méd.," ix, 1881, p. 157; and "De l'héméralopie dans les affections du foie," *ibid.*, x, p. 439) altogether seven cases. In all his cases icterus was present, and he considered the hemeralopia only appeared long after the icterus, diminishing when it was ameliorated, aggravated when it was augmented. In only one case was an ophthalmoscopic examination made; in this there was dilatation of the veins of the retina, fine and exsanguinated arteries, and in the neighborhood of the principal trunk and its ramifications was an intense œdema, as if that region was strewn with white, milky spots. There were no pigmented or hæmorrhagic spots.

Parinaud reports ("De l'héméralopie dans les affections du foie," etc., "Arch. gén.," 1881, p. 413) three cases of hemeralopia associated with enlarged livers; nothing appreciable in the fundus of the eye. This author states that these associated conditions have been recognized for a long time, and he suggests that the treatment of hemeralopia by the ancients, by administering the liver of calves or sheep, was in consequence of their knowledge of the associated conditions.

As the works on diseases of the eye do not refer to hemeralopia consequent upon diseased liver, it may be well to emphasize that point here, so that those having cases of hemeralopia will examine into the condition of the liver.

A CASE OF DRY LABOR.

By H. R. COSTON, M. D.,
LINCOLN, TENN.

The following case, occurring in my practice, is probably deserving of being placed on record:

On the evening of April 13th I was called to see Mrs. H., aged twenty-three, supposed to be in labor with her second child. I found the uterine contractions very short and irregular. Upon making a vaginal examination, I found the pelvis large and roomy, the soft parts lax and well lubricated, but no dilatation of the os. The symptoms soon passed off and labor did not supervene for over two weeks. But upon this first visit I was surprised to learn that the membranes had ruptured on the night of the 16th of March. I expressed the hope that this had been an extra-amniotic sac, and that there was probably a small amount of water yet present, as the movements of the child were very free and strong. She informed me, however, that her "waters had broken ten days before labor came on in her first pregnancy." She attributed the rupture of the membranes in her first pregnancy to a strain received while trying to use the syringe for the purpose of evacuating the bowels, as they ruptured while she was in the act of giving herself an injection.

In the present instance, however, they had ruptured during sleep, she being aroused by it, herself and husband as well as the bedding being wet by the fluid, there being a considerable quantity. No symptoms of labor presenting themselves save the rupture of the membranes, and remembering her first experience, she had called no physician at the time. Feeling greatly interested in the case, the patient being quite an intelligent woman, and living next door to my office, I gave the case close attention until the time that labor developed, April 30th.

The labor only lasted about three hours and a half, and during the time I never left the bedside a moment for anything whatever. During the progress of labor there was no pouch found, and through the dilating os uteri I could determine positively that there was no membrane of any kind between my finger and the occiput. A portion of the membranes were expelled some minutes before the child was born, which further convinced me that the membranes had long since ruptured.

In this case we find that it was about forty-five days from the time the membranes ruptured until labor commenced.

Yet when it did come on it was comparatively short and easy, there being but a small amount of blood lost and an eight-pound male child born. Up to this writing (May 7th) there has never been a bad symptom developed, the mother rapidly regaining her strength and the child doing well.

Correspondence.

LETTER FROM CINCINNATI.

The Obstetrical Department of the Cincinnati Hospital.—The Acid Salts of Phosphorus in the Disorders of Digestion.

Cincinnati, *May 6, 1889.*

The obstetrical report of the Cincinnati Hospital for the past year shows that two hundred and twenty-four women were delivered, of which number one hundred and fifty-one were primiparæ. Thirty-nine were delivered of the second, thirteen of

the third, twelve of the fourth, four of the fifth, two of the sixth, one of the seventh, one of the eighth, and one of the ninth child. The average duration of labor in primiparæ was, for the first stage, fourteen hours and five minutes; for the second stage, four hours and forty-five minutes; and for the third stage, seventeen minutes. In multiparæ the average duration was, for the first stage, eleven hours and eleven minutes; for the second stage, five hours and ten minutes; and for the third stage, fourteen minutes. The presentations in primiparæ were one hundred and forty vertex, six breech, three shoulder, one arm, and one foot; and in multiparæ, sixty-eight vertex, four breech, and one foot. The positions in primiparæ were ninety-eight left occipito-anterior, thirty-three right occipito-anterior, six right occipito-posterior, one left occipito-posterior, three right dorso-anterior, two left dorso-posterior, one right dorso-posterior, and seven unknown; and in multiparæ, forty-two left occipito-anterior, fourteen right occipito-anterior, six right occipito-posterior, two left occipito-posterior, two right dorso-anterior, two left dorso-anterior, and five unknown.

Primiparæ gave birth to seventy-four males and seventy-seven females. In one case the sex was not reported. There was one case of twins—male and female. Multiparæ gave birth to forty males and thirty-five females. There was also a case of twins, both males, and one case of a male and female. The average weight of the male children of primiparæ was seven pounds and twelve ounces, and the average length eighteen inches and five sixths. The female children had an average weight of seven pounds and an average length of eighteen inches. The average weight of the male children of multiparæ was seven pounds and the average length eighteen inches and one sixth. The female children had an average weight of seven pounds and eight ounces, and an average length of eighteen inches and one twelfth. The heaviest male child weighed ten pounds and eight ounces, and the lightest two pounds. The heaviest female child weighed ten pounds, and the lightest two pounds.

In seventeen cases the cord was wound about the child's neck, and in the case of one primipara, in which the cord was forty-eight inches long, it was wound twice about the neck and once around the body of the child. In the case of one multipara the cord, which was thirty-two inches in length, was wound twice about the child's neck. Four patients were attacked with typhoid fever within a week after delivery, and were transferred to the medical ward. There were sixteen cases of abortion, two occurring at two months and a half, one at three months, two at four months, one at four months and a half, one at five months, and nine at an unknown period of gestation. Two were the result of falls, one was caused by medicines, and thirteen were from unknown causes. In the case of one primipara, at the sixth month, in which there was a shoulder presentation, the child was expelled by spontaneous evolution. In one case of premature birth artificial respiration was maintained for five minutes, but the child died seven hours after. There were forty-one slight lacerations of the perinæum, one slight externally and deep internally, and fifteen to the sphincter ani. In forty-five cases the lacerations were cured with silk suture, in four with catgut, and in one with wire, and in seven cases no sutures were required.

In one case, that of a primipara, the head of the child was delayed in the vulva an hour and a half, but was finally extracted over a rigid perinæum, which sustained a slight cutaneous and a deep mucous laceration. In another primipara the child's head rested on the perinæum for a period of five hours, with the right arm curved over the face. It was expelled by abdominal pressure, with but slight laceration of the perinæum. In the case of a multipara a still-born child was extracted by podalic version. The woman's pelvis was contracted, and measured two inches and seven eighths. One primipara had post-partum hæmorrhage, which was arrested by the employment of ice. Inflammation of both breasts supervened. In one case, occurring in a multipara, in which the second stage was of long duration, the low forceps-operation was performed. There was laceration of the perinæum to the sphincter ani. In one case of protracted labor the woman was delivered with the forceps, with slight laceration of the perinæum. Post-partum hæmorrhage occurred in this case. In one case, when the head reached the perinæum, the patient became almost maniacal, and was delivered under chloroform. In one case, in which long duration of the second stage and rigidity of the perinæum rendered the use of forceps necessary, the perinæum was lacerated to the sphincter ani, and there was considerable hæmorrhage from a small artery.

In the case of a twin pregnancy, occurring in a multipara, in which there were two placentæ, each child being enveloped in its own amnion and chorion, the membranes covering the second child were ruptured ten minutes after the birth of the first, and the placentæ were extracted together fifteen minutes after the birth of the second child. There was slight laceration of the perinæum. One primipara had double vagina and double cervix uteri, with a common uterine cavity. The intercervical and the intervaginal septa were entirely destroyed during labor. A primipara who was admitted during the second week of an attack of typhoid fever, and who thought she was only six months pregnant, gave birth to a child which had the appearance of one of eight months and a half. Hæmorrhage from lacerated cervix was controlled with ice. In a twin pregnancy, in a multipara, of from six to six months and a half of utero-gestation, each child was enveloped in its own membranes, and there were two placentæ, which were removed in five minutes after the birth of the second child. The placentæ had a marginal attachment, and there was some ante-partum hæmorrhage from partial placenta prævia. In one primipara a large clot was adherent to the external surface of the placenta, and the labor was followed by a severe hæmorrhage, which was checked by the use of ice and ergotine. The social conditions of the women were as follows: One hundred and thirty-three were unmarried, thirty-four were married, ten were widows, and in two the social condition was unknown. Their ages ranged from fifteen to thirty-nine years, and the age at which they first menstruated, from the eleventh to the twentieth year.

Dr. Joseph Eichberg, president of the Cincinnati Medical Society, read a paper recently on the acid salts of phosphorus, which was intended to call special attention to their value in disorders of digestion. The value of the element phosphorus in the various compounds was referred to; its physiological uses in alkaline, acid, and earthy combinations were illustrated; and a comparison was instituted between the nitrogen and phosphorus radicles, as shown by the varying affinity for oxygen. It was stated that this fact alone was proof of the important *rôle* played by any chemical in the tissue changes of the body, the apparent readiness of change from one form of acid radicle to another being observed only in those elements whose functional activity was great. In regard to the form of administration of phosphorus, attention was called to the fact that this varied with the nature of the disease. The hyphophosphites in phthisis and wasting diseases, the phosphate of zinc and phosphorus itself in emulsion for nervous diseases, and the acid salts of phosphorus for digestive disturbance, were the forms in which the greatest benefit would be derived from the use of the remedy. Phosphoric acid and its compounds possessed an advantage over the other mineral acids in that, even in a concentrated form, they were essentially non-corrosive. Considerable benefit had been derived from a compound called "crystallized phosphates."

THE
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THE PLACE OF MEDICAL WOMEN.

As objects of criticism and discussion, medical women are continually coming to the front. The energies and wit of mankind are spent without stint in an effort to assign them to their proper place. Nowadays it is conceded that they have a place, though it is not very many years since a Boston physician, presumably well versed in the ways of Providence, declared gravely that God never intended women to practice medicine. Hence the inference that piety, if nothing else, demanded their exclusion from the Massachusetts Medical Society. And only the other day our friends of the Quaker City awoke to a realizing sense that there was no good reason why a properly educated and legalized woman practitioner should not be admitted to membership in their county society. This conclusion was the growth of years, and the vote was a close one. The surrender on the part of the opposition seems to have been at once graceful and humorous, for the advocates of the admission of women into the Philadelphia County Medical Society say: "We owe the election to the forbearance, good-will, and great-heartedness of our friends, who have for so many years successfully opposed our efforts to gain recognition of our women physicians in that body."

In a recent issue of this journal reference was made to Professor Waldeyer's address before the Assembly of German Naturalists and Physicians, in which he says complimentary things of Louise Bourgeois, Marguerite de la Manche, Marie Louise Chapelle, and others eminent in the practice of midwifery. He admits that the healing art was at one time for centuries in the hands of women, and recognizes their valuable contributions to medical literature. Yet women, he maintains, in spite of abundant opportunities, have never advanced medical science, nor in any art created a masterpiece, and in music have failed to do anything that might immortalize a name. Like Mrs. Tulliver, our excellent professor seems to consider them poor foolish bodies of little account, without adding that honest dame's shrewd saving clause: "God made 'em to match the men!" Unwelcome in laboratories, because awkward, careless, and easily discouraged, the unbusiness-like women students besiege the assistants with questions upon trivial matters, and appear to be altogether unlovely. In colleges devoted to the instruction of men their presence is a hindrance to teachers and students alike. Charcot is quoted as saying that women think more of themselves than of humanity. They consent reluctantly to assume subordinate positions, and they are too ambitious, aspiring immediately to the front rank and great prominence. Debarred from their natural *rôle*, the rearing and fostering of children—which, by the way, has nothing whatever to do with the question at issue—women doctors have no future before them, and can never be more than the exception. Yet the author gives them credit, oddly enough, for excellent memories, close attention to lectures, and frequent ability to pass better examinations than men. According to this showing, it would appear that age can not wither nor custom stale the infinite variety of medical women. They are credited with a range of qualities sufficiently diverse and interesting, if not attractive. The address seems to imply that women physicians—that is, some women—are well enough in their place, but that the place is undefined, and does not readily assume the proportions of a local habitation.

Nearer home, Dr. Leonard Weber, discussing with admirable clearness and sound sense a question concerning the practice of medicine, remarks incidentally: "I am not opposed to women physicians, but I think they ought to practice in fields that are suitable to them, such as diseases of women and children, for instance; their field is necessarily limited." Between this statement and that of the Boston man there is certainly a vast difference. Yet in a way the two bear an unmistakable family resemblance. Who knows positively that the field of medical women is necessarily limited? Upon what data is such a supposition based? Up to the present time women physicians can hardly be said to have had a field—it were better to call it a narrow path. To judge of failure or success along given lines of effort without the liberty to act freely in these specified directions is quite beyond the limits of human reason. The proposition is not to be entertained. Positive opinions in regard to what women can do or can not do in the professions have not the same weight to-day as they may have in the coming time when all barriers may be broken down, and every opportunity and encouragement given to women to fight out the matter to a successful or unsuccessful issue themselves. Then, and not till then, will it be possible to measure the size of this particular field accurately. At present, opinions upon the subject appear more in the light of preferences of perfectly chivalrous, honest intent, and expressed with the kindest motives—but preferences all the same, the personal equation being the largest factor.

The place of educated women in the medical profession would seem to correspond in a general way to that of educated women in the community at large. Earnest women of well-trained minds have an instinct for reform; they unearth the forgotten things, and give time and attention to wearisome details that men have not the inclination—perhaps not the ability—to undertake in serious part. The importance of such endeavor no one denies. It is as essential to progress as the creative faculty, and seems, in fact, its correlative and complement. The things overlooked in medicine certainly constitute a portion of the medical woman's sphere. Unfortunately, they are not confined to the treatment of diseases peculiar to women and children; they exist in every special department, as the attentive listener and observer may readily convince himself—or rather herself—by careful attendance at various medical meetings. The little things are often the great things, and they

are worth speaking about and writing about; and medical women who have thus brought them into notice have done good work. In regard to needed reform, they have not been backward. On the contrary, they are often pioneers. The instruction of other women in matters of health and more satisfactory living has been largely through their efforts. The more rational dress of to-day, together with the simpler, more natural methods of domestic life that now prevail, must be ascribed in great measure to the influence and teachings of the woman physician. The application of principles for the welfare of humanity gives, on the whole, a place not altogether unworthy of the best human effort, whether masculine or feminine. As a teacher, the medical woman stands at the point of power. It is largely through her personal attention and persistent energy that education, especially the education of girls, is beginning to receive the careful consideration that the subject demands. If education in America can be so revolutionized that it compares favorably with the other practical advances of the nineteenth century; if women attain greater health and happiness; if principles now overlooked are more carefully applied in the treatment of disease and the relief of suffering; if children are shielded and allowed to develop in a natural harmonious way; if domestic life is ennobled by the application of great truths to small events; and if this consummation, devoutly to be wished, is due to the direct and indirect influence of medical women—they may be said, without undue exaggeration, to occupy a position of extreme value and dignity, even though it should fail to assume the proportions of a field. Perhaps not the least advantage of women in medicine is that their existence proves the vitalizing effective force of careful intellectual discipline, and the possibility of their fulfilling arduous and urgent duties without loss of health.

SO-CALLED VARICOCELE IN WOMEN.

Dr. A. Palmer Dudley, of New York, read a paper entitled "Varicocele in the Female: what is its Influence upon the Ovary?" at last year's meeting of the Alumni Association of the Woman's Hospital. Dr. Dudley's paper was published in full in our issues for August 11 and 18, 1888, and an account of the discussion that followed its reading was given in the number for August 18th. Like several authors before him, Dr. Dudley applied the term varicocele to varicosities of the veins of the broad ligament of the uterus. His conclusions were that such a condition was not rare; that it was produced by long-continued congestion, the most important factors being arrested uterine involution and chronic constipation; that it might be mistaken for inflammation of the uterine annexa, from which it was to be distinguished by careful rectal examination of the broad ligament, when masses feeling like earthworms could be detected; that it was capable of producing functional impairment and structural changes in the ovary, such as atrophy of the stroma, cystic degeneration, and consequent sterility; that when it had become confirmed (meaning, it is to be presumed, that it had assumed the condition of true varicosity as distinguished from temporary dilatation) no lasting benefit could be produced by means of ordinary local treatment, such as counter-irritation, tamponing, the use of pessaries, and depletion; and that the removal of the dilated veins by laparotomy, of which procedure the author reported four cases, was sometimes a justifiable operation, even in women who had passed the menopause.

Dr. Dudley's paper opened with the statement that he had been led to the researches that had culminated in these conclusions by reflecting on a paper read before the same association two years before by Dr. Henry C. Coe, entitled "The Exaggerated Importance of Minor Pelvic Inflammations," and especially on Dr. Coe's remark that certain thickenings, increased tension, etc., that were commonly found on examination during life, and promptly entered in clinical records as evidences of cellulitis, frequently vanished after death, when the natural tension of the tissues had disappeared. Dr. Coe, who was not present at the discussion of Dr. Dudley's paper, has come out in the May number of the "American Journal of Obstetrics and Diseases of Women and Children" with an article entitled "So-called 'Varicocele' in the Female," in which he argues to conclusions quite at variance with Dr. Dudley's. True varicocele in women, he says (meaning permanent dilatation of the veins of the pampiniform plexus), is seldom met with post mortem, and therefore must be rare; neither in its ætiology, in its anatomy, nor in its symptomatology can varicose enlargement of the veins of the broad ligament be regarded as closely analogous to the varicocele of men, the anatomical conditions being widely different in the two sexes; it is not alone long-continued congestion (from displacements or other abnormities) that should be taken into account in searching for the causes of such venous dilatation, but also changes in the walls of the veins and in the surrounding connective tissue due to antecedent phlebitis of uterine origin, puerperal or traumatic; it is exceedingly doubtful if atrophy of the ovary can be traced to venous dilatation, although that condition and ovarian disease may be due to a common cause, such as surrounding adhesions; there is no evidence that varicosity of the veins of the broad ligament gives rise to any peculiar symptoms; so-called varicocele ought not to be mistaken for cellulitis or resulting indurations, since the former should occupy the upper portion of the broad ligament, while the latter are usually found at its base, and the discovery of dilated veins on opening the abdomen does not necessarily prove that they were the objects felt before the operation; and varicose enlargement of these veins is not a sufficient indication for laparotomy, for all the affected veins can not be removed without ligating or excising nearly the whole of the broad ligament—"a dangerous procedure that has led to most of the fatal cases of secondary hæmorrhage," and laparotomy is certainly not justifiable after the menopause, when the quiescent state of the pelvic organs seems to favor a spontaneous cure.

As Dr. Coe states, the subject of the varicose enlargement of the veins of the broad ligament is often mentioned by gynæcological writers, the condition having been first described by Richet, who termed it *varicocèle ovarien*. It seems to us, how-

ever, that Dr. Dudley did a good work in studying it more thoroughly than had been done before, even if we side with Dr. Coe's conclusions rather than with his, as we are inclined to do.

MINOR PARAGRAPHS.

BORIC ACID FOR THE PRESERVATION OF URINE.

The "Lancet" states that Dr. M. Wendringer recommends the use of a solution of borax and boric acid to prevent the fermentation of urine that is to be examined microscopically, and to keep the urates dissolved. The urine is placed in a conical glass, and from a fifth to a third of its bulk is to be added to it of a solution prepared by mixing 12 parts of powdered borax in 100 parts of hot water, adding a like amount of boric acid, stirring the mixture well, and filtering while hot. Some crystals are deposited, but they cling to the side of the vessel and do not destroy the transparency of the liquid. The mixture of urine and solution is to be shaken, and it will soon become clear if there is no cloudiness due to bacteria. If the urine is to be preserved for a day or two only, a smaller proportion of the solution may be used.

THE INFLUENCE OF THE PARENTS' AGE ON THE CHILD'S CONSTITUTION.

The "Union médicale" states that a learned Hungarian has concluded, from the observation of nearly 25,000 cases, that the children of very young fathers and mothers have a feeble constitution, that those of old fathers and mothers are in the same predicament, and that the most robust children are those of fathers over thirty-five years old and younger mothers. From the scientific point of view, therefore, it is well for men of middle age to marry young women, as the *vaudevillistes* and the Arabs have always maintained.

THE JUBILEE OF THE ALBANY MEDICAL COLLEGE.

The "Albany Medical Annals" for April is a double number, largely given up to the semi-centennial celebration of the medical college. The address, by David Murray, LL. D., Secretary of the Board of Regents of the University of the State, is historical and biographical in character, and presents quite a picture of the struggle for medical education in northern New York before the days of many railroads and before the clinical element in teaching had driven the schools to the cities where the large hospitals exist. The old college of Fairfield, Herkimer County, whose very existence is a thing unknown to a large part of the New York profession, was in its day an important and thriving institution. Dr. Murray's sketch of it shows that its financial corner-stone was a lottery, permitted by the Legislature in order to raise the sum of $15,000—a method in those days considered to be entirely legitimate. Many will be surprised to hear that there was a flourishing school in the northern wilds of New York for a period of thirty years, which matriculated 3,018 students in that time and sent out 555 graduates. Among the names of the professors at Fairfield appear those of Romeyn Beck, Lyman Spalding, Westel Willoughby, James Hadley, James McNaughton, R. D. Mussey, and Frank H. Hamilton, some of whom subsequently became "a tower of strength to the Albany school." Dr. William C. Wey, of Elmira, president-elect of the Albany Alumni Association, spoke entertainingly of the times and the men of forty years ago. Dr. W. H. Bailey, of Albany, also delivered an address descriptive of the early struggles of the college. These, with other papers and a banquet, conspired to make memorable the close of the fiftieth anniversary of the institution founded by Dr. Alden March and Dr. Armsby. As an indication of the amount of public spirit evinced toward the founding of the school in 1839, it may be stated that the citizens contributed the sum of $10,000 for the necessary buildings. Stephen Van Rensselaer gave $500, and others gave $100 each, but a large part of the sum dripped into the treasury in subscriptions of ten dollars each. Those were times that tried men's zeal and courage and patience.

ALLEGED MURDER WITH CHLORAL.

A youth named Pardon, who had been condemned to death at Manchester, England, for the alleged murder of a gentleman in a cab by means of chloral, has been reprieved. The "Lancet" states that a petition in his behalf was signed by 20,000 persons, and a recommendation to mercy by both judge and jury. The analyst could only prove the presence of a small quantity of chloral in the tissues of the deceased. The latter was under the influence of alcohol at the time of the giving of the chloral, and his system was far from being in a healthy condition, owing to chronic alcoholism. The "Lancet" remarks that there is great room for a revision of the methods of testing for chloral in cases where it has been employed for a homicidal purpose.

MEDICAL ATTENDANCE ON WOMEN IN INDIA.

The fourth annual report of the association in Great Britain for supplying female medical aid in the eastern dependencies of the empire shows really marvelous progress, according to the "American Practitioner and News's" London correspondent. In all parts of India the work is being advanced and has resulted in not fewer than twenty-seven dispensaries or hospitals, including the magnificent Cama Hospital at Bombay. At the hospital in Burmah a large percentage of the cases are obstetrical and many of the patients are able to pay for treatment. The obstacles of prejudice and race and custom seem to be diminished in a marked degree, especially among the Burmese women, who are everywhere eagerly availing themselves of the foreign medical help offered them. Very many of the patients reaching the new Burmah Hospital were brought thither in a critical condition, owing to the incompetence of the native midwives. The ultimate aim of this association is the raising up of a class of Indian women practitioners, and some progress has been made. There are now as many as two hundred and twenty female medical students. At the half-yearly examination at Hyderabad two of the lady students passed at the head of their class. At all the various medical schools and colleges the number of native women students is constantly increasing.

ELECTRICITY AS A CURE FOR CANCER.

Surely, of the wonderful effects ascribed to electricity there seems to be no end. Dr. J. Inglis Parsons, of London, thinks that he has found in that agency a means of rendering cancer inert. His idea is that cancer cells, although they grow like noxious weeds and choke the normal elements, are really of a lower vitality than the latter, and hence are susceptible of destruction by electrical currents that the healthy cells are able to withstand. He has tested his theory in four cases, which he reports in the "British Medical Journal" for April 27th. The patient is anæsthetized, and the current is passed through the tumor and all the tissues for some inches round it by means of fine insulated needles, so as not to injure the skin. A battery of seventy cells is used, with an electro-motive force of 105 volts. To begin with, a current of an intensity of 10 milliampères is employed, and this is gradually increased to 600 mil-

liampères, being "flashed through the growth in every direction from 50 to 100 times, according to circumstances." In only one case was it considered unsafe to use a current of more than 250 milliampères, and that was one of mammary cancer in a woman, sixty-three years old, who had a presystolic bruit and a weak, intermittent pulse; and even she was able to endure a current of 600 milliampères passed through a secondary growth in the axilla. It is not so much to the strength of the current, although that seems to be essential, as to its sudden interruptions that the destructive effect on the cancer cells is attributed. The tumor does not disappear altogether, but remains as an inert mass; at least, in the cases reported, the growths remained quiescent for periods varying from three months and a half to six months. In case of recurrence, the author states, he would not hesitate to use a current of still greater intensity. It is said that the patient is usually able to go about his customary employment on the day following the operation.

THE ALLEGED ANÆSTHETIC EFFECT OF ARTIFICIAL LOCAL ANÆMIA.

The increased anæsthetic powers of such alkaloids as cocaine and erythrophlœine when injected into a part that has been rendered bloodless by means of Esmarch's bandage or some other contrivance to accomplish the same end have been said by some to be more apparent than real, the anæsthesia being alleged to be really due to the anæmia alone. To settle the point, Karewski, of Berlin ("Therapeutische Monatshefte"; "Deutsche Medizinal-Zeitung"), has tested the sensibility of parts that have simply been emptied of their blood, without being subjected to the action of any drug. He finds that certain paræsthesiæ are caused, but that the sensibility to heat and cold is unimpaired, that the tactile perception is sufficient to enable the subject to distinguish the contact of a blunt object from that of a pointed one, and that the sensitiveness to painful impressions, far from being suspended, is rather intensified. Anæmia, then, is not an anæsthetic.

FŒTAL MOVEMENTS SUPPOSED TO BE RESPIRATORY.

As our readers have been informed, Professor Ahlfeld, of Marburg, maintains that certain rhythmical fœtal movements observed by him are of a respiratory character. Under Ahlfeld's direction, Dr. Heinrich Weber has made further observations bearing upon the subject, using an apparatus consisting of a funnel with its broad end applied to the mother's abdomen at the site of the greatest intensity of the movements, and communicating by means of rubber tubing with a Marey's tambour, so as to make tracings showing the movements of the abdominal wall. Weber has published an essay on the subject, in the form of a graduation thesis. He finds that the movements in question consist either of quick impulses, from eight to twenty-six in a minute, or (more commonly) of gentler but more rapid undulations, as many as seventy-six in a minute; and that both forms are rhythmical. In eighty examinations of fifty-four pregnant women, he has observed the more rapid movements fifty times. They last for several minutes, and in two instances they continued, with slight interruptions, for forty-five minutes. The thirty-second week of gestation is the earliest period at which he has detected them. The curves traced with his apparatus are said to bear a striking resemblance to those of the respiratory movements of new-born infants. Dr. N. Zuntz, of Berlin, who prepared the summary of Weber's thesis for the "Fortschritte der Medicin," adds the remark that, in animals whose uteri have been opened under water, rhythmical respiratory movements of the fœtus are never observed so long as the placental circulation is not materially disturbed.

THE ARTIFICIAL CICATRIZATION OF OPEN CANCERS.

Several methods of bringing about the temporary cicatrization of open cancers that are beyond the reach of a radical operation are described in recent issues of the "Münchener medicinische Wochenschrift," by Kraske and Lauenstein, and their articles are summarized in the "Centralblatt für Chirurgie." Kraske reports four cases in which several months of comfort were afforded the patients; in three of them by a plastic operation after shaving off the fungous mass to a level with the surrounding skin, and in the other by skin-grafting. Lauenstein states that he has employed skin-grafting successfully after reducing the exuberant excrescence by applications of savine and burnt alum, followed by methodical antiseptic dressings. He has also seen complete cicatrization of the cervix uteri take place after erasion.

ITEMS, ETC.

The American Laryngological Association will hold its eleventh annual congress at the Arlington, in Washington, on Thursday, Friday, and Saturday, May 30th and 31st and June 1st, under the presidency of Dr. Ethelbert Carroll Morgan, of Washington. Besides the president's address, the programme includes the following: "Report of the Removal of a Supernumerary Tonsil," by the president; "An Œdematous form of Disease of the Upper Air-Passages," by Dr. W. C. Glasgow, of St. Louis; "The Relation between Facial Erysipelas and Erythema, on the one hand, and Intra-nasal Pressure, on the other," by Dr. G. W. Major, of Montreal; "Acute Multiple Adenitis (Septic?), Œdema of the Larynx, with Spontaneous Cure—Laryngoscopic Appearances," by Dr. S. W. Langmaid, of Boston; "Some Points in the Pathology and Treatment of Diseases of the Nasal Pharynx," by Dr. J. N. Mackenzie, of Baltimore; "Observations upon the Condition known as Adenoid Hypertrophy at the Vault of the Pharynx, and the Methods used for its Relief," by Dr. D. B. Delavan, of New York; "Three Rare Cases," by Dr. G. M. Lefferts, of New York; "Warts in the Nasal Passages," by Dr. E. F. Ingals, of Chicago; "Some of the Manifestations of Syphilis of the Upper Air-Passages," by Dr. T. A. De Blois, of Boston; "Note on the Galvano-cautery in the Treatment of Hypertrophied Tonsils," by Dr. C. H. Knight, of New York; "The Treatment of Diseased Tonsils when unattended with Hypertrophy," by Dr. J. O. Roe, of Rochester; "Experimental Methods of Studying the Actions of the Intrinsic Muscles of the Larynx," by Dr. F. H. Hooper, of Boston; "Dysphonia Spastica," by Dr. F. I. Night, of Boston; "A Case of Sarcoma of the Thyreoid Gland," etc., by Dr. J. Solis-Cohen, of Philadelphia; "Memorandum of a Recurrent Laryngeal Growth appearing twenty-two years after Removal," by Dr. R. P. Lincoln, of New York; "Some Unusual Manifestations of Tuberculosis of the Larynx," by Dr. C. C. Rice, of New York; "Report of Two Cases of Tuberculosis of the Tongue," by Dr. C. E. Bean, of St. Paul; "The Advantages of Occasional Applications of Silver Nitrate in Chronic Laryngitis," by Dr. S. Solis-Cohen, of Philadelphia; "Some Manifestations in the Throat of Lithæmia and Allied Conditions," by Dr. F. W. Hinkel, of Buffalo; "On the Local Treatment of Diphtheria," by Dr. J. C. Mulhall, of St. Louis; and "Hæmorrhage from the Larynx," by Dr. W. Porter, of St. Louis. The annual dinner will be given at the Arlington on Friday evening, and there will be an excursion to Mount Vernon after the adjournment on Saturday.

Recent Deaths.—Dr. George F. Adams, formerly a resident of Brooklyn and surgeon of the First Long Island Regiment, died at Medfield, Mass., on the 10th inst., aged eighty-six years.

About two years ago, while a resident of St. Louis, he was stricken with paralysis, and, being admonished to withdraw from business, he retired to the farm at Medfield, where he was born, to pass the remnant of his days.

Dr. John Leland Miller died at Sheffield, Mass., on the 16th of April, aged seventy-seven years. He was a surgeon in the Mexican War. He was considered the wealthiest citizen of his town and was known to be a generous giver, especially to Williams College. He had been a member of the Massachusetts Medical Society since 1851 and president of the Housatonic Agricultural Society for several terms.

Dr. William Neilson, the oldest practitioner of Salem, Mass., died on the 3d inst., after a very short illness. He had been for many years a member of the attending staff of the Salem Hospital and had been the city physician in former years. He had recently passed his eightieth birthday.

The "Journal of the American Medical Association."—We learn that Dr. William G. Eggleston, who has for several years been a member of the editorial staff, has retired from his connection with the journal.

The Hospital Graduates' Club, of New York, had its fourth annual dinner at the Hotel Hungaria on Thursday evening, the 16th inst., the president, Dr. A. B. Townshend, in the chair. An anniversary address was read by Dr. John S. Hawley. The club is composed of former members of the house staff of one or more hospitals. Its present members represent the New York Hospital, Bellevue Hospital, Charity Hospital, St. Luke's Hospital, the Roosevelt Hospital, the Presbyterian Hospital, the Chambers Street Hospital, St. Francis's Hospital, St. Vincent's Hospital, the State Emigrants' Hospital, the Woman's Hospital, and the Nursery and Child's Hospital, of New York, and the Charity Hospital, of New Orleans.

The Central New York Medical Association, representing the counties of Cayuga, Chenango, Cortlandt, Genesee, Livingston, Madison, Monroe, Onondaga, Ontario, Orleans, Oswego, Seneca, Wayne, Wyoming, and Yates, held its twenty-first annual meeting at Syracuse on Tuesday, the 21st inst., under the presidency of Dr. William Curtiss Bailey. The programme included papers or participation in discussions by Dr. E. V. Stoddard, Dr. Ely Van de Warker, Dr. John Van Duyn, Dr. P. M. Wise, Dr. Louis A. Weigel, Dr. Milton Josiah Roberts, Dr. Gregory Doyle, Dr. E. F. Marsh, Dr. Byron De Witt, Dr. H. D. Didama, Dr. John O. Roe, Dr. William H. Daly, Dr. Henry L. Elsner, Dr. Nathan Jacobson, and Dr. J. W. Putnam.

The Emanuel Sisterhood of Personal Service, of New York, has been incorporated. Its object is to direct and aid its members who desire to devote a portion of their time to visiting the sick and caring for young children.

Change of Address.—Dr. B. Farquhar Curtis, to No. 35 West Thirty-first Street.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending May 18, 1889:*

Whiting, Robert, Passed Assistant Surgeon. Ordered to the Receiving Ship Minnesota.

Harmon, G. E. H., Surgeon. Detached from the Naval Academy and ordered to the Constellation.

Lowndes, C. W. F., Assistant Surgeon. Detached from the Naval Academy and ordered to the Constellation.

Arnold, W. F., Assistant Surgeon. Detached from the New Hampshire and ordered to the Pinta.

Rush, C. W., Passed Assistant Surgeon. Detached from the Pinta and to proceed home and wait orders.

McClure, W. A., Surgeon. Ordered to the Bureau of Medicine and Surgery.

Stilt, E. R., Assistant Surgeon. Detached from the Bureau of Medicine and Surgery and ordered to the New Hampshire.

Eckstein, H. C., Surgeon. Ordered to the Marine Rendezvous, Philadelphia, Pa.

Bradley, M., Medical Director. Detached from the Marine Rendezvous, Philadelphia, Pa., and to continue on special duty, Philadelphia.

Ruth, M. L., Surgeon. Granted another year's leave.

Society Meetings for the Coming Week:

Monday, *May 27th:* Medical Society of the County of New York; Boston Society for Medical Improvement; Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement; Baltimore Medical Association.

Tuesday, *May 28th:* Arkansas State Medical Society (Pine Bluff); New York Academy of Medicine (Section in Laryngology and Rhinology); New York Dermatological Society (private); Buffalo Obstetrical Society (private); Medical Societies of the Counties of Queens (annual—Mineola) and Rockland (annual), N. Y.; Boston Society of Medical Sciences (private).

Wednesday, *May 29th:* Auburn, N. Y., City Medical Association; Medical Society of the County of Monroe (annual—Rochester), N. Y.; Berkshire, Mass., District Medical Society (Pittsfield).

Thursday, *May 30th:* Cumberland, Me., County Medical Society (Portland).

Proceedings of Societies.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Meeting of March 25, 1889.

The President, Dr. A. S. Hunter, in the Chair.

The Ætiology of Fibrinous Pneumonia.—Dr. August Seibert read a paper with this title devoted to the evidences of an infectious element in the causation of ordinary pneumonia. It was only within twenty years, and mainly within ten years, past that the invasion and growth of infectious material in the body had been looked to for an explanation of epidemic and endemic appearances of pneumonia, and of the occasional occurrence of purulent complications and of the form of pneumonia called migratory. The so-called one-day pneumonia, with its fall of temperature twenty-four hours after the initial chill, while dullness, bronchial respiration, and rusty sputa were observable several days longer, had been observed only since 1877, and had furnished further material for consideration and for doubt that a simple inflammation due to exposure to cold was all that was present in such cases. Then statistics concerning the relative frequency of pneumonia among soldiers when in the field or in barracks, among sailors, among those who went on Arctic expeditions, and finally among the inmates of prisons, convents, and boarding schools, had appeared, all coinciding in showing that persons leading an outdoor life, exposed often to bad weather, were in far less danger of being attacked by pneumonia than those spending most of their time indoors. These statistics had, in fact, shown that a liability to pneumonia increased in exact proportion to the time spent in closed rooms. Investigations had shown pneumonia to be most common among aged people and young children, and not young adults, as had always been supposed. In a certain epidemic of pneumonia among children under five years of age it had appeared that two thirds

of them had not been out of doors for a long time previous to their illness.

The endemic and epidemic appearances of pneumonia had attracted attention since 1875, when Kühn first published an essay on an epidemic in a Bavarian prison, in which most of the cases presented the pleuro-pneumonic type, often complicated by pericarditis and typhoid cerebral symptoms. Müller in 1877 had reported the occurrence of pneumonia in three out of four inhabitants of a small house and in two relatives who had been visiting there; Ritter, in five persons, who inhabited a single house, within five days and in two visitors there; Bielinski, in nine of ten persons living in a house with only two rooms, within two weeks; Daly, in six of eight persons living in one house.

Attempts to produce pneumonia by forcing dry cold air into the lungs of animals had always failed. Efforts to determine the weather influences bearing on the frequency of the disease had been made, and had led to the fact that pneumonia was most prevalent in weather which favored catarrhal inflammations of the air passages. Low and falling temperature, high and rising humidity, and high winds were each alone capable of furnishing this influence. In Davos, with its cold dry climate, pneumonia never appeared until the melting of the snow in the spring. Taking up the direct evidences of the presence of a bacillus in pneumonia, the speaker quoted Sänger as having found Friedländer's pneumococcus in the lungs in all his fatal cases, as well as in the organs suffering from complicating inflammations (meningitis, pleurisy, endocarditis, nephritis, and pericarditis). Emmerich, after an epidemic in a prison in which 161 out of 1,150 inmates had been attacked and 46 had died, had found this coccus between the ceilings and beneath the floors in great quantities, imbedded in very moist *débris* that had been used to fill up the spaces. He had inoculated thirty-two mice with a cultivation made from some of these germs and injected into the lung tissue, and all had died, pronounced hepatization being found in each case. Cases of wandering pneumonia and of central pneumonia (beginning in numerous small pneumonic areas) were best explained on the theory of infection.

The adherents of the taking-cold theory had two distinct ideas; the local action of cold penetrating the lung through the ribs was believed by some to cause the inflammatory process; others believed a cooling of the whole surface of the body caused pneumonia in a reflex way by producing a sudden hyperæmia of the internal organs. Harm did not occur after the use of Esmarch's bandage, however, in amputation of the thigh, although sudden hyperæmia must be produced; nor did it follow the use of the cold bath. The cases of pneumonia lasting one and two days were perfectly explainable on the theory of infection; so were the epidemic and endemic cases. The latter also furnished evidence that the germs causing the disease were most apt to take effect in cold, moist weather. The fact that in these epidemics neighboring villages or dwellings escaped showed that the weather condition was not alone the cause. Investigations by Emmerich, Mendelsohn, Darlington, and many others had shown that Friedländer's pneumococcus throve best in warm, moist, and dirty rooms and houses. Daily scrubbing, as was customary in many prisons, favored this condition, since much of the material not removed from cracks and beneath the flooring was kept moist. The speaker believed that cold, moist weather so generally occurring when pneumonia was prevalent acted in a causative way only by keeping the very young and aged persons indoors entirely, and by preventing the ventilation of sleeping apartments. Confinement in close rooms of itself favored the development of bronchial catarrh, and this in turn made the lodgment of pneumonic germs much easier. The coughing also tended to force the pneumococci into the alveoli. As we might expect from this now well-established fact, pneumonia often complicated diseases in which the pulmonary mucous membrane was in a state of congestion, as in typhoid fever measles, and whooping-cough. On the other hand, pneumonia seldom complicated diseases such as scarlatina, diphtheria, and meningitis, in which the pulmonary mucous membrane was not so affected. The depression of the bodily forces was quite as great in the latter diseases.

The speaker closed by reiterating his belief that cold, moist, and windy weather was efficient as a cause of pneumonia, in a majority of cases, by its causing those who lived in moist and dirty houses to close the windows and doors, and so at once encourage the development of catarrhal inflammations in their bronchi and the multiplication of Friedländer's pneumococcus in the air they were to breathe, unmixed with outside air, for hours to come. His reason for the greater prevalence of pneumonia in April and May as compared with October and November, when the temperature was similar, was that people feared the moist air of spring, closed their windows, and breathed air contaminated (in the case of filthy dwellings) by the accumulated dirt and moisture of the winter.

Dr. Francis Delafield remarked that no department of our knowledge was so uncertain as that of the causation of disease. If any advance was being made in this direction, it was that we were no longer as once willing to accept any statement that might be made regarding the ætiology of a disease. We looked for well-connected data preceding any conclusion offered, and until such appeared were willing to admit our ignorance. This was especially true of pneumonia. It was true that for many years no efforts had been made to discover its cause or causes which could very well meet with success; what work had been done was not good work. Still, even yet we had arrived at no certainty, simply from our continuing to lack sufficient knowledge. It was idle to say that we knew the cause. What we did know was that pneumonia seemed to belong to a class of inflammations due to infection, whose progress was accompanied by the growth of pathogenic bacteria. We seemed to know that to cause this growth three factors were essential—the pathogenic bacteria themselves, some exciting cause of inflammation, and a proper soil in the body of the person attacked. It was curious to observe how at different times and in different places one or the other of these three factors would take a more prominent share in producing the single result of pneumonic inflammation. Sometimes the bacteria were evidently the leading cause, as when people were much in the house and the house was a dirty one. In other cases the bacteria were abundantly present in the air breathed, yet no disease resulted unless some other exciting cause of inflammation came into play. Or, again, crowded quarters and foul air were without effect except where a susceptibility was somehow developed or present in the individual. Then, still further, we must admit that our real knowledge concerning the bacteriology of pneumonia was now just in its infancy. As far as we were now advanced, it was probable that several bacteria were capable of causing the disease, and we were unable to classify all that were at times associated with fibrinous pneumonia. Until this was worked out (a matter of much time and labor), we had not gone far toward ultimate knowledge in the subject.

Everybody must have noticed the remarkable differences in the constitutional symptoms met with, some patients throughout seeming to have only a local inflammation, others very early appearing as if suffering from general infection in addition to the disease in the lung. This variation was one of the most characteristic features of the disease. We saw the same thing in peritonitis. In the present state of our knowledge such papers as the one Dr. Seibert had just read, bringing together as

it did large collections of facts, were very valuable. At the same time it was wise to remember how ignorant we were of the facts which could give us any intelligent idea as to the cause of the disease.

Dr. L. Emmett Holt said that he had very little to add. For any one to enter this field of investigation it was eminently necessary that he should come prepared with a large array of facts and a large number of well-recorded and systematically arranged cases. One feature of the disease he wished to allude to as a very noticeable one. This was the very great difference met with in individuals with respect to a predisposition to contract the disease after exposure to its exciting causes. Everything in the manner of living or the inherited tendencies which affected the general state of the constitution seemed also to affect the liability of that person to contract pneumonia. We saw similar differences, but no more marked ones, in children, in respect to the ease with which they could be inoculated by the vaccine virus or by the contagious element of measles and scarlatina. He believed one reason why pneumonia was more common in spring was because the constitutions of the less vigorous were then exhausted to some extent by the recent long continuance of cold weather and the changed conditions of living thereby made necessary. We most often saw malarial disease, and even so simple and functional a disease as chorea, appearing in the spring. It only showed that the causes which predisposed had been more active during the winter.

His experience also pointed strongly toward the fact that a predisposition to the disease was often the result of the character and cleanliness of the house and neighborhood where the patient resided. The prevalence of the disease in tenement houses did seem to indicate that pneumonia was largely due to conditions existing indoors, especially where these included dampness and bad ventilation.

Abortive types of pneumonia were not infrequent, and this fact was quite in harmony with the theory of the infectious nature of the disease. Such cases of typhoid fever had often been described, and in a recent epidemic of scarlatina in the New York Infant Asylum in which over one hundred cases occurred, instances had been seen in which the rash lasted only half a day; and several in which no temperature above 100° F. was observed. The speaker thought it very probable that many of those obscure forms of illness in which there were high temperature only for a day or two, some cough, and the physical signs of hyperæmia of the lung, were in reality abortive cases of pneumonia.

Dr. A. F. Currier remarked that, without wishing to derogate from the value of the paper, he must confess he had felt relieved when Dr. Delafield insisted that other points must come under our consideration besides bacteria. As students of truth as a whole we should always remember that, while new knowledge was always important, the old landmarks must not be forgotten. The conclusions reached by good observers in times past could not be entirely incorrect. According to Dr. Seibert's conclusion, coachmen, letter-carriers, and truck-drivers might be supposed prepared against the disease, considering their outdoor occupation, whereas, as a fact, they were very liable to it and often died of it. Here evidently cold and moisture and the susceptibility of the individual were the primary and efficient elements in the causation, as was so long recognized in days before the septic element was taken account of. As Dr. Delafield had said, the questions respecting the ætiology of this disease were not settled even by those who were making careful and wide observations and subjecting them to close analysis. Others must wait until definite conclusions could be reached.

Dr. John Messenger would emphasize Dr. Delafield's remarks as to the part played by bacteria in the ætiology. The predisposition seemed to him to have much to do in this direction. Thus the coachmen and draymen spoken of by Dr. Seibert commonly had systems debilitated by their habits and their general mode of life. They indulged in beer or whisky, slept in close apartments, bathed little, and paid little attention to the disposal of the excreta of their bodies. The form of pneumonia known as croupous or fibrinous he had treated with best success by the same means which he employed in acute rheumatism. He had seen cases of this sort in which uric acid was present in the urine in large amount. But, last of all, it remained to be said that we did not know very much about it.

Dr. Seibert said that he had not meant to say that everything had been done which could be done in giving us correct and final knowledge in the subject of the ætiology of pneumonia. We had not learned all there was to know about antiseptic methods in surgery, but in both these directions we had gone far enough to recognize the important part played by dirt in causing inflammatory processes in wounds and in the lungs. This was the practical and important part of his paper. It was a plea for asepsis in preventive medicine, as applied to pneumonia. Having made this first, he would then ask in what bodily soil the bacteria would grow if they had entrance. Physicians, reversing this order, spoke too much of predispositions instead of saying to the tenants of some filthy abode "Clean this room," or else making them leave it at once and finally. The fact that pneumonia even occasionally occurred as an epidemic was enough to prove its infectious nature. It would not alter that fact whether the germ proved to be Friedländer's, Fraenkel's, or Sternberg's pneumococcus. If a child of his own took pneumonia he would first of all see that no one slept again in the room it had been sleeping in, and would not have it used again as a living room until the floors and walls had been renovated and a clean carpet put down. Acute rheumatism he had long considered an infectious disease, and had observed it most in dirty, damp, and warm tenement houses. Infants in a tenement family he had seen die of it, and the father some months later. Its being best treated with salicylate of sodium was quite in line with the idea of there being a bacterium in the case.

He would have it recognized that the germs of pneumonia were in houses and not outdoors: he would have children taught to go outdoors in all weathers; he would have weak and anæmic children sent, not to school or into a store, but into any outdoor trade. He had for years past treated pneumonia with cold air; he never allowed a fire in the room while the patient slept; if the outdoor air was cold, so much the better; when the crisis of the disease came, he closed the windows partially; and during convalescence had the patient in a sunny room with pure air at a moderate temperature.

NEW YORK ACADEMY OF MEDICINE.

Meeting of April 4, 1889.

The President, Dr. Alfred L. Loomis, in the Chair.

Acute Mania and Melancholia or Hypochondriasis as a Sequel to Gynæcological Operations. — Dr. T. Gaillard Thomas read a paper with this title. He wished to submit for general consideration an unusual but possible sequel to operations, not necessarily limited to those on women alone, although his experience was limited to gynæcological operations. He understood mania to mean a sudden violent aberration following a slight melancholic period, attended by excitement and violent motions, and without a tendency to inflict violence on attendants, and with a sharp, high pitched-voice. By acute melancholia he understood a sad and quiet state, the patient weeping or moaning, and the mental depression associated with halluci-

nation of persecution. Of his six illustrative cases, four were cases of acute mania, with two deaths, and two were of acute melancholia, in both of which the patients had died.

1. A woman was operated on for removal of a large ovarian tumor of rapid growth, accompanied by much exudation of fluid. At the time she was much wasted and very low-spirited. She rallied well from the operation, the pulse being 100 and the temperature normal, but extreme nervous depression was noticed, which continued, the patient insisting that she was certain to die, until the seventh day after the operation. During the night she became very excitable, the eyes wild and haggard, the face maniacal, the speech incoherent and violent, and the pulse very rapid (160). She gradually passed into coma and died in exhaustion, the whole acute stage having lasted only thirty-six hours. The prodromes had been present from the first day.

2. This patient, a handsome and well-made woman, of good weight and in robust health, had for a long time suffered for five days preceding each period with intolerable pain in the ovaries. After a consultation with two practitioners the author performed ovariotomy. The recovery was rapid, but, after three weeks had passed, low melancholia developed, which soon passed into acute mania, in which she struck at her attendants and proved so unmanageable that she was sent to an asylum, where she remained for five months, but had then entirely recovered, and was now free from any trace of mental aberration.

3. This patient, having been operated on by perinæorrhaphy, had shown no abnormal symptoms until the ninth day, when the sutures were taken out. She then became violently maniacal, tried to leave her bed, abused her attendants, but without indecent language, and finally had to be put into a strait-jacket. After raving for four days she passed into coma and died.

4. In this case, on about the fourth day after an operation for a lacerated cervix complicated by retroflexion, it was noticed that the manner of the patient was peculiar, but on the ninth day she desired to speak with the author privately about a terrible crime which she represented that she had committed, and in so matter of fact a way that he had quite believed that she had such a confidence to make to him. About a month after the operation acute melancholia developed, in which the patient sat for hours silent and remorseful, with occasional wringing of the hands and weeping. Insomnia and also the sense of having committed some crime were persistent, and after ten days she died in exhaustion.

5. On this patient, a flighty and eccentric woman, he had performed amputation of the breast. Her peculiarities of mind had become more noticeable after the operation, but on the ninth day, when the sutures were removed, she began to weep inconsolably, refusing nourishment, and slowly passing into a coma in which she died.

6. This patient had acted queerly before the operation, and had continued to do so after it; on the seventh day following removal of the breast she became noisy and irritable (the same day the sutures were removed), but on the ninth day had become maniacal, with intervals of lucidity and quiet. After the fourth week violent mania developed, and in this condition the patient still remained.

There was very little literature bearing on the subject, and that was recent. In all, twenty-six cases had been reported. In 1887 Dr. E. J. Ill, of Newark, had published an account of ten cases in which acute psychoses had followed gynæcological operations, three of them in his own practice, and one of these after a minor operation on the bladder. One patient had had acute mania and two had presented acute melancholia, and all had recovered. The remaining seven cases had been taken from a paper by Graube from the records of various foreign operators. In 1888 Werth had reported psychical disturbances following six out of three hundred operations, with six recoveries, two unimproved, and one instance in which the patient committed suicide. In none of these cases had iodoform been used. In 1889 a Hamburg surgeon had reported three more cases.

In the speaker's own six cases four of the patients, and especially two, had shown eccentricity of disposition before the operation; four died, one had recovered, one was still insane. In none of them had there been evidence of kidney disease or of hereditary insanity. In only two of them had iodoform been used, and then very sparingly and with special precautions. In none had a sudden septicæmia been present, if his own large and melancholy experience with this complication after operations entitled him to make a positive statement. He had five questions to propose: 1. Were these disturbances which he had recorded really due to the operation, or had they happened to follow it? 2. We knew that any strain on the nervous system might be followed by mania; but might there not have been a special causation in these cases from the nature of the operations performed? 3. If the mania or melancholia had indeed been a sequence, how were we in the future to avoid such a result? 4. Were the operations of gynæcology more apt to be followed by mental disorders than operations on other parts of the body? 5. Was it not remarkable that more such cases had not occurred since gynæcological operations had become so numerous.

Dr. J. B. Hunter thought that gynæcological operations were no more apt to be followed by mental disturbances than other operations. He had recently heard a large number of similar cases related by surgeons in a meeting in which the subject had come up for discussion. He thought we could divide the cases of mental disorder which occurred in the way Dr. Thomas had described into four classes: 1. In a few it was due entirely to the operation. 2. In others there was a predisposition to mental aberration, and the shock of the operation acted as the torch which lit up the trouble merely. 3. In a few the development happened to take place after the operation, but came only incidentally. 4. In others the iodoform, carbolic acid, or bichloride of mercury used during the operation might be the cause, and very small amounts were sometimes sufficient to act in this way. In patients already predisposed, the ether alone might be followed by insanity as an immediate effect, as surgeons had long since begun to observe. When the three last classes had been eliminated, not many would be left for the first; he did not believe, either, that the psychical condition a patient might be in was ever a ground for refusing to perform operations otherwise called for. Severe nervous diseases, including epilepsy, were sometimes cured by the removal of the ovaries. We must also remember that the menopause (and especially when produced by ovariotomy) often caused mental disturbances. He thought there was some connection between the amount of surface exposed in the operation (either to the action of the antiseptic drug that might be used or to septic influences) and the liability to such psychoses as were under discussion. Thus operations on the breast and the peritonæum had a greater liability of this sort.

Dr. C. H. Nichols had had an examination made of the records of the Bloomingdale Asylum for the last eleven years and a half, which had shown that within that time only two patients had been under treatment where insanity had followed a gynæcological operation. The first of these two patients had suffered from childhood from insomnia, had insanity in her family, and seemed a person whose mental balance might easily be upset. The second had, after an ovariotomy, suffered from a grave type of suicidal melancholia. It seemed to him that a

total of twenty six cases, if these were indeed all that had occurred, bore a very small proportion to the whole number of gynæcological operations which had been done of late. He had not supposed that any of these operations, or most of them, had any liability to be followed by insanity, except for the reason that they were usually long contemplated and much dreaded by the patients. This, together with the exposure of a large surface and the shock of the operation, might be supposed to render the patient quite liable to subsequent mental disturbances, and he was surprised that such cases were not more frequent.

Dr. P. F. Munde, in past years before iodoform was introduced, had had a case of what he had then supposed to be septic mania, following an ovariotomy for persistent ovarian neuralgia. The patient had recovered after a week. Two such cases, as it happened, had occurred in his practice during the past winter, and he had recently received a letter from Dr. Franklin Townsend inquiring as to the possibility of the form of mania under consideration. In one of the speaker's cases, after the removal of an ovarian tumor under chloroform and with the use of a minimum of iodoform, the patient had lost the power of speech for three weeks, during which time there had been neither fever nor depression. She pointed to her lips and indicated that she wished to write what she had to say. In another case violent mania had lasted for a week after a prolonged combined operation, accompanied by a red tongue and a temperature of 102°, but without sepsis or any interruption in the healing of the wound.

He had once been inclined to think that the removal of the ovaries would be more apt to be followed by mental disturbances than other operations, considering the not infrequent occurrence of melancholic or maniacal symptoms at the time of the menopause; but he had since come to think there was no such special liability after gynæcological operations as compared with others. He believed the premeditations of the patient had much to do with the causation, and also the prolonged anæsthesia of many of these operations. As for iodoform, plenty of patients operated on were packed with iodoform dressings in the freest manner, and showed no such symptoms as those under discussion. His conclusion was that though the cases did occur they could not be foretold, and could not be avoided except in so far as general surgical principles being followed would make the strain on the patient as little as possible.

Dr. W. M. Polk spoke at some variance with the opinions of those who had preceded him. He thought women were naturally disposed to mental aberrations after operations on the genital tract; they were more emotional than men to begin with, and mental disorders in them were closely connected with the genital organs. He preferred not to operate where a woman presented any abnormal mental action. He had had three cases where after the operation mania was developed, followed by death, and not due to drugs used in the operation. To appreciate the important connection of the mind and generative organs in women we only had to consider the case of those numerous women who in the intervals of menstruation were capable of attending to any business or social duties, but during the few days of menstruation were unable to manage their own houses or cooks. He thought the contemplation of an operation was hardly a sufficient cause for subsequent mania. In one of his three cases he had performed an autopsy after death and found everything normal. In a second the sister of the patient had mental peculiarities, and in the third the patient had been decidedly queer before the operation. He was therefore opposed to any severe operation being done on a woman in whose family history there were any indications of inherited mental derangement.

Dr. W. G. Wylie said his experience would not permit him to say positively that gynæcological operations caused insane after-developments more than other operations. We should remember that these operations were in many instances done on women not perfectly developed in their generative organs, and this of itself would have an influence in the production of mental troubles. Moreover, the imperfectly developed uterus might well go with an imperfectly developed brain. In this case the operation could scarcely be said to have caused the mental disorders following it, in any specific way. Among his many operations there had been a number on patients already insane, and the results had been good.

He recalled an instance where a lady living in the West became insane after the birth of a child, and after passing six months in an asylum had been sent to New York to try the effects of a change of residence. Here a number of experts had pronounced her insane, with suicidal tendencies. Subsequently he had been called in and had found her suffering from a very large erosion of the cervix. After treatment of this condition she became sane again, except during menstruation, and returned home. After the birth of her next child she returned to the city presenting the same symptoms as before, and an examination showed that she had an enlarged uterus and diseased tubes and ovaries. Immediately on her arrival she was violently insane, and was sent to Bellevue Hospital, he having been called thither by Dr. Dana. Ovariotomy and other local treatment had been followed a second time by considerable improvement.

In the only case in his experience in which insanity had followed an operation on the genital organs the patient had had a severe form of epilepsy for years before. When the case was sent to him he had said that he would operate if he found any evidences of local disease warranting it, and having found salpingitis and an ovarian tumor, he removed these structures. The patient died on the seventh day in raving mania. He had thought till lately that the removal of the tubes and ovaries was always followed by depression and despondency, but had found that this was not certain to follow. It was well worth remembering that in almost all forms of uterine trouble the rectum was in a very bad state, or else the colon, or both, and the cure of hæmorrhoids and fissures would be found to have as excellent an influence on the mental state as the treatment of uterine diseases. He had recently had a patient under his care suffering from severe nervous disturbances who had been for a long time receiving treatment for diseases of the uterus and bladder without relief, and also for salpingitis. He had found an enormous anal fissure. All the nervous symptoms had disappeared after the second dilatation of the sphincter.

Dr. Franklin Townsend, Jr., of Albany, related an instance in which, after a patient had rallied well from an operation for the removal of the tubes and ovaries, the bowels being regular, the appetite good, the pulse fair though rapid (as before the operation), nervous depression had grown into hysteria, and then into melancholia, with refusal to eat or speak. He would say here that he thought a rapid pulse previous to an operation a bad omen. The patient had then become maniacal, so that a straitjacket had been used to keep her in bed. The heart had gradually become weaker and she had died in exhaustion. When she was operated on she was very hydræmic, and he believed the poor nourishment of the brain so caused had favored melancholia, and also a weakness in the arterial walls which subsequently allowed them to dilate with the production of acute mania.

Dr. L. C. Gray said that to Dr. Thomas was due the credit of having called attention to a distinct genus of insanity. Dr. Thomas had given the histories of six cases of his own, to which he had added twenty-six other cases culled from the journals. These latter might be left out of consideration, as the

histories were not definite enough to allow one to base upon them any conclusions, so that we must confine our knowledge of the subject to the six cases reported by the reader of the paper. Four of these six patients had died, one within thirty-six hours. Three of these six cases had been of the type of mania, while the three others had been of the type of melancholia. But mania and melancholia were but symptoms, and these six cases did not possess the characteristics of the ordinary types of mania and melancholia. Two forms of so-called acute mania were known—one which was the true acute mania, and which was characterized by active but not destructive violence; and another known as delirium grave, which was really a cerebritis, and which was characterized by violent, dangerous, and insensate delirium, and by marked intermissions. Dr. Thomas's sixth case was unquestionably a case of delirium grave. The types of melancholia which were known were the simple melancholia, the agitated melancholia, and the melancholia with stupor, all of which were more or less chronic diseases and generally of fair prognosis. None of Dr. Thomas's three cases of melancholia would correspond to either of these three types. So that, after all, we had three non-typical cases of mania and three non-typical cases of melancholia following gynæcological operation. The post-febrile insanities were a well-studied group, and it was very evident that Dr. Thomas's cases were a genus of the post-febrile species of insanity, differing from the latter in the fatality, in the violence, and in the absence of one of the most marked features of post-febrile insanity, namely, logical delusions. He thought, therefore, that a far better name for the disease than that which the writer of the paper had suggested would be post-operative insanity. It was a noteworthy fact that all of these six cases had developed at a certain time after the operation. The query, therefore, would be naturally as to whether there was not something that germinated in the wound at a certain period after the operation in these cases—a microorganism perhaps. Certainly the fact that in some cases mania developed, in others that melancholia developed, that there was in all great violence, and that in four out of six death followed—all these facts certainly seemed to show that there was a great deal more than a reflex act as cause, and that some morbific germ or poisonous substance must develop in the site of the wound within a certain period of time after certain operations. Whatever the cause might be, the profession would do very well to answer Dr. Thomas's questions concerning the ætiology in ten years. As to whether there were certain persons upon whom gynæcological operations should not be done, that would be a very difficult question to answer, although it might be well if the widespread passion for oophorectomy could be prevailed upon to spare, for a time at least, the tender nervous systems of those who were congenitally or hereditarily predisposed to insanity.

The PRESIDENT instanced a case in which a week after the removal of a kidney by Dr. Lange the most acute mania had developed, followed in time by full recovery.

Dr. THOMAS replied to Dr. Hunter in regard to iodoform, that if there were such grave disadvantages connected with its employment its use at all was not warranted. He closed his incisions with silver sutures followed by catgut, so that the skin was brought into complete union, and then covered the line of union with collodion, which he sprinkled, when not quite dry, with iodoform. He would not say positively that even then the drug could have no influence. He had not mentioned a number of cases in his experience in which the mental disturbance had been of short duration. As to what had been said relative to the free use of iodoform in some cases without results, we must remember how much patients varied in other matters, in the possible effects of an ordinary dose of quinine, for instance. He did not believe that ether had ever produced insanity, although he did not like it as an anæsthetic.

It seemed to him very significant that the record had been increased by the addition of twelve cases since the discussion had begun, and it reminded him of an incident which had occurred just after pelvic hæmatocele had become a recognized disease. A surgeon in a European hospital in conversation with another had expressed doubt as to the possibility of the existence of such a disease. An examination thereupon of patients then in his wards had revealed two cases there at the time.

As to the evil results of the expectation of an operation, he was in sympathy with what had been said. When we considered how many of these patients went successively to six or eight surgeons, it was remarkable that more *crises* did not follow the operation. However, the practical deduction he wished to draw here was this: If a tumor appeared in a woman's breast no larger than a cherry stone it had best be taken out at once, for while it remained she would think, talk, and dream of nothing else. We might also be thus removing the nucleus of a malignant cancer. In conclusion, he would say that his own mind was not fully made up as to the broad questions raised by his paper, and he thought they could not be fully decided now, but that if the cases that occurred in the future were reported and classified, much more might be learned.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN OBSTETRICS AND GYNÆCOLOGY.

Meeting of February 28, 1889.

Dr. H. T. HANKS in the Chair.

An Anencephalic Fœtus.—Dr. J. M. MABBOT presented a specimen of this sort. (See page 491.)

The CHAIRMAN remarked that he had once extracted a child somewhat similar in shape and appearance to the one just shown, except that more of the brain had been developed, and had formed a tumor as large as an egg outside of what there was of the head. As often as he had touched this tumor, when he made his examinations before the descent of the head through the vagina, the child had made sudden movements, which had evidently been caused reflexively. As in the present case, it had been born dead.

The Ætiology of Dermoid Cysts.—Dr. J. R. GOFFE presented a large dermoid cyst in which a number of teeth and a large wad of matted hair were loosely imbedded. The woman from whom he had removed it had borne seven children, the last four years previously. The tumor had first been noticed a year previously, and since that time there had been much pain, and repeated attacks of peritonitis. When the abdomen was opened, the tumor was found in the site of the right ovary, but the ovary on the other side also was found to be in a state of disease of the same sort, with a similar production of hair and sebaceous and glandular matter. Over the larger tumor the intestines were adherent to such an extent that the Paquelin cautery was used to stop the hæmorrhage which followed the division of the bands of new tissue. Besides the hair and teeth, the tumor was composed in the main of sebaceous matter and dermoid tissue. The hair was wrapped up so as to form a hard ball, and was saturated with the sebaceous material.

Dr. P. F. MUNDÉ remarked that large balls of hair were of frequent occurrence in these tumors. In one such tumor which he had removed he had found numerous small bodies containing sebaceous matter, of the size of marbles and as round as if cast in a mold, floating in the fluid contents of the tumor. To each one a single hair had been found growing. In another instance

he had removed a dermoid cyst on either side, both ovaries being involved, and had found that in one the hair was blonde and in the other black.

Dr. W. G. Wylie, in reply to a question from Dr. Goffe as to how the appearance of dermoid cysts late in life was to be reconciled with their being always of congenital origin, said that they might remain latent for an indefinite time, and might first take on active growth at the time of the atrophic changes of the menopause. It was noticeable that tumors growing at or after the menopause grew slowly, and with much accompanying pain; adhesions were apt to form, and there was a tendency to suppuration. This slow growth might be the reason for the frequent formation of oily matters in dermoid cysts. He had that same day removed a dermoid cyst from an elderly woman which contained a quantity of chocolate-colored fluid and about half a pint of what was to all appearance olive-oil. The woman had borne twelve children.

Dr. Mundé remarked that there were three events in a woman's life which might be influential in starting up the growth of a latent tumor such as a dermoid cyst, and they were puberty, child-birth, and the menopause. He was inclined to believe with Waldeyer that this was true for all new growths, that the germs of all were derived from fœtal life, and that peculiar circumstances of different sorts called them into a more active state.

The Surgical Treatment of Retroversion of the Uterus with Adhesions.—Dr. Wylie read a paper thus entitled in which he described a new method of shortening the round ligaments, and showed its applicability to a class of cases which had until lately been very troublesome to deal with—where the uterus was held retroflexed by adhesions, but where the tubes and ovaries were not diseased. He believed, as he had maintained for many years, that displacements of the uterus were not of themselves necessarily the cause of disorder or pain. However, a diseased uterus was often put into a worse condition by displacements, especially flexion. Adhesions of themselves were not a disease, but an effort toward repair or shutting off diseased parts from the general cavity. They only became harmful when attached to diseased organs in a way which interfered with their circulation, or when they hampered other organs, such as the bowels, in their functional activities. Adhesions could be softened and stretched enough to release the intestines and relieve the endometritis commonly present in this class of cases; but since in nine tenths of all cases of retroversion with adhesions there was also pyosalpinx, laparotomy was usually called for before the patient could be cured. Any one who had opened the abdomen often enough to be familiar with the conditions constantly met with when adhesions had formed in any amount, would appreciate how much greater the probabilities of rational treatment were after the abdomen had been laid open. It was now not a more dangerous procedure than stretching out adhesions, when we took into account the liability to causing a fresh inflammation in tubes and ovaries already diseased which was present in the great majority of these cases. Forcibly breaking up adhesions without opening the abdomen was never to be resorted to. He would keep the patient quiet as long as the symptoms were acute and there was any rise of temperature. But otherwise, whenever a retroflexed uterus was found to be enlarged and sensitive, he would put the patient in the prone posture and push up the uterus slightly with the finger. If the adhesions were attached to the fundus, the fixation of the uterus would be much greater than if the adhesions were in the broad ligaments. Adhesions in the latter situation caused most of the displacements of the uterus. In mild cases he would begin treatment by packing in pledgets of boro-glyceride cotton to restore the uterus to its position by securing drainage, dilating the cervix, and curetting the endometrium, according as the case seemed to demand; but if these failed, he would then make an incision and find out what he had to deal with. If with the patient under the influence of ether he found the uterus freely movable and the tubes healthy, he considered Alexander's operation not unlikely to do good, but such cases were not the majority of those that were met with. By stretching adhesions the position of the uterus could not really be restored, since the adhesions were in no case broken up, and would in time return to their former state of tension. When ordinary treatment failed to relieve, and where the symptoms were such as to demand measures for relief, he proceeded at once to perform laparotomy, look over the contents of the pelvic cavity, break up all adhesions, bring the uterus forward and shorten the round ligaments so as to retain it upright, and remove diseased tubes and ovaries, if necessary, as was so often the case. At one time he had shortened the round ligaments by cutting out a portion of their length and reuniting their ends inside the abdomen; but a far better device, which he now used exclusively, was to scrape a suitable length of the ligament raw and then fold it on itself at this point and tie it together. Healing took place rapidly and firmly after this procedure, and the ligament was of course permanently shortened. A large Albert Smith pessary was then used to keep the uterus in its new position while healing went on.

Dr. B. F. Baer, of Philadelphia, present by invitation, was not prepared to agree with Dr. Wylie as to the pathology of displacements, and still held to the belief that displacements of the uterus had some share in bringing about its diseases; still his belief was not so strong as it had been, and he might in the future abandon it entirely. And still no one would suppose an organ in its normal position which was upside down. All would agree that our present approved therapeutical measures were such as tended to restore the displaced uterus to its position, and even Dr. Wylie employed these. He believed with him most emphatically that it was a matter of the greatest importance to restore to mobility and upright position a uterus fixed by adhesions in retroflexion. Still he thought that in a large number of cases this could be done through the vagina by ordinary methods, including the use of the pessary. The interference with circulation and the pressure on nerve-ends must be a part of the condition needing relief in uterine displacements, being directly due to that displacement. He entirely concurred with the reader as to the advantages of the new operation, and believed it a scientific and effective method. He could go further than Dr. Wylie in his estimate of its value, since he regarded retroflexion and displacement as causes of disease. He believed laparotomy justified in many cases for the sole purpose of shortening the ligaments. He had found the round ligaments very hard to find externally sometimes. He had lately operated in a case of retroflexion in which there were no adhesions, but in which all ordinary treatment (including the use of a pessary) had not availed to relieve the malposition. The tubes and ovaries were healthy. After opening the abdomen he had brought the uterus forward, but not without difficulty. In one tenth of the cases the shortening of the round ligaments after a laparotomy would of itself be found useful. In nine tenths there were likely to be diseased tubes and ovaries, besides adhesions. In either case laparotomy was justifiable. The danger of hernia was less than after Alexander's operation, and, as none of the patients operated on had as yet died, it seemed to be quite as safe an operation.

Dr. Mundé had not tried Dr. Wylie's method. All who had treated retroflexion with adhesions had felt that laparotomy

might in some cases be required to effect a cure. However, systematic and prolonged tamponing had undoubtedly cured some patients. He had thought that the amount of adhesion produced by Dr. Wylie's method would hardly be sufficient to stand the dragging on the ligament, but he might be mistaken on that point. He had performed Alexander's operation twenty-six times, and believed that it fulfilled its object in suitable cases. The objection to it was not that the round ligaments could not in most instances be found, but that they could not always be drawn out, or were too thin to be of service. It was not to be compared to hysterorrhaphy, since absolute mobility of the uterus was an indispensable condition for its performance. Recently he had had a case of complete prolapse of the uterus, and had decided to attempt a cure by shortening the round ligaments. He had accordingly found and exposed the ligament on one side, and had then made careful traction on it, remembering that it might be weak. The rupture of a large vein and a troublesome hæmorrhage had first occurred. When he continued to pull on the ligament, it broke off short. He therefore did not attempt the procedure on the other side, but at once performed laparotomy and stitched the fundus of the uterus to the anterior abdominal wall. So far the result had been excellent. The cases in which hysterorrhaphy was indicated were those in which the adhesions were capable of being stretched, and the uterus could be lifted up into position by the finger pushing upon it through the posterior vaginal wall, or by an ordinary repositor, but returned to retroflexion as soon as these were withdrawn. Where the adhesions were very dense it might be impossible to liberate the uterus, ovaries, and tubes without a risk of tearing and injuring the latter. This had happened to him in one case, and he had been obliged to give up the attempt. The patient fortunately had recovered. A possible danger from hysterorrhaphy seemed to him to be the slipping and incarceration of intestines between the uterus and bladder. In the two successful operations which he had performed he had found the constant protrusion of the intestines during the operation to be a source of great annoyance, especially by their interfering with the introduction of the sutures through the broad ligaments and fundus. He thought it might be well to stitch the uterus up first and tie the sutures before inserting the other sutures in the abdominal wall. Many cases of backward displacement could be cured by tampons and pessaries. Hence the operation of hysterorrhaphy had a limited field of usefulness and applicability, and certainly was not devoid of danger. With regard to the significance of forward displacements, he believed that, although they were not of themselves the cause of uterine symptoms, they might yet in course of time produce symptoms indirectly by favoring engorgement. Then, too, the peritoneal surfaces brought into contact might become adherent. He therefore thought that even such displacements should be treated and cured if possible.

Dr. G. T. Harrison thought that retroflexion complicated by perimetric adhesions was emphatically a pathological state, and either by the specialist or the general practitioner must always be considered as one requiring relief. He must dissent from Dr. Wylie's opinion that backward displacement was in itself a matter of small concern. On the contrary, he thought that treatment was needed in every case in which it occurred before the woman could be well. He believed that a really normal position could not be obtained in these cases by shortening the round ligaments. The uterus naturally was freely movable, but the shortening of the round ligaments tended to produce anteflexion in place of retroflexion; it did not therefore restore normal position. One great objection to ventral fixation was its holding the uterus forward so as to interfere with the normal excursions of that organ. It made an exchange of one evil for another. However, Dr. Mundé had admitted that the operation was a recent one, and was still on trial. The speaker had no doubt that many of the women operated on in this way would afterward have trouble with the bladder, and also during the progress of pregnancy and in delivery. It was certainly important that during the puerperal period the parturient woman should not suffer from overdistension of the bladder. It was a matter for congratulation that we had a means of dealing with almost all cases of retroflexion complicated with perimetric adhesions—namely, massage applied by a modification of Brandt's method. The speaker had employed massage with excellent results without having read or being minutely acquainted with Brandt's directions. He could testify that pessaries did often cure retroflexion, although a whole year or five years might be required to get this result. He believed that it was the relaxation of the utero-sacral ligaments which was the active and important element in the situation when the uterus was displaced backward, and, as Alexander's operation did not take this into account, he thought it lacking in real applicability to these cases.

Dr. A. F. Currier had seen Dr. Wylie do his operation and was familiar with his ideas in regard to it. As Dr. Mundé had said, no surgeons except Dr. Wylie and Dr. Baer had done the operation, and discussion of it by others could not be carried very far. The main question before the meeting related to the treatment of backward displacement of the uterus by any and all methods. The advantages of Dr. Wylie's operation, or its disadvantages, could not be directly discussed so soon as this after its introduction. We were bound to consider what results really followed backward displacements. In some patients certainly there were no symptoms produced; in others there were very marked symptoms, the result of engorgement, which demanded treatment. In a third class of cases, though there were symptoms of a certain sort, the chief result of the displacement was a general atrophic change in the uterine tissue, and this was incurable. Cures were undoubtedly effected by Alexander's operation, by Dr. Wylie's also, and by pessaries as well, and particularly in unmarried women. Another point but briefly alluded to by Dr. Wylie was the method of forcible replacement of the uterus when it was retroflexed and held by dense inelastic adhesions and shortenings of its ligaments. Retroflexion caused the layers of the broad ligament to become folded on each other, and if then an inflammatory process was set up, these folds would very soon adhere to each other. A question then arose as to what method could be used to break up these adhesions safely, so that their shortening and the resulting traction on the uterus might be brought to an end. It could certainly not be done by the method called Schultze's operation, which he had employed, but without success. Whenever, with the hand on the abdomen, a sound in the uterus, and one finger in the rectum, he found that the layers of the broad ligament were adherent to each other, and that when the uterus had been restored to position by the sound it immediately sprang back as soon as the sound was withdrawn, he knew that forcible replacement must be a vain procedure. As to the value of pessaries in uterine displacements, he believed with Dr. Harrison that they cured some cases. He had sometimes followed a case for two years after pessaries had been successfully used to replace a uterus, during which time, as the uterus retained its new position steadily, he had simply gradually reduced the size of the pessary until he was convinced that none whatever was needed. He thought that none but experienced and skillful operators should attempt so bloody an operation as the method by laparotomy might prove to be. He agreed with Dr. Mundé that in cases of retroflexion with a perfectly movable uterus Alexander's operation was a

good and useful one, but that if the uterus was adherent, either hysterorrhaphy or Dr. Wylie's new method was called for.

The Chairman remarked that it was recognized by all that some cases could not be cured by Alexander's operation, by pessaries, or by tampons. Moreover, Alexander's operation had been as fatal as laparotomy in the hands of the best operators, but not more than was to be expected. He did not think that the Alexander operation was backed by good surgical principles, and believed that, if pessaries failed to effect a cure or a long relief from symptoms, we should open the abdomen at once, and so make sure at least of what there was there needing treatment. At the same time, when pessaries gave relief for one or two years, that relief was for the time a cure. The reappearance of the disease in time did not prevent that. Pessaries did certainly often do this much. However, plenty of cases occurred where the adhesions needed to be broken up. As to hysterorrhaphy and the opinion that its result was incompatible with the uterus lying in its normal relations, and that it left a pathological condition present which would interfere with a normal pregnancy, he would say that he had delivered a woman upon whom this operation had been done of a full-grown child, and had observed no symptoms of there being anything wrong.

Dr. Wylie professed himself ready to try other operations whenever a valuable addition to our resources should seem to have been made. He had only put forward his present method as one which would replace hysterorrhaphy to advantage in the same sort of cases. It did not cure uterine diseases, but it removed one of the complicating elements which interfered with the likelihood of a full recovery of health. Thus, we could treat chronic endometritis to better advantage after replacement of a retroverted uterus. As to treating this condition of perimetric adhesions by massage, he would say that he valued the method as preparatory to other treatment in uterine diseases, but in many cases it would prove insufficient. The treatment by pledgets soaked in boro-glyceride was to be tried, also dilatation of the cervix and drainage, also pessaries and massage. He refused to operate until this had been done faithfully; but, when all these had failed, the operative procedure became in order. When the broad ligament had folded on itself and become adherent in the way described by Dr. Currier, salpingitis was usually present, as laparotomies were constantly showing. Here, too, when general treatment had failed, laparotomy gave an opportunity to remove the diseased appendages, besides breaking up adhesions and allowing the uterus to regain mobility, which he regarded as of more importance than position. Atrophic conditions he did not expect to cure. He only brought the uterus far enough forward to bring it about that, in making exertions or in efforts at stool, pressure should come upon the top of the uterus and not upon its anterior side.

Book Notices.

Rectal and Anal Surgery, with Description of the Secret Methods of the Itinerant Specialists. By Edmund Andrews, M. D., LL. D., Professor of Clinical Surgery, Chicago Medical College, etc., and Edward Wyllys Andrews, A. M., M. D., Professor of Clinical Surgery, Chicago Medical College, etc. Second Edition, revised and enlarged, with Illustrations and Formulary. Chicago: W. T. Keener, 1889. Pp. xiv–140. [Price, $1.50.]

We are glad to see that the authors have enlarged and perfected the work of the first edition—in fact, have so rewritten it as to have made almost another book. The first was devoted almost entirely to the good work of exposing the quacks in this branch of surgery; the second is a text-book. Looked at as such, there is much in it deserving of praise. It is concise, practical, and valuable; it contains no errors; and it shows a careful study of the literature of the subject and a practical knowledge of the things of which it speaks. The greater its circulation, the better for the profession and their patients.

The Diagnosis and Treatment of Diseases of the Rectum. By William Allingham, Fellow of the Royal College of Surgeons of England. Edited and revised, with much additional New Matter and Numerous Diagrams, by Herbert W. Allingham, Fellow of the Royal College of Surgeons of England, etc. Fifth Edition. London: J. & A. Churchill, 1888. Pp. 16–366.

To every student of diseases of the rectum the fifth edition of Mr. Allingham's book comes as an old, familiar friend—practical and reliable. If it contains too little that is new, all that it does contain is good; and if it is incomplete, it is trustworthy so far as it goes. In this edition it comes to us with a new name on the title-page, that of Mr. Herbert W. Allingham, but with the same old statement in the preface to the effect that the work is practical, and contains no pathology; and this omission of everything save diagnosis and treatment is a defect in the work greatly to be regretted.

Considering the book as the authors choose to have it and not as we might wish they had written it, there is little to speak of except with praise. The younger author shows his hand in the chapters on incontinence of fæces, excision of the rectum, and inguinal colotomy—two of which at least are familiar to the reader from the pages of current medical publications. As to the first, the omission of all reference to previous work in the same line by other writers might lead the reader to believe that it was original with Mr. Allingham—an impression he could hardly have intended to convey. Rather, we suppose it to be in the general line of the dogmatic character which has always characterized this text-book, and which we see carried to its extreme limit in a chapter on excision of the rectum, in which the work of the German surgeons, which by its boldness has startled the profession and filled the medical journals for the last five years, is not even referred to. We are tempted to wonder if either Allingham ever heard of Kraske's operation.

However, the limitations of the book are so generally understood that they need not be dwelt upon. As an account of the experience and practice of the elder Allingham it has great value; as a text-book it has fallen far behind several of its competitors. The specialty to which its senior author has devoted his life seems to be running in advance of him; and the sixth edition, unless it makes more rapid strides than the last, will be but a primer for medical students.

Hand-book of the Diagnosis and Treatment of Skin Diseases. By Arthur Van Harlingen, M. D., Professor of Diseases of the Skin in the Philadelphia Polyclinic and College for Graduates in Medicine, etc. Second Edition. Enlarged and revised. With Eight Full-page Plates and other Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1889. Pp. xv–17 to 410. [Price, $2.50.]

We had the pleasure of giving the first edition of this most excellent book a favorable notice in our issue for March 21, 1885. The second edition is an improvement on the first. It contains a hundred and twenty-eight more pages, a number of full-page illustrations, and thirteen woodcuts in the body of the text. These, with a number of tables of differential diagnosis,

greatly enhance the value of the work. The whole has been thoroughly revised, as well as in great part rewritten, some of the sections being two or three times as full as they were in the first edition. There are new sections on angeioma pigmentosum et atrophicum, hemiatrophia facialis, baths, colloid degeneration of the skin, dermatitis scarlatiformis, dermatitis papillaris capillitii, desquamation, skin diseases in connection with diabetes, eczema seborrhoicum, electricity, erysipelas, desquamative scarlatiniform erythema, erythrasma, goose-skin, hæmatidrosis, lymphangeioma, mycosis fungoides, diseases of the nails, naphthol ointments, and rubella, all of which are well and concisely written. One specially commendable new feature of this edition is that the proper pronunciation of the majority of the names is given. The book is one that no medical student can afford to be without, and he will find it a convenient work for ready reference when he becomes a practitioner and has not time to consult the larger treatises that he ought to have on his shelves.

Chemical Analysis of Healthy and Diseased Urine, Qualitative and Quantitative. By T. C. Van Nüys, Professor of Chemistry, Indiana University. With Thirty-nine Wood Engravings. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. x–17 to 187. [Price, $2.]

This manual can not be said to have been written for the busy practitioner, and for the specialist in urinary analysis we think it is hardly thorough enough. It will, no doubt, however, be found invaluable to the students attending the author's course of lectures. So many excellent manuals have recently appeared on this subject that there is little reason to commend one more than another. The one under review, however, will compare favorably with those that have preceded it.

The Vest-pocket Anatomist (founded upon "Gray"). By C. Henri Leonard, A. M., M. D., etc. Fourteenth Revised Edition. Containing Dissection Hints and Visceral Anatomy. Detroit: The Illustrated Medical Journal Co., 1888. Pp. 5–297. [Price, $1.]

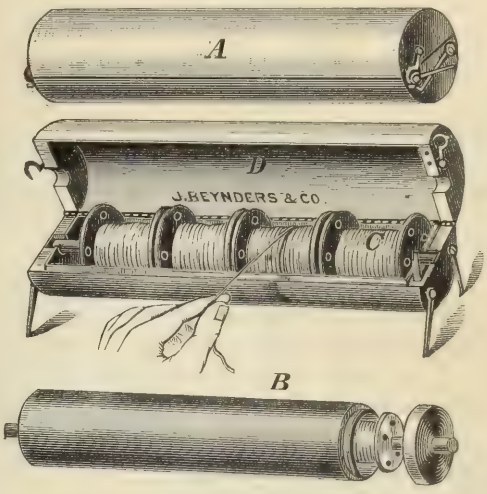
That this is the fourteenth edition of this work, and that four editions have been sold, as the author tells us, in London alone, indicates a demand for the work, but the reason for such a demand is a mystery. The student just before examination will find it useful to rapidly refresh his memory regarding the anatomy previously learned from a more complete work, but it is insufficient for almost any other purpose. On page 84 the arch of the aorta is said to be on a level with the second dorsal vertebra. So far as we know, there is no authority for placing the level so very high. Gray places it at the third dorsal vertebra, but many of the best anatomists consider this too high, and give the fourth dorsal vertebra as the usual level. The engravings are old and poor, the paper is poor, and the book as a whole is not very well got up.

New Inventions, etc.

A NEW FORM OF CATGUT RECEIVER AND HOLDER.

By A. M. Phelps, M. D.

Up to the present time every form of catgut holder and device for carrying catgut has been found to be very unsatisfactory to the surgeon. The glass catgut holder can not be carried about owing to the liability to breakage; the catgut which is placed in bottles or small spools is liable to become entangled, and the ends are constantly coming in contact with the outside of the bottle or the cork, thereby becoming infected and making it an impossibility for the operator to do thorough antiseptic work. In hospitals the large glass catgut holders in which the catgut is immersed meet every requirement, but when the surgeon is compelled to drive about the city and perform operations in the homes of his patients, or perhaps the country practitioner has to drive miles over the rocky roads to perform an operation in some obscure cabin, or possibly among the wood-choppers or miners of the mountains, he finds that to keep his catgut in a thorough antiseptic condition from the time he leaves his office until he opens the ordinary receiver, threads his needle from it, and passes it into the wound, requires the greatest of care; after all this care, the wound will frequently suppurate, and he can justly charge it to the infection of his catgut.



To obviate all this, I have devised a simple apparatus which consists of a catgut receiver for carrying the catgut, and a catgut holder from which the catgut can be used without danger of infecting it. It consists of a hard-rubber receiver, B, which contains spools on a spindle upon which the catgut is rolled. This catgut is prepared in the following manner: Raw catgut is immersed in oil of juniper for two weeks, then transferred to sulphuric ether for forty-eight hours; finally it is wound upon the spools and passed into the receiver, which is filled with alcohol. This receiver is then placed inside of the catgut holder, D. When closed it makes a compact box, A. It should be carried in a small antiseptic rubber bag furnished with the apparatus. When the operator is prepared for his operation he opens the holder, A, takes out his receiver, B, unscrews the cap, removes the spools and places it in the catgut holder, D, as seen in the figure. The alcohol from the receiver, B, is now turned into the holder, D, and the lid closed down to the stop, which allows it to close within about half an inch, from which space the catgut can be unreeled from the spools, which are immersed one half their diameter in the alcohol of the holder; as the spools revolve they revolve through the alcohol. The cover being nearly closed prevents dust or other accidental filth from coming in contact with the catgut. After the operation is concluded, the receiver, B, which had at the beginning of the operation been placed carefully in the small rubber bag, is now opened, the spools of catgut are returned together with the alcohol, the cap is screwed on, the receiver is returned to the holder, D, the whole thing is closed, the legs upon which the receiver has stood being folded up, as seen in A, and the whole machine is returned to the bag.

It has been urged that the holder is not an antiseptic machine, owing to the corners and crevices. In answer I will say that if the apparatus is kept in the antiseptic rubber bag, and care exercised to thoroughly wash it in bichloride solution before the operation begins, and before the catgut spools and alcohol are transmitted to it, it is thoroughly antiseptic, and more so than any other portable catgut holder or receiver that I know anything of.

The peculiar advantages of this machine are: First, it is not liable to breakage. Second, it is durable. Third, it is convenient. Fourth, the possibilities of the snarling of the catgut upon the spools is remote, and when it does occur the cover can be easily raised and the accident remedied, which can not be done in any other portable machine with so great facility. Lastly, but not least, the surgeon can be absolutely certain, if he exercises proper care and judgment in cutting off the catgut and in carrying out the few simple details which I have enumerated, of having thoroughly antiseptic catgut in the wound when he has finished the operation. (I should have remarked that the holder, D, is made of brass, nickel-plated.)

For the perfection of this machine I am indebted to Mr. William Harz, of Messrs. John Reynders & Co., 303 Fourth Avenue, New York.

Miscellany.

Mortality in Cities in the United States.—The following table represents the mortality in the cities named, as reported to Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, and published in the abstract of sanitary reports received by him during the week ending May 17th:

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—									
				Cholera.	Yellow fever.	Small-pox.	Variloid.	Varicella.	Typhus-fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y.	May 11.	1,565,196	782	..	..	..	..	..	..	4	48	43	8	24
Chicago, Ill.	May 11.	830,000	328	..	..	1	..	..	..	2	4	11	13	4
Brooklyn, N. Y.	May 11.	821,525	415	..	..	..	..	1	..	2	10	18	10	5
Baltimore, Md.	May 11.	500,343	146	..	..	..	..	..	..	5	4	2	1	....
San Francisco, Cal.	May 3.	330,000	107	..	..	..	..	..	..	1	..	2	..	....
Detroit, Mich.				..	..	..	..	..	..	..	..	..	..	....
Cincinnati, Ohio.	May 11.	325,000	142	..	..	..	..	..	..	2	2	12	1	....
New Orleans, La.	May 4.	254,000	141	..	..	..	..	..	..	1	..	5	..	2
Washington, D. C.	May 4.	225,000	67	..	..	..	..	..	..	1	1	1	..	1
Washington, D. C.	May 11.	225,000	92	..	..	..	..	..	..	..	1	2	..	....
Milwaukee, Wis.	May 11.	210,000	53	..	..	..	..	..	..	3	1	1	1	....
Minneapolis, Minn.	May 4.	200,000	45	..	..	..	..	..	..	3	1	9	..	..
Newark, N. J.	May 7.	182,457	91	..	..	..	..	..	..	4	16	28	..	....
Kansas City, Mo.	May 11.	180,000	36	..	..	1	..	..	..	..	..	1	1	....
Providence, R. I.	May 11.	127,000	52	..	..	..	..	..	..	..	..	2	1	2
Rochester, N. Y.	May 11.	120,000	30	..	..	..	..	..	..	..	..	..	..	1
Denver, Col.	May 10.	100,000	28	..	..	..	..	..	..	1	1	1	..	....
Richmond, Va.	May 11.	100,000	36	..	..	..	..	..	..	..	..	..	1	....
Toledo, Ohio	May 10.	83,500	26	..	..	..	..	..	..	1	..	..	..	....
Nashville, Tenn.	May 11.	65,153	11	..	..	..	..	..	..	..	..	..	..	....
Fall River, Mass.	May 11.	65,000	20	..	..	..	..	..	..	..	1	1	..	....
Charleston, S. C.	May 11.	60,145	47	..	..	..	..	..	..	..	..	..	..	....
Lynn, Mass.	May 11.	50,000	14	..	..	..	..	..	..	..	..	1	..	....
Manchester, N. H.	May 4.	42,000	12	..	..	..	..	..	..	..	..	..	..	....
Portland, Me	May 11.	42,000	12	..	..	..	..	..	..	1	..	..	..	....
Galveston, Texas	May 3.	40,000	11	..	..	..	..	..	..	..	..	..	..	..
Davenport, Iowa	May 4.	33,715	8	..	..	..	..	..	..	..	..	..	..	....
Davenport, Iowa	May 11.	33,715	6	..	..	..	..	..	..	..	..	1	..	....
Binghamton, N. Y.	May 11.	30,000	10	..	..	..	..	..	..	..	..	..	..	....
Altoona, Pa.	May 4.	30,000	8	..	..	..	..	..	..	..	..	..	..	....
Altoona, Pa.	May 11.	30,000	5	..	..	..	..	..	..	..	..	..	..	....
Auburn, N. Y.	May 11.	26,000	7	..	..	..	..	..	..	..	..	..	..	....
Haverhill, Mass.	May 11.	25,000	9	..	..	..	..	..	..	..	..	..	2	....
Newport, R. I.	May 9.	22,000	6	..	..	..	..	..	..	..	..	..	..	....
Newton, Mass.	May 11.	21,553	5	..	..	..	..	..	..	1	..	..	..	....
Keokuk, Iowa	May 11.	16,000	.....	..	..	..	..	..	..	..	..	..	..	....
Council Bluffs, Ia.	May 4.	35,000	2	..	..	..	..	..	..	..	..	1	..	....
Council Bluffs, Ia.	May 11.	35,000	3	..	..	..	..	..	..	..	..	..	..	....
Pensacola, Fla.	May 11.	15,000	4	..	..	..	..	..	..	..	..	..	..	....

The Health of Connecticut.—According to the State Board of Health's "Monthly Bulletin," the total number of deaths reported from 166 towns during the month of April was 1,073, including 12 from measles, 11 from scarlet fever, 11 from cerebro-spinal meningitis, 71 from diphtheria and croup, 8 from whooping-cough, 3 from erysipelas, 10 from typhoid fever, 5 from malarial fever, 1 from typho-malarial fever, and 7 from puerperal fever.

A Correction.—In the Journal for March 9th, in the report of a meeting of the New York Surgical Society, on page 277, Dr. Abbe's paper on "Colo-colostomy" being under discussion, Dr. Willy Meyer was made to say that "in his own last case of colo-colostomy the operation had lasted more than two hours." Dr. Meyer's remark really had reference to a case of gastro-enterostomy.

Morbid Changes in Diabetes.—"Dr. P. Ferraro, who has made several researches on the subject of the changes produced in the different organs of the body by diabetes," says the "Lancet," "has recently published the results of similar investigations in a fresh case, the eighth of the series. The arteries were affected with chronic endarteritis; in the lungs there were morbid changes not due to bacilli; in the stomach and intestines the mucous membrane was atrophied; the pancreas was transformed into a firm, compact mass of fibrous or cicatricial character; in the parenchyma of the liver and in the spleen pulp there were also signs of atrophy. Here, therefore, as in the other cases examined, the digestive organs were most of them affected to a greater or less extent, while the nervous system was not apparently the subject of any morbid changes. Dr. Ferraro considers the exhaustive study of the morbid histological changes in diabetes very important, and believes that we shall not arrive at any definite conclusion as to the ætiology of this disease until our knowledge of the conditions under which sugar is formed and distributed in the body in a state of health is very much further advanced than it is at present."

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Lectures and Addresses.

STATE CARE *VERSUS* COUNTY CARE OF THE INSANE.

BEING THE ANNUAL ADDRESS DELIVERED BEFORE THE NEW YORK NEUROLOGICAL SOCIETY, *May 7, 1889.*

BY GEORGE W. JACOBY, M. D.

THE position which this society occupies and has occupied almost since its birth has been one of double character. The one devoted to ourselves, to the study and advancement of neurology in all its minuteness, the other devoted to the public, aiding and guiding it in the formation of opinions upon subjects of which we are supposed to possess special knowledge. Often has the expressed opinion of this society led to the adoption of beneficial and far-reaching reforms. Probably the most pronounced of these was the amelioration in the condition of the insane in public asylums, which in great part was due to the decisive stand which this society took upon this question in 1878 and 1879.

I need not review the tribulations and attacks to which the society was subjected at that time in consequence thereof; it suffices to regard the result attained and to know that these labors were not in vain.

I beg to be excused for recalling to your mind these facts, which are well known and appreciated, but my object is to ask you to retrace your steps and to assist in remedying defects which in their way are greater than those so successfully combated ten years ago. I bespeak your individual and collective support of what must be acknowledged to be the leading humanitarian question of the day. It is that of *State care against county care for the insane.* I am aware that the society as such is in favor of the transfer of the insane of this State from county to State care, as expressed in a resolution adopted over a year ago, but I have met many members who are not so well instructed upon this subject as its importance warrants—members who, I am convinced, will, when they once recognize the import of this change, give all measures tending to its accomplishment their full and active support.

Humanitarian principles make it plain that we owe to the insane the best that we are capable of giving—the best medical treatment, the highest grade of attendants, occupation, instruction, etc. Furthermore, it must be conceded that whatever advance our State asylums may still be capable of, they to-day represent—and this is largely due to the efforts of this society—the best care for the insane thus far attained in this country.

It will also be acknowledged that the State is under obligation to make proper provision for the care of all its insane. This is a principle which has been recognized by nearly all the States of the Union; thus in Ohio, Illinois, Indiana, Kansas, Mississippi, and Dakota provisions for both the acute and chronic insane are made by the State, although the law is not in all of them fully carried out, while in Connecticut, Michigan, and Pennsylvania this obligation is practically fulfilled. Here in New York we have but to take a brief retrospect of the history of legislation for the insane to see that this principle has been repeatedly enunciated. We find that in 1831, before a single State asylum had been erected, a report was made to the Legislature by a commission (the Hon. A. C. Paige, chairman) which contained the recommendation that asylums be erected "of sufficient dimensions and number to accommodate all the insane."

About twenty-five years later, at the convention of the superintendents of the poor held in Utica, the following resolutions were passed:

"*Resolved*, That the State should make ample and suitable provision for all of its insane not able to reside in private families.

"*Resolved*, That no insane person should be treated or in any way taken care of in any county poor-house, or almshouse, or other receptacle provided for, and in which paupers are maintained or supported."

That the idea embodied in the recommendation of 1831 and the resolutions of 1845 was acted upon by the various legislatures is shown by the successive opening of the different State asylums—in 1843 the New York State Lunatic Asylum at Utica, for acute insane; 1869, the Willard Asylum, for chronic insane; 1871, the Hudson River State Hospital and the State Asylum at Middletown; 1880, the Buffalo Asylum; and in 1881 the Binghamton Asylum, for the chronic insane.

The desire of the State thus to make proper provision, first, for its acute, then for its chronic insane, becomes clear.

The first apparent break in this principle was made when in 1871 the Willard Asylum became overcrowded, and, instead of making further provision for the insane by the State, the Legislature empowered the State Board of Charities to exempt any county from the Willard Asylum Act.

What influence this provision has had is shown by the fact that at present, while there are six State hospitals for the pauper insane—three receiving acute, two chronic, and one both acute and chronic cases of insanity—there are nearly twice as many insane in the county poor-houses (excluding New York, Kings, and Monroe Counties) as were found by Dr. Willard in 1865. As the law stands at present, of the sixty counties of the State, all, with the exception of New York, Kings, and Monroe Counties, are obliged to send their acute pauper insane to State hospitals, and forty counties are by law obliged also to do the same with their chronic pauper insane. The others keep their chronic pauper insane by permission of the State Board of Charities, or by virtue of a special act of the Legislature. The present agitation tends simply toward an enforcement of the general law, so that no exemptions shall be granted under any circumstances and all the insane of the State shall be placed under State care. The least that the State, which has deprived the insane of their liberty, can do in return is to guarantee them full protection; and this protection means the furnishing of the best possible care for one and all. Every insane person in the State ought to enjoy the

advantages accruing from the progress which has been made in the care of the insane.

That this is not and can not be accorded them in county institutions is conceded. Even admitting that the condition of the insane in county poor-houses is improved when compared to what it was years ago, admitting that the neglect and abuse formerly prevalent are abolished, still every person familiar with the management of State asylums and of county poor-houses must acknowledge that the care furnished by the State is decidedly superior to that furnished by the counties. An investigation by the State Charities Aid Association extending over fourteen years, during which time the poor-houses and almshouses throughout the State were repeatedly visited, verifies this statement, as does also their last report, as well as that of the Commissioner in Lunacy. If we take up the first of these reports, we find among others (and I shall only cite three) the following charges of mismanagement.

Of Erie County it is said:

"A lad, an insane boy of fifteen years, who had some weakness of the bladder and other organs, was found strapped upon an ordinary commode. He was placed there every morning when he was taken out of his bed, and was never taken off from it until evening. That boy was placed in a room where there were at least fifteen sick and insane men and one child. The attendant upon these people was an idiotic man. A child, eleven years of age, apparently insane, was found strapped to some kind of a chair, and, according to statements of the attendant, was not removed from morning until night. At Willard there are for every ten insane persons one attendant, and here only one to twenty-five."

Of Ulster County we read:

"The safety of the inmates has been imperiled by the lack of attendants. One illustration will suffice. From two to four insane are locked up at night in each room. The corridor is locked and the keeper retires for the night to a distant part of the building. One morning the inmates were discovered fighting each other with the slats taken from their beds."

Of Wayne County it is said:

"In the attic were found, in two cells under the slanting roof, two women who were so diseased that it was impossible with the small force of attendants to keep them in proper condition in the halls below. Excepting through their grated doors, the cells were unlighted and unventilated. One of the women was blind; the keeper said 'she would not come out,' so her door was not locked. The other was locked in. During most of the time the attic is unoccupied by any other person, and if the nurse comes here, she must leave the halls below unattended."

Do these excerpts read any better than the descriptions from the time when the insane were thrown into prisons or burned for witchcraft? The present State Commissioner in Lunacy, judging from his general remarks, believes that the insane can be as well cared for in county as in State institutions, but when we analyze his report we find the following complaints made:

Broome County.—"A better system of ventilation is needed. . . . The dining-room is underground and damp and unfit for this use. . . . In the poor-house there are now three insane patients who are filthy and demand special attention."

Clinton County.—"It is not the custom of this asylum to provide employment for patients, and but five were engaged in any occupation. Pauper inmates and the insane are indiscriminately associated."

Chenango County.—"Better ventilation of the female wards 1, 2, 4, and 5 is recommended."

Cortland County.—"The water supply is entirely inadequate."

Lewis County.—"A better system of ventilation is recommended."

Oneida County.—"The old building needs renovation. . . . The single division of one hundred and forty-five (males) I think inadequate for the proper classification of the quiet cases from the disturbed and filthy. . . . A case-book is needed by the attending physician, wherein notes may be made from time to time, thereby affording facilities for recording any change in the mental and physical condition of the insane patients. . . . A male and female night attendant are especially needed, etc."

Onondaga County.—"On the day of visitation, July 7th, the keeper, matron, and two of the attendants were absent. Visited again on August 29th. Wards overcrowded, and sleeping-rooms too small for a proper ventilation; the fare was extremely plain and the bread was stale and unpalatable."

Orange County.—"The basement is used as a ward for males, one side of which is underground and is damp and unfit for habitation."

Oswego County.—"Renovation and better ventilation are needed. The windows might be protected by bars or strong wire screens. . . . A female and male night attendant are needed."

Wayne County.—"Wards in the old building are overcrowded and badly ventilated."

If we compare these remarks with those in the same report about State asylums, we are at a loss to comprehend how it is that the commissioner has arrived at any other conclusion than that of State care being vastly superior to county care.

While acknowledging the facts set forth in these abstracts, excuses are sought by the advocates of county care to explain the existence of these conditions. The editor of the "Medico-legal Journal," in the March number of that journal, attributes these facts to the non-enforcement of powers vested in the State Board of Charities, and believes that the abolition of this board would remedy the defects of county care. This erroneous process of reasoning, which has also been applied by others, sees the withered branches of the tree only and does not realize that another and deeper-lying cause is the productive agency. The trouble here is that the agitation, like most movements for asylum reform, is supposed to rest upon isolated and flagrant abuses. This is erroneous, for the fault does not lie with the State Board of Charities, nor with the State Commissioner, nor with the County Superintendent, nor hardly with each individual asy-

lum; but the fault lies with the entire system. The system is bad from beginning to end, and no amount of inspection, no amount of special legislation, can remedy defects which are inherent in the system itself. Local interests and politics govern and influence the care of the insane. A new superintendent of the poor, who is elected every few years, means a new keeper for the poor-house, who in some counties is also elected on the county ticket, and subordinate positions are filled by him as a reward for political services. Even the physician, when one is appointed, is selected on account of his party affiliation and not on account of his skill or professional standing.

The administration of laws, no matter how good they may be, when devolving upon county officials, permits their desire to make an economical showing, and this is necessary, in order to retain their places, to extinguish the natural spark of humanity which they must possess. In the interests of economy, the requisite number of wards will be sacrificed, classification is not attempted or is unworthy of the name, the number of trained attendants becomes inadequate, and the diet and general care for the insane are lowered to the standard deemed sufficient for the poor-house inmates. A uniform standard is adopted, and I think it needs no argument to show that provision sufficient for the ordinary poor-house inmate is entirely inadequate for the necessities of the insane. It is impossible to prevent these and other great abuses from creeping into the management of any institution in which an entire change of officials occurs, and is expected, every few years. It has been suggested that these unstable elements could be eliminated by having a board of non-partisan managers appointed by the county supervisors, or, better still, by having trustees appointed by the Supreme Court, with the government resting in them. These suggestions can only be regarded as half-way measures, cumbersome substitutes for State care.

It is superfluous here to enter into a discussion about the superiority of State care. What our State asylums are is known to every one of our members, but it will do no harm to recall to your memory that the State asylums are governed by a board of trustees, who are appointed by the Governor and serve without compensation. These trustees, who accept the position solely from philanthropic motives, appoint a superintendent, who holds the position for life if competent. Subordinate officers are likewise sure of retaining their positions under similar circumstances.

It is interesting to examine also the other side of the case and see what arguments are adduced by the advocates of county care to warrant its continuance. Not only is it interesting, but I think that a mere enumeration of their points of defense will suffice to convince you that these advocates are either unable or unwilling to answer the arguments and allegations of their opponents.

Firstly, it is said that it is cruel to take the insane so far away from home, from relatives and friends, who can not go to see them in the distant State asylums; *secondly*, that the removal of the insane interferes with local self-government, and that "the primitive right of the counties to care for their own insane can not be disputed," because "where taxes are raised, there they should as far as possible be spent"; and, *thirdly*, the financial argument is adduced by which it is attempted to show that a great outlay of money would be needed in order to erect suitable State buildings for *all* the insane, and that, furthermore, State care is more expensive than county care.

The first two arguments hardly deserve serious consideration unless you are willing to place the right of the taxpayer above the welfare of the insane, and the third, which is really of importance, has been successfully answered and controverted by reliable authorities. It would lead us entirely beyond our province to enter upon this question here; but this much is positive, that the American people certainly never were and never will be parsimonious in their charities. For us the best care must be the cheapest.

Finally, as an instance of what makeshifts are used in the place of argument, allow me to cite the following: In the "Annual Report of the State Charities Aid Association for 1887" we find an anonymous communication, which says: "One of our insane girls is soon to bring into the asylum a newly born infant, the father of which is an insane inmate." In the report of the State Commissioner in Lunacy, dated January, 1889, we find that this accusation relates to Wayne County, and affidavits are there printed, made by the keeper of Wayne County Insane Asylum and by the superintendent of the poor of Wayne County, setting forth that during their term of service no "female insane" has become pregnant in the asylum. Only lately it has been shown by Mr. Oscar Craig, of Rochester, one of the State Commissioners of Charities, that these affidavits are only to be taken literally; that the offspring was not that of an *insane* woman, but of an *idiot* woman.

Comments are superfluous. We, as practical men, must also remember that this question is not simply a matter of theory, but that practical experience with the care of the pauper insane of all countries justifies the conclusion which Mr. Letchworth has drawn in his recently published admirable work on the insane in foreign countries, that in the institutions variously designated as poor-houses, work-houses, or almshouses, which contained insane persons, either in separate departments or in ordinary wards, "the provisions for their care did not reach the ordinary standard."

I will now bring these fragmentary remarks to a close, and I shall feel perfectly satisfied if they prove a stimulus to your interest in this question, for I am sure that slight further investigation will satisfactorily demonstrate to you that the interests of the insane are best served, and that they are surest to receive the most intelligent and most humane care, where they are placed directly under State control and supervision.

Sale of Morphine in Berlin.—"There have been so many cases of slow self-poisoning by morphine lately in Berlin," says the "Lancet," "that the evil of indiscriminate poison selling has had to be peremptorily checked. Stringent police orders have been in consequence issued to all chemists with specific directions and precautions as to the sale of morphine by them, and wholesale druggists must not sell morphine to anybody excepting doctors and chemists. These precautions will, no doubt, embarrass persons who have carried a prescription from one chemist to another, as they craved for morphine; and forged prescriptions may also be partly checked."

Original Communications.

THE AFTER-TREATMENT OF KOLPO-URETERO-CYSTOTOMY AND OTHER SIMILAR OPERATIONS BY A NEW SYSTEM OF CONTINUOUS IRRIGATION AND DRAINAGE.

By NATHAN G. BOZEMAN, Ph. B., M. D.

My father, Dr. Nathan Bozeman, published recently an account of his treatment for chronic pyelitis in women by washing out the pelvis of the kidney,* and it will be remembered that this was done for the first time by him in the Woman's Hospital on December 26, 1886. The patient had sustained in parturition very extensive injuries of the urethra, bladder, cervix uteri, and the vesical extremities of both ureters. In this case the end of the left ureter was exposed to view in the everted border of the large coexisting fistulous opening after three months of gradual preparatory treatment by his method of incisions and dilatation. Here the pyelitis, with the choking up of the ureter, existed as a complication of the injuries just mentioned, and the diagnosis of both these conditions was made when the patient was almost in a dying condition from septic poisoning.

On seeing the marked relief of the patient from her threatening symptoms which occurred almost immediately after washing out the pelvis of the kidney, Dr. Bozeman spoke of the great value of the procedure in the presence of the house staff. He expressed then his intention, as soon as an opportunity offered, to extend the same practice to the treatment of chronic pyelitis in cases where no fistula coexisted by exposing, through the vesico-vaginal septum, the extremity of the ureter of the affected kidney. Three weeks later, curiously enough, he received a letter, dated January 23, 1887, from a lady in Charleston, S. C., whose sister, a child three years old, he had operated on for stone thirty years before, removing from the bladder a calculus of the size of a hazel-nut. She informed him that she had been and was still a great sufferer; and as he believed from her description that the trouble arose from pyelitis calculosa, he at once advised her to come to New York, at the same time acquainting her with the nature of the operation which he contemplated performing. At the time she came on to this city I was house surgeon in the Woman's Hospital, where she was treated, and the principal complication in the case proved to be an exaggerated form of retroversion of the uterus attended with engorgement and occasional metrorrhagia. The cervix uteri was inclined to the right, the side of the affected ureter and kidney. The prominent features of the history pertaining to the kidney, ureter, and bladder were hæmaturia of two years and a half standing, renal colic, with passage of two calculi at different times, and vesical tenesmus. Gradual preparatory treatment by columning the vagina with dry cotton in the supported knee-elbow position was carried on for several weeks, together with the use of tonics and supporting diet, in order to get the uterus in an elevated and easy position for drainage and to build up the patient's general health.

For this patient Dr. Bozeman devised his utero-vesico-urethral drainage support, for the purpose of draining away the urine after the establishment of the proposed artificial fistula.* This original instrument he modified somewhat after the operation by introducing a tube for conducting a stream of water into it, so as to secure at the same time the good effects of continuous irrigation of the vagina and bladder as well as drainage. (See Fig. 1.) He proposed to



Fig. 1.—Bozeman's utero-vesico-urethral drainage support, with a tube projecting into the instrument for continuous irrigation.

accomplish this by flooding the instrument and then allowing the water to escape through the soft-rubber tube attached to its nozzle. Appreciating the soothing effects of warm water and emollient solutions on the diseased mucous membrane of the vagina and bladder after operations, even with his drainage instrument in position and a soft catheter introduced through the urethra, he found that the bladder could be efficiently douched, the fluid finding an easy outflow through the instrument. A soft-rubber catheter, No. 20 F., with the closed end cut off, doubled, and having three or four perforations near its middle, so as to allow water to pass into the vagina and bladder to serve as a drainage tube, he also tried with more or less satisfactory results. By a loop of wire passing through it and bent upon itself, the appliance was made self-retaining, as shown in Fig. 2. Into one of the two ends which projected outside of the vulva a stream of water was thrown with a piston syringe, and collected as it flowed out at the other end. By this mode of douching comparatively little of the water escaped into the vagina and bladder, but the current carried along with it the urine as it was secreted. Dr. Bozeman further extended this principle of douching and drainage by bending sharply forward the portion of the tube corresponding to the fistula, so as to make the perforated loop thus formed enter the bladder through the fistula. But he soon found that the pressure of the loop on the edges of the fistula and the force of the jets of water through the holes directed against the walls of the inflamed bladder could not be borne by the patient long enough for the douching to be of any permanent benefit, and he therefore gave up the device of the small anterior loop as impracticable, continuing, however, to use the bent tube as shown. It will be seen that all these expedients for securing the beneficial effects of douching and drainage required the constant attention of a nurse.

Now, in order to overcome the defects of the several appliances referred to of my father's, and to secure the bene-

* "American Jour. of Medical Sciences," March and April, 1888.

* *Op. cit.*

ficial effects of painless and continuous warm-water douching of the vagina and bladder with effective drainage, which he himself regarded as of the greatest practical importance, I instituted a series of experiments from which I hoped to attain this end: to introduce into the most dependent portion of the vagina a small amount of warm water at a time, which does not cause distension, and to have it accumulate there, thus bathing in it the raw edges of the fistula, the mucous membranes of the vagina and bladder, and diluting the urine. But to make this application of warm water continuous it has been necessary to devise a self-retaining douche-tip which can be easily adjusted to any case, and combine a system of irrigation and drainage by automatically supplying water and draining it away with diluted urine and discharges, without disturbing the patient or causing vesical

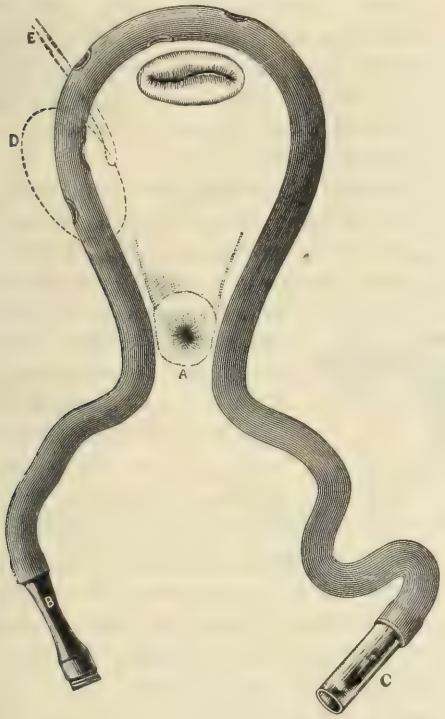


FIG. 2.—Dr. Bozeman's soft-rubber irrigating tube, made self-retaining by a stiff wire inside the intravaginal portion. Drawn half size, and in the supported knee-elbow position, to show the relationship of the tube to the urethra, A, the fistula, D, the ureter, E, and the cervix uteri; B, nozzle of piston syringe; C, outflow.

tenesmus. It has been a difficult task, and has occupied my attention for nearly a year; but I am confident now that I can apply continuous vaginal irrigation and drainage and keep the patient perfectly dry in any case that may present itself. I have had opportunities to test this in ten cases after kolpo-uretero-cystotomy, most of them in my father's service at the Woman's Hospital, and in one case of carcinoma of the cervix uteri where the disease had extended into the bladder, forming a vesico-vaginal fistula. In this case, which occurred in my service at St. Francis Hospital, Jersey City, I was enabled to apply appropriate solutions continuously and thoroughly to the diseased surfaces and drain them off without disturbing the patient, and I believe that this mode of treatment is of very great service in the advanced stages of carcinoma of the cervix uteri, especially when the bladder is implicated.

I will describe as briefly as possible the apparatus, which can be easily constructed of glass and rubber tubing by any one, though Messrs. George Tiemann & Co. have been very

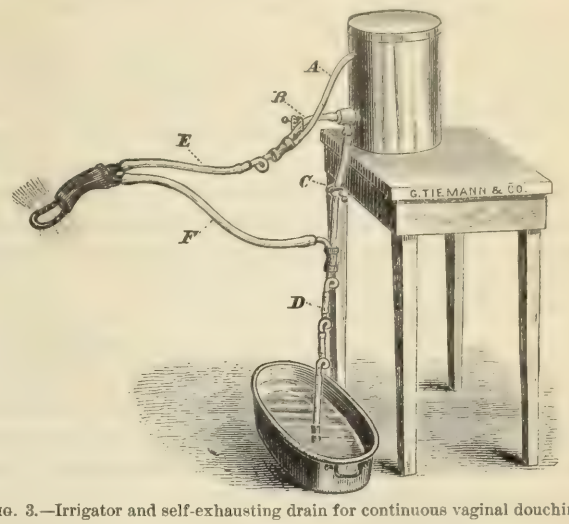


FIG. 3.—Irrigator and self-exhausting drain for continuous vaginal douching.

obliging in making it from the models which I have furnished them. The important features of it are:

1. A double-current vaginal douche-tip, combining the principles of the body and nozzle of Bozeman's utero-vesico-urethral drainage support, which can be easily introduced and worn comfortably by the patient.

2. An intermittent siphon, by means of which a current of warm water and heated air is introduced into the vagina from a covered vessel slightly elevated above the patient.

3. A suction-tube which automatically removes the air and fluid from the vagina, and deposits the latter in a convenient receptacle.

The double-current vaginal douche-tip (Fig. 4) is three inches and a half long, is made of hard rubber, and is part-

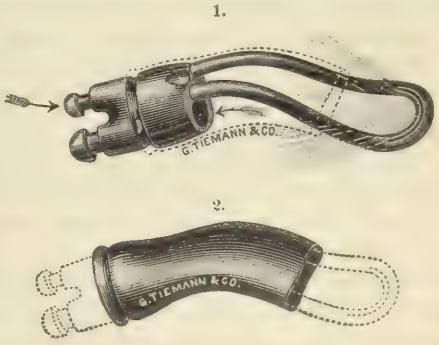


FIG. 4.—1. Double-current vaginal douche-tip, half size. 2. Soft-rubber sheath.*

ly covered with a soft-rubber sheath. The intravaginal portion consists of a hard-rubber tube three sixteenths of an inch thick, which is bent at the middle in a cordate form to render it self-retaining, and is shaped in such a way as to conform to the axis of the vagina. The portion which fits under the cervix uteri is deeply grooved, and this converts it into an open tube. The two ends are inserted, a quarter of an inch apart, into a bulb of hard rubber three quarters

* In some cases I use a flat grooved projection from the vulvar portion for the purpose of keeping patulous the rubber sheath, which sometimes has a tendency to collapse.

of an inch thick and one inch long, which forms the vulval portion of the instrument and constitutes a kind of wedge which occludes the vagina. This bulb is perforated by two openings, and the upper one, three sixteenths of an inch in diameter, bifurcates to form the sockets into which the open ends of the hard-rubber tube fit, and through which the irrigating fluid passes into the vagina. The lower one, a quarter of an inch in diameter, is for the outflow. Both of these openings terminate on the outer surface of the bulb in two projections for attaching soft-rubber tubing. A soft-rubber sheath fitted tightly over the bulb and a part of the intra-vaginal portion forms a continuation of the outflow aperture into the vagina.

The intermittent siphon (see Ganot's "Physics," § 201, p. 161) consists of a cavity formed by a soft-rubber tube two inches long, which is occluded at either end by rubber stoppers. The upper one has two perforations into which fit two short pieces of hard-rubber tubing, one being connected by the tube B (Fig. 3) with the lower part of the vessel containing the irrigating fluid, the other by the tube A (Fig. 3) with the upper part above the level of the fluid. Through the lower stopper is thrust the end A (Fig. 5) of a glass tube having a diameter of three sixteenths of an inch, which is bent in a small coil, the other end C (Fig. 5) being connected with the double-current vaginal douche-tip by the tube E (Fig. 3). When the flow into the small cylindrical cavity, which is regulated by the clamp near the letter B (Fig. 3), is less than that through the tube E (Fig. 3), there is an intermittent discharge of fluid and air into the vagina. The air is drawn in from the top of the vessel each time that the intermittent siphon formed by the bent glass tube empties itself. The amount of air thus introduced into the vagina depends upon the difference in the quantity of fluid supplied to the siphon and discharged by it in a given time, this being regulated by the elevation of the vessel above the bed. The elevation required varies in different patients, the average being between twelve and eighteen inches. It can be easily determined by experiment, and precaution must be taken to admit the minimum amount of air, which is indicated by the passage of a long column of water through the glass tube, followed by three or four bubbles of air. This means that the rate of supply and discharge is nearly equal; so that the result, so far as the patient's feelings are concerned, is a continuous current.

The suction tube is made up of three separate coils of glass tubing, A, B, C (Fig. 5), having a caliber of three sixteenths of an inch, which are joined one to another by soft-rubber tubing. To one extremity of this series of coils, D (Fig. 3), is suspended a rubber tube ten inches long. The other end passes through a rubber stopper, over which is stretched a rubber tube two inches long, and this is closed by another rubber stopper into which is fastened the end of a glass tube bent at right angles and a short hard-rubber tube. The latter serves to suspend the whole from a vessel over it, and fits a rubber tube, C (Fig. 3), twelve to eighteen inches long, which is supplied with a Hoffmann's clamp.*

By means of this series of coils, when in a vertical position, an aspirating force is exerted along the tube F (Fig. 3) by the passage through them of a very small quantity of water from the vessel above them, the amount of the water being regulated by the clamp near the letter C (Fig. 3). This device, which is familiar to every student of practical chemistry, was suggested to my mind from having seen and employed, in the chemical laboratory at Yale University in 1881, long glass tubes, bent in a succession of coils, such as are represented by dotted lines in Fig. 5. When suspended in a vertical position from a funnel, they collected the few drops of the filtrate of a slow filtering precipitate in order to convert them into columns of fluid, which, falling down through the vertical portions of the tubes, carried bubbles of air with them and exerted suction on the filter paper, thus accelerating the process of filtering. The object in having the coils separate and joined together by rubber tubing is to make them more portable and less liable to break. They should always be made of glass, in order that one may see just how to regulate the flow through them. The T-shaped tube (Fig. 6) makes the apparatus complete. The tube B (Fig. 3) being connected with the short horizontal arm, and the tube C (Fig. 3) with the vertical projection, it is only necessary, for the application of continuous irrigation, to have a convenient vessel, with a small opening near the top, into which the tube A (Fig. 3) is passed, and an orifice in the bottom through which the long arm of the T-tube, provided with a screw-thread, is thrust, the side of the vessel being then clamped between the nut and the rubber stopper.



Fig. 5.—A B C, suction tube. Length two inches, diameter of tube three sixteenths of an inch, diameter of coil half an inch. Two additional coils drawn in dotted lines.

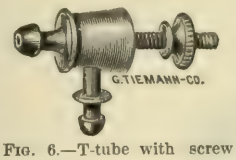


Fig. 6.—T-tube with screw and nut for clamping side of vessel.

* In the "Atlanta Medical and Surgical Journal" for March, 1889, appeared an article, by Dr. William B. Gilmer, describing a new pump and its uses in medicine. The introduction by him of the inverted U-tube in the cylindrical cavity increases the efficacy of his pump for large tubes, the limit, however, being an eighth of an inch. I have never made any clinical use of this pump on account of the small size of the tubes, since they do not afford a sufficient outflow for irrigation, and hence very soon become clogged by mucus sticking to their sides. By the use of the coils described in the text, tubes having a caliber of a quarter of an inch very quickly produce exhaustion of air, and require very little water to do it, while a greater quantity of fluid can pass through them, which increases the suction without siphoning. All the clinical experiments described by Dr. Gilmer and many others of a similar character were made by Dr. Bozeman on his patients with the idea of utilizing the pumping action of the bladder resulting from the rise and fall of the diaphragm and viscera in respiration. This phenomenon he demonstrated to both Dr. Gilmer and myself, and he has applied it to great advantage in his new form of utero-vesical drainage support to remove the urine from the instrument as fast as it is collected. The form of vaginal drainage tube (Fig. 2) which Dr. Bozeman devised and used, and which he showed to Dr. Gilmer when he was living with us in New York, has also been described in three different shapes by the latter.

In a warm room, with an agate-ware vessel holding one gallon, the irrigation can be kept up for an hour, when it becomes necessary to renew the hot water; but when used as a simple vaginal douche, the same amount of water will run through in half the time.

Dr. Nathan Bozeman has adopted this form of continuous vaginal douching as a part of the after-treatment of his operations of kolpo-uretero-cystotomy and kolpo-cystotomy. The douche-tip is introduced at the time of the operation, and the irrigation kept up almost constantly until the wound in the vesico-vaginal septum has cicatrized (about two weeks), when one of his improved form of utero-vesical drainage supports is fitted, which keeps the patient dry.

The advantage maintained for this system of irrigation and drainage is the facility with which hot water can be continuously applied to the diseased mucous membrane of the bladder, vagina, and cervix uteri, and drained off, which dilutes the urine, protects the raw edges of the wound, hastens the granulating process, and adds greatly to the patient's comfort. By the introduction of a small quantity of air into the vagina, suction on the tissues is prevented, and the patient is enabled to change her position in bed, and yet still be kept perfectly dry. Patients learn very soon how to regulate the apparatus themselves, and it becomes a source of amusement to them. In conclusion, I wish to express my thanks to Dr. L. G. Baldwin and Dr. A. S. Bird, of the house staff of the Woman's Hospital, for the kind assistance they have afforded me in introducing this system of drainage in Dr. Nathan Bozeman's service at that institution.

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PRIMARY SARCOMA OF THE IRIS.*

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Primary sarcoma of the iris is of such rare occurrence that I have willingly acceded to the request to prepare the following sketch in which it will be my aim to present the pathological anatomy as revealed by those instances of this disease so far thoroughly studied. I shall also venture to indicate what I conceive to be the practical lesson to be deduced from an examination of the cases published up to the present time.

Cases of Sarcoma of the Chorioid in which Enucleation of the Eyeball was done.

The following case has been published by myself in the "Medical Analectic," vol. v, New York, June 7, 1888. I have recently obtained from my friend, Dr. David Webster, additional notes bearing on the history of the case which, it was believed, did not exist:

Case I.†—November 9, 1880. Martha B., aged forty-seven years. Patient had noticed discoloration at site of tumor in iris for many years—at least five or six years. About fifteen months ago sight of left eye became obscured, this condition lasting a day or two. Eye reddened at the time, but was not painful. Had no pain at any time. Periodical obscurations of sight frequent since then. There is slight circumcorneal injection. Pupil dilates very nearly circularly to atropine. No corneal opacity. No lesion of either lens, vitreous, or fundus. No history of syphilis. Growth springs from anterior aspect of iris, is lobulated, and vascular. V. = $\frac{20}{100}$, each eye; no improvement with glasses. Dr. C. R. Agnew removed the tumor by including it in an iridectomy. Considerable inflammation followed operation, and it was decided—in view, if I remember correctly, of the probable invasion of the deeper structures of the eye by the disease—to enucleate the globe, which was done by Dr. Agnew within a week after the performance of iridectomy. At the enucleation the partially healed corneal wound ruptured and the lens escaped.

Microscopic examination: Cornea in vicinity of wound slightly infiltrated with pus cells; in the sclera in this region there is considerable purulent infiltration. On the outside, corneal wound is almost entirely bridged over with organized connective tissue; within, it is only partially closed. In some of the sections is seen a fragment of iris which had prolapsed into corneal wound. Iris densely infiltrated with pus cells. In stump of iris is an infiltration with cells looking not unlike some cells near tumor in piece of iris removed by iridectomy, but they are not associated with them, and Dr. Prudden informs me that he does not attach any specific character to these cells. There remains no trace of sarcomatous tissue in the eye; the tumor was, therefore, entirely removed by the iridectomy. Just below point of excision of iris is a small dense collection of pus cells beneath uveal layer, and there is an extensive purulent infiltration of pars ciliaris retinæ in this region; here, too, between vitreous and pars ciliaris retinæ is a collection of blood and pus cells. Chorioidal vessels throughout engorged with blood.

I learned in May, 1888, that the patient was living and in good health.

Case II.—Albrecht von Graefe's case. Reported by J. Hirschberg, "Archiv f. Ophthal.," vol. xiv, 3, p. 285. Patient was a man, thirty-eight years old. Anterior chamber for a greater part filled with a dark mass with a saturated, dark-brown, glistening surface. Tumor first noticed one year before consulting von Graefe. Had developed without pain, redness, or other irritation of the eye. In last few weeks the growth of the tumor had been particularly rapid. Enucleation.

Diagnosis: Pigmented spindle-celled sarcoma. The starting point was believed to be from the anterior layers of the iris, as healthy iris stroma was situated behind peripheric portion of the tumor.

Case III.—Fano, "L'Union méd.," 1865, No. 59, p. 343. Man, aged nineteen years. Tumor removed by abscission of anterior portion of eyeball. Six months later, relapse in remaining portions of bulbus, which was removed. Seven months after this last operation there were no signs of return of the disease. Operation was done in the third stage of the disease.

Case IV.—Schiess, Virchow's "Arch.," lxix, 1876, p. 100. Woman, aged fifty-five years. Never had pain in eye. Pigmented spindle-celled sarcoma.

Case V.—Quaglino and Guaita, "Ann. d'ottalm.," 1877, part 2, and 1879, part 2. Had existed for three months; was of yellowish-red color. Enucleation, followed by phlegmon of orbit.

Case VI.—Warren Tay, "Ophthal. Hosp. Reports," v, 1866, p. 230. Man, aged twenty-five years. Growth of brown color. First noticed ten years before operation. Neighboring ciliary processes involved.

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* Read before the Section in Ophthalmology of the New York Academy of Medicine, March 18, 1889.

† I am indebted to Dr. T. Mitchell Prudden, director of the pathological laboratory of the College of Physicians and Surgeons, New York, for placing at my disposal for study his sections of the eye in this case.

Case VII.—Argyll Robertson and H. Knapp, "Archives of Ophthal.," vol. iii, p. 106. Woman, aged twenty-four years. Tumor 1" in length, ½" in breadth, of a light-brown color, situated at upper and outer ciliary margin of iris. Vision limited to counting of fingers held close before the eye. Glaucomatous cupping of optic nerve. Tension markedly increased. Blood-vessels of tumor very numerous and large. There were many small tumors in iris which were believed to be the product of dissemination from the primary larger tumor. The disease was limited to the iris. All the other coats of the eye were found in a healthy condition. Round-celled melano-sarcoma.

Case VIII.—J. Dreschfeld (under care of David Little), "Lancet," January 16, 1875, p. 82. Woman, aged fifty-three. Tumor had developed in course of two years and its growth had been attended by repeated hæmorrhages into anterior chamber. Tumor was of a reddish-gray color, about size of a split pea, situated in lower half of iris. Eye was painful and sight was impaired. T + 2. Tumor was firmly attached to cornea. The growth was a spindle-celled sarcoma.

Case IX.—Lebrun, "Annales d'oculistique," lx, p. 208, 1868. Woman, aged thirty-six years. Eye was in glaucomatous condition. Tumor first removed by iridectomy. Thirteen days later the eyeball was enucleated.

Case X.—J. Thalberg, "Arch. of Ophthal.," vol. xiii, p. 179. Woman, aged sixty-four. Operation on right eye for cataract was followed by constant pain in the temporal region, which did not yield to any remedy. Three months after the extraction the patient was admitted to the hospital with symptoms of irido-cyclitis. There was exudation in the pupillary space, with small remnants of cataract, deep episcleral injection, severe ciliary neuralgia, and tenderness to pressure. The pain and injection were diminished by atropine and artificial leech, hydrate of chloral, blue ointment applied to the forehead, laxatives, etc. Patient was discharged four weeks later. She returned after a month with marked episcleral injection, ciliary neuralgia, tenderness to the touch, swelling of the iris, and turbid aqueous humor. Under the same treatment the symptoms disappeared again, leaving only some photophobia. She was again discharged after about six weeks' treatment. These attacks were repeated a number of times, until a year after the extraction, the S = 0, and the pain increasing, she asked to have the eye removed, which was done, the healing being normal.

Macroscopic examination: The anterior chamber of the enucleated eye was filled with a soft, white mass which was firmly adherent to the iris. The iris and ciliary body were thickened. The cornea also was thickened. There were no other macroscopic changes in the other parts of the globe.

The microscopic examination showed that the white mass in the anterior chamber was a *round-celled sarcoma.* Growth began at pupillary margin and reached beyond the sphincter of the iris, and in the thickest portion touched Descemet's membrane. The whole uveal tract showed abundance of pigmented round, oval, spindle- and star-shaped cells. The ciliary portion of the iris, which was not covered with the neoplasm, was increased to twice its normal thickness by the lymphoid cells. Where tumor touched Descemet's membrane the cornea was considerably thickened and infiltrated, and blood-vessels entered the tumor from the cornea. This was the only place where blood-vessels were seen to enter the growth. Tumor had not entered iris itself.

In the foregoing case it appears that the starting-point of the neoplasm was the endothelium of the iris.

The following case was reported at a meeting of the Section in Ophthalmology of the New York Academy of Medicine, 1887, by Dr. H. Knapp:

Case XI.—Woman, aged fifty-three years. Four months before seen by Knapp patient first noticed that sight of left eye had begun to be impaired, and that a small tumor was visible in the iris. Growth had increased rather rapidly, and the eye was at times painful and congested. When first seen by Knapp eye was free from irritation, of normal size and tension, but its vision was reduced to quantitative perception of light with perfect localization of candle. Tumor was of a reddish-white color, size of a cherry-stone, situated at outer, upper part of iris, and extended over adjacent third of pupil. Lens was cataractous, pupil irregular; pupillary edge adherent to lens all around. Eye moved freely, and was not painful, either spontaneously or to touch. Knapp determined to remove eyeball, chiefly for reason that the pseudoplasm had damaged the adjacent structures so much as to make restoration of useful vision out of question. Eye enucleated without accident, recovery taking place in a few days. No discomfort since.

Examination of eye: Tumor was somewhat larger than displaced crystalline lens; 8 mm. long, 5 mm. broad; occupied iris from ciliary to pupillary margin. Starting-point seemed to have been situated in root of iris, quite near ciliary processes. Besides displacement of lens obliquely into vitreous, nothing remarkable was observed in other parts of eye.

Tumor was a round-celled sarcoma. Whole tumor pervaded by a rich network of blood-vessels, with delicate walls, connecting with vessels of ciliary processes. Dense accumulations of round cells, with large nuclei and shining nucleoli. There was no secondary tumor, nor any alteration worth mentioning in the other parts of the eye. The diagnosis was that of a *tubular round-celled leuco-sarcoma of the iris.*

The following case was reported at the meeting at which this paper was read:*

Case XII.—Dr. David Webster and Dr. Ira Van Gieson. Patient was a woman, aged sixty years. Tumor first noticed four weeks before she consulted Dr. Webster, at which time the eye was apparently not inflamed, but tension was + with arterial pulsation; no glaucomatous excavation of the nerve. V. = $\frac{20}{70}$; $\frac{20}{20}$ with + 1·5 D. No pain. How long growth had actually existed was not known, but it had probably been present for years. The microscopic examination showed the tumor to be pedicellate. It originated in the stroma of the iris without a definite boundary-line. Ligamentum pectinatum infiltrated with sarcoma cells; some of same cells around Schlemm's canal, the lumen of which was markedly narrowed. Anterior surface of iris was, in different places between site of growth and angle of iris, infiltrated with pigmented, spindle, and round cells. The disease appeared to have extended along the anterior surface of the iris, for the infiltrations were all associated. The ciliary body proper was not involved, nor were the other parts of the eye.

Tumor was a *pigmented spindle-celled sarcoma.*

Cases in which no Operation was performed.

Case I.—D. B. St. John Roosa, "Transactions of American Ophthalmological Society," 1869, p. 14. Excellent colored plate.

Case II.—Albrecht v. Graefe, Graefe's "Arch.," 1854, vol. i, part 1, p. 414. No details given.

Case III.—Stoeber, "Annal. d'oc.," xxx, 1853, p. 264.

* This case will be published, with a woodcut, in the forthcoming number of the "Archives of Ophthalmology," vol. xviii, 1889, No. 1.

Man, aged sixty-two years. Brown growth noticed in iris five years and a half before death, which occurred in the third stage of the disease, with brain symptoms.

Case IV.—Albrecht v. Graefe, Graefe's "Arch.," i, 1854, 1, p. 414. V. Graefe called it a melanotic growth.

Cases of Sarcoma of the Iris in which the Growth was successfully removed.

Case I.—C. J. Kipp, "Archives of Ophthal.," vol. v, 1876, p. 34. Man, aged thirty-six years. Growth was of a flesh-color. First noticed twelve years before. With exception of part of iris from which tumor grew, all parts of eye were healthy. *Spindle-celled sarcoma, slightly pigmented.*

Cases II and III.—Arlt, Graefe u. Saemisch, "Handbuch der Augenheilk.," vol. iii, 1874, capt. ii, p. 420. Arlt alludes to his having known two cases in which the growth in the iris was successfully removed without enucleation. No details.

H. Knapp, "Archives of Ophthal.," vol. viii, 1879, p. 82. Knapp reports three cases of *successful removal of sarcoma of iris, with preservation of sight:*

Case IV.—Man, aged thirty-six. Tumor occupied fully one third of iris. It was *white*, slightly vascular. No symptoms of irritation. Fundus normal. Operation followed by moderately intense irido-cyclitis with slight receding scar. Eye free from any irritation six weeks after operation, and remained so as long as patient was under Knapp's observation, which was about a year. Tumor consisted of *white spindle cells* closely packed together; it originated in stroma of iris without a definite line of demarkation.

Case V.—Woman, aged thirty-five years. *Blackish* tumor, of the apparent size of a small pea. Had been noticed since many years. For three or four years there had been repeated attacks of iritis. The last attacks witnessed by Knapp were accompanied by *turbidity of the ocular media and increase of tension.* They, however, yielded to antiphlogistic treatment, leaving vision and eye in previous condition. V. $= \frac{20}{200}$. During three years which had elapsed since operation only two very mild attacks of iritis had taken place, which disappeared in a few days.

Structure of growth: Melanotic spindle-celled sarcoma, with considerable admixture of fibrous intercellular substance. It grew from stroma of iris without a definite boundary-line, but also without infiltration of the neighboring tissue.

Case VI.—Man, aged twenty-two years. Ten years before, small speck was noticed in left eye. Felt no inconvenience in eye until four years before seen by Knapp, when from time to time there appeared a veil-like obscuration of the visual field, lasting the whole day, but disappearing when he could sleep during the day. Last winter obscurations were more frequent, and accompanied by ocular and circumorbital pain, injection, and lacrymation. During month before consulting Knapp he had four or five attacks accompanied by halos. They rendered him almost blind at the time, and caused violent pain and lacrymation. When first seen, exterior T., S. and F. normal. Tumor arose from outer two thirds of iris, projected into anterior chamber, and encroached upon pupillary area as far as its center. Color *yellowish-red* and studded with a number of red dots and small lines. Media clear; pupil clear and reacted freely; low degree of retinal congestion; retina adjacent to disc slightly veiled. One week previous to operation patient had a severe glaucomatous attack.

Case VII.—Brudenell Carter, "Transactions of Clinical Society of London," vol. viii, 1873, p. 60.

Case of Sarcoma of both Irides.

Boy, aged fifteen years. In *left* iris was one tumor about size of split pea seated on lower and inner quadrant of left iris extending to margin of anterior chamber, encroaching somewhat upon pupil, and lying in contact with inner surface of cornea. There was a zone of injection around cornea.

In *right eye* were two small growths of a similar character, as large as pin-heads, springing from outer part of margin of the iris. This eye was in other respects healthy, and its vision was unaffected.

The tumor of left eye was removed by including it in an iridectomy. The wound left by operation united readily, but cornea become opaque at its posterior portion, where it had been in contact with the growth. Two or three days later a very slight and insidious iritis appeared. Under atropine, and later daturine, the irritation gradually subsided, and the corneal opacity had much diminished at time of reporting case. At the same time, however, a fresh tumor appeared in the left iris at the outer margin. The growth removed was a *round-celled sarcoma.*

Case VIII.—A. Krückow, "Wjestnik. Ophth.," May–June, 1886: Woman, aged twenty-eight years. Patient had noticed a "black" spot in iris for ten years. Tumor was dark-brown in color, filled half of pupil, and was in contact with posterior surface of cornea. Four months before operation there had been hæmorrhage into anterior chamber. Tumor was successfully removed and proved to be a *melano-sarcoma.*

Case IX.—Zellweger, "Klin. Monatsbl. f. Augenheilkunde," 1888, xvi, 366: Woman, aged seventy-five years. Patient had noticed for a long time a small spot in lower part of iris. Since six or seven weeks this spot had begun to grow faster; the sight had also deteriorated. No pain or other disturbance. Tumor small, 3 mm. broad, 2 mm. high, of a *pale-pink color.* At apex of growth color was of a deeper red, and fine ectasic blood-vessels were visible at that place. Counts fingers at 2½ mm. Eye absolutely free from irritation; aqueous humor wholly clear. Tension normal. Incipient cataract. Patient would not consent to operation, but returned three weeks later with tumor larger, reaching margin of pupil. Eye still free from irritation. Tumor removed by Professor Haab. Cut off tumor close to ligamentum pectinatum. Healing rapid under wet sublimate-solution dressing. Tumor was an *unpigmented spindle-celled sarcoma.*

In all, twenty-five cases of sarcoma of the iris have been recorded. The case of Berthold, which has been classed in this category by writers, I have, for obvious reasons, omitted from my list.

The foregoing cases show that in color sarcoma of the iris varies. It may be *flesh-colored*, *reddish-gray*, *blackish*, or *light-brown*, the color depending on the amount or absence of pigmentation and the degree of vascularity.

In the majority of the cases the tumor was believed to have originated in the anterior portion of the iris. In one case it originated from the middle layer; in another it developed from the posterior surface of the iris. In Thalberg's case the endothelium of the iris was shown to have been the starting-point of the growth. This case is of special interest, as it relates to the endothelium of the iris in a subject twenty-four years old. The anterior limiting layer of the iris consists of reticulated bundles of fine connective tissue, rich in intercellular elements, the latter having short and long processes, and being permeated, in varying degree, with pigment. The free surface of this layer is, in

children, covered with a single row of flat, polygonal endothelial cells. It has been denied that this endothelium is present in the adult. G. Schwalbe, J. Michel, and others state that it is of constant occurrence. These cells certainly are demonstrable in the iris of the adult, only they do not appear so plainly as a distinct layer as is the case in very young children. In Robertson's case there were several tumors in the iris, all the other coats of the eye having been found in a healthy condition. It appears, therefore, that sarcoma may develop in any of the layers of the iris, just as it seems that this disease may develop in any of the layers of the chorioid. The pigment variety prevailed. The youngest subject was fifteen years, the oldest seventy-five years of age. It is seen that the disease may be present for many years without giving rise to any symptoms of irritation.

In seven cases the growth was successfully removed with preservation of sight.

It is further shown that when the growth had reached the second or inflammatory stage, giving rise to a glaucomatous attack, the removal of the tumor was successful as to immediate signs of still existing malignant disease. The wound after the operation has generally healed kindly; but even where, as in Knapp's case, the operation was followed by considerable inflammation, this yielded to treatment. So far the only instance of local relapse recorded is that published by Carter; but it is not proved that there was actually a recurrence in this case. In one case in which no operation was done death occurred in the third stage of the disease with brain symptoms, the tumor having been present for five years and a half.

There is, however, no instance on record of the return of the disease in the orbital tissues where the eyeball had been removed, nor am I acquainted with any case in which after enucleation the pseudoplasm has appeared through metastasis in other organs of the body.

Prognosis.—It has been shown in sarcoma of the chorioid in which the eye was enucleated in the first stage of the disease that the prognosis as to local relapse is rendered more favorable after the first six months succeeding the operation, the majority of the relapses having occurred within this period of time. This observation applies, of course, only to those cases in which the eye was removed in the first stage, the danger of local relapse and metastasis being very greatly increased when the operation is done in the second and third stages, metastatic sarcoma of the liver having in such instances been known to occur twelve or more years after the enucleation of an eyeball containing a sarcoma of the chorioid.

I am of the opinion that the prognosis should be the same in sarcoma of the iris as in sarcoma of the chorioid. In sarcoma of the iris we have a disease which is for many years limited to a comparatively small area of the iris. It is furthermore seen that tumors of the iris follow the same clinical course as those of the ciliary body, chorioid, and retina—*i. e.*, there is a stage in which there is no irritation, and an inflammatory stage. When the inflammatory stage has been reached we are by no means able to exclude participation of the ciliary body and chorioid in the malignant process, as in those cases of sarcoma of the iris (cases of Argyll Robertson and Knapp) in which there were acute inflammatory symptoms with a glaucomatous condition. It is clearly shown that the ciliary body was involved in two of the cases of sarcoma of the iris in which enucleation was done, but the microscopic examination revealed an inflammatory process in that region, all evidences of sarcoma being absent from the inflamed ciliary body, it having been shown that the sarcoma was positively limited to a circumscribed area of the iris. In such a case the removal of the tumor of the iris might have been successful, but in such instances we could not have said that this simple inflammatory process was not an extension of the original disease. Webster's case is one in point. In this case the tumor might have been included in an iridectomy, but the sarcoma in the angle of the iris would have remained and extended, and nothing would have been gained by the operation. The extension of the disease to the angle of the iris could not be determined before the removal of the eyeball, but it is a strong argument for the removal of the eye in the inflammatory stage.

I am in favor of removing the tumor of the iris by including it in an iridectomy in the first stage of the disease before any signs of irritation have set in, and the operation should be done as soon as the tumor is discovered; but I am opposed to this procedure in those cases in which the second stage has been reached, giving rise to inflammation and increased intra-ocular tension, for the reason that we are in such cases unable to differentiate between a simple inflammatory and an extension of the malignant process. Therefore I am decidedly opposed to any attempt to save the eye in the second stage of the disease; such an eye should, in my judgment, be enucleated. In the first case described by myself in this paper (Agnew's), in which the growth was successfully and, as established by an examination of the enucleated eyeball, wholly removed by the iridectomy, the operation was followed by suppuration in the globe, calling for its removal. The operation should therefore be performed under strict antiseptic precautions.

39 West Thirty-second Street.

A DEATH FROM ETHER.*

By W. DUNCAN McKIM, M. D.

Death from the administration of sulphuric ether is of such rare occurrence that the case about to be narrated seems to merit a place on the records:

The patient was a Frenchman, aged forty-six. For a year or more he had been suffering from tubercular disease of the tarsus of one foot. At the time of his admission to the French Hospital the disease had become widely diffused. The general appearance of the patient was bad. There were aortic and mitral systolic murmurs, and the heart-sounds were feeble. The urine contained a moderate amount of albumin. The patient's condition appeared not only to justify but to demand removal of the tubercular foot, and I prepared, therefore, on January 25, 1889, to do a Syme's amputation at the ankle joint.

* Read before the New York Clinical Society, March 26, 1889.

In the presence of the attending staff and internes, after the administration of half an ounce of whisky, the etherization was commenced. In a few minutes the respiration faltered and the patient became deeply cyanosed, but this somewhat alarming condition quickly passed away. About five minutes later, the assistant having the pulse under observation suddenly announced that it had ceased. Immediately hypodermatic injections of brandy, ether, and sulphate of atropine were given; amyl nitrite was applied to the nostrils, artificial respiration was practiced, and the head and shoulders were depressed by elevation of the foot of the table; but all was in vain; the patient was dead.

The ether used was the æther fortior manufactured by Squibb.

The following is the report of the autopsy made by Dr. G. G. Van Schaick, pathologist to the French Hospital, in the presence of the coroner.

"No rigor mortis. Body well nourished. *Lungs:* Very small, otherwise normal. Left pleura, a few adhesions, no fluid. Right pleura, no fluid, many adhesions. Lungs slightly congested. *Heart:* Hypertrophied; pericardium everywhere adherent; coronary arteries of small caliber; slight atheroma of the aorta; mitral valve stenotic. *Spleen:* Enlarged. *Kidneys:* Left atrophied, capsule adherent, markings indistinct, sclerosis above the pyramids; pelves filled with fat. Right kidney in about same condition; both surrounded by a thick layer of fat. *Stomach:* Normal."

The most striking revelation of the autopsy was the complete adhesion of the two surfaces of the pericardium. The death seemed due, then, to syncope, the heart being so fettered that it could not respond to the unusual strain thrown upon it. When beginning the inhalation of ether, the patient seemed very nervous, there was rather more struggling than usual, and a struggle closely preceded the disappearance of the pulse. The heart was in a condition to suffer permanent arrest of its function upon any slight increase of labor, and any occasion for unusual mental or physical excitement would, I think, have been as fatal as the ether. Had much more than ordinary care been exercised to quiet the patient's nervousness, and to restrain his jactitation by moral suasion and the gentle and gradual administration of the ether, I can readily believe that this feeble heart might have successfully emerged from its ordeal.

THE CORRECTION OF CONGENITAL HYPERMETROPIA.

PORTION OF A LECTURE BEFORE THE OPHTHALMOLOGICAL SECTION OF THE CLASS AT THE UNIVERSITY MEDICAL COLLEGE,

New York, April 9, 1889.

By H. H. SEABROOK, M. D.,

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The multiplicity of instruments for the diagnosis and measurement of errors of refraction tends to obscure the fact that this work is usually done with a case of test-glasses. A careful study of the best way to determine the refraction by means of the test-case will better repay the student of ophthalmology than to consume his time and energy in an attempt to understand elaborate instruments designed for testing, of which the merits are appreciated only by the inventor.

Congenital hypermetropia is the most common form of refraction with which the oculist has to deal, and is the most difficult to measure, as well as the hardest in which to determine the proper glass to be ordered. You have received practical instruction upon this subject. Let us define and enlarge upon the knowledge thus gained.

The total hypermetropia (H. T.) is divided into manifest hypermetropia (H. M.) and latent hypermetropia (H. L.). If the vision (V.) at twenty feet can not be improved by a glass, the strongest convex lens with which it remains equally good is the measure of H. M. If the V. can be improved, the strongest convex glass with which it is at its best is the measure of H. M. It is evident that H. M. must vary in one patient at different examinations, but this variation could be reduced to a minimum if everything that could interfere with relaxation of the ciliary muscle of the examined eye were carefully eliminated. The difference between H. T. and H. M. is H. L., and this is caused by contraction of the ciliary muscle—the muscle of accommodation. It should be the desire of every ophthalmologist to procure the greatest possible relaxation of accommodation and obtain the largest measure of H. M.

A certain contraction of the ciliary muscle is usually present in the hypermetropic eye of patients under thirty years of age, and may be present after that age, though almost never after the age of forty-five. Relaxation takes place in the higher degrees of hypermetropia in a dark room when the eye is adjusted for distance. These conditions can be met during examination in the rooms used for ophthalmoscopy by causing the patient to look at the black wall opposite him. The H. T. can be measured during the direct examination by means of the convex lenses set in the revolving disc of the ophthalmoscope. After correcting his own refraction, the strongest convex glass with which the examiner can see the epithelial cells at the macula lutea corresponds to the lens which should be worn to correct the hypermetropia of the examined eye *in toto*. Unfortunately, the many chances for error make this system of measurement an approximate one at best.

Paralysis of the ciliary muscle and perfect relaxation of the accommodation may be brought about by disease or certain medicinal agents in the manner previously brought to your notice. You also already know how atropine is used in testing refraction.

Contraction of the ciliary muscle is increased by light shining in the eye, or by any form of excitation of the nervous system, and occurs with convergence of the ocular axes in an associated ratio. Strange as it may appear, the ocular fatigue caused by trying on glasses is apt to increase the contraction, and when the hypermetropic eye has once adjusted itself for a lens, the difficulty of adjustment for a stronger convex or weaker concave glass is increased for the time being.

To procure ciliary relaxation in testing the V. for distance, it is better that the light should come from the side of the patient, at his back, and opposite the test-card. A comparison of results with the light thus arranged with others obtained with the light from the side of the room, in front of the patient, shows greater relaxation of accom-

modation in the former cases though the illumination is better in the latter, as is shown by better average V.

To eliminate nervous excitement in the patient during an examination requires a calm examiner, who has a good knowledge of human nature. I can offer only one suggestion: when the patient desires to tell you how the cow frightened her little sister into cross-eye, or the tragic sufferings her father underwent from a foreign body upon his cornea, listen without betraying any annoyance, and when she ceases, and the far-off look of contentment which always follows these narrations creeps into her eyes, then test for H. M.

To procure parallelism of the ocular axes, test the eyes together, as well as separately. In the latter case the covered eye sometimes converges and accommodative spasm in both is likely to result from the motion.

To avoid fatigue of the examined eyes, begin with the convex lens which in your opinion most nearly corrects the H. T., as determined by ophthalmoscopic examination, or by a consideration of the vision for distance, age of the patient, and state of accommodation for diamond type combined. If this glass is not accepted, gradually decrease its strength until you find one that is. Do not begin with a weak convex lens, as is usually done. This not only interferes with obtaining a large measure of H. M., but the fact that an eye accepts a convex lens of half a dioptrie (D. 0·50) proves nothing. At twenty feet a lens of about D. 0·16 is required to render the diverging rays of light from an object parallel, so the emmetropic eye, or that with normal refraction, would, in a state of rest, require this glass to absolutely adjust it for such a distance. At fifteen feet the glass required would be almost D. 0·25 in strength. Again, an eye will occasionally accept a stronger convex lens than the refraction requires, or at least read as correctly with it for distance. This acceptance of the too strong lens is due to the fact that it does not increase the convergence of the rays of light sufficiently to disarrange their relation to the retinal perceptive elements, and the fact should be borne in mind when an eye with the accommodation paralyzed by atropine is apparently equally well corrected by two or three lenses of nearly equal strength. In such a case the patient may be appealed to for a decision as to which lens renders the test-letters most distinct. He responds, at times, that one or the other enables him to see the letters "blacker," and this response may determine the selection of the proper lens.

When, in any given case, the H. M. has been determined, and then the ciliary muscle paralyzed by atropine and the H. T. definitely demonstrated, what glass should be ordered? This is an important question, and the answer requires careful consideration of the conditions of hypermetropia in general and the individual case in particular.

Experience has shown that young patients will not, as a rule, be able to use the glass correcting the H. T. with comfort. Correction of only the H. M. usually gives but transitory relief. Consequently (with a very few possible exceptions) the glass ordered should be more than correction of H. M. requires, but less than H. T. Donders's rule was, "Correct the H. M. + one fourth the H. L." While no harm would be done by adherence to this rule, its general application would not give relief to the asthenopia in a certain proportion of cases. Another rule is, "Correct the H. T. in patients over thirty years of age." There should be few, if any, exceptions to this. The correcting glasses are always better borne if they are worn for distance from the time they are ordered at least until such time as the effect of the atropine upon the accommodation ceases. I believe that the strength of the glass to be worn should, to a certain extent, depend upon the strength of the ciliary muscle, as shown by the near point of the range of accommodation. The average emmetropic eye has a near point at two inches and two thirds at ten years of age, receding to six inches at thirty-two years. It is at five inches at the age of twenty-eight, representing a lens of D. 8 focal power. A hypermetrope of D. 2, with the standard amount of accommodation, should have a near point represented by a lens of D. 8 — D. 2 = D. 6, giving a near point of six inches and two thirds, since D. 2 of his power of accommodation are needed to neutralize his refractive error. If such a patient should have D. 10 of accommodative strength, sufficient to neutralize his error of refraction, and have in addition the accommodation of the emmetrope, he should have no accommodative asthenopia or fatigue, and the few cases of this kind that I have had the opportunity to investigate have had none.

It is common for young patients with only D. 1 or D. 1·50 of H. T. to suffer upon using their eyes, and in these cases the ciliary muscle appears to be invariably weak. Let me give you a few instances taken at random. A young man, aged twenty, suffers from ocular fatigue and congestion, with headache, upon using the eyes. Has given up reading at night, and for a long period by day. V. = $\frac{15}{15}$. No H. M. Near point for Jaeger No. 1, seven inches. After atropine, H. T. = D. 1. This was corrected for reading, and all the symptoms disappeared. At this patient's age the near point should be about three inches and a half, if the eye were emmetropic, representing an accommodative strength of nearly D. 12. Instead, there is a strength of nearly D. 7, D. 1 of which is required to correct the hypermetropia. For use at near work the accommodation is D. 6 under the standard.

A boy of eleven years has D. 0·25 H. M. H. T. = D. 1·50. Near point for Jaeger No. 1, nine inches. The accommodation in this case is D. 9·50 below the standard. Another boy, same age, has H. T. = D. 1, all manifest; could not read smaller type than Jaeger No. 2.

The general muscular system in all these cases was bad. The extrinsic muscles of the eye were not abnormal in strength and comparative relations. In the two latter cases the patients were relieved of their annoying asthenopia by constant use of glasses correcting the H. T. Improvement in the strength of the ciliary muscle could probably be accomplished in these cases by an improvement in the general muscular strength and bodily health. Rest for the eyes would undoubtedly be beneficial. If this is impracticable and the eyes must be much used, and asthenopia persists after correction of H. T., it would certainly be justifiable to order a convex glass strong enough to give relief to the eyes.

In order that you may better understand this matter, let me approach it from another standpoint. Experienced ophthalmologists correct hypermetropia by means of a consideration of H. T. and the age of the patient, as a rule; in a patient of twenty-five years of age, let us say, correcting H. T., if less than D. 2 in amount; in the medium grades correcting the H. M. and part of H. L. Thus, in eyes with D. 4 of H. T., ordering D. 2·50 or D. 3. In the higher grades the same principles are followed, but here the vision often becomes more of a consideration than the asthenopia, and renders the choice of the glasses to be ordered somewhat easier.

The point that I desire to make is, that you will do well to consider not only the H. T. and patient's age, but also the condition of the ciliary muscle as shown by the H. M., carefully tested, and the accommodation for reading. Thus will you have a key which will enable you to more rapidly learn the proper glass to order, in any given case, to meet the ocular indications, and best suit the so-called "individuality" of the patient.

The far point for reading is very variable, and from it only general deductions can be drawn. For Jaeger No. 1 it varies, in an eye that has practically no error of refraction or accommodation, from eighteen to thirty inches. The nearer it approaches the near point in hypermetropia, the greater is the spasm of the ciliary muscle that can not be relaxed in reading.

When should the glasses for hypermetropia be worn? This question is easily answered. If given to improve the vision only, the decision may, indeed must, be made in accordance with the wishes of the patient. In that larger number of cases where they are given to relieve asthenopia, and this is accomplished by their use for near work, such limited use is evidently sufficient. If the asthenopia is not relieved by this, the glasses must be worn for distance as well.

Hypermetropia is the cause of certain abnormal conditions of the internal recti muscles. You may have noticed that I have, as far as possible, avoided allusions to the external muscles of the eye and their affections. It is my desire to say as little of them as may be, but as the celebrated Mr. Dick was accustomed to find the head of Charles I constantly obtruding itself into his memorial, so must any teacher of ophthalmology in New York to-day run foul of the external ocular muscles when giving instruction, since this portion of the subject possesses unusual local interest from having been disproportionately thrust into the foreground of the ophthalmological landscape.

That hypermetropia is the most common cause of strabismus convergens is a fact so well known that it is unnecessary to emphasize it. In a very large proportion of cases of uncorrected hypermetropia, with asthenopia, relative weakness, or insufficiency of the internal recti muscles for near work, can be demonstrated. This is combined sometimes with a like condition for distance, at others with insufficiency of the external muscles.

Why do the causes that produce internal squint in some cases result in insufficiency of the internal muscles in others? In the former case, overuse of these muscles causes permanent contraction; in the latter, fatigue is the result from the same cause. The intimate relation between accommodation and convergence is at the bottom of both muscular conditions. The increased accommodation rendered necessary by the hypermetropia causes increased innervation of the internal recti, and the shape of the hypermetropic eye allows of freer motion, but requires it to be more extensive than in the emmetropic or myopic type of eyeball. This muscular fatigue usually passes off after proper correction of the hypermetropia, the time required varying from a few days to several months. In one case that I have seen the asthenopia with headache had existed more than one month, was extremely severe, and had persisted in spite of energetic general treatment. The internal recti could not overcome the weakest prism at a distance of twenty feet, and there was no binocular fixation for near vision. There was apparently spasm of the external recti, as their strength was abnormal. H. T. was D. 1·50, which was corrected. In one day the headache was almost well; at twenty feet the internal muscles could overcome prisms of greater power than the external, the strength of the latter having diminished one half. At reading distance the internal muscles had double the strength of the external. The headache entirely disappeared in a few days, but returned four months later, when it was undoubtedly due to a marked insufficiency of the *external* muscles.

In another case with asthenopia and severe headache that had defied general treatment, the muscles varied for distance at different examinations. At reading distance the internal muscles were at one time equal in strength to the external, at another only two thirds as strong. In this case there was compound hypermetropic astigmatism, the deficiency in the worst meridian being D. 0·75. The near point of accommodation was at eight inches, the age being sixteen years. The refraction was slightly overcorrected as regards the hypermetropic portion. The headache improved gradually, to disappear in about three months, the asthenopia was entirely relieved, and neither have since returned. Nine months after the first examination the muscles were in the proportion, at fifteen feet, of thirty-four to six; at thirteen inches, forty to seven, the larger number representing the internal recti, the smaller the external.

It is perhaps unnecessary to state that no muscular condition of the eye requires treatment unless it produces symptoms, and no refractive condition requires correction if the vision is good and the eyes cause no trouble. It may surprise you to learn that useless, sometimes injurious, operations are done upon the ocular muscles in just such cases as I have described.

Years ago, after a terrible epidemic of muscle-cutting upon the European continent, Donders wrote the following words. They are not yet obsolete, and I advise you to paste them in your hats:

"I have already asserted that hypermetropia is usually at the bottom of asthenopia. The truth of this assertion has been doubted. I now, however, go a step further and venture to maintain that in the pure form of asthenopia, hypermetropia is scarcely ever wanting."

1032 Lexington Avenue.

THE USE OF THE BANDAGE IN MITRAL INSUFFICIENCY.

By W. T. O'DONNELL, M. D.,
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The following case is related to illustrate a use of the bandage which, though ancient, may be novel to some of your readers:

On January 18, 1889, I was called to see Mr. M., aged fifty-seven. His condition, briefly stated, was as follows: Mitral insufficiency, dilatation of the right side of the heart, general dropsy, hæmoptysis, with cough, jaundice, and anæmia. Urine scanty, and as if holding blood in solution. Action of the heart frequent, irregular, and very feeble. Great dyspnœa. At first a little relief was obtained in the usual way by hydragogues. Then he was directed to take eight ounces of milk every four hours; tincture of iron, in fifteen-drop doses, three times per diem; and twelve grains of bisulphate of quinine each morning. The scrotum, distended to its utmost, was then tapped on each side with a large-sized aspirator-needle, which was permitted to remain for a time, so that when withdrawn the opening thus made should not be plugged by oozing blood. In this way, by four successive tappings, about seventeen quarts of fluid were withdrawn. As the dropsy disappeared from the upper portion of the body he had severe pleuritic pains, which were relieved by morphine. Finally, the legs being still distended, he was placed upon his back, with shoulders and legs elevated, and kept thus twenty-four hours. A bandage was then applied from feet to body as tightly as possible, yet each ascending turn compressed the limb slightly less than the one preceding it. He was again placed upright, when the scrotum rapidly filled and was tapped for the last time. The scrotum was then compressed by means of adhesive straps, and the bandages were carried to the nipples. His arms were also bandaged.

So soon as the dressing was *in situ* the heart became vastly more regular in its action, the urine more copious and clear, cough and blood-spitting ceased, and he was encouraged to walk, leaning upon the arm of an attendant. From this time, January 30th, the improvement was rapid and continuous, and by the end of February he was able to attend to his business, and has superintended the seeding of a large wheat farm.

The bandages, excepting those for the arms, are still *in statu quo*. An attempt to lay them aside was at once followed by increased heart trouble and incipient dropsy.

The *modus operandi* of the bandage is simplicity itself. If a ligature is applied to the limb of an anæmic person, sufficient to partially obstruct the venous flow, but not compressing the artery, dropsy will ensue in the part below the ligature. If now a bandage is applied from the end of the limb to the ligature, with gradually decreasing compression and yet the constriction of the last turn of the bandage exceeding that of the ligature, the obstruction will be overcome and the dropsy removed. The principle applies though the obstruction be moved toward the heart, or even placed at the heart itself. This factor of dropsy—called by the Greeks *φλεβῶν ἀπολήψιας*, which pertains to a certain extent even when the dropsy is not of cardiac origin—has long been recognized; but one of our most efficient means of relief has been left, so far as I know, in oblivion. The bandage is indicated with incipient dropsy, and coexisting anæmia should be overcome by all means at command. Direct stimulants to an already exhausted heart are not indicated. Digitalis should be regarded with suspicion, and only used for its tonic or diuretic effect, if indeed it has such properties. In the bandage, however, we have safe, efficient, and rational means of relief for valvular insufficiency, and which will frequently give the patient an additional lease of life, varying in duration according to the extent of the lesions and other concomitant factors.

In prognosis it should be remembered that the reverse force sustained by the mitral valve when intact is opisthobolic when the valve is insufficient, and ultimately is borne in part by the veins and capillaries, and when thus sustained dilatation of the right side of the heart will progress so much the more slowly as the burden is shared by the former. The arterial circulation would go on even if the mitral valve were entirely removed, because its office is assumed successively by the vessels of the lungs, the right side of the heart, the veins, and the capillaries, and is divided among them. Finally, with the bandage we again divide this reverse force, and hence in part the bandage fills the office in the circulation of the mitral valve, and must necessarily give a longer lease of life than *prima facie* might be supposed.

Correspondence.

LETTER FROM PARIS.

The "Doctor of 1889."—The Use of Cocaine and other Coca Preparations.—Tubercular Lesions of the Uterus.—The International Congresses of 1889.

Paris, *April 29, 1889.*

Professor Brouardel, the eloquent dean of the Paris faculty, holds the chair of legal medicine, and his lectures are always well attended. He opened this year by some pertinent remarks on the "Doctor of 1889." He said that medical science had become revolutionized within the last few years in a way that had no parallel since the beginning of the world. In surgery great changes had been brought about by the microbian doctrine, and indeed this question had altogether changed the rôle of a physician in society. For instance, no matter what locality a man now settled in, besides being the family doctor, he became a public officer, as he had the power of stopping epidemics in a way that had never existed before. Open almost any of the modern novels and one would find that it discussed hysteria, nymphomania, and other diseases; and it was the same in the newspapers. All the questions of legal medicine, public hygiene, and medical matters of all kinds were public, so that the doctor was no longer judged by the families that he might attend, but by the whole world. The doctor of fifty years ago had only a small library of books that he had used as a student, and only added to this his clinical experience that he acquired. There were good doctors then, but their responsibility was limited to their patients, and no one thought of criticising the correctness of the therapeutical measures that they might adopt. To day, however, all was changed; the smallest village received or published several papers where scientific work was talked of and judged with more or less impartiality, and where the sittings of the great academies of medicine were analyzed. This led the modern patient to ask his doctor to prescribe for him the new drugs he read of, such as antipyrine or strophantine. The doctor might not know more than his patient about the new medicine, which

he might not have tried yet; and even if he had an opinion about it, the editor of his patient's favorite journal might have an opposite one. So that he was obliged to prescribe what in reality was ordered by some one else, and his authority was so much lessened in modern times. Certainly the old doctor was treated with great esteem, confidence, and affection, and he was almost a member of the family. To-day, however, the old family doctor was a myth; but, on the other hand, the scientific man of medicine and hygiene had become almost one of the wheels of state, or at least of city power, and he was consulted in regard to the public health, so that in these days of progress his position was perhaps, after all, better than ever. We lived in a time when the public were well educated and wished to know the why and wherefore of everything, so that doctors must expect to have their diagnosis, prognosis, and treatment discussed by their patients, and even disputed by them. If one gave a certificate in lunacy he might expect the papers to say that he had been paid to do so; but, on the other hand, he might have the satisfaction of saving the whole city from an epidemic by intelligent prophylactic measures. And again he could sometimes expose the errors of a lawyer who pleaded for the condemnation of a man when a wiser and more correct view of the matter, in a medical sense, would show that there was no guilt. Other occasions would present themselves when a doctor could do good in many ways, and show that, after all, his critics had only a superficial knowledge, and his more exact science would destroy their arguments. This would prove the superiority of the modern physician, but it could not be done except by hard work and hard study; then the general public could not say that they knew as much as the doctors.

It seems rather curious that no one has called attention to the apparent contradiction in the use of cocaine and other coca preparations. It is almost certain that the good effects on the nervous system, respiratory and digestive organs, are not the result of tonic stimulation, but rather that of anæsthesia or paralysis. A more careful study of the effects of coca is needed, as, owing to its general introduction to the public, it is being used in all sorts of complaints which can not be benefited by it, while others are neglected. M. Sandras showed the members of the *Société de médecine pratique* at its last meeting the alteration produced in the voice by the use of cocaine and coca used by atomization by inhalations, or by drinking it. He had treated actors who were suffering from aphonia and chronic laryngitis, and had thought it might be that the loss of voice was produced by the use of coca wine and cocaine, and on making a series of experiments he had found that this was true. Coca wine is not a tensor of the vocal cords; it is rather a relaxer, as the cocaine acts by paralyzing and deadening the tensor muscles of the vocal cords. This is very easy to show by experiment, and M. Sandras, while speaking to the society, filled a glass with coca wine and drank it slowly, and then attempted to continue his speech, when it was noticed by every one present that his voice had greatly altered in intensity and acuteness. The vibrations were lost, and the orator could hardly be heard. This aphonia is almost painless, but it is annoying to observe it. It has been found that after a few inhalations of chloroform the voice comes back to its normal timbre, and if, further, inhalations of tar and tincture of benzoin are used, the voice increases and is doubled in extent. There are certainly some studies yet to be made of the correct use of coca wine and cocaine preparations.

Chronic tubercular endometritis, according to a study of it just made by Dr. Jouin, is a much more common disease than the secondary tubercular degenerations of the rest of the female genital system. It also has symptoms that are peculiar to itself and important to recognize, as a failure to do so leads to an incomplete method of treatment. It is easy to understand that the uterus is disposed to such troubles, owing to the fact that its mucous membrane is soft, spongy, and rich in tube-glands, thus making it essentially favorable to the development of Koch's bacilli, while on the other hand the bladder, urethra, and vagina have a thick mucous membrane covered with pavement epithelium.

Dr. Jouin presents the histories of nine patients whose cases he divides into four classes. The first class contains two cases of tubercular endometritis which followed coition with a man who was afflicted with genital tuberculosis. The second set consists of two more patients, whose husbands had phthisis but no apparent signs of local trouble of the genitals. The third class consists of three cases, where no cause could be found for the disease, but in two of them M. Jouin saw symptoms of genital tuberculosis arise in the husbands of the women affected with tubercular endometritis, while the third husband became affected with pulmonary phthisis after a few years. The last two cases forming the fourth class were cases in which no cause could be traced, and the disease did not seem to have been conveyed to the husbands. The diagnosis was confirmed in every case by microscopical examination and also by peritoneal inoculations of guinea-pigs. The predisposing causes of this affection are those of tuberculosis in general, and local causes are lesions of the os uteri, inflammation of the region, the use of linen that may have been soiled by the sputum of tubercular patients, also badly cleaned instruments, but, above all, it must now be admitted that sexual intercourse has considerable importance in the ætiology of this affection.

It is possible that tubercular endometritis may be a cause of the gleet seen in men who have phthisical wives. The symptoms are leucorrhœa, pain in the lower part of the abdomen, and constipation; sterility is the rule. By combined palpation the uterus will be found to be doubled in size and volume. The speculum will show an os that is red, sometimes ulcerated and with an inflamed orifice, allowing of the passage of sanious fluid which is more or less abundant. The hysterometer or, what is better, a small bougie held with a pair of pinchers, will show that the cavity is larger than it should be; finally, a microscopical examination of a detached portion of the mucous membrane lining the organ will give the characters of tuberculosis. It may also be seen that the patient has the usual general signs of tuberculosis, such as wasting, fever, cold night-sweats, etc. And when the disease is not treated it will constantly extend to the lungs, and it was so found in several of M. Jouin's cases. When it first arises it is not a dangerous malady, and, if proper action is taken, may be prevented from extending to the entire organism, but of course, if it has already gone to the lungs, the prognosis is serious. As to treatment, M. Jouin thinks that it is best to give creasote, which seems to be quite active against the genital types of tuberculosis. Iodoform pencils should be introduced, after dilatation of the os with laminaria tents (which have first been steeped in iodoformed ether for twelve hours). To this may be added all the general medical aids used in tubercular complaints, and the women should be instructed to abstain from intercourse until they are cured.

Several international meetings will be held in Paris during the Exposition. The following will interest the medical profession: Congress of Alcoholism, Public Assistance and Hospitals, Chemistry, Therapeutics, Hygiene and Demography, Dermatology and Syphilis, Mental Medicine, Physiological Psychology (Charcot's), Criminal Anthropology, Dentistry (September 1st to 7th), Otology and Laryngology (September 16th to 21st), Hydrology and Climatology (October 3d to 10th). Those of which the dates are not here given will take place from the 1st to the 10th of August.

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ELECTRICITY IN GYNÆCOLOGY.

At the recent meeting of the Alabama Medical Association Dr. W. E. B. Davis, of Birmingham, read an interesting paper on this subject. He suggested that excessive enthusiasm had led to frequent failure in the use of this remedy, but thought that there could be no question as to its importance as a therapeutic agent in gynæcological practice when such men as Apostoli, the Keiths, Engelmann, and other competent observers who had had experience in its application had reported most satisfactory results. The apparatus employed by Dr. Davis consisted of a Gaiffe faradaic machine, Apostoli's bipolar uterine and vaginal excitor, a fifty-cell galvanic battery made by Woodruff & Harris, of Birmingham, under his supervision, the cells of which were of the Law telephone pattern, a portable Waite & Bartlett galvanic battery, Gaiffe's galvanometer, Massey's current-controller, Apostoli's and Martin's abdominal electrodes, platinum sounds, steel needles, and metal electrodes to be used with absorbent cotton. He advised the use of the current of the Edison circuit, direct from the dynamo, when it could be had, so as to avoid the annoyances and inconveniences of a battery. Portable batteries had proved very disappointing in the administration of high intensities, and his work had therefore been almost confined to office practice. Great stress was laid on the importance of the application of the faradaic current in subinvolution of the uterus. It was the author's practice to give ergot to every woman who had had an abortion or been confined at full term, and, should there be incomplete involution at the expiration of six weeks, to begin at once with the use of the faradaic current, using Apostoli's bipolar intra-uterine excitor, and repeat the application every second or third day until the organ had returned to its normal size, which occurrence, he said, could "always be counted on with mathematical certainty." He did not, however, recommend the use of the current immediately after every abortion or delivery, as practiced by Apostoli, since the expense of this treatment could not or would not be incurred by most patients, unless it was certain that the uterus would not otherwise return to its proper size. For this reason ergot was prescribed in every case, for it acted very much like faradization on the muscular fiber of the uterus, although it was not by any means so prompt, energetic, and reliable. All patients were examined at the expiration of six weeks, to ascertain whether involution had been complete.

Cases were reported to show the value of the faradaic current in subinvolution of the uterus, and to illustrate its efficacy in displacements due to the enlarged, hyperæmic condition of the uterus after parturition. The "current of tension"—the current from the long, fine wire—had proved a valuable agent for the relief of pain, and cases showing permanent relief were cited. The currents of quantity and tension had been used with very satisfactory results, as indicated by Apostoli, but the author had begun to use the current of tension not only for pain, but to stimulate relaxed and enfeebled muscle fiber. The current of tension, he said, was borne better by the patient, but he had been unable to recognize the superior results of the current of quantity on muscle over the current of tension. In displacements of the uterus, he supported the organ with wool tampons and did not object to any form of pessary, properly fitted, in connection with the treatment by electricity. He believed efficient support of the organ, combined with the proper application of electricity, to be the most rational treatment for this condition.

When the uterus was enlarged, not from subinvolution, but from hyperplasia, the continuous current was indicated. All cases of chronic endometritis, according to Apostoli, were amenable to galvanism—the positive electrode being inserted when there was much leucorrhœa or profuse menstruation, and the negative in other cases. A current of from seventy-five to one hundred and fifty milliampères was used twice a week for five minutes at a time. The sound was usually introduced through a bivalve speculum, and the handle allowed to rest on a large wad of absorbent cotton. Dr. Davis would not say that electricity would do away entirely with such surgical procedures as shortening the round ligaments, attaching the cornua of the organ to the abdominal wall, or narrowing the vagina by the many methods at present in vogue, but he insisted that many patients might be relieved by this method of treatment who would otherwise be condemned to the knife. Chronic inflammatory exudations in the pelvis, he said, should be punctured from once to twice a week, and a current of from a hundred to a hundred and fifty milliampères used. The faradaic current was an admirable remedy for the so-called chronic pelvic inflammations—thickening of one or both broad ligaments. Of course, the lacerated cervix that, he thought, usually caused this condition should be repaired before the administration of electricity was begun. The local application of the faradaic current was capable of overcoming many cases of amenorrhœa due to atrophy of the uterus. On the other hand, in menorrhagia, when it was due to relaxation of muscle or to engorgement, when the patient menstruated from eight to nine days, after a few applications the menstrual periods would last only from four to five days. The galvanic current with the positive electrode applied internally was the remedy indicated for hæmorrhage due to disease of the endometrium, and it was the current usually indicated for hæmorrhage. Women often become pregnant soon after being treated with electricity, and it was unquestionably a valuable remedy for sterility due to nervous causes, as had been ably described by Dr. Campbell. In neuralgic dysmenorrhœa and dysmenorrhœa in women of an hysterical temperament—whom the slightest excitement or worry would cause to suffer greatly, but in whose cases there was no apparent pathological lesion—

he had succeeded, as with no other remedy, by the application of the faradaic current of tension or a mild galvanic current, using the positive electrode internally. The negative electrode should be so used when the pain was due to mechanical causes in the cervical canal and when there were inflammatory deposits around the ovaries.

Dr. Davis reported a case in which he had removed the ovaries and Falloppian tubes when they were surrounded by inflammatory deposits, and regretted that he had not used galvanism, as the operation had not benefited the patient. He did not think that galvanism could take the place of removal of the ovaries and tubes, but said that each had its special field; should electricity fail, no harm would have been done, and the operation could still be resorted to. While he had had no experience with electricity in extra-uterine pregnancy, from a study of the actions of the agent and the results in the hands of others, he thought there could be no doubt that it should be used in the early stages of this condition; should there have been a mistake in diagnosis, there could be no harm done, as this was the remedy for the pathological processes most likely to be mistaken for extra-uterine gestation. When the pregnancy had lasted for more than three months, and when it could be diagnosticated positively, it was a question in his mind whether laparotomy should not be resorted to at once. He said that the subject which had interested the profession most in connection with the use of electricity was the treatment of fibroid tumors, and that the results of the treatment in the hands of Apostoli, the Keiths, Engelmann, Lapthorn Smith, and others had demonstrated that this was the treatment for fibroid tumors which offered, as Engelmann had said, probabilities of healthy retrograde metamorphosis. He had followed Apostoli's instructions in this class of neoplasms, and believed that the majority of cases could be cured, so far as symptoms were concerned. Certainly Apostoli's treatment should be tried before hysterectomy was resorted to.

THE STUDY OF CELL CHARACTERISTICS.

Anatomical results have a reputation for superior force and credibility. Within the scope of gross anatomy this reputation is well grounded. The work of minute anatomy or histology can scarcely as yet merit equal praise, though the field is clearing, and many existing contradictions are rather apparent than real. Gudden reached this conclusion: "First of all, let us have anatomy, or, if physiology must come first, never without anatomical control." In other words, the careful consideration of a machine will demonstrate its use; and in experiments with uses their scope is defined and limited by the structure of the machine. In the study of the form and functions of the nervous system there is ample reason for accepting anatomical data—though far from perfect—as the norm, and for measuring physiological results by them. The more accurate the anatomical standard, the more certain all progress in neurology and psychology. The relation of the two last-named branches of medical science is discussed, together with a review of recent observations along the lines above specified, by Henry Donaldson in the "American Journal of Psychology" for February, 1888. Up to the present time, as the author states, it has been largely the topographical anatomy of the central nervous system that has been studied. The units are groups of cells and bundles of fibers, and the question to be answered is, as a rule, how these are united. The methods employed to determine the correlation of function with form are the association of the failure of some function with the failure of some part, and *vice versa*. Sometimes there is loss of nervous substance not apparently associated with any or with a corresponding functional disturbance. Anomalous as these cases now appear, without doubt they will become clear under proper anatomical investigation. A much finer analysis of function than is now in use must ultimately prevail. After localization, still another question arises. Given a group of cells with a definite function, what is the fundamental difference between this group and others with a different function? This leads to a consideration of the individual characteristics of the cell itself. The first step here is the study of the form and chemistry of the cell, its minute mechanism and its composition or proper constitution. Will it ever be possible to infer function from the morphological characteristics of special cells? Thus far, attempts to infer the grade of intelligence from the general form of the brain have not been very successful. Yet this would appear one of the least difficult questions that wait for an answer. With failures in correlation in full view, is it worth while to pursue neurology as an aid to psychology? Yes, and for the following reasons: Neurology is the common factor of most of the approaches to psychology. It is the point of departure in various methods of investigation—the comparative, the developmental, the morbid, and the experimental. Further anatomical knowledge promises to give far deeper insight into the workings of the central nervous system. Eventually it may become the habit of the scientific mind to associate definite cell changes with the performance of certain functions. Accurate neural anatomy must go hand in hand with accurate psychological analysis.

MINOR PARAGRAPHS.

THE BULLETIN OF THE NORTH CAROLINA BOARD OF HEALTH.

The State Board of Health of North Carolina issues monthly a report of the prevailing diseases of the principal cities and boroughs and of the condition of the jails. It gives also a considerable space to articles, selected or original, on the more recent advances of sanitary science. The "Bulletin," as it is styled, for April has an original note on excreta-disposal in rural communities, which holds the country practitioner to a close responsibility for the occurrence of soil-damage by excrement in the locality in which he practices. The author, Dr. G. S. Franklin, addresses his colleagues in strong language when he charges them with a want of care in the disposal of filth. He says: "I venture to say there is not a physician in North Carolina who is not chargeable with gross negligence in permitting this state of things to exist on his own premises, and with ignoring a great public duty when he does not call the at-

tention of neighbors and patrons to the great danger liable to be thus incurred, even by the present generation, but more especially by our posterity. But the time will surely come, if present methods continue, when our sanitary sins will find us out, when typhoid fever and dysentery and diphtheria will become more and more common and more deadly." He adverts also to the possible incursion of cholera in the near future, and urges the medical fraternity to advocate the passage of laws and ordinances which will prevent the construction of privies that are not cemented, and which will make provision for soil-removal. The non-water-tight yard privy is a danger and an abomination which one need not journey to North Carolina to find. There are communities not very far from New York where no restrictions exist in regard to these structures, on the sites of which it will not be long before dwellings will be put up. Any of our older communities in which a "boom" in real estate and in building takes place will bear close watching in regard to the filth-pollution of the house-plot.

CHLORIDE OF METHYLENE AS AN ANÆSTHETIC.

From the Paris letter to the "Lancet" for May 4th we learn that Professor Regnauld has given to the French Academy of Medicine his views on the use of chloride of methylene as an anæsthetic. The drug that has ordinarily been used under that name he holds to be a mixture of four volumes of chloroform and one volume of ethyl ether. The genuine chloride of methylene, as obtained by M. Regnauld, also has anæsthetic properties, but, when used upon the inferior animals, induces a variety of nervous phenomena, such as convulsions, contractures, and seizures suggestive of chorea and epilepsy, so that he does not recommend that it should be used upon man. The ordinary methylene mixture, above referred to, he recommends for anæsthetic use as being safer and less expensive than chloroform. It is also a more stable preparation than chloroform, being less subject to alteration under the action of light and air.

THE BARTHOLDI CRÈCHE.

The War Department has done a most commendable act of charity in permitting the New York Crèche to erect a cottage and tent on Liberty Island. Very few persons who have not visited the statue of Liberty will appreciate the fact that eight or more beautiful acres are unoccupied and eminently applicable to some summer charity. The crèche will probably open on or before July 1st, and will be in charge of one or more members of the staff of the New York Infirmary for Women and Children. Now let some clever artist depict the God of War smoothing his horrid front and making himself presentable to the babès and their attendants, more or less timid, as they disembark upon his territory. Or let a design be drawn, showing old Mars seated and in the act of rocking a baby in the hollow of his shield, as in a cradle. But, in all soberness, this is a graceful and praiseworthy concession on the part of the authorities, and we believe that it will be worthily employed.

THE MEDICAL PROFESSION AND THE LAW IN CALIFORNIA.

As individuals, the people of California are as just and generous in their treatment of medical men as could be desired. In their corporate capacity, however, they have tolerated legislation that sometimes works oppressively on members of our profession. We lately alluded to an example, that of a member of the State Medical Society who could not attend its annual meeting, because he was in jail for refusing to give his time and his medical knowledge in the service of the State without compensation. We regret to learn now that Dr. Walter Lindley, of Los Angeles, one of the editors of the "Southern California Practitioner" and the newly elected president of the State society, finds himself sued for damages for alleged malpractice, on the ground that his assistant, not he himself, dislocated a patient's shoulder while moving her in bed. "The victories in these cases are barren," says the "Practitioner," "and it leads the physician to believe there are only two avenues of safety; one, the placing of whatever property he may have in his wife's name; the other, entering a different vocation." How long will the people of California willingly see their medical men thus needlessly worried and humiliated?

ADDISON'S DISEASE.

Reference is made in the "Province médicale" for March 2d to an autopsy performed by M. Babès and M. Kalindero in a typical case of Addison's disease. There was general pigmentation, particularly marked about the abdomen, breasts, knees, etc., together with tuberculization of the lungs, the intestines, and the suprarenal capsules. Microscopic examination revealed chronic spinal sclerosis limited to the posterior horns. Neuritis existed about the posterior roots of the spinal nerves, very marked at the level of the annular constrictions and characterized by a distension and sometimes absence of the axis-cylinder, together with an increase of cells. The greatest number of these lesions was found in the lower portion of the cord.

BENDING OF THE CERVIX FEMORIS DURING ADOLESCENCE.

Herr Ernst Müller, of Tübingen, has published in the "Beiträge zur klinische Chirurgie" an account of four cases of an affection of the hip in adolescents that turned out to be characterized chiefly by a bending of the neck of the femur on the shaft, so as to lessen the angle between the two. In one case resection was performed, and the hip joint was found perfectly healthy, but an interesting specimen was secured—one that showed decided softening of the bone, a condition that the author attributes to rickets. The symptoms consisted of slight pain in the hip, a limping gait, and some impairment of the power of rotation and abduction, together with an apparent shortening of the limb. Herr Garrè, who gives a summary of the article in the "Centralblatt für Chirurgie," thinks that this is a new disease.

A NEW ANNUAL OF OBSTETRICS AND GYNÆCOLOGY.

We have received the first volume of the "Jahresbericht über die Fortschritte auf dem Gebiete der Geburtshilfe und Gynäkologie," edited by Professor Richard Frommel, of Erlangen, with the collaboration of Dr. Ahlfeld, of Marburg, Dr. Bumm, of Würzburg, Dr. Frommel, of Erlangen, Dr. Hofmeier, of Würzburg, Dr. Loehlein, of Giessen, Dr. Sänger, of Leipsic, Dr. Schwarz, of Halle, Dr. Stumpf, of Munich, Dr. Veit, of Berlin, and Dr. Wyder, of Zürich. This volume is a digest of the selected obstetrical and gynæcological literature of the year 1887, consisting of 555 octavo pages. It is published by the well-known Wiesbaden house of J. F. Bergmann.

THE NEW YORK PHYSICIANS' MUTUAL AID ASSOCIATION.

It has been gratifying to note the progress made by this beneficent society from time to time. It is announced now that the membership has been largely increased of late, and that consequently, at their April meeting, the trustees voted that the sum paid to beneficiaries should be raised to five hundred

and fifty dollars. It is desirable, of course, that a good rate of increase should be kept up, and we would again urge members of the profession in the State of New York to avail themselves of membership. Applications for admission should be sent to the secretary, Dr. N. G. McMaster, No. 322 East Fifteenth Street.

THE RIGHT TO TAKE FEES FROM HOSPITAL PATIENTS.

Some wonder has been expressed that Dr. Henry J. Bigelow, of Boston, should have published such an elaborate argument against the expediency of allowing hospital medical officers to receive fees from the patients as is to be found under his name in the "Boston Medical and Surgical Journal" for April 18th. Under many circumstances it is doubtless a hardship that such a practice is not generally allowed, but we must admit that in the main Dr. Bigelow's logic is unassailable, and there is one consideration mentioned by him that should make it palatable for hospital physicians and surgeons—namely, that the absence of a right to take fees softens the envy (that might easily be aggravated into hostility) felt toward them by many members of the profession who, although very well fitted for hospital positions, can not succeed in obtaining them. The truth seems to us to be that only in instances so rare as to be practically not worth talking about should persons able to pay fees be admitted into a hospital.

SPECULATIONS CONCERNING A CONTORTIONIST.

At a recent meeting of the Royal Imperial Society of Physicians of Vienna, Herr Billroth showed a contortionist known as the human snake (*Schlangenmensch*), who was chiefly remarkable for the extraordinary mobility of his spinal column. According to the account given in the "Deutsche Medizinal-Zeitung," Professor Billroth conjectured that this might be due to great elasticity of the anterior longitudinal ligament, a high degree of compressibility of the vertebræ, and perhaps unusual shortness of their spinous processes.

THE DOUBLE PUBLICATION OF DERMATOLOGICAL ARTICLES.

The "Monatshefte für praktische Dermatologie" announces that an arrangement has been made with the "British Journal of Dermatology" by virtue of which all original articles contributed to either journal will be published also in the other, except in case of objection on the author's part.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending May 28, 1889:

DISEASES.	Week ending May 21.		Week ending May 28.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	11	2	15	1
Scarlet fever	218	27	159	27
Cerebro-spinal meningitis	2	2	0	0
Measles	123	8	129	7
Diphtheria	150	46	165	61

The American Association of Genito-urinary Surgeons.—We learn that the recent annual meeting, at Newport, R. I., under the presidency of Dr. Robert W. Taylor, of New York, was very well attended and in every way most successful. We shall shortly publish a report of the proceedings. Officers for the ensuing year were elected as follows: President, Dr. John P. Bryson, of St. Louis; vice-president, Dr. Francis B. Greenough, of Boston; secretary, Dr. A. T. Cabot, of Boston; members of the council, Dr. Robert W. Taylor and Dr. Edward L. Keyes, of New York, to serve in conjunction with the officers previously mentioned. It was voted to hold the next meeting at Cresson, Pa., early in June, 1890.

Changes of Address.—Dr. Frank W. Olds, to No. 44 West Seventy-first Street; Dr. G. A. Spalding, to No. 248 Lenox Avenue.

The Medical Microscopical Society of Brooklyn.—At the next meeting, to be held at the Hoagland Laboratory, on Wednesday evening, the 5th inst., Dr. Lennox will give a "Demonstration of the Earlier Stages of Ocular Development," and Dr. Abbott will read a paper on the "Structure and Caries of Dentine."

The Alumni Association of the Long Island College Hospital.—It is announced that Dr. Charles N. Dixon Jones has resigned from the office of treasurer.

A Medico-legal Congress.—As we have already mentioned, an international congress of medical jurisprudence, under the auspices of the New York Medico-legal Society, has been called for June 4th–8th. It is announced that Mayor Grant, Mr. Chauncey M. Depew, ex-Judge Noah Davis, Mr. J. R. Fellows, and Mr. J. S. Wise will participate in the opening exercises. The subjects arranged for the first day will be chemistry, toxicology, and electricity; those for the second day, alcoholism, suicide, and insanity and responsibility; those for the third day, psychology and psychiatry, with an excursion to the public asylums for the insane, by invitation of the Commissioners of Charities and Correction; and those for the fourth day, expert testimony and postponed subjects. The congress is to close with a banquet at the Marlborough. The general meetings will be held in Steinway Hall.

The Suspension Apparatus.—We are glad to learn that the form of apparatus in use at Dr. William A. Hammond's sanitarium, in Washington, meets the requirement that we lately suggested, namely, that the patient should not be able to suspend himself. Our informant, Dr. E. L. Tompkins, of the sanitarium, adds: "Heretofore, moreover, each patient has suffered from momentary vertigo just as he was let down; since the spring balance has been put in, no one has complained of the vertigo at all."

The Kings County Medical Association.—The next meeting will be held on June 4th, at the Hoagland Laboratory, Brooklyn. The announced subject is "The Presentation of Interesting Cases or Patients," continued from the May session, and introduced by surgical notes by Dr. Rushmore, Dr. Benton, and Dr. Fox.

St. Mary's Hospital, Brooklyn.—The friends of this hospital propose a novel expedient for the benefit of its treasury, in the way of a tennis tournament to take place on June 5th and 6th, on the grounds of the hospital. Prizes will be offered to the competitors, and they will be charged an entrance fee.

McGill University.—The "Montreal Medical Journal" for May announces that Dr. Robert Craik, emeritus professor of chemistry, has been appointed dean of the faculty of the medical department, to succeed the late Dr. Robert Palmer Howard. Dr. Craik's connection with the college dates from 1856. He officiated as dean at the last commencement, held April 1st.

The Kentucky State Medical Society.—The thirty-fourth annual convention of this society was held at Richmond on May

8th, 9th, and 10th, Dr. L. S. McMurtry presiding. The following officers were elected for the ensuing year: President, Dr. J. A. Ochterlony, of Louisville; vice presidents, Dr. William Jennings and Dr. R. L. Willis; secretary, Dr. Steele Bailey, of Stanford; treasurer, Dr. James B. Kinnaird, of Lancaster. The new medical practice law was again indorsed by the society, and measures were adopted giving active support to the State Board of Health in the enforcement of the law, which went into operation in April.

The New York Post-graduate Medical School and Hospital.—We learn that Dr. Robert W. Taylor has been appointed professor of diseases of the skin.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from May 12 to May 25, 1889:*

By direction of the Acting Secretary of War, a board of medical officers, to consist of Heger, Anthony, Lieutenant-Colonel and Surgeon, Ainsworth, F. C., Captain and Assistant Surgeon, and Skinner, John O., Captain and Assistant Surgeon, will assemble at the U. S. Military Academy, West Point, N. Y., on June 1, 1889, to examine into the physical qualification of candidates for admission and members of the graduating class. Par. 9, S. O. 108, A. G. O., May 10, 1889.

By direction of the Acting Secretary of War, the following-named officers are detailed to represent the Medical Department of the Army at the annual meeting of the American Medical Association, to be held at Newport, R. I., on the 25th of June, 1889: Horton, Samuel M., Major and Surgeon, Billings, John S., Major and Surgeon, and Smart, Charles, Major and Surgeon. Par. 15, S. O. 110, A. G. O., May 13, 1889.

Davis, William B., Captain and Assistant Surgeon. The ordinary leave of absence granted in Special Orders No. 232, October 3, 1888, from this office, is, by direction of the Acting Secretary of War, extended six months on surgeon's certificate of disability. Par. 20, S. O. 108, A. G. O., May 10, 1889.

Ebert, R. G., Captain and Assistant Surgeon, and Moseley, E. B., Captain and Assistant Surgeon, are, by direction of the Acting Secretary of War, granted leave of absence for six months on surgeon's certificate of disability. Pars. 5 and 6, S. O. 109, A. G. O., May 11, 1889.

Tesson, Louis S., Captain and Assistant Surgeon, is relieved from duty at Watervliet Arsenal, N. Y., by direction of the Acting Secretary of War, and ordered to Fort Sidney, Nebraska. Par. 9, S. O. 109, A. G. O., May 11, 1889.

Gorgas, William C., Captain and Assistant Surgeon, will accompany the command from Fort Barrancas, Fla., and proceed with Battery H, Second Artillery, to Fort Adams, R. I., and to return to his proper station on completion of this duty. Par. 5, S. O. 108, Headquarters Division of the Atlantic, Governor's Island, New York city, May 13, 1889.

Gorgas, William C., Captain and Assistant Surgeon. Ordered to proceed at once and to report to the commanding general, Department of the Missouri, for temporary duty in the field.

Gorgas, William C., Captain and Assistant Surgeon, now on duty at Fort Barrancas, Fla., will report in person to the commanding general, Department of the Missouri, for temporary duty with troops in the field. Par. 1, S. O. 112, A. G. O., Washington, May 15, 1889.

Kean, Jefferson R., First Lieutenant and Assistant Surgeon, Fort Robinson, Neb., is hereby granted leave of absence for one month, to take effect between the 1st and the 15th of June, 1889, with permission to apply at Headquarters Division of the Missouri, for an extension of fifteen days. Par. 2, S. O. 48, Headquarters Department of the Platte, May 13, 1889.

Forwood, William H., Major and Surgeon. By direction of the Acting Secretary of War, the leave of absence on surgeon's certificate of disability, granted in S. O. No. 35, April 8, 1889, Department of Dakota, is extended one month on surgeon's certificate of disability. Par. 13, S. O. 118, A. G. O., Washington, May 22, 1889.

Middleton, Passmore, Major and Surgeon, will, as soon as practicable after his arrival at Fort Trumbull, Conn., proceed to Fort Warren, Mass., and report for temporary duty until the return of the post surgeon from detached service with batteries of the Fourth Artillery ordered to Atlanta, Ga. He will then return to his proper station (St. Francis Barracks, Fla.). Par. 2, S. O. 113, Headquarters Division of the Atlantic, Governor's Island, New York city, May 18, 1889.

Appel, Aaron H., Captain and Assistant Surgeon. By direction of the Secretary of War, the leave of absence granted in S. O. No. 38, April 16, 1889, Division of the Missouri, is extended twenty days. Par. 2, S. O. 114, A. G. O., Washington, May 17, 1889.

Stephenson, William, Captain and Assistant Surgeon. By direction of the Secretary of War, leave of absence for four months, with permission to go beyond sea, is granted. Par. 15, S. O. 114, A. G. O., Washington, May 17, 1889.

Rafferty, Ogden, First Lieutenant and Assistant Surgeon, is granted leave of absence for one month. Par. 3, S. O. 29, Headquarters Department of Texas, San Antonio, Texas, May 13, 1889.

McElderry, Henry, Major and Surgeon, is granted leave of absence for one month, to take effect upon completion of his duties as a member of the Army Medical Examining Board in New York city. Par. 4, S. O. 117, Headquarters Division of the Atlantic, Governor's Island, New York city, May 23, 1889.

Patzki, J. H., Major and Surgeon, is granted leave of absence for twenty-one days. Par. 1, S. O. 44, Headquarters Department of Arizona, Los Angeles, Cal., May 18, 1889.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending May 25, 1889:*

Heneberger, L. G., Passed Assistant Surgeon. Detached from the Thetis and ordered to the Iroquois.

Hesler, F. A., Assistant Surgeon. Promoted to be Passed Assistant Surgeon.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the two weeks ending May 25, 1889:*

Hutton, W. H. H., Surgeon. To proceed to New Orleans, La., and inspect unserviceable property. May 25, 1889.

Purviance, George, Surgeon. Detailed as chairman, Board of Examiners. May 22, 1889.

Austin, H. W., Surgeon. Detailed as member, Board of Examiners. May 22, 1889.

Godfrey, John, Surgeon. Detailed as recorder, Board of Examiners. May 22, 1889.

Guitéras, John, Passed Assistant Surgeon. Resignation accepted, by direction of the President, as tendered, to take effect April 30, 1889. May 11, 1889.

ARMSTRONG, S. T., Passed Assistant Surgeon. Granted leave of absence for thirty days. May 11, 1889.

Society Meetings for the Coming Week:

MONDAY, *June 3d:* Medico-chirugical Society of German Physicians; Morrisania Medical Society (private); Brooklyn Anatomical and Surgical Society (private); Utica Medical Library Association; Boston Society for Medical Observation; St. Albans, Vt., Medical Association; Providence, R. I., Medical Association; Hartford, Conn., City Medical Association; Chicago Medical Society.

TUESDAY, *June 4th:* New Jersey State Medical Society (Spring Lake); Pennsylvania State Medical Society (Pittsburgh); New York Neurological Society; Eleventh District Branch, New York State Medical Association (Brooklyn); Elmira Academy of Medicine; Buffalo Medical and Surgical Association; Ogdensburgh Medical Association; Medical Societies of the Counties of Columbia (semi-annual—Chatham), Franklin (semi-annual), Herkimer (annual—Herkimer), Niagara (annual—Lockport), Orange (annual—Goshen), Saratoga (annual), Schoharie (annual), Ulster (annual—Kingston), and Yates (annual), N. Y.; Hudson, N. J. (Jersey City), and Warren (annual), N. J., County Medical Societies; Androscoggin, Me., County Medical Association (Lewiston); Baltimore Academy of Medicine.

WEDNESDAY, *June 5th:* Society of the Alumni of Bellevue Hospital; Harlem Medical Association of the City of New York; Medical Microscopical Society of Brooklyn; Medical Societies of the Counties of Cattaraugus (annual) and Richmond (Stapleton), N. Y.; Penobscot, Me., County Medical Society (Bangor); Medical Society of Orleans County (annual), Vt.; Philadelphia County Medical Society; Bridgeport, Conn., Medical Association.

THURSDAY, *June 6th:* New York Academy of Medicine; Society of Physicians of the Village of Canandaigua; Brooklyn Surgical Society; Boston Medico-psychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington).

FRIDAY, *June 7th:* Baltimore Clinical Society.

SATURDAY, *June 8th:* Clinical Society of the New York Postgraduate Medical School and Hospital; Manhattan Medical and Surgical Society (private); Miller's River, Mass., Medical Society.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN OBSTETRICS AND GYNÆCOLOGY.

Meeting of March 28, 1889.

Dr. J. E. JANVRIN in the Chair.

An Operation for an Intestinal Fistula after Laparotomy.—Dr. A. P. DUDLEY gave an account of an operation which he had undertaken for the cure of a persistent abdominal sinus in a woman who had some time previously been operated on by laparotomy for the removal of the uterine appendages. To his surprise, when the abdomen had been laid open, he had found the ovaries and tubes in a state of disease, and also that the sinus communicated with the ileum. The tract of the sinus and much surrounding exudation which glued the parts together were removed. The perforation into the bowel was closed, one horn of the uterus cut away to release it from adhesions binding it to the adjacent bowel, and the fan-shaped urachus brought down and firmly sewed to the denuded tissues in the tract of the sinus and wherever peritonæum had been removed. He moved the bowels on the second day with a Seidlitz powder. The patient had made a good recovery.

Cervical Myxadenoma.—Dr. P. F. MUNDÉ presented a large specimen of a growth of this sort. Sarcomatous degeneration had begun in the deeper parts. It was the ninth case on record. The growth had caused a sanious, watery discharge from the vagina, and intense anæmia. The gelatinous mass shown had been removed in two sections with a wire écraseur. As in all previous cases, death from cachexia had resulted after a few months.

Myxo-sarcoma of the Falloppian Tube.—The CHAIRMAN read an account of a case of this sort, and presented an enormously enlarged and semi-solid tube removed by laparotomy. The case was interesting on account of its unexpected termination in death after the operation, owing apparently to the effects of morphine previously used to control the intense pain. Excruciating pain at the pit of the stomach had come on soon after the successful completion of the operation. Morphine, atropine, sulphonal, and acetanilide were used, but without relieving the pain in the stomach. A mustard poultice over the epigastrium and rectal feeding were also tried. Fæcal vomiting came on in spite of the free use of saline cathartics and enemata. The wound was opened, and the possibility of peritonitis was excluded with reasonable certainty. There had been no evidences of septicæmia. The speaker believed that the pain at the pit of the stomach, the inability to retain even liquids, and the stercoraceous vomiting were all due to a general nervous exhaustion in the whole alimentary tract. He had in former years had other such cases after prolonged operations for the removal of large ovarian tumors. In this case he ascribed all the symptoms of disorder in the functions of assimilation to the previous long-continued use of morphine. He had seen a number of exactly similar cases in which the post-mortem had shown that neither peritonitis, nor septicæmia, nor any kink or occlusion in the intestines had been present. In all of these there had been stercoraceous vomiting, without any intestinal occlusion that could be demonstrated, either at the time or at the autopsy.

Examination of the diseased tube showed a club-shaped enlargement, the greatest diameter of which was two inches. The tube was patent throughout, and its epithelium intact; it had contained no pus at any time. Its course through the neoplasm was very tortuous. The peritonæum covering the neoplasm and the ovary was normal in appearance and without increase of its connective-tissue elements. The tissue of which the new growth was composed had been developed entirely outside the Falloppian tube, between the basement membrane upon which its epithelial cells rested and the lower surface of the peritonæum forming the broad ligament. It consisted mainly of embryonic connective tissue, the dense white fibrillated and the yellow elastic forms of connective tissue being present in smaller amount, and also some smooth muscular fiber, zones of mucoid tissue, and cells of many shapes belonging to various forms of tissue. The growth was in no sense an inflammatory deposit, and might best be termed a composite myxo-sarcoma.

Dr. MUNDÉ said that the history given reminded him of several instances in his own experience where death had followed operations on the abdomen in a somewhat similar way, but he had always supposed it due in these cases to septicæmia. He had not, however, observed stercoraceous vomiting in his cases, and thought such a symptom must point to some sort of obstruction in the bowel.

Dr. DUDLEY agreed with Dr. Mundé that stercoraceous vomiting must have some special cause, and thought it strange

that a "paralyzed" intestinal tract should show energy enough, even of a reversed sort, to allow of such incessant regurgitation and retching as had occurred in the chairman's patient. Just what the obstruction had been due to he was not ready to say, although he was convinced that one must have existed. The examination through the small opening spoken of could not have determined whether or not an intussusception or a band of adhesive exudation was present at some part of the intestinal tube. He had had cases in which complete obstruction had persisted for some time after an operation, and, after hours of treatment, had suddenly disappeared, a distinct noise ("snap") being heard at the same time. It appeared in such cases to have been a localized peritonitis, which so affected the muscular coat of that part of the intestine involved (by an action on its nerve-ends or ganglia) that none of the intestinal contents was allowed to pass through.

The Chairman replied to this that he had meant by a paralysis a loss of normal action. To Dr. Mundé he could only answer by repeating that there had been no septicæmia in his case, no peritonitis or exudation of either lymph or serum. The pain had been confined to the stomach.

Fistula in Ano in the Female; Operation by Suturing.—Dr. H. W. Mitchell read a paper with this title. In the cases, the history of which he related, other operations had been done at the same time, either for uterine disorders, lacerations of the cervix or perinæum, or hæmorrhoids, and sometimes several of these at once. He laid great emphasis on the advantage of dissecting out all the fibrous tissue in the tract of the fistula, and uniting the fresh wound so made both with deep tension sutures of silver wire carried below the bottom of the wound and also with interrupted superficial sutures of silk. He reported a number of cases in which the union obtained had been so complete as to leave no trace of the fistula or its site. He emptied the lower bowel by an enema before the operation, and kept it inactive for a considerable time afterward with opium.

Dr. Currier thought the operation for fistula severer than was called for in ordinary cases, in which he considered Emmet's plan sufficient. He had found an instrument comparable to a dentist's burr the best one for cleaning out and freshening the edges of a fistula, and, having done so, used, in ordinary cases, only a single silver-wire suture, passed around so as to approximate the sides of the tract. He did not believe it well to keep the bowels closed so long as Dr. Mitchell advised, and objected to the use of opium. Even after operations for lacerated anus he had found it feasible to allow a movement of the bowels on the third or fourth day.

Combined Operations in Gynæcology.—Dr. Mundé read a paper thus entitled. (See p. 534.)

The Chairman, Dr. Dudley, Dr. Murray, and others discussed the value of combined operations, the general opinion being in their favor. It was generally agreed that catgut sutures, especially those prepared in chromic acid, could be used in operations for cervical lacerations, as well as many other gynæcological operations. Dr. Dudley used two silver crown sutures to remove the tension (besides catgut), but removed them about the tenth day. Attention was called by Dr. Mundé to Sänger's recommendation of silkworm gut in perineal operations as causing less pain than any other suture.

NEW YORK CLINICAL SOCIETY.

Meeting of March 26, 1889.

The President, Dr. L. Bolton Bangs, in the Chair.

The Periodicity and Duration of the Menstrual Flow.—Dr. Frank P. Foster presented some observations of the behavior of the menstrual function in women under treatment for various affections of the pelvic organs. Excluding cases in which the patients had stated, either spontaneously or in reply to questions, that there was some abnormity of menstruation, he had considered for the purpose of his present remarks only those of women whose ailments had not, in their own estimation, been accompanied with disordered menstruation. He had excluded also all cases in which fewer than five menstrual periods had been recorded. Thus circumscribed, his observations related to fifty-six women, twenty of whom had been pregnant at some previous time, and thirty-six of whom had never been pregnant. The number of periods observed in each case ranged from five to eighteen. In only one instance had perfect periodicity been noted, the interval from the beginning of one menstruation to the beginning of the next one being twenty-six days. There had been a difference of one day in one case, of two days in four cases, of three days in three cases, of four days in eight cases, of five days in six cases, of six days in four cases, of seven days in three cases, of eight days in four cases, of nine days in four cases, of ten days in one case, of eleven days in six cases, of twelve days in two cases, of thirteen days in two cases, of sixteen days in two cases, of seventeen days in one case, and of eighteen days in one case. In other words, the intervals had varied as follows:

From 16 to 29 days in 1 case.
" 16 " 34 " " 1 "
" 16 " 42 " " 1 "
" 18 " 29 " " 1 "
" 20 " 27 " " 1 "
" 21 " 26 " " 1 "
" 21 " 27 " " 1 "
" 21 " 30 " " 3 cases.
" 21 " 33 " " 1 case.
" 21 " 37 " " 1 "
" 21 " 38 " " 1 "
" 21 " 46 " " 1 "
" 22 " 26 " " 1 "
" 22 " 28 " " 1 "
" 22 " 30 " " 1 "
" 22 " 38 " " 1 "
" 23 " 27 " " 1 "
" 23 " 28 " " 2 cases.
" 23 " 29 " " 1 case.
" 23 " 31 " " 2 cases.
" 23 " 32 " " 2 "
" 23 " 34 " " 1 case.
" 24 " 25 " " 1 "
" 24 " 26 " " 1 "
" 24 " 27 " " 1 "
" 24 " 31 " " 1 "
" 24 " 33 " " 1 "
" 25 " 29 " " 4 cases.
" 25 " 30 " " 1 case.
" 25 " 32 " " 1 "
" 25 " 38 " " 1 "
" 26 " 28 " " 1 "
" 26 " 30 " " 1 "
" 26 " 31 " " 1 "
" 26 " 32 " " 1 "
" 26 " 36 " " 1 "
" 27 " 29 " " 1 "
" 27 " 30 " " 2 cases.
" 27 " 31 " " 1 case.
" 27 " 38 " " 4 cases.
" 28 " 30 " " 1 case.
" 34 " 36 " " 1 "

Out of 380 menstruations, 45 had taken place after an interval of twenty-eight days, 225 after shorter intervals (the shortest being sixteen days), and 110 after longer intervals (the longest being forty-six days). In the instances of very long intervals following very short ones, it was reasonable to suppose that a menstruation had been missed. Allowing for these sources of possible error, the speaker had still been surprised at the great irregularity shown among women who had stated that their menstruation was regular. It had been the rule in his experience for women to profess themselves regular, and not uncommon for them to add that their periods always began on the same day of the month. Of course, these two statements were somewhat conflicting, inasmuch as all the calendar months were not of the same length; it might be imagined, however, that the variation of but two or three days that would be needed to make the occurrence of consecutive menstruations fall on the same day of the month took place as the result of psychical influence, the woman being under the conviction that her next period was to fall on a particular day of the month. Nevertheless, the speaker had not observed any facts that would bear out this supposition; indeed, he had never noted the regular recurrence of menstruation on the same day of the month. He had inferred from his observations that many women were decidedly irregular without realizing the fact, and consequently that regularity of menstruation ought not to be set down in the history of a case simply on the strength of the patient's statement. There were some women, however, who were very precise observers of themselves, but it was not until they had been under his care for some time that a physician could feel convinced of the fact. The speaker had been astonished at the amount of irregularity that he had noted, but the number of observations was, of course, too small to serve as the ground for any sweeping conclusions.

As to the duration of the flow, it had varied as follows:

From	1	to	2	days	in	3 cases.
"	1	"	3	"	"	2 "
"	1	"	4	"	"	1 case.
"	1	"	5	"	"	2 cases.
"	1	"	6	"	"	1 case.
"	2	"	3	"	"	4 cases.
"	2	"	4	"	"	6 "
"	2	"	6	"	"	1 case.
"	2	"	7	"	"	1 "
"	2	"	9	"	"	1 "
"	2	"	15	"	"	1 "
"	3	"	4	"	"	1 "
"	3	"	5	"	"	11 cases.
"	3	"	6	"	"	4 "
"	3	"	7	"	"	3 "
"	3	"	9	"	"	1 case.
"	3	"	11	"	"	1 "
"	3	"	12	"	"	1 "
"	4	"	6	"	"	2 cases.
"	4	"	7	"	"	2 "
"	5	"	6	"	"	2 "
"	5	"	7	"	"	1 case.
"	5	"	14	"	"	1 "

In only two instances had the duration of the flow been found to be the same at all the periods observed—one day in one case, and two days in the other.

Dr. J. H. Emerson had been surprised at the results of Dr. Foster's observations. The variations in the length of the period and in the regularity of its recurrence recorded by Dr. Foster were greater than he had supposed commonly existed. The only suggestion that he could make bearing on the correctness of the conclusions was that the women upon whom the observations in question had been made had uterine diseases or other pelvic disorders, and the menstrual function might have been disordered by those diseased conditions. He believed it a generally received impression among physicians that the menstrual function was ordinarily performed with a greater degree of regularity.

Dr. C. B. Kelsey inquired as to the condition of the ovaries in the women upon whom the observations had been made, whether they were diseased or not; and the Chairman asked if Dr. Foster would have it supposed that such intervals as thirty-one days had been physiological for the women in whom they had occurred.

Dr. Foster replied that the cases had not been selected, except as he had already stated. As to the condition of the ovaries, in by far the greater number of cases there had been no discoverable abnormity. He repeated that the number of observations was too small to serve as the foundation for any broader inferences than he had indicated. Whether the long and short intervals between different periods which he had observed had been physiological or not he could not say. He only knew that these intervals had occurred. It had not been uncommon for him to be asked by a patient who was usually very regular, but in whom a certain period had come on too soon or too late, whether she ought to expect that the next period would come on at the usual time after the day of the month on which the last one should have come but had not, or at the same interval after the recent irregular period considered as a new starting-point. He had never been able to answer this question, and no observations he had been able to make had thrown the least light on it. The next period might come on a day of the month that seemed to have no relation either to the last actual period or to the time when presumably that last period should have occurred. His records had been based on the appearance and duration of a flow of blood as observed and remembered by the patients themselves, and not on actual inspection. It was true that with the speculum a slight discharge of blood was often detected a short time before the patient was aware that she was menstruating and after she supposed that the period had ceased.

A Death from Ether.—Dr. W. Duncan McKim read a paper with this title. (See page 598.)

Dr. D. Bryson Delavan thought that in his closing remarks Dr. McKim had touched upon one of the most important matters in surgery. He himself had frequently seen the crude and unsatisfactory work done in the giving of anæsthetics. He had been surprised in talking with foreign surgeons to see how they preferred chloroform to ether. He had used chloroform in upward of sixty operations of late, and had been very much pleased with its action. Statistics collected in Europe had proved chloroform to be as safe as ether or even safer. Carefully employed, well understood, closely watched, and given in selected cases, he considered chloroform safe. Under these conditions of administration, accidents from anæsthesia would be infrequent. In several cases he had known death follow the administration of ether, apparently from irritation to the lung. With chloroform there was neither irritation to the lung nor a stage of excitement. Among the number of deaths set down as due to chloroform there were many in which dentists had administered it before extracting teeth, with little knowledge of the proper method of doing so, the patient being in the upright posture, and no selection of cases being made. Statistics had been made in institutions where both chloroform and ether had been used, and where they had been administered by the same assistants. In such records, although the number of times chloroform had been used greatly exceeded that in which ether was employed, the number of deaths was about the same.

Chloroform, although commonly used in the South and West, was certainly not so well known in America as in Europe. But those who had used it and had also had some training as to how to use it (which must, of course, be imparted to the assistant) felt that it was too good an agent to be dismissed from our repertory.

Dr. H. M. Biggs agreed to what had been said as to the crude methods employed in giving ether in our hospitals. The juniors were commonly asked to give the ether, and received no instruction before and no attention at the time of the operation. He had repeatedly seen a patient deeply cyanotic and no one noticing the fact. He believed that deaths from ether were very much more common than was commonly supposed. Four had come to his knowledge as occurring in one of the large hospitals of New York during the last four or five years, but there had probably been a number of others. He believed that unnecessary amounts of ether were often used. In careful hands six ounces might be sufficient to keep a patient thoroughly anæsthetized for two hours, but he had seen a pound and a half or two pounds used under the same circumstances, and he thought such doses had a great influence in intensifying and prolonging shock after an operation and in diminishing the chances of ultimate recovery.

Dr. F. W. Murray had seen death result after three or four days from the effects of the ether on the kidney in three separate instances. He made it a rule to use nitroglycerin whenever there was any reason to suspect kidney trouble. He did not believe the mortality of chloroform was large where it was well given. In England it was the leading anæsthetic.

Dr. W. H. Katzenbach, referring to the case related by Dr. McKim, thought that, considering the condition of the lung and the mitral obstruction, the matter of an anæsthetic should have been carefully considered. At least half an ounce of whisky or some other stimulant given before the anæsthetic might have changed the result. Some believed that in aortic disease ether should never be given at all.

Dr. Kelsey thought that the real point at issue had been brought out by the last two speakers. The time was coming when the choice between ether and chloroform would no longer be an arbitrary one, but would depend entirely upon the condition found to exist in the patient. Each of the two would be contra-indicated in certain cases. He had had one death occurring in his practice from each. He disliked giving either intensely, and shrank from the necessity of doing so as often as it occurred. It was a serious thing to give any anæsthetic to a delicate patient. He was not yet convinced that ether equaled chloroform in its poisonous effects, but believed that deaths from ether were really much more frequent than was generally supposed, and cited the results published by Weir of his search in the records of the New York Hospital.

Dr. Foster remarked that he had often felt anxious as to the result when he had seen patients deeply etherized, but he had seen only one death from ether, which had occurred many years ago. The patient was a man upon whom Dr. Markoe was about to operate for traumatic aneurysm. He was a robust man, who had fallen from a tree with a knife in his hand, and received a punctured wound in the neck implicating the carotid, as the result of which a large effusion of blood had resulted. The ether was given very carefully, but the man died before the operation was begun. The speaker had always supposed that the pressure exerted by the extravasated blood and the sac about the aneurysm on the nerves in the neck had crippled the action of the heart, and perhaps of the lungs also, and so contributed as much as the ether to the death. He stood in great dread of chloroform, and would not sanction its being given to any one, unless under special circumstances of great urgency. It would be well to consider what the result would be if chloroform came to be generally used, and consequently used with more or less recklessness. It was not fair to compare the careful, skilled administration of chloroform and its results with the results that had followed the use of ether given in the ordinary way. A very striking fact bearing on the question was to be found in the circumstance that in Great Britain ether was now coming very largely into use.

Dr. Kelsey suggested that the two countries had each been using one of the two anæsthetics almost exclusively. Each, finding that deaths occurred, was beginning to try the other agent, largely from ignorance of its drawbacks.

Dr. J. West Roosevelt thought that much of the bad effects of ether could be attributed to the practice of half choking a patient for a considerable time by too much exclusion of air. It was possible that a patient might be made more liable to after-trouble if kept blue in the face for a long period. This of itself, to say nothing of the possible dangers of ether *per se*, was a dangerous thing.

The President wished to emphasize all that had been said as to the difference it made whether the ether was well given or not. He had sometimes wished there might be a school started for teaching students how to give ether. He did not consider that ether of itself caused cyanosis. He often had to tell a young man who held the cone to give the patient more oxygen, and then less ether would be needed. When unnecessary amounts of ether were used, some of it went into the patient's mouth and caused coughing, but he was convinced that a large proportion of the excess was absorbed. He had many times seen patients strangled and cyanosed—really being poisoned by carbonic anhydride. He agreed that the deaths which took place from ether secondarily made up a large part of the mortality that must be charged to it.

Dr. J. E. Winters believed that chloroform was always safe where there was no organic disease of the heart, and hence in children free of valvular disease. But, as adults might have a degenerated condition, fatty or other, in the heart that could not be recognized, chloroform was not necessarily safe because the heart seemed normal. In the country, where fatty degeneration was rare, chloroform was practically safe. In cities, where there were so many victims of alcohol and syphilis, it was not safe. He thought that before ether was given the state of both the heart and the lungs should be known. Thus, in phthisis ether was safe if the heart was not affected; not otherwise. While there was too much carelessness in the giving of both ether and chloroform, he thought there were more men who could give ether safely than there were who could do the same with chloroform. He had never seen the latter given in New York without being pushed too rapidly. The rule was that its vapor should form only three hundredths of the air the patient inspired, yet it was common to see a handkerchief wet with chloroform laid directly on the mouth. The physician under whom the speaker had learned to give chloroform had used it for thirty-six years continuously, and had never had an accident. He thought the cases in which ether should be used could be selected with practical certainty. As Emmet, in the first edition of his "Diseases of Women," had insisted, before ether was given the urine should always be examined. Stress had been laid on the carelessness with which ether was given, but as a fact most of the deaths occurred some time after the patient had come out from its influence, and were due to pulmonary or renal disease, and here the manner of giving it, whether good or bad, had little to do with the result. Chloroform might kill at the time, but did not cause after-troubles.

Dr. W. G. Thompson had for a time used chloroform in experimenting with animals, but the deaths had been so many that

he had given up using it entirely. He had seen as much carelessness in the giving of chloroform in Germany as in the giving of ether here, and as much cyanosis and heart weakness. He could not agree with Dr. McKim that the excessive amount of ether sometimes given did not enter the lungs. It must be absorbed in order to come away as it did, in the breath, the urine, and the exhalation from the skin, for hours afterward.

Reports on the Progress of Medicine.

MATERIA MEDICA AND THERAPEUTICS.

By H. N. VINEBERG, M. D.

Agaricin.—Dr. A. Radcliffe and Dr. A. B. Pope ("Ther. Gaz.," 1888, No. 6) give their experience with this drug in night-sweats. Dr. Radcliffe used the following formula: Agaricin, 0·12 grm. (1·8 gr.); pulv. Doveri, 0·1 grm. (1·5 gr.); pulv. gummi arab., q s. Ft. pil. xxxv, div. Sig.: One at bed-time. He found it uniformly successful. Dr. Pope used the drug while an interne in the Bellevue Hospital, and administered it to a great number of patients. He prescribed it in doses of an eighth of a grain at bed-time, and repeated this dose usually twice during the night at intervals of two, three, or four hours. In the majority of the cases these were sufficient to completely control the night-sweating. In some cases the foregoing dose was given every four hours, day and night. In one case in which it was pushed beyond this, symptoms that were thought referable to the drug manifested themselves. In several instances agaricin succeeded where belladonna or atropine had failed, and without giving rise to any unpleasant symptoms whatever. He found the following combination valuable: Agaricin, gr. x; acid. sulph. arom., ♏ m. The dose of this was mixed in syrup or simple elixir, given at night only, or every four hours. Nothing definite is stated of the untoward symptoms which the drug may produce.

Phenacetin.—Dr. Hugo Hoppe ("Therap. Monatsh.," 1888, No. 4), on the basis of an extensive experience with this new drug, draws the following conclusions: Phenacetin is a drug which in small single doses—1½–4½ grs. in children, and from 3¾–7½ grs. in adults—has a powerful antipyretic effect without producing any disagreeable symptoms. It probably acts through the central nervous system. In strong persons three doses in succession may be given, but in weakly individuals, reduced by a long infectious disease, and more especially in phthisical patients, the drug is not free from danger. In cases of acute febrile affections it can be given as well as antipyrine and acetanilide. In larger doses (gr. 15 to 30), in healthy persons, it acts variously, acting more powerfully on easily excited temperaments. Its action is principally a sedative one, causing lassitude, yawning, and sleepiness; in a few cases it causes vertigo, chilliness, and nausea. In these large doses (given after a time repeatedly daily), phenacetin is a valuable antineuralgic, especially against migraine. It acts usually slowly but surely in from one to two hours, and for the most part without any untoward after-effects. When the latter do appear, they are usually mild and soon disappear. It should be preferred in these cases to acetanilide on account of its relative innocuousness.

Antipyrine and Acetanilide as Nervines compared with Solanine.—Dr. G. Sarda ("Bull. gén. de thér.," 1888, No. 20), after employing these drugs in the clinic of Professor Grasset, of Montpellier, in over one hundred and thirty patients, makes the following deductions: Antipyrine, acetanilide, and solanine are valuable nervines. Antipyrine is more valuable than the two other remedies in articular rheumatism, in primary and secondary migraines, in acute neuralgia, and in paroxysmal attacks of pain. Antipyrine and acetanilide act about equally well in chronic articular rheumatism and in the lancinating pains of tabes. Acetanilide is to be preferred to antipyrine in chronic neuralgia and in disturbances of motor excitability. Solanine is a very valuable analgesic. While it ranks close to antipyrine and acetanilide in acute articular rheumatism, it excels these agents in chronic neuralgias, especially when it is attended with neuritis. It mitigates the gastric and lancinating pains of the ataxic, and it is a particularly serviceable remedy in the disturbances of motor excitability, far excelling acetanilide. Under its use the tremor of multiple sclerosis and the increased reflexes rapidly disappear. The medium dose is from 0·25 to 0·30 grm. (3¾–4½ grs.) in the twenty-four hours.

Glycerin as a Purgative.—Dr. Karl Ullmann ("Ctrlbl. f. die ges. Ther.," August, 1888) contributes an exhaustive article on this subject, which already, in the short space of a year, can boast of quite an extensive literature. Mixed with water, glycerin enemata, he soon learned, were often attended with failure in chronic constipation. He employed a small glass syringe with its end covered with caoutchouc, and with a capacity of 3 c. ctm. (♏ 45). A syringeful of pure glycerin was administered and the cases selected were those in which constipation had existed for at least two or three days, the maximum duration being twelve days; 226 enemata altogether were given, and the result of each enema was noted separately. The quantity of the produced dejections varied; in 31·4 per cent. the stools were copious, in 45·5 per cent. they were moderate in amount, and in 23·1 per cent. they were very scanty, containing merely the injected glycerin mixed with some mucus and a brownish fluid. In 83 per cent. the stools were hard, consisting chiefly of scybala, in 13 per cent. they were pappy and unformed, and in 4 per cent. they were of a diarrhœic nature. Subsequent constipation occurred in 39 per cent. Diarrhœa followed only in 3 per cent. Painful sensations during the stool, or immediately afterward, such as a burning in the rectum and colic, were complained of only by five patients, three of whom were suffering from acute parametritis, one from retroversion of the uterus, and one from chronic tubercular peritonitis. Borborygmi existed in 4 per cent. only. Abnormal quantities of mucus occurred in four cases. Blood in quantities sufficient to be noticeable was observed in two cases. Of the fifty-two cases in which the enemata failed, the author could find no cause for the failure in the primary disease. In all, however, he was enabled to detect by palpation an atonic condition of the rectum, or an accumulation of the fæcal mass higher up than usual. The author favors the theory that the local purgative action of glycerin is due to its power of abstracting water from the tissues, and in this way irritating the rectal mucous membrane and causing contraction of the muscles of the rectum. Enemata of glycerin are serviceable where, for any reason, a rapid evacuation of the lower part of the bowel is indicated. They are of no use when the accumulation of fæces is in the upper part of the large bowel, or in the small intestines. They are contra-indicated in ulcerative conditions of the rectum, and in painful inflammatory affections of neighboring parts. In habitual constipation they can not replace dietetic regimen, massage of the bowels, and well-known aperients. Further observations are necessary to determine whether their continued use is not injurious to the rectal mucous membrane.

Sulphonal, the New Hypnotic.—Dr. H. Rosin ("Berl. klin. Woch.," 1888, No. 25) has made several carefully conducted experiments with this new drug, and concludes that in doses of 1 grm. (gr. xv) it is of little use, but that in doses of 2 grm. (gr. xxx) it produces a good night's sleep. Of particular interest regarding its hypnotic effect was the circumstance that a dose of 2 grm. (gr. xxx) would procure sleep during the day in individuals not accustomed to sleep in the day-time. Untoward symptoms were never witnessed after these doses. A small number of the patients complained of giddiness after waking, which disappeared in from fifteen to sixty minutes. Headache was never once observed. The drug was administered to several patients with cardiac trouble without any evil after-effects. The experiments did not extend over a sufficient length of time to determine whether the system became accustomed to it. Sulphonal in hypnotic doses has a decided influence upon the bronchial mucous membrane. It was given to a number of phthisical patients suffering with an irritating cough and with insomnia. The cough, in a majority of these, was materially lessened by doses of 3 grm. (gr. xlv). But morphine, in doses of one sixth of a grain, had a decidedly greater influence upon the cough; so that it must always be preferred to sulphonal where insomnia is attended with an irritable cough or any painful condition. Sulphonal in doses of 4 grm. (℥ j) produced a deep sleep, lasting from three to four hours in the day-time and from eight to twelve hours in the night. The persons in all these instances awoke with a feeling of giddiness, which

continued the whole day. On the following night the sleep was as sound as on the preceding night, if not more so. Symptoms other than giddiness were not observed to follow these large doses.

In the same number of the journal Dr. Oestreicher gives his experience with the drug in one hundred patients. The diseases from which they suffered were as follows: One had phthisis, nine had paralytic dementia, eighteen had senile dementia, ten had mania, thirteen had melancholia, seventeen had paranoia, four had hysteria, ten had epilepsy, and forty-one had the morphine habit. The results corresponded, in the main, with those given in the foregoing paper. The author found sulphonal of little use in the first few days of abstinence from morphine. He compared the drug with the usual hypnotics—chloral, paraldehyde, hydrate of amyl, and morphine—and found that it was slower in its effects, taking usually from one to three hours.

The Method of Administering and Prescribing Sulphonal.—Professor A. Kast ("Ther. Monatsh.," 1888, No. 7) attributes the delayed action of this new hypnotic to two causes: One is its insolubility in water, and the second is a chemical one—the great resistance of its molecules. It is only soluble in 450 parts of water at the temperature of the blood. Its solubility, however, is increased by the addition of chloride of sodium. In a two-per-cent. solution of salt one part will dissolve in 250 parts. The same may be said of the acids. In a solution of hydrochloric acid of the same strength as the gastric juice one part will dissolve in 272 parts. The presence of salts and peptones still further favors its solubility. To solve the question of how sulphonal behaves after it has been taken into the stomach, experiments were made upon dogs. As a result of these experiments, it was found that after all the sulphonal had been absorbed from the stomach a small portion of it, undecomposed, was circulating in the blood. The drug, therefore, should be given in a finely powdered form in at least 200 parts of a warm liquid, and two or three hours before bed-time. The best time to give it, then, would be with the evening meal, when it finds favorable conditions for its solution and decomposition.

Unfavorable Experience with Sulphonal.—Dr. Schmey (*ibid.*) reports a case in which the administration of the drug was followed by dangerous symptoms. It was in a man, sixty-one years of age, who, on account of arterial sclerosis, suffered from angina pectoris and insomnia. Nitrite of amyl diminished the frequency of the attacks of angina, and the insomnia was successfully treated with three-gramme (45-grain) doses of hydrate of amylene. But, as the patient refused after a time to take this drug, on account of its taste, a single dose of two grammes (30 grains) of sulphonal was administered. The effects were alarming. Immediately after the dose was given the attacks of angina set in with great severity and frequency. During the whole night they recurred every few minutes in spite of the inhalation of nitrite of amyl. Real sleep did not occur; only a slight slumber of about two hours' duration, which was interrupted by the attacks. For the two days following, the attacks recurred with unusual severity and frequency.

[The foregoing case is of great interest, inasmuch as Kast, the introducer of this hypnotic, makes the special statement that it has no ill effects upon the heart. He says it may be safely given in all forms and states of heart disease. Dr. Schmey's experience, however, should make us very careful in giving it in cases of malnutrition of the heart due to interference with the blood-supply.]

Codeine in Painful Affections of the Abdominal and Pelvic Organs.—Dr. Lauder Brunton ("Brit. Med. Jour.," June 9, 1888) undertook to test practically the results of Barbier and Berthé's experiments, which showed that codeine had a specific effect upon the sympathetic. For this purpose he gave the drug in affections of the pelvic and abdominal organs, and the results were extremely gratifying. In one case of perityphlitis a dose of one grain gave immediate relief to the pain. In a woman suffering with a painful tumor in the pelvic cavity, half a grain had the same magic effect. In one case of pain in the abdomen, due to accumulation of fæces in the bowels, codeine relieved the pain without interfering with the functions of the bowel. The drug was also found serviceable in relieving the pain in cases of cancer of the liver and pancreas. In these cases the author gave 0·04 grm. (⅔ gr.), three times daily, in pill form, with extract of gentian. It caused no stupor, and did not interfere with digestion. He found the drug relieve the pain for months in long standing cases of enteralgia without any anatomical cause. The dose was 0·07 grm. (1⅛ gr.) three times daily. In cases where diarrhœa is present, as in many cases of carcinoma of the colon and rectum, morphine and opium are to be preferred to codeine, in that they influence the peristaltic action of the bowels.

Subcutaneous Injections.—Dr. F. Balzer and Dr. A. Klumpke ("Jour. de méd. de Paris," 1888, No. 5) have studied the local effects of certain drugs and substances injected under the skin.

Antipyrine.—Subcutaneous injections of this drug were made in sciatica, rheumatism, and various kinds of neuralgia. The solution consisted of 0·5 grm. (7½ grs.) of antipyrine and 1 grm. (ɱ15) of water. In general the effects were favorable, the pains were usually relieved, but the injections were always painful. Ecchymoses were often observed at the seat of puncture. In one case, in which an autopsy was made, there were found minute hæmorrhages, small inflammatory lesions, and microscopical abscesses. These lesions are found, to a lesser or greater extent, in subcutaneous injections with every agent. They are the least marked when morphine is employed.

Arsenic.—Injections of Fowler's solution are attended with intense changes; the pain is even greater than with antipyrine. In stronger solutions, coagulation necroses occur.

Chloroform.—An injection of equal parts of chloroform and vaseline was made over the trochanter of a woman suffering with an obstinate sciatica which did not yield to various remedies. The pains disappeared, and the only change at the seat of puncture was anæsthesia. A small slough appeared at the most painful part over the malleolus, but the sciatica was cured. The authors explain the action of chloroform in this case by its causing a necrosis of the nerve similar to that produced by the local contact of ether. They consider these injections indicated in neuralgias of superficial nerves. Injections of nitrate of silver, carbolic acid, etc., seem to act in the same way.

Eucalyptus.—A solution of oil of eucalyptus, 0·05 to 0·10 grm. (gr. ¾–1½) in ɱxv of oil, was employed. The injections were not painful; the absorption of the eucalyptus took place rapidly, as was evident from the breath. The eucalyptus seemed to have a favorable influence upon the bronchitis; the expectoration became easier and less copious. On the course of tuberculosis it had no influence. At the autopsies of tubercular patients, at the points of the injections, which were mostly indurated, the greater part of the oil was found infiltrating the surrounding tissues; in older lesions the oil was found in small accumulations, and here and there were to be seen small hæmorrhagic areas. Vaseline does not seem to be well suited for injections, inasmuch as it is not easily absorbed. The authors are of the opinion that some mineral oil or white cod-liver oil should be used instead of vaseline. Vaseline remains in the tissues as a foreign body. Injections of hydrochloride of cocaine in solution in water were more efficacious than solutions of pure cocaine in oil.

Antipyrine in Polyuria and Diabetes.—Dr. H. Huchard ("Rev. gén. de chir. et de thérap.," 1888, No. 21) has employed antipyrine in four-gramme (℥j) doses daily in symptomatic polyuria attendant upon meningomyelitis. The patient, who had been passing from 28 to 30 litres of urine, had the quantity reduced to 3 or 4 litres. Antipyrine would seem to be indicated in polyuria dependent upon bulbar affections. In one case of diabetes, after giving the drug for a few days, the author observed a diminution of the quantity of sugar from 735 grms. to 271 grms., but the proportion of sugar to the litre showed very little change. The continued administration of antipyrine did not seem to produce albuminuria.

Ether in Cardiac Insufficiency.—Professor H. Bamberger ("Wiener klin. Woch.," 1888, No. 12) was struck with the almost magical effects of a subcutaneous injection of ether in a case of advanced heart disease. The history of the case was the following: The patient, a man sixty years of age, was the subject of insufficiency due to fatty degeneration of the heart muscle, and had dropsy, albuminuria, swelling of the liver, severe dyspnœa without any lesion of the lungs excepting a moderate catarrh of the bronchi, and obstinate insomnia. The dyspnœa increased to such an alarming extent that the attending physician in sheer despair gave a few injections of ether subcutaneously. These had a most striking effect: the urine immediately increased in quantity, the anasarca decreased, and the dyspnœa became very much less. The

improvement was so great that the patient was enabled a few months afterward to undergo Oertel's cure (graduated exercise in climbing mountains). The following spring the patient had an attack of apoplexy, no doubt due to an embolism. The anasarca now returned, but yielded to treatment by calomel; the patient, however, grew weaker and finally died. Two theories may be offered to explain the wonderful effects of the ether: either it acted upon the heart and goaded the paretic organ to a last effort and in this way overcame the congestion of the renal vessels, or it acted directly upon the secreting functions of the kidneys.

Creasote in Pulmonary Phthisis.—Von Driver ("Berl. klin. Woch.," 1888, No. 35) has been employing this agent in a great number of cases of phthisis for the past three years. He gave it mixed with alcohol, as recommended by Fräntzel, and the dose was increased according to the results obtained until the maximum dose—0·75 grm. (11¼ grs.)—was reached. The author summarizes as follows: 1. Creasote, as a rule, is well borne when it is begun in small doses, well diluted, and given at meal-times. It was better borne when the patients grew accustomed to its taste in mixture than in capsules. 2. Appetite and digestion were usually favorably influenced by the drug, especially when abnormal fermentation took place in the stomach or in the intestines. Tubercular diarrhœa, however, could not be stopped with it for any length of time. 3. An undoubted influence upon the tubercular fever the author did not observe in a single case, notwithstanding accurate measurements of the temperature were taken. 4. Just as little influence could be observed from the treatment on the tubercular processes of the lungs. The improvement that was observed was due entirely to a bettering of the hygienic surroundings. 5. Admitting some exceptions, the treatment by creasote finds its indication in those cases only which have scrofula for their foundation, and are of a torpid nature. The patients affected with this form of phthisis present, in spite of a poor and perverted appetite, a fair proportion of adipose tissue, suffer very little with cough, though they may have considerable expectoration, and have very little tendency to fever and night-sweats, although the lungs may be breaking down pretty rapidly. The author has seen a marked improvement of all the symptoms in these cases when creasote was administered, and he is of the opinion that the treatment of phthisis by this agent in the future will be solely limited to this class of cases.

Simulo in Epilepsy.—Dr. W. Hall White ("Lancet," March 31, 1888) states that simulo is the fruit of the *Capparis coriacea*, and is indigenous to Bolivia. Dr. Lorrea had reported a case of epilepsy which he cured by this agent. The author tried the tincture of simulo in a number of cases. He did not observe any untoward effects from the drug, when given to either healthy or sick persons. He does not feel justified in drawing any conclusions from his experience. Still, in some cases he has seen a decided decrease in the number of attacks, and would suggest a further trial of the remedy.

Pelletierine in Tape-worm.—Dr. Bérenger-Feraud ("Bull. gén. de thér.," 1888, No. 30) speaks highly of this agent in tænia lata. In his experience it succeeds seven or eight times out of ten. It should always be followed by a purgative. When it fails, both the drug and the subsequent purgative should be given in a double dose.

The Effects of Digitalis on the Normal Temperature and on the Pyrexia of Typhoid Fever.—Dr. Joseph Leidy, Jr. ("Ther. Gaz.," 1888, No. 10), from experiments made on patients in the University Hospital, Philadelphia, with digitalis in heart cases with normal temperatures and typhoid-fever cases, draws the following conclusions: I. Digitalis depresses normal temperatures from a degree to a degree and a half. This subnormal range remains from one to two days after the administration has ceased. II. In typhoid fever, digitalis reduces the pulse-rate, diminishes the respirations, and depresses the temperature. III. With a fall in the pulse and respirations there is a corresponding decline in the temperature. IV. A weak heart is no contra-indication to the use of digitalis. V. The main indication for the use of digitalis is a weak heart, independent of the hyperpyrexia. VI. Though a most powerful antipyretic in the treatment of hyperpyrexia when associated with a weak heart, it should not, however, be used to meet this indication when there are no evidences of cardiac weakness—*i. e.*, when the pulse is strong, full, and bounding.

Iodol.—Assaky ("Ctrlbl. für klin. Med.," 1888, No. 21) has used this drug in a number of operation wounds and mammary abscesses with excellent results, but with only variable results in buboes and chancroids. The author has had gratifying results with the internal administration of iodol in the late stages of syphilis and in surgical cases of scrofula. In these cases the daily dose varied from 0·5 to 2 grm. (7½ to 30 gr.). Slight symptoms of intoxication, such as headache, nausea, and colic, were observed, but these did not interfere with the continued use of the drug. Coryza was seldom witnessed. It is remarked as worthy of attention that iodine was found in the urine from twelve to fourteen days after the last dose of iodol had been administered, and it appears within a very short time after the drug is ingested.

Miscellany.

The late Dr. Frank W. Rockwell.—At the last meeting of the Hospital Faculty of St. Mary's General Hospital, Brooklyn, the following resolution was passed:

The Hospital Faculty of St. Mary's Hospital desire to put on record their deep emotion at the death of their friend and colleague, Dr. Frank W. Rockwell. Dr. Rockwell died at the age of forty-six, on the very threshold of what is regarded as the intellectual prime by all civilized races. Yet he stood in the foremost rank of his profession, not only in the city of his residence, but throughout the country. That fact alone attests his intellectual stature. But those who knew him more intimately than by reputation knew that his character was a rare combination of mental qualities which compel praise and the softer ones that win without the asking. Endowed with a marvelous capacity for absorbing information, so that he was at home in every branch of his profession; with a delicacy of touch and mechanical skill as an operator that met the requirements of the best surgical *technique;* with abounding and quick resources and of excellent judgment, he had as well a gentle nature and a gentle manner, an omnivorous appreciation of humor and art and literature and the changing phases of nature. What better credentials than these can a man have to the esteem of his friends during life and to their remembrance after death? Physicians though we are, accustomed to death and disease and their ravages and surprises at every turn, a death like this comes home to our bosoms, and we can only inadequately express to the widow of Dr. Rockwell our sorrow and the infinite sympathy that we feel for her and her children.

[Signed.] William E. Griffiths, M. D., Landon Carter Gray, M. D., } *Committee.*

At a special meeting of the trustees of St. Mary's Hospital, held May 7th, the following preamble and resolutions were unanimously adopted:

Whereas, We have heard with profound regret of the sudden demise of Dr. Frank W. Rockwell, a most zealous and able member of our hospital staff, and whose untiring efforts and acknowledged professional skill in the special department of which he was chief have contributed largely toward the efficiency and wide reputation of our institution; and

Whereas, By the death of Dr. Rockwell, St. Mary's Hospital, which has been the recipient of his valued services since its organization, has sustained a grievous loss; the profession, of which he was a distinguished member, a high-minded, skillful, and conscientious surgeon, and the community at large a benefactor; therefore be it

Resolved, That, while regretfully testifying to his honorable record and unostentatious labors in the cause of suffering humanity, we deeply sympathize with his bereaved family and respectfully tender them our sincere condolence.

Resolved, That the foregoing be incorporated in our minutes, and a duly authenticated copy thereof be forwarded to his family.

[Signed.] John Byrne, M. D., John J. Kiernan, James Clyne, } *Committee.*

The Maine Medical Association.—The thirty-seventh annual meeting will be held at Portland, on Tuesday, Wednesday, and Thursday, June 11th, 12th, and 13th. The programme includes the following papers: "Prevailing Diseases of the Year," by Dr. A. G. Young, of Augusta; "Pregnancy and Operative Surgery—their Mutual Relations," by Dr. S. C. Gordon, of Portland; "Mercury," by Dr. J. A. Spalding, of Portland; "Apoplectiform Seizures; Diagnosis of the different Forms and their Treatment," by Dr. I. T. Dana, of Portland, the discussion to be opened by Dr. T. A. Foster, of Portland, Dr. O. A. Horr, of Lewiston, and Dr. D. A. Robinson, of Bangor; "Cases of Wild-Parsnip Poisoning and Remarks on the Physiological Action of the Plant," by Dr. G. A. Phillips, of Ellsworth; "The Relation of Micro-organisms to Injuries and Surgical Diseases," by Dr. E. T. Nealey, of Bangor; "Dysmenorrhœa," by Dr. A. L. Hersey, of Oxford; "Pleuritic Effusion; its Treatment," by Dr. H. F. Twitchell, of Freeport, the discussion to be opened by Dr. F. C. Thayer, of Waterville, Dr. O. A. Horr, of Lewiston, and Dr. A. K. P. Meserve, of Portland; "Eczema," by Dr. J. A. Donovan, of Lewiston, the discussion to be opened by Dr. D. A. Robinson, of Bangor, and Dr. G. H. Shedd, of Fryeburg; "The Central Maine Hospital," by Dr. E. H. Hill, of Lewiston; "Necrology," by Dr. A. K. P. Meserve, of Portland.

Mortality in Cities in the United States.—The following table represents the mortality in the cities named, as reported to Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, and published in the abstract of sanitary reports received by him during the week ending May 24th:

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—										
				Cholera.	Yellow fever.	Small-pox.	Varioloid.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y.	May 18.	1,566,068	744	..	..	..	..	..	..	6	25	44	7	12
Philadelphia, Pa.	May 18.	1,040,245	420	..	..	..	..	..	..	17	5	5	6	7
Chicago, Ill.	May 18.	830,000	283	..	..	..	..	1	..	4	4	16	7	1
Brooklyn, N. Y.	May 18.	821,555	345	..	..	..	..	..	..	11	22	5	5	6
Baltimore, Md.	May 18.	500,343	144	..	..	..	..	..	..	1	1	2	..	....
Cincinnati, Ohio.	May 18.	325,000	134	..	..	..	..	..	..	3	..	7	2	....
San Francisco, Cal.	May 10.	330,000	109	..	..	..	..	..	..	1	..	2	..	3
New Orleans, La.	May 11.	254,000	135	..	..	..	..	..	..	..	..	3	1	1
Cleveland, Ohio	April 20.	235,000	85	..	..	..	..	..	..	1	..	8	..	2
Cleveland, Ohio	April 27.	235,000	91	..	..	..	..	..	..	5	..	..	..	1
Pittsburgh, Pa.	May 18.	230,000	66	..	..	..	..	..	..	3	1	2	3	..
Detroit, Mich.	May 11.	230,000	68	..	..	..	..	..	..	..	3	2	..	....
Louisville, Ky.	May 11.	227,000	78	..	..	..	..	..	..	2	..	1	4	2
Washington, D. C.	May 18.	225,000	....	..	..	..	..	..	..	2	2	1	..	1
Milwaukee, Wis.	May 18.	210,000	58	..	..	..	..	..	..	..	..	..	..	....
Minneapolis, Minn.	May 11.	200,000	49	..	..	..	..	..	..	..	1	3	..	....
Newark, N. J.	May 14.	182,457	80	..	..	..	..	..	..	1	2	9	..	....
Kansas City, Mo.	May 18.	180,000	34	..	..	1	..	..	..	1	..	..	..	1
Rochester, N. Y.	May 18.	130,000	31	..	..	..	..	..	..	..	..	1	..	1
Providence, R. I.	May 18.	127,000	41	..	..	..	..	..	..	..	1	5	1	....
Richmond, Va.	May 18.	100,000	26	..	..	..	..	..	..	1	..	..	..	1
Denver, Col.	May 17.	100,000	33	..	..	..	..	..	..	..	1	3	..	....
Nashville, Tenn.	May 18.	65,153	15	..	..	..	..	..	..	..	..	..	..	..
Fall River, Mass.	May 18.	65,000	20	..	..	..	..	..	..	..	2	..	..	....
Charleston, S. C.	May 18.	60,145	50	..	..	..	..	..	..	..	..	..	..	....
Lynn, Mass.	May 18.	50,000	26	..	..	..	..	..	..	1	..	1	..	....
Portland, Me.	May 18.	42,000	14	..	..	..	..	..	..	..	1	..	..	....
Manchester, N. H.	May 11.	42,000	12	..	..	..	..	..	..	..	..	..	..	....
Council Bluffs, Iowa.	May 20.	35,000	4	..	..	..	..	..	..	..	..	..	..	....
Davenport, Iowa.	May 18.	33,715	8	..	..	..	..	..	..	..	..	3	..	....
Binghamton, N. Y.	May 20.	30,000	9	..	..	..	..	..	..	..	..	..	..	....
Altoona, Pa.	May 18.	30,000	5	..	..	..	..	..	..	..	..	..	..	....
Auburn, N. Y.	May 18.	26,000	11	..	..	..	..	..	..	..	..	..	..	....
Haverhill, Mass.	May 18.	25,000	7	..	..	..	..	..	..	..	..	..	..	....
Newport, R. I.	May 16.	22,000	6	..	..	..	..	..	..	..	..	..	..	....
Newton, Mass.	May 18.	21,553	4	..	..	..	..	..	..	..	..	..	..	....
Keokuk, Iowa.	May 18.	16,000	4	..	..	..	..	..	..	..	..	1	..	....

The New Massachusetts Medical Practice Bill.—The following is the text of a bill that has been reported to the House of Representatives by the Judiciary Committee:

Section 1. Every person who shall practice medicine or surgery for hire, gain or reward, within this Commonwealth, or who shall publicly profess to practice medicine or surgery, shall first file with the clerk of the city or town in which he resides and in which he has his principal office, an affidavit, duly subscribed and sworn to by him, in which he shall state his full name and residence; place and date of birth; location of his principal office; what medical college or institution, if any, he has attended, and for what length of time; what degrees in medicine or surgery, if any, he has received, and from what institutions, with date for granting of same; and of what medical societies or associations, if any, he is a member.

Sec. 2. The city or town clerk with whom the affidavit named in Section 1 may be filed shall give to such person a certificate of the filing of the affidavit, which certificate shall state the substance of the facts set forth in the affidavit, and such person shall keep such certificate conspicuously displayed in his principal office or place of practice so long as he shall continue so to practice.

Sec. 3. Whoever shall violate the provisions of this act shall be punished by fine not exceeding $1,000, or imprisonment not exceeding one year, or both such fines and imprisonment.

Sec. 4. Whoever shall willfully swear or affirm falsely in relation to any matter or thing, respecting which the affidavit is required by this act, shall be deemed guilty of perjury.

Sec. 5. The provisions of this act shall not apply to surgeons and assistant surgeons of the army and navy of the United States, nor to any physician or surgeon resident in another State and lawfully engaged in the practice of medicine or surgery there, who may be called in consultation with a physician or surgeon lawfully practicing within this Commonwealth.

Sec. 6. This act shall take effect on the first day of October, 1889.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

THE VALUE OF ELECTRICITY AS A SUBSTITUTE FOR LAPAROTOMY IN DISEASES OF THE UTERINE APPENDAGES.

BY AUGUSTIN H. GOELET, M.D.

WHEN we take into consideration the risk involved, coupled with the fact that the ultimate result is not always what is desired, laparotomy can by no means be considered successful or satisfactory when done for disease of the uterine appendages. Unless it affords positive relief of the symptoms which caused the presence of the disease to be detected, it can not be considered even a justifiable operation. If pain, the main symptom which drove the patient to seek relief, persists after the operation, what has been gained beyond permanent sterility? The recovery of the patient from a dangerous operation often serves to eclipse the purpose for which it was intended, and is mistaken for success, adding to the record of the successful operator, but in no way benefiting the patient. The mental impression produced upon her may serve to satisfy her for a time, until, when this subsides, she awakens to the truth that she is no better than before. The proof of this assertion is to be found in the fact that a successful laparotomist has published an elaborate paper upon the cause of pain following laparotomy. Also in substantiation is the fact that operators declare temporary improvement frequently follows laparotomy when the abdomen is only opened, inspected, and immediately closed, the condition found being unfavorable for interference. Such improvement can only be explained by the mental impression produced by the operation.

The patient is often so overwhelmed by the magnitude of the disclosure, as well as by the long list of successful (?) operations of the man who advises her, that she does not think to question the ultimate results of these operations, but consents with a sort of resignation to a fate from which she is given no choice. Nothing else having been suggested by her adviser, she argues there is no other alternative, for the principle of the laparotomist is, "If an eye offend thee, pluck it out." If the tubes and ovaries are diseased, take them out. Do not try to cure them. Take them out. The surgeon does not seek to cure (?) by any other means.

But how often do we find patients undergoing treatment after laparotomy for the relief of symptoms which it was intended to relieve—treatment which, if faithfully carried out beforehand, would have removed the apparent necessity for the operation! Would it not be wiser and more consistent with honest purpose to at least try a course of treatment which known authorities find successful and free from danger before advising an operation which is often disastrous and which promises nothing certain but mutilation and sterility? Is the surgeon justified in recommending the removal of such important, organs and in not suggesting the possibility of relief by safer methods? Is it not an obligation on his part to explain clearly the dangers and uncertainty of the one and the harmlessness and possible relief to be afforded by the other measures, instead of autocratically declaring the removal of the diseased structures necessary? Beyond a doubt there are conditions which may demand immediate operative interference to avert impending evil, but they are rare, and if laparotomy for the removal of the appendages was limited to such conditions, there would be fewer mutilated women and fewer operators.

It is high time the voice of conservatism should be raised against this wholesale useless castration, which serves only to add to the record of a few ambitious surgeons who have built up their records with high-handed—yea! bloody-handed—methods. But they have carried it too far. The key-note of conservatism has been sounded by two of the greatest living ovariotomists, and let us hope it will be heeded before the laparotomist is made to blush at the accusation of the abuse of his knife: the fate of his brother of the lancet.

Is the immediate resort to laparotomy justifiable for inflammatory conditions of the uterine appendages where the presence of pus can not be detected, when electricity promises so much with absolutely no risk? Is it rational to remove these important organs without previous efforts to relieve the diseased state, when there is no immediate danger to be apprehended in delaying operative interference? It has been said, and with some degree of truth, that there are more healthy ovaries removed than diseased ones. Hence the term normal ovariotomy, which is a blot upon the escutcheon of the profession. Frequently the ovaries and tubes are condemned when the origin and seat of the disease are to be found in the uterus, as where drainage is obstructed by a condition of stenosis or acute flexion. To remove these organs for disease which is secondary only to the condition of the uterus is certainly illogical, to say the least. Remove the cause which produces the ovarian or tubal malcondition, and that too may be curable; but remove the appendages, and you have but gotten rid of offending organs which have been more offended against than they are offending. And herein lies a solution of many of the failures following laparotomy—failures to produce an intended artificial menopause, and failures to remove pain and other symptoms which caused the patient to submit to the operation.

If it is possible to destroy a tubal pregnancy and cause its complete absorption by electricity, is it unreasonable to expect what is claimed for it in inflammatory conditions and their results? The number of women who have been saved from the knife and relieved by electricity may be insignificant in comparison with those who have been successfully laparotomized (not to say relieved), but the number is multiplying, and it is the duty of all who find success with the safer method to contribute their mite in favor of its adoption as a substitute for dangerous and unnecessary operative measures. With this view in mind I find the excuse for the present paper, which, while it may present little that is new to some, will open the eyes of many to the value of an important agent which promises much for the future.

The ignorance of the action of the electric current, associated with the fact that it has been so long used empirically or without precision by those who professed to understand it, constitutes the chief drawback to its adoption as an active therapeutic agent. Any other agent capable of so much good would scarcely be received with as little confidence when so strongly and ably advocated. But this is not to be wondered at when we stop to consider the improper uses which have been made of it by those who have sought to surround it with mystery, as well as the ignorance of its action which has pervaded the profession in the past. Now that we know definitely the different action of the two poles, and are able to measure accurately the dose, we may confidently expect to accomplish with it what was never possible before. And we owe much to Apostoli for his persistent efforts to wrest so valuable an agent from the chaos of ignorance, empiricism, and mystery with which it has been surrounded, and establish its value in a favorable and scientific light before the profession.

The value of electricity, or that form of it known as galvanism, which is under consideration here, depends much upon its proper use, which shears it of danger. Improperly used, it is not only of no value, but is capable of much harm. Is not the same true of other valuable agents? In the first place, it is necessary to thoroughly comprehend the different action of the two poles. The *positive* pole is *anodyne*, *sedative*, *anti-congestive*, and *anti-hæmorrhagic*. "It combats and prevents the tendency to excessive vascularization," and consequently relieves congestion and inflammation and the pain depending upon these conditions. Its *local* or *polar* action, when used within the uterus, is *hæmostatic* or *styptic*, and *caustic* with high intensities of current. The *negative* pole is *stimulating* and has marked *electrolytic* action. It tends to produce *congestion*, and a *derivative* effect which favors *absorption* of *tumors*, *inflammatory deposits*, and *adhesions*. But great care must be observed in using it in some conditions, lest a fresh inflammation be rekindled. When used within the uterus its *local* action is *caustic* with much lower intensity of current than the other pole, and it has a marked *electrolytic* action upon fibrous and hypertrophied tissues with which it comes in contact, and at the same time produces a derivative effect to the uterus and from the surrounding organs and structures which are in sympathy with and closely allied to that organ, and whose healthy condition depends greatly upon its proper physiological action. Consequently it is strongly indicated when menstruation is insufficient or retarded, or when the uterus is indolent and inactive, and where an obstruction, either from flexion or hypertrophy of the lining membrane, interferes with the flow.

To briefly recapitulate, the *positive* pole is *sedative* and the *negative* is *stimulating* in the general effect upon the organs or structures through which the current traverses, while in the local effect the *negative* is more strictly *caustic*, because requiring less current strength to produce this action. But in truth both are caustic, though in a different way and with different results.

An intelligent interpretation of the indications for these different actions forms the basis of electrical treatment, and the operator must constantly bear them in mind. Much latitude is allowed for good judgment, and experience will greatly increase one's ability for accurate decision. And prompt results as well as freedom from unpleasant consequences depend much upon the operator's skill and experience. No one should attempt its application in gynæcology without having previously made a careful clinical study of its effects upon the different conditions of disease of the pelvic organs. In this way alone can its value be determined and its future usefulness advanced; *for failure from improper use is more likely to be attributed to the inefficiency of the agent than inexperience in manipulation.*

In the second place, exact dosage is an all-important factor in the administration of electricity, for, without the means of measuring the intensity of the current, one would find himself very much in the position of a country practitioner who wanted to give his patient strychnine and had no scales to weigh it. The necessity for an instrument which will measure accurately the amount of current passing between the two poles can not be overestimated, for the number of cells used, which for a long time constituted our only means of deciding the amount administered, is inaccurate, because no allowance is made for the resistance to be overcome in the traversing of the current. It must be taken into consideration that the strength of a battery deteriorates with use, and the resistance the current encounters in penetrating the skin and tissues is different in different subjects. While very much depends upon the susceptibility of the patient, and what one may bear well another will not submit to, and although much is left to be determined by experience with its use, precision in posology has an important bearing upon the safety of the patient, as well as the advantage to be gained by accuracy from a scientific point of view. Although it is not always possible to determine previously the exact dose required to accomplish desired results in every patient, it is important to record accurately the amount used in every instance, in order to arrive at a satisfactory conclusion of what we may accomplish by its future use. While the milliampèremeter is still open to objections on account of slight inaccuracies and variance of different makers, it furnishes the best guide we have at present, and answers every purpose. I have been forced to the conclusion, however, that either the French instrument is gauged differently from ours or else the American women are capable of less endurance, for they are not always able to bear well the high intensities of Apostoli. The meter would be important, if for no other reason, to show that the battery is working properly and the patient is not deceiving you as to her impressions.

There are many important minor details in connection with the administration of electricity which deserve close attention.

1. The inactive or external electrode should cover a large surface, both in order to obtain a greater intensity of penetration and to avoid discomfort to the patient, and it should be made of such material as will offer the least resistance to the current, and at the same time the metal should be so protected as to prevent any unpleasant action on the skin. The cake of wet clay recommended by

Apostoli is the best which has yet been devised. The objections which have been made to it may be readily overcome. The large size need not be used except where very high intensities are desired, and smaller sizes may be appropriately and conveniently substituted. By using the white clay, it will not soil if properly protected. The clay, when mixed to about the consistence of putty, should be rolled out evenly on a flat surface until it is from one half to three quarters of an inch thick, according to the size of the electrode, cut of the desired size, and allowed to stiffen somewhat, so that it may be more readily handled. If it is then covered with a layer of absorbent cotton, sewed up in linen crash and backed with rubber cloth which projects only slightly beyond the edges, it may be applied to the surface without soiling or wetting the clothing. The metal disc is pressed into the clay under the cotton, and the binding post must penetrate the different layers. A large flat pan, with only enough water to cover the bottom, should be kept warm over a spirit lamp, and the electrode is immersed in this just before using it, the excess of water being pressed out. Besides the advantage of cleanliness, the cotton covering serves to keep the clay moist while not in use. The illustration, Fig. 1, shows this electrode, the size being 6 x 8.

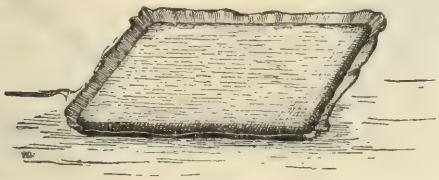


Fig. 1.

The most convenient sizes besides this one are 4 x 6½, 6½ x 9, and larger when desired.

2. The position of the inactive electrode may not be confined to the abdomen, but in some conditions can be applied with equal benefit to the lower part of the spine with the patient in the Sims position.

3. The internal electrode for use in the vagina was for a long time unsatisfactory to me on account of the cauterization of the vaginal surface with high intensities, especially when the positive pole was used. The usual covering of absorbent cotton or chamois skin will not allow the use of sufficient current to be effective in many conditions without producing deep cauterization. I believe I have satisfactorily overcome this objection by covering the metal with clay, as described in the "New York Medical Journal," February 23, 1889, page 206. I use for the negative pole a small flat copper disc in place of the usual ball electrode, and cover this with a thick layer of potter's clay. This is allowed to harden so it will retain its position, and is then covered with a thin layer of absorbent cotton, and over this a piece of gauze held in place by a rubber band around the shaft of the electrode. (See Fig. 2.) This may then be kept moist, and, when it is to be used, it is covered additionally with absorbent cotton and well moistened. When once used, the outer layer of cotton is removed and replaced with fresh cotton for every patient.

With this electrode it is possible to use currents of from 60 to 150, and even 200 milliampères, with no more effect upon the surface of the vagina than on the external surface of the body, and effective intensities may thus be concen-

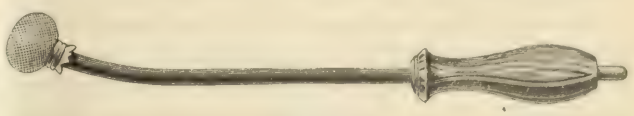


Fig. 2.

trated upon any desired location in the pelvis accessible through the vagina without fear of injury. This is an advantage which will be readily appreciated by those who have had any experience in this kind of work. In diseases of the appendages it is possible to accomplish by this method of applying electricity what could never be attained before. When we take into consideration that it is the interpolar action alone which we have to depend upon in many of these conditions, it is important to get the greatest intensity permissible concentrated upon the structures to be acted upon.

For use with the positive pole I have had the disc made of aluminium, but, after prolonged use with strong currents, some action takes place on the surface of the aluminium which interferes with its conductibility, and for this reason I have had the electrode, shown in Figs. 3 and 4, made with a carbon disc instead of metal. It will be seen by examining the two cuts that the carbon disc has a long spindle for connection with the metallic rod of the handle, which is an inch or more from the disc, and a hard-rubber insulating slide, which, when it is pushed up against the disc, fits the spindle of the carbon snugly and prevents it from being easily broken off. The metallic connection with the carbon is so far removed from the extremity of the electrode that



Fig. 3.

it does not become moist and corroded. But there is some objection to the use of carbon, in that it is so good a con-



Fig. 4.

ductor that it requires an additional protection to prevent cauterization when used with the positive pole with high intensities. In preparing it for use I first cover the carbon disc with a layer of plaster of Paris, then with the clay, etc. This additional protection assists in modifying the local action. When very high intensities (100 to 150 milliampères) are used for five minutes or longer, I take the precaution to dip the electrode into a solution of bicarbonate of sodium, which I find neutralizes the acids which collect at the surface of contact of the positive pole and prevents the usual caustic action. A point worthy of mention is the fact that the local action is intensified in proportion to the conductibility of the electrode. Another point which does not ap-

pear to be generally known is that while the negative pole is the more caustic with an unprotected metal or carbon electrode in the uterus, the positive pole is the more caustic with the protected electrode used in the vagina.

Recently I have made some very satisfactory experiments with electrodes made of steel, treated by a process which renders the metal absolutely non-corrosive and non-attackable by acids. It may be used for the same purposes as platinum, is a better conductor, and the cost is trifling. I have had the discs for vaginal electrodes made of it, intra-uterine electrodes, and puncture needles. The intra-uterine electrodes show no action after constant use with from 50 to 100 or 150 milliampères (positive). The puncture needles have been used with 300 milliampères (positive) with little or no effect upon the surface of the needle, and none which interferes with the passage of the current. The electrodes as well as needles may be used with either the positive or negative pole.

4. For the sake of convenience hereafter I will show and describe here some other electrodes which I have devised for use in the method of treatment under consideration.



Fig. 5.

Fig. 5 is an intra-uterine electrode for use with the negative pole. It has an insulated handle of hard rubber, and three movable tips of copper, nickel-plated, 13, 15, and 17 of the French scale. They are two inches and a half long, conical, and of the usual curve. It is used for applications of negative galvanism to the cervical canal and uterine cavity, and has been found to be more convenient, more easily introduced, and to cause less discomfort to the patient than the usual intra-uterine electrode, especially the bulb.

Fig. 6 represents an intra-uterine electrode for use with the positive pole. The metallic tip, A, is made of steel

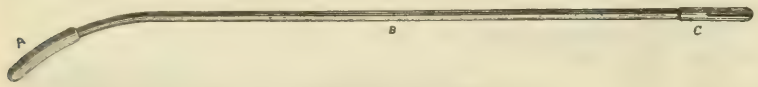


Fig. 6.



Fig. 7.

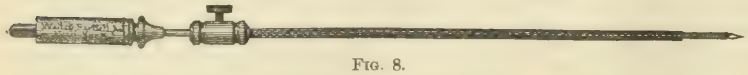


Fig. 8.

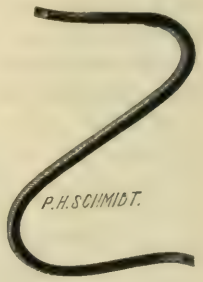
treated by the process described above, and is three fourths of an inch in length, the shaft, B, being covered with hard rubber. With this the uterine cavity, exclusive of the cervical canal, can be cauterized in two sections. The sizes run from 12 to 16 of the French scale. The tips are also made two inches and a half long, so that the application may be made to the whole canal at once when it is desired, the usual size being a little larger than the ordinary uterine sound. This electrode may be used with the negative pole as well.

The small puncture needle shown in Fig. 7 consists of a point, A, made of either platinum or protected steel, on a steel shaft, D, insulated with hard-rubber covering. Over this is placed a slide, B, of catheter material fitted with a set screw, C. By this arrangement the degree of penetration may be limited and accuracy in puncture assured.*

Fig. 8 is a small aspirating cannula with a trocar, made so that it can be utilized as an electrode through the cannula. It is made of steel protected by the process referred to above, and is therefore available for use with either pole for cauterizing a drainage track after aspiration. It is made to fit the attachments of the aspirator or the surgical pump, and has the sliding cover and set screw to limit penetration.



The speculum.



The elevator for the anterior vaginal wall.

Fig. 9.

5. The necessity for a speculum to facilitate the introduction of both vaginal and intra-uterine electrodes was fully set forth in a paper published in the "New York Medical Journal" of February 23, 1889, page 205. The cut (Fig. 9) shows this speculum, which is now made either of metal or hard rubber. The advantages of this speculum are, viz.:

1. That it may be used in either the dorsal or lateral positions and with equal facility whether a nurse is present or not.

2. Vaginal electrodes may be introduced and withdrawn with no discomfort to the patient and without soiling the hand of the operator.

3. Intra-uterine electrodes may be introduced with greater ease, more precision, and less risk than upon the finger as a guide.

4. The position of the cervix may be as readily altered in the dorsal as in the lateral position, which is not possible with bivalve or trivalve instruments.

5. When the hard-rubber instrument is used the necessity for removal of the speculum during an application is avoided.

* The electrodes (Figs. 1, 2, 6, 7, and 8) were made for me by Messrs. Waite and Bartlett. Figs. 3, 4, and 5 were made by "The Jerome Kidder Manufacturing Company."

6. It is self-retaining in both positions when the beak is behind the cervix.

7. When used in the lateral position it is more convenient than the Sims instrument, and will retain its position when the support of the hand is removed.

8. With the elevator for the anterior vaginal wall, it is a perineal retractor for the dorsal posture, acting upon the same principle as the Sims instrument with the depressor.

9. The elevator used alone forms a convenient guide and shield in passing the needle for galvano-puncture.

The conditions of the appendages which may be considered amenable to treatment by galvanism are the different varieties of subacute and chronic oophoritis and salpingitis and neoplasms, hypertrophies, indurations, and adhesions resulting from inflammatory action, and we may include certain conditions of hydrosalpinx, hæmatosalpinx, and pyosalpinx. Small cysts and fibro-cysts of the ovary and in the broad ligament may likewise be included.

The failures in the past with this agent may be readily accounted for by ignorance of its action and lack of precision in posology, as well as the limited strength of current which the improperly protected electrodes permitted. When high intensities can be employed with perfect safety and comfort, very much more can be accomplished than has heretofore been thought possible, for many conditions which remain unacted upon, or but little so, by smaller, yield readily to larger doses when the agent is appropriately administered. The reason for this is obvious, for we must depend entirely upon the interpolar action of the current in conditions where puncture is not available. But it is important to confine the current as much as possible to the structures to be acted upon, instead of dispersing it over a large surface; and to accomplish this the external electrode should be limited in size as much as the sensations of the patient will allow, and must be so placed that the structures under consideration shall be immediately interposed between the two poles. Electricity may take the most direct course in passing from one pole to the other, but, if the external electrode is spread over the whole surface of the abdomen, some of the current is dispersed through tissues which do not require its action, and much of the effect is lost. Then, if the treatment is intended for the left side of the pelvis, confine the current to that side if you desire its full benefit. Place the internal electrode directly against the structures as felt in the vagina, and the external electrode either on the abdomen or back, in a position most suitable for including them between the two poles.

A detailed description of the method of procedure necessary in all the diseases of the appendages which may require this treatment would be beyond the scope of this paper, and I must confine myself to a few essential points, trusting to the reader's comprehension of the principles involved and his thorough acquaintance with the nature of the structures under consideration.

The rule is in most cases to use the positive pole in the vagina until all pain and inflammatory action have been subdued and until the vaginal vault is not sensitive to ordinary pressure, using from 30 to 100 milliampères from five to ten minutes every day or every second day, according to the susceptibility of the patient and the condition present. Then the negative pole follows where it is needed for its electrolytic, absorptive, and alterative tonic action. But the pain produced by pressure of an accumulation or deposit, adhesions, and contraction, must be distinguished from that due to congestion or that of neuralgia. In these conditions the negative pole is more appropriate, as it tends to remove sooner the cause which produces it. If the pain is very troublesome, however, much relief is afforded by moistening the positive electrode with a four-per-cent. solution of cocaine, and using from 30 to 50 milliampères at first, increasing cautiously as the endurance and improvement become manifest. I do not wish to be misunderstood in regard to the use of the high intensities which I have advocated in some of these conditions. All do not require it, and some will not tolerate it; but there are conditions which demand it, and which will not yield to anything less. Usually the toleration of the diseased structures of the pelvis is what the operator chooses to make it if he wisely uses judgment in his selection. Commencing with low intensities, which produce no discomfort other than a warmth of the surface under the external electrode, and gradually increasing at every séance, taking care never to use enough to produce pain or an aching internally, tolerance may be increased, and the high intensities, when reached, produce no more discomfort or disturbance than the others did at first. If there is a tendency to over-menstruation, the intensity must be lowered as the period approaches, and after its cessation lower intensities must again be employed at the first sittings. It is often better to use the positive instead of the negative pole both immediately before and after menstruation, especially when it is accompanied by congestive or neuralgic pain. And if the flow is insufficient, a mild faradaic current with the negative pole in the uterus will increase it, and afford relief by lessening congestion.

When obstruction in the cervical canal is found, treatment must begin with dilatation to secure drainage either with the steel dilator under an anæsthetic, followed by the use of the perforated intra-uterine stem (see "New York Medical Journal," May 12, 1888) for a week with the patient confined to bed (bearing in mind the contra-indications), or by means of the electrode (Fig. 5) with the negative pole. Then the condition of salpingitis or oophoritis depending upon this cause must receive appropriate treatment. The applications are mainly intravaginal, the active pole being placed directly against the abnormal structures, and the intensity may vary from 30 to 100 milliampères. But the os must be kept patulous by an occasional application of negative galvanism, and positive galvanism (30 to 100 milliampères) to the fundus or whole uterine cavity will be indicated if the leucorrhœa is persistent.

Where there is an occlusion at the proximal end of the tube with pyosalpinx, I have frequently been able to evacuate it into the uterine cavity, and secure permanent drainage, by using the electrode shown in Fig. 6, with the small metal tip applied to the cornu of the cavity at the entrance of the tube, using 100 milliampères positive galvanism for five minutes at intervals of two or three days. In one case

three such séances accomplished this result. About an ounce of pus followed the withdrawal of the electrode, and the patient experienced immediate and permanent relief. There was a purulent discharge for some days after, showing that drainage was good; and there was no reaccumulation of pus. When evacuation can not be secured in this way, I tap the tube through the vagina with the trocar and cannula shown in Fig. 8, empty it with the aspirator, wash out the cavity with a saturated solution of hydronaphthol, reintroduce the trocar, and, connecting it with the positive pole, turn on 50 or 100 milliampères, thus cauterizing a drainage track through the tissues which the cannula penetrates. The absorption of septic material is prevented by this cauterization, and the walls of the sac are stimulated to contract. The vagina is dusted with powdered boric acid and a moist absorbent cotton or gauze tampon is introduced to favor drainage, care being taken to arrange it so as to hold the cervix away from the vaginal wall, which would otherwise prevent drainage by closing the orifice. It is important to render the vagina perfectly aseptic before the puncture is made. Conditions may exist which would contraindicate both of these measures, and they must be removed before such procedures are justifiable.

Hydrosalpinx may be evacuated in the same way, using either negative or positive galvanism afterward through the cannula. The cavity will not require washing unless the fluid shows some admixture of pus. If the tube refills, which is rare, after it has been evacuated in this way, it is an easy matter to tap it again. The thickened condition remaining must be absorbed by applications of negative galvanism to the vagina after the soreness which follows the puncture, has been removed.

Hæmatosalpinx, when seen early, must be treated with positive galvanism (intravaginal) until the clot becomes firm; then it is absorbed by negative galvanism or galvano-puncture. Recovery may be hastened by evacuating the separated serum, if the accumulation is large, with an aspirating needle, using 50 to 100 milliampères positive galvanism (intravaginal) immediately after, to contract the capillaries and prevent further hæmorrhage.

Hæmatoma and hæmatocele, which are sometimes met with in connection with these conditions, must be treated in the early stage by positive galvanism to control and limit the hæmorrhage, and later by negative galvanism to promote its absorption. When the serum becomes separated, the aspirator may be used to remove it, followed immediately by positive galvanism, and later by negative galvanism or galvano-puncture to hasten absorption.

Inflammatory conditions of both tubes and ovaries must be treated first by positive galvanism through the vagina, commencing with small doses (20 to 30 milliampères) and gradually increasing the intensity to 100. Subsequently, negative galvanism used in the same way may be required to complete the cure.

Catarrhal salpingitis must be treated by keeping the cervical canal free for drainage, and positive galvanism to the entrance of the tube (intra-uterine), with either positive or negative galvanism (intravaginal) as the condition demands.

Pelvic exudations, adhesions, and contractions of long standing can only be attacked successfully by high intensities. The solidified, immobile condition resulting from pelvic peritonitis or cellulitis may be satisfactorily overcome and perfect mobility of the pelvic organs restored in many instances by patience and high intensities judiciously used. I have found that a current of 200 milliampères is well borne when gradually attained, and is speedily productive of satisfactory results. The gentle pressure from a vaseline tampon after the applications, conjoined with massage, will materially aid in effecting the desired result.

Cysts and fibro-cysts in the broad ligament or of the ovary, when small and accessible through the vagina, are successfully treated by galvano-puncture, followed by negative galvanism (intravaginal) to remove indurations and adhesions.

The advantage in favor of this method of treatment is that it does not, as a rule, confine the patient to bed, and that with ordinary care it involves no risk of life. She is able to go to the physician's office for treatment, thus getting all the benefit to be derived from fresh air, exercise, and diversion, which will be of great service in certain nervous conditions, frequently associated with this form of disease. The only restriction necessary is the avoidance of exercise for several hours after the application to insure the best result. Galvano-puncture should be looked upon in the light of an operation and judgment must be used in the subsequent management. Sometimes it may be done at the office, and the patient sent to her home in a carriage; but in some conditions the patient should be put to bed immediately after, and kept there until all unpleasant symptoms have subsided. In some instances the patient is found in bed, and she must be treated there. In certain conditions no conservative treatment would be justified unless the surroundings of the patient were such as to permit laparotomy at a moment's notice, should this become urgently necessary in the course of the treatment.

Anæsthetics should be used with galvano-punctures when necessary to prevent unpleasant shock, but they are not always called for. It is important to warn patients that relief of symptoms is not always an evidence of complete cure, or they may be tempted to discontinue treatment too soon.

The subjoined notes of cases, which have been selected from among many others in my case-book, is evidence of what may be accomplished with galvanism in conditions which have been thought only amenable to laparotomy for removal. My diagnosis in some of these cases may be questioned, and I frankly confess I have no means of substantiating it, but the fact remains that the symptoms and physical signs upon which alone we must depend for a diagnosis have been removed, and the patients have been restored to health and a life of usefulness.

Case I.—Mrs. T., aged twenty-six. Severe pelvic pain referred to left side; profuse leucorrhœa; prolonged and painful menstruation. Diagnosis: Pyosalpinx of the left side. Laparotomy advised at Woman's Hospital. Treatment: Tube emptied into the uterus by applications of positive galvanism to the left cornu of the cavity. Intravaginal applications afterward

completed the cure. Duration of treatment, four months. Complete relief of pain followed the removal of the pus from the tube. At the end of the treatment she had completely regained her health. Menstruation was normal, and symptoms relieved.

Case II.—Mrs. M., aged thirty-three. Acute pelvic pain referred to the right side produced by exertion of any kind. Profuse purulent leucorrhœa, which is intermittent. Diagnosis: Pyosalpinx with chronic pelvic cellulitis and fixation. Laparotomy had been strenuously advised by a prominent specialist. Treatment: Intravaginal galvanization. Tube tapped through the vagina, and galvanism used to secure drainage. Intra-uterine positive galvanization rendered the tube pervious. Duration of treatment, six months. The recovery has been permanent. The drainage after the galvano-tapping was good, and tube did not refill.

Case III.—Mrs. P., aged twenty-four. Dysmenorrhœa with scanty flow, confining her to bed. Backache and dragging pain mostly on left side of the pelvis on the slightest exertion. Diagnosis: Oophoritis with hydrosalpinx; anteflexion. Laparotomy had been advised. Treatment: Tube tapped through the vagina; two ounces of straw-colored fluid withdrawn. Galvanization of the track. Negative galvanism to the canal and positive galvanism to the vagina. Duration of treatment, four months. Dysmenorrhœa and other symptoms entirely relieved; flow natural. The tube did not refill. Flexion overcome. Complete restoration to health.

Case IV.—Mrs. D., aged thirty-five. Backache and pelvic pain produced by walking or standing. Prolonged menstruation. Profuse purulent leucorrhœa following menstruation. Sterility. Diagnosis: Chronic salpingitis; hypertrophy of the tubes; fullness in broad ligaments; hypertrophy of the uterus, with anteflexion. Treatment: Flexion overcome by negative galvanism to the canal and free drainage secured. Galvanism to the uterine cavity and vagina. No pessary. Vaseline and boric-acid tampons. Duration of treatment, five months. The patient was not regular in her attendance, or the cure might have been accomplished sooner. She was discharged cured at the end of five months, but has not become pregnant.

Case V.—Mrs. C., aged twenty-three. Constant pelvic pain, confined mostly to the right side, with backache, bearing down, and inability to ride or walk. Dysmenorrhœa, which confined her to bed for ten days. Leucorrhœa profuse. Diagnosis: Chronic salpingitis, with oophoritis of both sides. Threatened abscess on right side. Complete fixation of pelvic contents. Laparotomy advised by Dr. C. C. Lee. Treatment: Intravaginal galvanization, with cocaine and soft, dry tampons. Duration of treatment, three months. After three months' treatment all pain and local distress were entirely relieved, as well as the dysmenorrhœa and leucorrhœa, and she could walk or ride without discomfort. Uterus partially movable. She removed to another city, and refused further treatment because she thought it unnecessary. The good result has remained permanent for two years.

Case VI.—Mrs. S., aged thirty-two. Severe and constantly increasing dysmenorrhœa confining her to bed; intense backache, with pelvic pain referred mostly to right side; profuse leucorrhœa; dyspareunia. Diagnosis: Stenosis, with anteflexion of the uterus; oophoritis and catarrhal salpingitis of right side. Treatment: Dilatation after my method. Intra-uterine and intravaginal galvanization. Tampons, but no pessary. Duration of treatment, three months and a half. Perfect restoration to health. Dysmenorrhœa, pelvic pain, backache, and leucorrhœa permanently relieved. Uterus normal. Previous to treatment her backache was so severe that it had been diagnosticated and treated for spinal meningitis by a prominent specialist in nervous diseases.

Case VII.—Mrs. A., aged thirty. Pain and dragging in pelvis (right side mostly) on walking or standing, with backache and leucorrhœa. Diagnosis: Catarrhal salpingitis, with fixation of pelvic contents. Treatment: Positive galvanism, 50 milliampères to 100 milliampères, intra-uterine, to entrance of tube. Positive followed by negative galvanism to the vagina, 50 milliampères to 200 milliampères. Duration of treatment, six months. At the end of the time stated all symptoms were removed and she was restored to health. Uterus movable. A small fibro-cyst, connected by pedicle with uterus, was discovered in the left broad ligament and removed by galvano-puncture during the course of the treatment.

Case VIII.—Mrs. J., aged twenty-eight. Intense pelvic pain, menorrhagia, and metrorrhagia, with leucorrhœa. Constant pressure on the rectum and painful evacuations, with profuse mucous discharge from the rectum. Diagnosis: Hæmatoma in left broad ligament, with another posterior to the uterus low down, occurring while she suffered from a salpingitis. Treatment: Positive followed by negative galvanism, intravaginal, 50 milliampères to 100 milliampères. Negative galvano-puncture in each place, 50 milliampères, at a week's interval. Duration of treatment, two months. Complete absorption; menstruation normal and remaining so. All symptoms relieved.

Case IX.—Miss S., aged twenty-five. Severe pain in ovarian regions preceding menstruation; dysmenorrhœa; backache following the flow; leucorrhœa; headache and hysterical attacks during menstruation. Diagnosis: Retroflexion producing obstruction; oophoritis. Treatment: Dilatation, pessary, and positive galvanism, intravaginal, with an occasional application of negative galvanism, 20 milliampères to 30 milliampères, to the canal. Duration of treatment, two months and a half. Complete relief of symptoms. Menstruation normal. Pessary was removed two months after treatment was discontinued. The uterus retained its normal position.

Case X.—Mrs. H., aged thirty-eight. Pelvic pain, sciatica, sacralgia, menorrhagia; leucorrhœa, dating from an attack of pelvic inflammation two years previous. Diagnosis: Chronic pelvic cellulitis, with induration and fixation. Treatment: Negative galvanism, intravaginal, 50 milliampères to 200 milliampères. Positive galvanism, intra-uterine, 50 milliampères to 100 milliampères. Duration of treatment, three months. Complete absorption of deposit and relief of symptoms. Uterus movable.

Case XI.—Mrs. B., aged thirty. Leucorrhœa; weight and dragging pain on walking or standing. Diagnosis: Fibro-cyst in left broad ligament, of the size of an egg. Treatment: Negative galvano-puncture, four times, of 100 milliampères each. Duration of treatment, two months. Two months after treatment ceased nothing abnormal could be found in the pelvis.

Case XII.—Mrs. C., aged twenty-eight. Dragging pains in pelvis; irritability of the bladder; pain on right side, of a dull, uneasy kind. Diagnosis: Cyst of right ovary, of the size of a kidney. Treatment: One negative galvano-puncture, of 150 milliampères, was followed by a discharge for ten days. Duration of treatment, one month. Three weeks after the puncture no trace of the cyst could be found.

243 West Fifty-fourth Street.

The American Public Health Association.—The local executive committee, for the meeting to be held in Brooklyn, in October, consists of Dr. J. H. Raymond, 173 Joralemon Street (chairman), Dr. R. M. Wyckoff, 532 Clinton Avenue (secretary), Dr. C. N. Hoagland, Dr. A. N. Bell, Dr. Stephen Smith, Dr. John Griffin, H. C. Du Val, Esq., Dr. F. H. Colton, Dr. R. C. Baker, and Dr. J. L. Moffat.

SEPTIC POISONING IN EARLY LIFE.*

By HENRY DWIGHT CHAPIN, M. D.,

PROFESSOR OF DISEASES OF CHILDREN AT THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL, AND AT THE WOMAN'S MEDICAL COLLEGE OF THE NEW YORK INFIRMARY; ATTENDING PHYSICIAN TO THE DEMILT DISPENSARY.

The extreme susceptibility to septic infection exhibited in early life is recognized by those who are called to treat disease at this time. This tendency is analogous to that shown toward the germ-poisons which are supposed to cause the various specific diseases. Young protoplasm affords a virgin soil for the growth of microbes, and the active circulatory and lymphatic systems will readily carry a developing virus to all parts of the organism. A division may be made into the septic poisoning occurring in the new-born and that which is seen in older infants and young children. Infection may even take place before birth by the passage of septic matter from the mother to the fœtus through the medium of the placenta. In such a case the infant may be still-born, or succumb a few hours after birth, without presenting any marked local changes, but followed by a rapid decomposition of the body. When a woman is in a septic condition the virus may act to the destruction of the fœtus, just as in the case of a syphilitic woman. As it is not common, however, for septicæmia to develop in the mother before the birth of the child, the fœtus is not so apt to be disturbed by septic influences. After birth, the vulnerable point for the entrance of septic poison is the umbilicus. When the cord is tied, the blood remaining in the umbilical vein forms small thrombi, which eventually become calcified, thus constituting part of the structure known as the round ligament. Owing to its exposed position, pyogenic germs may gain access to these thrombi, when suppuration and septic infection will quickly follow. Dr. J. L. Smith, in a communication on sepsis of the new-born read before the Pædiatric Section of the Academy of Medicine, divides infection at the umbilicus into two groups of cases: (1) those in which the poison enters the system from an umbilical sore and is conveyed by the lymphatics; (2) cases in which the septic poison gains access through the umbilical vein. As the latter vessel is somewhat pervious and is not in an internal and protected position like the ductus arteriosus and ductus venosus, the wonder is that infective inflammation is not more frequently set up in it. When this accident takes place, there will be more or less oozing of purulent fluid from the vein, soon followed by symptoms of peritonitis, erysipelas, pleurisy, or other evidences of systemic infection. Doubtless in many cases the lymphatics carry the infection after the vein has been completely closed by an obliterating endarteritis. The umbilical fossa, with its denuded epithelium, affords a convenient receptacle and favorable spot for the absorption of septic material from a diseased mother—from dirty hands, infected linen, sponges, or the air.

There has come under my observation a case where an infant was born healthy, but the mother contracted septicæmia. When the infant was three days old it began to show symptoms of peritonitis, although the temperature was not high. At five days the general blush of erysipelas appeared upon the surface of the body, followed in a few hours by death. At the autopsy there was a red discoloration over the body and extremities, more noticeable over the legs and thighs and at the axillæ. The abdomen was tense and swollen, with no projection of the cord above the surface. The peritoneal cavity contained about eight ounces of fluid, red in color and holding flakes of lymph in suspension. Between the skin and peritonæum, in the region of the cord, was a circumscribed abscess through which the vein passed. The sheath of the vein was involved, the inflammation extending into the peritoneal cavity to the liver, the surface of which was covered by a thick layer of lymph. There were no signs of suppuration in the vein itself, nor could any communication with the surrounding tissues be found. The inflammatory process seemed to be greatest at the navel, extending to the liver and then becoming diffused. The intestines were matted together by the fibrinous exudation. The lungs contained a few patches of broncho-pneumonia, and there was considerable bronchitis.

Any abrasion or accidental wound may likewise afford en entrance to septic poison at or shortly after birth. The forceps may be responsible for the necessary solution of continuity. The delicate epithelium of the genital organs, without any apparent break, may give access to septic matter.

A female infant came under my observation who was born perfectly healthy. The mother had sore throat and some temperature, but no other evidences of septicæmia. When four days old the baby began to fail, and at five days there was some swelling of the abdomen and pain on pressure, with a slight rise in temperature. On the morning of the sixth day erysipelas appeared at the vulva and both groins, spreading up on the abdomen, but not as far as the umbilicus, and down both thighs to the knees. Death occurred in the evening. At the autopsy there was a bluish-red discoloration of the erysipelatous surface, which failed to disappear on pressure, but not reaching the navel, which appeared healthy. The peritoneal cavity contained about four ounces of turbid, yellowish, viscid fluid, holding in suspension flocculi of lymph. The parietal and visceral peritonæum was coated with a moderately thick layer of fibrin, particularly well marked over the upper surface of the liver and over the spleen, but present in the pelvis and everywhere over the peritonæum. The cerebro-spinal fluid over the occipital lobe and at the base of the brain was stained with blood.

Dr. P. Müller, in Gehrhardt's "Handbuch," states that erysipelas or phlegmon, starting from the extremities or genitals in the new-born, is probably produced by small wounds following birth that furnish points for absorption of septic poison. Any possible injury that may be received during parturition may thus favor the development of septic diseases. After a certain interval of time has elapsed, and the infant has passed safely through the vicissitudes attendant upon and following parturition, there is still a considerable liability to septic poisoning. During early infancy the genitals and umbilicus are still vulnerable points. This was well exemplified in a case I recently saw in consultation.

An infant, four weeks old, with a good family history, had severe convulsions during three consecutive days, when a slight redness and induration appeared over the pubes. There was a badly arranged, uncleanly compress over the umbilicus, which

* Read by title before the Medical Society of the State of New York at its eighty-third annual meeting.

presented an irritated appearance. The penis and scrotum soon became red and œdematous, and erysipelas was well marked, with a distinct line of demarkation half way between the pubes and umbilicus. This was followed by some retention of urine and renewed convulsions. The disease gradually abated under vigorous treatment, and in a week the infant had recovered.

In this case the source of infection was the genitals, but, if cleanliness and antisepsis had not been employed, the umbilicus would soon have become likewise inflamed. Erysipelas in very young infants is not so very uncommon, and, as it is a very dangerous disease, great care should be taken to guard against all sources of septic infection. As the infant grows older, the upper part of the body, particularly the scalp and mouth, afford vulnerable areas for sepsis. The lymphatics of the head and face are numerous and active, and are thus ready to quickly absorb any poison that may present itself. The blood-supply to these parts is also abundant, which favors inflammatory conditions. With reference to the action of the absorbed poison, a division may be made into local and general sepsis. When suppuration is started upon a surface by pyogenic germs—such as the *Staphylococcus* and *Streptococcus pyogenes*—the lymphatics beneath soon participate in the inflammation. Both the germs and their products of various poisonous principles are absorbed into the lymphatic tracts, and, if they reach the blood in sufficient quantity, will cause a general poisoning. Protoplasmatic cells, by their inherent vitality, can dispose of and destroy a certain number of germs. If the latter are produced quicker or in larger numbers than they can be taken care of by the cells of the adjacent lymphatic glands, the poison will soon find its way into the system. In what may be called local sepsis a certain number of neighboring lymphatic glands are irritated and inflamed by absorption of the poison, which does not, however, find its way into the general circulation in sufficient quantity to produce any very marked symptoms. The commonest example of this is impetiginous eczema of the scalp, more particularly in connection with pediculi. The pus thus produced is unusually irritating, and quickly leads to infection of the neighboring lymphatic glands. Its infective nature is further shown by pustules on various parts of the body, where the poison has been carried by the child's finfier-nails. Peculiar pustular eruptions may go through a neighborhood by one child infecting another by means of the pus accompanying pediculi. This may sometimes be mistaken for an epidemic of impetigo contagiosa.

Any enlarged or inflamed condition of the lymphatic glands about the head or neck should lead to a very careful examination of the scalp, as a very few pediculi and one or two small points of suppuration may give rise to the mischief.

I have recently treated a girl of seven years who had been perfectly healthy until her mother noticed a swelling beginning on the left side of the neck which was thought to be mumps. The child looked pale and unhealthy. This continued for three weeks, the swelling growing slowly larger, when she was brought to the dispensary. A careful examination revealed several points of suppuration upon the scalp and a few pediculi. As an abscess had formed in the neck, it was opened, and appropriate treatment applied to the scalp. The girl recovered her usual health when the source of infection was removed, and the lymphatic enlargements soon subsided.

The mouth affords very favorable conditions for the growth and development of microbes of all kinds. Where suitable cleanliness is not observed there is no cavity of the body that can become fouler in a short time. With its many crevices and corners ready to lodge decomposing food, a free access of air and suitable warmth and moisture, it would seem to be a typical place for bacterial culture. Certain forms of stomatitis, especially the aphthous and ulcerous, are often accompanied by evidences of poisoning. When the aphthous patches separate, the small ulcers left afford a favorable entrance for septic matter. In these cases the enlarged and painful submaxillary glands, with frequently involvement of the glands of the neck, are evidences of such infection. The pain and distress accompanying many cases of stomatitis, together with the constitutional symptoms, can hardly be explained by a simple inflammation of the mucous membrane. We may arrive at a satisfactory account of all the disturbance by considering that the neighboring tissues are being infiltrated by septic matter. Many cases of local sepsis in the mouth are due to diseased teeth. Septic matter may be lodged about the roots of the teeth, which, when carious, will afford a means of absorption into the blood. In some young children the teeth appear to be cut in a decayed condition.

I have recently seen an infant of nineteen months in whom dentition began at six months. Although otherwise apparently healthy, the upper teeth came in black and quickly decayed. They produced no disturbance until recently, when the infant became feverish and restless and the upper gums and face began to swell. An examination revealed small sloughing ulcers around the stumps of the lateral incisors, with a general stomatitis. The glands on both sides of the neck were enlarged and painful.

In this case the source of infection was plainly the ulcerated gum about the decayed teeth. There are other avenues that may be noted as affording an entrance to septic matter, such as the nose and ears. Certain forms of nasal catarrh, and otorrhœa in conection with otitis media purulenta, may be responsible for the infection. In any case of lymphatic enlargement, with other evidence of local poisoning, the original source of suppuration must be carefully sought for. Not a few children said to be suffering from the so-called scrofulous diathesis are really cases of chronic poisoning by pyogenic germs, the true source of which has not been discovered. I have seen such patients poulticed and given oil and iron when an ulcerated surface in the scalp or elsewhere had been overlooked and thus allowed to continue absorbing septic germs. If the source of septic infection is undisturbed, the poison may be reproduced in sufficient quantity to infect the general system. This need not take place at once, but after an interval of time the lymphatic tissues may lose their power to dispose of the germs, which thus find their way into the general circulation in sufficient numbers to produce a disturbance in distant organs. It is not always easy to draw a sharp distinction between local and general sepsis, or to tell when the former ends and the latter begins. Any of the causes of local infection may likewise produce

a general poisoning. Doubtless certain conditions of the system will favor such a result.

A boy of eleven years was brought to me stating he had chilly feelings and fever that came on every morning for a week. He complained some of wandering pains in the legs, but more particularly of pain and soreness on either side of the neck and front of the chest. At the beginning of his illness a large boil came on the back of his neck, followed in two days by another one, which I opened. Examination revealed enlargement of the chains of lymphatics on both sides of the neck and considerable soreness to pressure over the pectoral muscles. Upon investigating his scalp, many nits were found and several small masses of pus, with slight ulcerations. Treatment directed here relieved his symptoms.

A point of interest in this case was that the boy's parents were both rheumatic and for the past two years he had suffered from rheumatic pains in the legs and elbows. During one of these attacks a year ago he complained of pain over the heart, and his parents were told that the rheumatism had attacked this organ. Examination revealed a distinct presystolic murmur. The chilliness, with fever coming on every morning, simulated a malarial attack, but a study of the case showed that the present illness was neither due to a mild attack of rheumatism nor to malaria, but to septic infection from small ulcers on the scalp. Sometimes it is impossible to discover the original source of trouble.

An Italian baby, two weeks old, with healthy-looking parents, was brought to the Demilt Dispensary with an abscess over both wrists, which I opened, letting out a fair quantity of pus. Healing took place, but in about two weeks a swelling was noticed in the right thigh which increased until in several days fluctuation was marked. It was then opened and washed out, considerable pus being evacuated. The abscess extended down to the bone, and it was found necessary to insert a drainage-tube. In a few days a good-sized abscess formed on the back of the neck which was opened and drained. At about this time the baby began to cough, and fine râles were heard in the left lung and base of the right lung. Some dullness on percussion was soon noted on the left side, and a diagnosis of pneumonia made. As this was about clearing up, a patch of erysipelas appeared on the upper third of the left thigh. Fortunately, the infant nursed well throughout its illness and tolerated large quantities of stimulants and tinct. ferri chlorid. A gradual recovery took place without other septic symptoms. The abscess in the thigh discharged for about two months, but examination of the pus failed to disclose tubercle bacilli, and eventually it healed up completely.

An interesting case has been related to me by Dr. News where septicæmia had its origin in a nævus.

A delicate female infant had a pulsating nævus about an inch long by half an inch in diameter upon the cheek. When it was seven weeks old the doctor was called and found the infant very ill, with a high temperature and quick pulse. On the following day the nævus turned black and had a reddened, swollen base. A general eruption, somewhat resembling measles, also appeared upon the body. Death took place upon the following day. The doctor afterward learned that an old woman had professed that she could cure the nævus by treating it with a piece of placenta. A trial was allowed, and she had been vigorously rubbing the placenta into the nævus for several days before the appearance of septic symptoms.

The contagious diseases of children, particularly scarlatina and diphtheria, present the gravest forms of sepsis. In these diseases a distinction can be made between the specific and the septic blood-poisoning. The secondary infection that produces the latter form of poisoning may ensue from the severe angina of scarlatina or from the decomposition and absorption of diphtheritic false membrane. Inflammation of the lymphatic glands of the neck with a phlegmonous cellulitis will often be present in such cases. There is nearly always a high temperature and great prostration. I have recently treated a case of scarlatina in a young child where the temperature remained about 106° F. for a week on account of sepsis. As this form of septic infection is well recognized and described fully in the text-books, further description is here needless.

Treatment.—The true line of treatment will be to prevent in every way the entrance of septic germs at any of the vulnerable points. Scrupulous cleanliness, which is practical antisepsis, should be observed from the time of birth. If the mother is in a septic condition, the greatest care must be taken not to infect the infant, principally by destroying the poison at its source by thorough disinfection. The umbilical cord and the navel wound should receive attention from the physician, instead of being relegated entirely to nurses. The cord is sometimes cut with scissors that are not overclean. If the attendant is not sure of the scissors, they had better be passed through the flame of a spirit lamp, and thus rendered aseptic. The cord, after being thoroughly cleansed, should have a dry dressing, such as borated cotton, applied, as its speedy mummification is desirable. If suppuration begins about the navel, frequent washings with solutions of carbolic acid or bichloride of mercury must be employed. In older infants or young children suffering from evidences of septic poisoning, a most careful search must be made for any point where such material might be absorbed. The scalp, mouth, and teeth should be carefully inspected, together with any other possible vulnerable point. When lymphatic enlargements are discovered, instead of using poultices and thus hastening the breaking down of tissue, it would seem better treatment to try and discover the focus of irritation, and, by destroying its source, prevent suppuration. If the poisoning has become general, free stimulation and support will be indicated. At the same time every effort must be made to cut off the source and entrance of septic germs.

27 West Fifty-first Street.

THE PLACE THAT NAUPATHIA OR SEASICKNESS SHOULD OCCUPY IN NOSOLOGY.*

By WINSLOW W. SKINNER, M. D.

Seasickness is one of those affections which the medical profession, as a whole, has studied but little, and, because it is attended with little or no mortality, its nature, its symptomatology, and its pathogenesis have been much neglected. Indeed, in my conversations with other members of our pro-

* Read before the New York Neurological Society, May 7, 1889.

fession on this subject, I have found that, as a rule, their knowledge of this affection was not greater than my own was before I made seasickness the subject of special study, and which may be summed up by saying that the movements of the ship produced, in many persons, nausea, vomiting, pallor, headache, and extreme prostration; and that sometimes alcohol, sometimes the bromides, and sometimes amyl nitrite, would benefit or cure the trouble.

I shall not at this time review the opinions of other authors concerning naupathia. I need only cite the names of Darwin, Wollaston, Pellarin, Gillchrist, Larrey, Kéraudren, Chapman, and Ossian-Bonnet, of Europe, and Dr. Barker, Dr. Corning, Dr. Gardner, Dr. Hubbard, Dr. James, Dr. Keating, and Dr. Kessler, of our own country, as among the few who have tried to discover the real cause of seasickness and to apply a proper remedy to it. My own practical studies of this affection began a little over three years ago when I made my first voyage as ship's surgeon from Havre to Buenos Ayres. I have had excellent opportunities to thoroughly observe this sickness in all its forms, for since that time my engagements have taken me over nearly sixty thousand miles of ocean, the passengers under my care numbered upward of two thousand, while the written clinical histories of seasickness upon which my work is based number seventy-two. I may also add that I have observed the affection in persons of many different nationalities, from the listless dark-skinned native of the Cape Verde Islands to the sensitive nervous American.

In order that each may be able to judge for himself of the place that naupathia should occupy in a classification of diseases, allow me first to enumerate the various symptoms that my observation has shown to belong to this affection. Many of them have never been mentioned by any other author whom I have read, and it was precisely these newly observed symptoms that caused me to regard seasickness in a new light and to treat it by a new method which has proved itself to be remarkably efficient even in the severest cases.

1. Let us turn our attention first to those symptoms which pertain directly to the *central nervous system*, especially of the brain and of the medulla oblongata. In a typical, well-developed case there are extreme prostration, a feeling of great weakness, which may render the patient incapable of making the least exertion and oblige him to remain in bed for days and even weeks; vertigo; cephalalgia, often extremely intense, located generally in the frontal region and sometimes in the temporal, sometimes general; the feeling of heaviness in the head, of constriction of the temples; lastly, insomnia, which may deprive the sufferer of all repose during several days in succession.

One other very important symptom which I have never seen mentioned in connection with seasickness is myosis, which is observed in three quarters of the cases of well-defined naupathia. This symptom will be discussed in a moment.

The reflex movements are unchanged. The corneal, pupillary, pharyngeal, abdominal, tendinous, and plantar reflexes remain normal. The pupils retain their reflex activity, as well under the action of light as in accommodation.

2. The digestive organs present a certain number of symptoms, many of which might properly be classified, however, as referring more nearly to the nervous system. Commencing at the superior extremity of the alimentary tract and naming them in their order downward, we find first ptyalism, a disagreeable or nauseous taste in the mouth, coldness and pallor of the lips. The tongue, in simple seasickness, is always rosy or pale, moist, and free from any coating.

Anorexia is one of the earliest symptoms that herald the approach of seasickness; then come nausea and vomiting, the latter often seeming to the non-medical observer to be the principal and most characteristic symptom of the affection. It is alimentary at first if the patient has eaten recently, but rapidly becomes mucous, then biliary. In regard to emesis in seasickness, I fully agree with Dr. Barker that it is a popular error to consider it as generally beneficial; and I add that it is undoubtedly a source of great exhaustion, as, besides the nutritious substances that are ejected, even when the vomiting has become biliary in character, the loss of which weakens the patient, there is also much fatigue caused by the mere effort of retching with such frequency.

There is often pain in the epigastrium due to retching and vomiting, and sometimes veritable gastralgia due to prolonged abstinence from food. Constipation is a very prominent symptom. It has been constant in the cases I have observed, but other physicians assert that they have occasionally found diarrhœa in seasickness. It is an indication in the treatment of the affection, but does not, in my opinion, require the administration of a cathartic. This is also a symptom which is due to deficiency of nervous action. The liver, spleen, and other abdominal organs remain apparently in a normal state.

3. The circulatory system yields important symptoms; they indicate generally a *slowing of the circulation and a lowering of the pressure of the blood.* The cardiac pulsations are not so strong as in health; their number is almost always lessened in men (*bradycardia;* several times I have observed it to be as low as 57, 51, 48, and even 45 in a minute); while in women it is increased as often as diminished, and sometimes remains normal (the maximum I have noticed is 114 in a minute without fever, the minimum 51); lastly, in children, it is almost always increased (*tachycardia;* the maximum is 120 beats, of course, without signs of fever). The pulse is less resistant, more compressible than the normal. Sometimes it can hardly be felt, so feeble is it. Otherwise it is regular, equal, non-dicrotic.

4. The unstriped muscular fibers present, by their inertia, a few symptoms. To their inaction I attribute the constipation before mentioned, and the inertia of the bladder which allows the patient to hold urine thirty-six or forty-eight hours without feeling much necessity of voiding it. Also a general relaxation of the unstriped fibers which enter into the composition of the blood-vessels would cause the lowering of the pressure of the blood already mentioned.

5. The skin becomes pale, cold, and often moist and clammy, thus indicating that the circulation of the blood in this organ is deficient.

The urine is remarkably diminished in quantity, 200 or 300 cubic centimetres being a fair daily average. Notwithstanding the difficulty of obtaining it on shipboard, I have roughly analyzed several specimens which in general presented the following characters: the urine was acid, clear, of the color of light amber, depositing no sediment and containing no albuminoid substance and no glucose.

7. Lastly, naupathia is an apyretic affection. The central temperature of the body remains nearly unchanged, only varying a few tenths of a degree above or below the average normal.

As a deduction from this considerable array of symptoms comes this leading proposition: that the principal symptoms of seasickness, if not all the symptoms, depend, first, upon an abnormal state of the circulation of the blood; secondly, upon an abnormal state of the nervous system.

Some of these symptoms are due to anæmia of the medulla oblongata, as has been thought by many investigators. These are emesis and the acceleration or slowing of the cardiac pulsations; others are due no doubt to anæmia of the hemispheres, such as great prostration, vertigo, and cephalalgia; others to anæmia of the skin and mucous membranes, such as the pallor and coldness of both. The scantiness of the urine is due to anæmia of the kidney, or, what amounts to the same, the lowering of the arterial tension in this organ. Again, the constipation, the compressibility of the pulse, and probably, also, the variation in the number and force of the heart-beats, indicate a defective or diminished action of the sympathetic nervous system upon the unstriped muscular fibers of the intestine and upon the intracardiac motor ganglia.

In view of the foregoing, the following proposition may be submitted: *The cause of naupathia is the general lowering of the arterial blood-pressure.*

The symptoms above named are considered as clinical evidence of lowering of the pressure of the blood; they are the anæmia of the brain and medulla, the compressibility of the pulse, the coldness of the extremities, the oliguria or scantiness of urine. More mathematical evidence might have been had by means of the sphygmograph or the sphygmometer, but I was unable to use one on shipboard.

Again, the cause of the lowering of the blood-pressure is the feebleness of the heart's action, and probably also the lack of tonus of the blood-vessels. This is easily explained by invoking a functional paresis of the cervical portion of the sympathetic. It is well known that stimulation of this portion produces acceleration of the heart's action and elevation of the blood-pressure. It is logical, therefore, to admit that paresis of the same portion would produce contrary symptoms—to wit, slowing of the heart-beats and lowering of the blood-pressure, precisely what is observed in seasickness. The anæmia of the medulla and of the pons Varolii, in which is situated the center for the regulation of the pressure of the blood, easily explains the functional paresis ofthe great sympathetic, for this center, being insufficiently nourished owing to the anæmia, can not perform its functions normally.

But the sympathetic nervous system is the source of other symptoms besides those consequent upon the feeble pressure of the blood. These are the constipation, the myosis, the slowing of the pulse (always present in men, present in one half the cases in women), all of which unite to indicate a paresis of that system. Thus presented, we may say that *there is not a single symptom of naupathia that can not be explained by referring it directly or indirectly to paresis of the great sympathetic.*

Seasickness, as others have also said, ought not to be considered a disease, certainly not more so than syncope, for instance, with which it has many points in common. Moreover, this affection is not caused or accompanied by any known anatomical lesions; it is only the expression of certain functional or dynamic disturbances of the organism. Affections without known lesions are generally known as psychoses when they affect principally the mind, and neuroses when they affect other functions of the body. I propose, therefore, to classify seasickness among the neuroses, and, in consideration of the preponderating *rôle* which the sympathetic nervous system plays in its production, I believe it should be considered as a neurosis of the sympathetic system.

170 West Sixty-fourth Street.

A CASE OF LARYNGISMUS STRIDULUS AND ECLAMPSIA ASSOCIATED WITH RHACHITIS,

*WITH SOME REMARKS.**

By HIRAM N. VINEBERG, M. D.

The following case, I think, offers some points of interest:

S. S., male, aged nine months, was brought to my division of the children's class at the Vanderbilt Clinic on February 6, 1889. He was born at full term, the labor was not instrumental, and the child cried immediately after birth. He is the only offspring of healthy parents, and was brought up on the breast, with the addition of occasional feeding with bread, milk, and soup, until fourteen days prior to coming to the clinic, since when he had been allowed the "run of the table." In the beginning of December of last year the child fell out of bed, but cried almost immediately afterward, and no symptoms of cerebral concussion followed. This is the only history of any injury. About six weeks before I saw the child it began to suffer from peculiar attacks manifested by a crowing noise and by throwing its head about from side to side. The eyes would bulge out, the face become blue, and the breathing would become arrested. In other words, the child began to have distinct attacks of laryngismus stridulus. At the outset the attacks would recur as often as three or four times daily. Later on they grew less frequent, but decidedly more severe, and often terminated in a general convulsive seizure. For three days the convulsions recurred as often as six times a day; at times they would be preceded by an attack of laryngismus stridulus, and at other times they would occur independently of these. Many of the convulsive seizures were extremely severe, and my friend Dr. Höfling witnessed one attack which was

* Read before the Section in Pædiatrics of the New York Academy of Medicine, March 14, 1889.

fully of two hours' duration. In the intervals the child seemed fairly well, and the only thing which the mother noticed, in addition to the foregoing attacks, was marked constipation. On being questioned, however, she stated that the child perspired freely about the head, and was in the habit of kicking off its clothes at night. At the time of the first visit the following note was made of the baby's condition:

The patient is fat, flabby, and anæmic, the superficial veins of the head are unusually prominent, the anterior fontanelle is large and rather full. *No softening of the cranial bones.* There are no teeth, nor swelling of the gums. The epiphyses of the radii and ulnæ are enlarged and thickened. There is no deformity of the chest. Lower extremities present no lesions. The spleen is considerably enlarged. No appreciable increase of the hepatic dullness. Lungs and heart are healthy. No opportunity to examine the urine. The rectal temperature is 99·2° F., and the tongue is clean. While the child was being examined it had an attack of laryngismus stridulus affecting the laryngeal muscles only.

Instructions were given as to the child's diet, and bathing in salt water. Two grains each of calomel and soda were ordered to be given every second night, and 3 j of cod-liver oil with gtt. ss. of ol. phosphoratum three times a day after feeding.

February 8th.—No improvement. The child had a severe attack of convulsions, after leaving the clinic, on the way home. It is very restless and peevish. To continue with the foregoing treatment, and to have in addition ten grains of bromide of potassium night and morning.

13th.—The father called to say that while the child had been taking the bromide no attacks of laryngismus stridulus or convulsions occurred, and that the medicine gave out two days ago. Since then the attacks of laryngismus stridulus reappeared. Re-ordered the bromide salt. I then saw nothing further of the little patient until a few days ago, when the mother called with him and stated that he had had no further attacks, and that she ceased attending on account of pecuniary difficulties and because she considered the child as cured. Six days before, left inguinal hernia suddenly appeared without any apparent cause, and a suitable truss had been applied. The child, though much improved in appearance, was still pasty-looking and anæmic. The gums over the upper incisors were somewhat swollen. The mother stated that the baby still perspired some about the head, but that he no longer suffered from constipation. He was then ordered vin ferri, 3 ss., t. i. d., in addition to his former treatment.

Before 1843 laryngismus stridulus was universally looked upon as being due to enlargement of the thymus gland. At that period Elsässer drew attention to the association of that affection with craniotabes. Then, in 1853, appeared Lederer's publication of ninety-six cases of laryngismus stridulus, ninety-two of which showed marked softening of the cranial bones. Friedleben's classical article, in 1858, on diseases of the thymus gland completely overthrew the thymic theory of laryngismus stridulus. As an expression of the state of the profession on this point since the appearance of Friedleben's articles, we may quote the following sentence from Fagge's "Practice of Medicine" (vol. i, page 800): "As a matter of fact it is now certain that there is no relation whatever between laryngismus stridulus and the state of the thymus."

But the pendulum is beginning to swing in the opposite direction, and the most important contribution to the pathology of the thymus gland of recent times—that by Dr. A. Jacobi (reprinted from the "Transactions of the Association of American Physicians," 1888)—recognizes swelling of that gland as being an occasional cause.

All modern authors, excepting those in France, lay great stress upon the dependence of spasm of the glottis on rhachitis. Rehn (Gerhardt's "Kinderkrank.," vol. iii, page 92) says he can not remember a case in which there were not symptoms of rhachitis, and Steffen (von Ziemssen's "Cyclopædia," vol. iv, page 466) states that at least nine tenths of the cases seen by him were associated with rickets. But in the experience of these authors, as well as in that of others, the rhachitical processes present seldom manifest themselves in softening of the cranial bones. Rehn asserts that he saw a number of cases of spasm of the glottis in which there were no signs of craniotabes, and again that he observed several cases of craniotabes for a long time in which spasms of the glottis never occurred. These statements correspond closely to my own limited experience and to the history of the case presented to-night.

Laryngeal spasm is most frequently met with between the ages of four months and two years. It may, however, occur at an earlier period of life as well as in more advanced years. West saw a case in a baby of ten weeks, and I have recently seen a child which suffered from attacks during the first four weeks of its life. Henoch was the first to point out that it occurred chiefly during the early part of the year. Dr. Gee, among sixty-three cases, observed no fewer than fifty-five between the months of February and June, inclusive (Fagge's "Practice of Medicine," vol. i, page 804). The affection is much more common in boys than in girls. Steffen (*loc. cit.*) cites the statistics of a number of authorities showing that the proportion of boys to girls is as two to one. Several children of the same family are often attacked with the disease. Gerhardt saw nine and Reid thirteen children in one family. Still, these observations do not argue so much an hereditary disposition as they do that the children were all exposed to the same unsanitary influences. Heart affections, interference with respiration on account of abnormal elevation of the diaphragm through overfilling of the stomach or bowels, and swelling of the liver, all favor the onset of spasm of the glottis in a child so disposed. Enlargement of the liver has been looked upon by some, notably by Hood, as sufficient of itself to bring on the paroxysms. Irritation in any part of the body may reflexly precipitate an attack. It is usually accepted that enlarged tracheal and bronchial glands may act as pathological factors through irritation of the vagi. Fright, fear, and, according to Wunderlich, loud shouting and excessive running may, in very excitable children, evoke a spasm. Romberg has seen a case in which the paroxysms set in after the sudden disappearance of a chronic extensive skin eruption, and on the recurrence of the eruption the paroxysms ceased.

Pathology.—Elsässer was of the opinion that the attacks were brought on by pressure of the brain against the pillow on account of the defect of the cranial bones. This theory had soon to be discarded, for it was found that the attacks were just as frequent in the sitting as in the lying posture. Then, again, they were witnessed in children who did not show the slightest signs of craniotabes. Löschner's theory

of congestion of the brain and its membranes and consequent hyperæmia is also untenable. For, if this were the case, it is difficult to understand why spasm of the glottis should be so rare in congestive hyperæmia of the brain due to heart affections and to diseases of the lungs and larynx which are attended with great difficulty of breathing. Further, laryngismus stridulus is a rare accompaniment of organic affections of the brain and its coverings. It may therefore be maintained that while a few cases of spasm of the glottis may be due to organic changes in the cerebrum, such as effusion, the majority of the cases are dependent upon functional disturbances, such as anæmia and hydræmia of the brain.

Morbid Anatomy.—This, as yet, may be considered as negative. Nothing so far has been detected in the nerves, muscles, or mucous membrane to account for the attacks. The brain and its membranes have generally been found in a state of hyperæmia. Effusion into the ventricles and between the membranes is not uncommon. The most constant morbid changes met with, as is to be expected, are those which are produced by rhachitis.

The diagnosis of laryngismus stridulus is easy enough to one who has once witnessed an attack. The peculiar cry, the projection of the eyeballs, the blueness of the face, and the suddenness of the onset are all characteristic. The affection with which it is most likely to be confounded is false croup, or what Eustace Smith calls laryngitis stridulosa.

*Laryngitis Stridulosa.**	*Laryngismus Stridulus.*
Extremely rare under the age of twelve months.	Observed most frequently from birth up to the twelfth or eighteenth month.
Usually preceded by slight coryza and light febrile disturbance.	Not preceded by coryza and febrile disturbance.
Attack usually occurs at night, and at the most there are not more than five or six attacks. Usually there are not more than two attacks.	Attack may occur during the day as well as at night, and there may be as many as twenty attacks in a day.
The attack is attended and followed by a hoarse, barking cough, and the breathing, as a rule, even in the intervals, is sonorous.	There is no cough.
The duration varies from a few minutes to several hours. In the interval there is usually some fever and cough.	The duration is seldom longer than one minute. In the interval there is no cough or fever.
It is an acute affection and seldom continues for longer than two or three days.	It is a chronic affection and the attacks may recur for weeks or months.
Convulsions are rare.	Convulsions are common.
It is rarely fatal.	It is very often fatal.

Attacks of bronchial asthma are easily distinguished by the character of the breathing and by an examination of the chest. Asthma due to compression of the trachea or vagus is characterized by the long duration of the attacks of dyspnœa, by the habitual stertor of the respiration, by the noisy and spasmodic cough, and by the presence of many of these symptoms in the intervals.

Prognosis.—It is a very grave affection, having a high mortality. Barthez and Sanné saw only one recovery in nine cases, and Herard one in seven cases. The majority of the severe cases prove fatal. It is said to be more fatal in boys than in girls. Lorent noted in a large collection of statistics that the death rate was 45 per cent. among boys and only 32 per cent. among girls. Death may occur during an attack (which may be the first), or the fatal termination may be brought on by an intercurrent disease, or the child may succumb to a gradual emaciation and exhaustion. It is more than likely that the high death rate stated by authorities is due to the circumstance that only the severe cases are brought under the notice of the physician. There can be no doubt that many infants suffer from "crowing breathing," for which parents never think of consulting a doctor. The second case which I present here to-night is an instance of this. The child suffered from attacks of laryngismus stridulus for the first four weeks after birth, and the mother paid no attention to them.

Treatment.—The treatment resolves itself into that of the attacks and that of the interval. If the attacks are mild they pass off so quickly that there is neither time nor need to do anything. But if the spasms are severe and of long duration, something must be done, and that at once, to allay them. The child should be seated in a tub of warm water and the upper part of the body should be douched with cold water. Even before the bath is resorted to an attempt should be made to excite vomiting by tickling the fauces with the finger. It is impossible to give remedies by the mouth to provoke emesis, and should the foregoing simple manœuvre fail, a hypodermatic injection of apomorphine could be administered, providing it was at hand. Vogel speaks highly of raising the child and throwing its head backward so as to give the larynx the most favorable attitude (Vogel, "Practical Treatise on Diseases of Children," translated by Dr. H. Raphael, p. 228). Some advise the inhalation of ammonia, a remedy warmly recommended by Eustace Smith. Simpson, West, and others advise the inhalation of chloroform, but this is too dangerous a drug to be intrusted to the mother. To prevent a return of the spasms, Eustace Smith strongly recommends cold sponge baths. These may be given three times daily. The child's diet and sanitary surroundings should receive the closest attention. Search must be made for any source of irritation. If the gums are tense and swollen they must be lanced, and the constipation which is usually present must be relieved by suitable remedies. The drugs most frequently employed are the bromides of ammonium and of potassium, musk, and belladonna. Musk has many very warm advocates in Germany, and may be given to a child twelve months old in doses of one third of a grain every six hours. Belladonna to be of any service must be given in large doses. As much as fifteen drops of the tincture, three times a day, may be given to a baby a year old. Time will not permit my saying much about the treatment of the rickets which usually

* Barthez and Sanné, "Maladies des enfants," vol. i, p. 549.

will be found present in one form or another. I should like to say a word or two about the value of phosphorus in that disease.

In the children's class at the clinic we are very fond of administering it in the form of oleum phosphoratum combined with cod-liver oil. A favorite formula is ol. morrhuæ, ℥ iv; ol. phosphoratum, ʒ ss. M. Sig.: ʒ j, three times a day, after feeding, to a child a year old. As far as my experience goes, I think I may safely assert that the symptoms of rhachitis disappear more rapidly under this form of treatment than when cod-liver oil is given alone.

Before concluding, I would like to quote, with your permission, a note which I appended to a "Report on Phosphorus in Rickets" in the "N. Y. Med. Jour." of September 10, 1887:

"Any one who has followed German medical literature for the past two years will have a vivid impression of the polemical discussions on the subject of the treatment of rickets with phosphorus. The disputants contested their points with the vigor and bitterness of the religious fanatics of a bygone age. Not a small portion of the discussion was devoted to the question of priority in recommending phosphorus in rickets. In this connection it will be of some interest to American readers to turn to a pamphlet on the anæmia of children written by Professor A. Jacobi several years ago. In it the author threw out the suggestion that, on the basis of our knowledge of the chemical processes going on in the body, phosphorus should be beneficial in the affections of children characterized by bone lesions."

229 East Sixtieth Street.

The Diplococcus of Meningitis.—"By means of bacteriological investigations and experiments upon animals, made with material obtained from the post-mortem examination of a case of epidemic cerebro-spinal meningitis which occurred at the beginning of 1888 in Roccella, a village near Palermo, Dr. de Blasi and Dr. Russo-Travali were able to obtain and study a micro-organism which did not develop at the ordinary temperature, and the morphological and biological characteristics of which did not leave any doubt whatever in their minds that it was the same as that studied first by Weichselbaum and more recently by Goldschmidt—*i. e.*, was identical with the microbe described by the former as the intercellular diplococcus of meningitis."—*Lancet.*

"Procursive" Epilepsy.—"This term is in far more common use among the French than with us. It signifies an attack the chief feature of which is a propulsion of the body in some special direction; it is apparently not accompanied by actual loss of consciousness, or followed by coma; its duration does not exceed that of an ordinary epileptic fit; according to Bourneville and Bricon, it is attended with marked congestion of the face. These cases are known to be epileptic by their associations as well as by the character of the attacks, the element of suddenness being very marked. In the same individual they may be replaced by epileptic fits, or they may replace a true epilepsy with loss of consciousness. There is, indeed, nothing so very remarkable in their occurrence if they be regarded from a physiological standpoint. They are the equivalents of head-banging and head-shaking in infants and children. The actual kind of movement varies much in different cases—in some a rapid revolving of the body around its horizontal axis, in others a rotation in a large circle, and in others a movement recalling that performed by some clowns. The highest expression of consciousness—if this be perfect control over volitional effects—is evidently lost, since the patient can not prevent himself from performing these absurd antics."—*Lancet.*

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INFLAMMATION OF THE SEMINAL VESICLES.

In an article published in the "British Medical Journal" for April 20th, Mr. Jordan Lloyd, of Birmingham, calls attention to the part played by inflammatory disease of the seminal vesicles in obscure vesical, prostatic, and urethral affections, stating it as his belief that the disease is far from uncommon, and that it is worthy of much more attention on the part of surgeons than they have hitherto given it. That it will be found to be present in many cases of apparent cystitis and prostatitis he feels no uncertainty; and that as a complication of gonorrhœal epididymitis and urethritis it will in many cases underlie the long-existent and obstinate symptoms which follow the apparent disappearance of the original disease. In many respects "seminal vesiculitis" (to use the author's hybrid term) is analogous to Falloppian salpingitis, and is dependent on similar causes.

Though sometimes a primary affection—at least occurring where no history or other evidence of antecedent disease as a cause can be elicited—the disease is usually secondary to simple or gonorrhœal urethritis, the latter constituting by far the most frequent cause. Direct pressure on the perinæum was the only assignable cause in one case of the primary form cited, the patient having noticed that pressure by the peak of his bicycle saddle had often excited symptoms of vesical irritability. In this case cystic enlargement due to obstruction of the ejaculatory duct was the pathological condition. In another instance there was suppuration of both seminal vesicles successively, not even a mechanical cause being found for the disease. Aspiration *per rectum* relieved the first-mentioned patient, and the fluid was found full of spermatozooids; and in the second case an incision through the perinæum was followed by a cure.

The secondary form may follow simple urethritis due to the passage of a bougie, urethral stricture, or coitus with a woman suffering from leucorrhœa. Occurring as an accompaniment of gonorrhœa in its milder form, it is said by Mr. Lloyd to be as common a complication as epididymitis; while the severer type, which is more infrequent, sometimes ends in suppuration, but not frequently. The tendency of all forms is to end in resolution, but, if suppuration takes place, the pus may burrow laterally into the ischio-rectal fossa or into the deep circumrectal tissues, or it may escape by the ejaculatory duct, or the abscess may rupture into the cavity of the bladder or that of the rectum, though it never penetrates into both cavities in the same case. The disease sometimes runs a chronic course, and results in a cystic enlargement of the vesicle, due to obstruction of the lumen of the ejaculatory duct. One case is cited in which such a cyst contained ten pints of fluid.

The symptoms of "seminal vesiculitis" detailed are essentially those which are characteristic of vesical irritability, of cystitis at the neck of the bladder, and of acute prostatitis, with the added sign of almost constant painful erection of the penis. Nocturnal emissions are common, as is the presence of blood in the seminal fluid. Physical examination *per rectum* reveals the presence of an elongated tumor, situated above the prostate, at the side of the base of the bladder, and running obliquely upward and outward. The presence and size of this tumor are made more manifest to the exploring finger if a large metallic sound is passed into the bladder and moved from side to side over the tumor. In the acute form, heat, tenderness, and swelling are felt above the prostate; and, if accompanied by the symptoms of vesical irritability with no urinary evidences of cystitis, this sign should make the diagnosis certain.

The author recommends an incision through the perinæum rather than through the rectal wall for the evacuation of pus in cases in which suppuration occurs. He urges digital examination *per rectum* in all cases of gonorrhœa or epididymitis which present vesical symptoms, and believes that in most of such cases this disease will be found.

Mr. Lloyd's paper bids fair to throw some light upon the nature of many of those cases of apparent urethral and vesical hypochondriasis the management of which is so often a source of intense annoyance to the surgeon. Again, it perhaps explains many of the facts which support the so-called "latent-gonorrhœa" theory of the causation of Falloppian salpingitis and of perimetritis. At all events, the subject is worthy of thorough investigation, for, while the disease is by no means a new one, it certainly has not received the attention that is its due.

BACKWARD DISLOCATION OF THE LOWER JAW.

In our issue for February 16th, on page 194, we published an account, by Dr. Henry C. Coe, of a case in which he had diagnosticated subluxation of the lower jaw backward with displacement of the interarticular fibro-cartilage. Dr. Coe's patient was a lady of a nervous temperament, and, at a meeting of the New York Clinical Society, at which he gave the history of the case, he expressed the opinion that it was "due to a peculiar laxity of the ligaments, especially the capsular ligament, and associated with a spasm of the muscles, of purely nervous origin." The displacement was recurrent, usually coming on during sleep and being associated by the patient with unusual physical or mental strain during the previous day.

From anatomical considerations, some hesitation has generally been felt about recognizing the possibility of such a dislocation, but there may be reason for a revision of current opinion on this point. Reference is made in the "Gazette hebdomadaire de médecine et de chirurgie" for March 22d to an exposition of the subject in German, founded upon four personal observations by Thiem during the past two years, together with the report of a case furnished by a colleague. The patients were all elderly women. Gaping caused the injury in three instances, while in another a too energetic use of the tongue-depressor resulted in a backward displacement when the maxillæ met. The author cites Guérin's reports concerning congenital backward dislocations, and that of R. W. Smith, in which dissection showed a very imperfect development of all the components of the joint on the affected side, including bones, interarticular cartilage, ligaments, and muscles. The usual signs of luxation are absent in the class of defects mentioned by Smith; but facial symmetry is wanting and there is marked deformity of the features, the face sinking in on the affected side, while it is rotund on the other. In spite of Crocker King's observation, in 1855, true backward dislocation is often overlooked, says the author.

Anatomically, he thinks, the possibility of this dislocation is beyond question. The condyle may slip into a temporary receptacle that is bounded in front by the tympanic tubercle, behind by the mastoid process, and internally by the styloid process. This "tympanico-stylo-mastoid fossa" (*fosse tympanico-stylo-mastoïdienne*) is extremely small in men, but in women it is said to be capacious. The maxillary angle, varying in degree with age, is also a factor in this form of dislocation, being hardly appreciable in young children and in the aged, and the alveolar dental arch being scarcely, if at all, developed. Thus the masseter and internal pterygoid muscles are levators only, having no power of forward traction, while the temporal muscle tends to draw the bone backward. Hence the rarity of the ordinary forward dislocation among children and old persons. This backward dislocation occurs in the act of closing the mouth, the lower jaw coming in contact with the upper and being forced slightly backward, the condyle resting exactly in front of the mastoid process. Reduction is effected by opening the mouth suddenly.

Sir Astley Cooper looked upon the victims of subluxation as young persons of a feeble and relaxed muscular system, and of little constitutional stamina. Noisy movements of the temporo-maxillary articulation are also a symptom of insufficient tone, indicating that quinine, iron, strychnine, good food, cold bathing, electricity, and open-air life are in order. Agnew calls attention to the fact that the vice of subluxation and noisy movements may degenerate into spontaneous luxation, in which one or both condyles slip out of the glenoid cavity in the most unexpected manner. Sometimes, in addition to the general tonic treatment, it is necessary to protect the jaw by a sling about the chin, fastened by tapes over the head.

It will be perceived that the superior capacity of the "tympanico-stylo-mastoid fossa" in women renders equanimity of temper and gentle speech in them a precautionary measure as well as an æsthetic and ethical duty.

MINOR PARAGRAPHS.

SPLENIC MURMURS.

The "Lancet" for April 6th refers to a paper by Dr. Bouchard, published in "La France médicale," calling attention to a bruit heard over the region of an enlarged spleen—a bruit not due to pressure upon vessels or to conduction from the heart, but apparently generated in the splenic artery or in the

spleen itself. Of five cases of enlarged spleen, three were due to cirrhosis of the liver, one was associated with enlarged liver in an obese person, and a third was a hypertrophy as in leucæmia, but without alteration in the blood. In several instances—in malarial spleen and in one marked case of leucæmia—no bruit could be detected. In a detailed account of a case of cirrhosis of the liver that ended in recovery the spleen was hard, smooth, and very large, measuring seventeen by eleven centimetres. Over the whole area, and confined to it, a soft prolonged bruit was audible, synchronous with the pulse. In whatever posture the patient was examined, and always during the three years that he was under observation, this bruit was present. There was considerable ascites, requiring paracentesis on three occasions. The arrest of the disease was attributed by Dr. Bouchard to the prolonged use of calomel in small doses. An intercurrent attack of uræmia was successfully treated with naphthol, on the theory that intestinal antisepsis is necessary to limit the operation of self-intoxication in the production of uræmia.

MÜRGER AT THE ST.-LOUIS.

Attacked with purpura during the last few months of his life, the poet Mürger entered the St.-Louis in 1840, and occasionally jotted down his impressions, sometimes in charming verse but generally in modest epistolary prose. The following brief extracts from his letters, published in the "Union médicale," give some idea of the man, together with more than a suggestion of French treatment and French hospital life nearly fifty years ago: "In the hospital again! The other night I was suddenly awakened by a sensation of general roasting all over the body. I seemed to be enveloped in flames. I literally blazed. Lighting the candle, I was horrified at the spectacle presented by my poor self—red from head to foot, red as a boiled lobster. . . . The physicians are amazed at my condition. They call it purpura. Purple indeed! The purple of the Roman emperors was not, I warrant, so purple as this envelope of mine. Sometimes I have intense headache. . . . Now I am in a state of reaction that science doesn't know much about. Every day from noon till five I can't walk thirty paces without staggering. A million trumpets blare in my ears. I am bled, bled again, and poulticed—all in vain. I take, all by myself, as much arsenic as three melodramas. How it will end I don't know. They put every sort of thing on my body—leeches, for instance, to relieve vertigo. . . . I am happier now, in the large ward that contains one hundred and six beds, filled for the most part by fairly well-bred men of intelligence. Bad as the food is, it is certain, and, in regard to quantity, ten times better than that which I could secure for myself. I ask for soup two or three times, which makes a change of costume necessary before each demand, for it is only to be obtained by strategy." Mürger left the hospital in a month. "My red *culotte*, my purpura, resists every kind of sponging and pressing. I have wallowed in brimstone, eaten it, drank it, and yet the aforesaid purpura appears without fail every Thursday which is a monstrous thing for science—always opening the biggest kind of eyes and seeing nothing clearly."

THE VAGARIES OF FAITH-HEALING.

Canon Wilberforce is the latest convert to the "faith-cure" doctrine. According to the "Lancet," this eminent Churchman has reported a cure in his own person from a severe internal illness which he said was by competent medical men held to be incurable without an operation. He submitted himself to a "faith" regimen by preference; he was anointed and prayed over, and in three weeks was cured. Skeptical physicians will hold in reserve their acceptance of this narrative until they know the meaning and true gravity of the alleged "internal illness," and also how long the Canon remains "cured," even if it is ascertained that the alleged illness was diagnosticated by competent men as grave and demanding an operation. The most perplexing reflection about the story is that the duration of the treatment under the faith-healing process was so long, for, if the process can accomplish these results, it seems preposterous that three weeks of faith and prayer and anointing should have been needed. It reminds us of the clairvoyants, by whose marvelous powers "the past, present, and future are foretold," who have to be sought out on some third-floor-back in a disreputable or decayed neighborhood. The self-contradiction will crop out somewhere sooner or later.

MEDICAL ELECTRICITY FROM THE DYNAMO.

Last week we cited Dr. W. E. B. Davis, of Birmingham, Alabama, as an advocate of the employment of electricity from the Edison dynamo in medical practice. The same idea received substantial support at the last meeting of the Section in Laryngology and Rhinology of the New York Academy of Medicine, in a paper read by Dr. O. B. Douglas. Several New York physicians have used the dynamo current, and it appeared on the occasion mentioned that they regarded it as satisfactory. The caution was given, however, that the use of the alternating current (which is not the one employed by the Edison company) required considerable familiarity with electro-physics to enable the operator to guard against its dangers. A gentleman connected with the Edison company was present at the meeting, and declared that the current generated by his company was devoid of danger, and that its flow from the down-town station had been interrupted for only two hours since its establishment, several years ago. The galvanic battery seems destined to pass out of medical use before long, and it looks as if even the storage battery would have to yield to the dynamo in districts where the latter is available.

VITAL STATISTICS FOR THE ELEVENTH CENSUS.

It is a matter for congratulation that the work of collecting and arranging the vital statistics of the country for the census has again been placed in the hands of so competent and energetic a man as Surgeon Billings, of the army. In another column we print a circular on the subject issued by the Superintendent of the Census, and we venture to suggest to our readers that a thorough compliance with its requests will aid materially in a most important and desirable statistical inquiry.

THE RUSH MONUMENT.

It is not creditable to our profession that the project of erecting a monument to the memory of the renowned Rush in Washington should have hung fire for so long a time. It can not be due to any lack of energy on the part of the committee having the matter in charge, for its chairman has repeatedly urged the plan upon his professional brethren. The committee's latest appeal will be found printed elsewhere in this issue, and we hope that it will not pass unheeded by our readers.

MEDICAL PLETHORA IN GERMANY.

According to the "Union médicale," a singular embarrassment exists in Germany in regard to the medical profession. The public authorities are seriously disturbed by the great and constantly increasing numbers of students at the medical schools. The Government will not allow of the establishment of new colleges, and recently the Landtag refused to grant further funds

for certain chairs in the schools of Halle and Marburg. In Germany, as in France, there are any number of young graduates without a position of any kind, who apply for State aid that the Government is unable to give. It is urged that some energetic measures be taken that will nip this evil in the bud.

THE INFLUENCE OF COCA ON THE VOICE.

In the Paris letter that we published in our last issue the statement was made that M. Sandras had lately appeared before one of the medical societies of Paris with remarks to the effect that preparations of coca were paralyzing rather than tonic in their action on the vocal bands, a proposition that the speaker proceeded to demonstrate by drinking a glass of coca wine, after which "it was noticed by every one present that his voice had greatly altered in intensity and acuteness," so that he could "hardly be heard." Such a statement, made before a reputable medical society, is proper matter for publication; but, being at direct variance with general experience, it ought not to be allowed to pass without comment. It may be that M. Sandras's vocal apparatus is exceptional, but the fact should not be lost sight of that an experiment performed on one's self, where the expected effect is one that is capable of simulation, however unconsciously, is anything but convincing. Moreover, we are not told whether the glass of coca wine drank by M. Sandras was made from the leaves or was a mere vinous solution of cocaine, like many of the so-called wines of coca to be found in the market. The efficacy of a preparation of coca intended to act as a tonic can not be gauged by its percentage of cocaine, as is well known. Granting, however, that M. Sandras used a proper preparation, the alleged effect can not weigh much against the overwhelming testimony of laryngologists and dramatic and lyric artists as to the invigorating effect of coca on the voice.

CRANIA OF AMERICAN MOUND-BUILDERS.

The excavations of tumuli of the mound-builders made this year at two or three points in northern Iowa have yielded better results than former ones. The skeletons found near Chester and Floyd were exceptionally well preserved, furnishing the best skulls thus far obtained from like sources. Of these skulls measurements have been made which indicate that the mound-builder stands very low in the human scale. His cephalic rating is considerably lower than that of the North American Indian and not so high as that of the fossil man of Neanderthal. These results may be slightly modified by further discoveries, but the presumption is that the status of these early possessors of our soil must be fixed at about the lowest point.

THE JOHNSTOWN CALAMITY.

The medical profession has not been spared by this dire catastrophe. In the published lists of identified bodies we find the name of Dr. G. W. Wagner, and with it the names of Mrs. Wagner (presumably his wife) and three children. He was a graduate from the Cleveland Medical College, of the class of 1878. Dr. J. M. Cooper, one of the alumni of the Jefferson Medical College of Philadelphia, of the class of 1868, lost his life; his wife, also, was lost. There are other names strikingly like those of practitioners known to have been residents of the destroyed town, but discrepancies exist which make it proper to refrain from the present mention of their names. A homœopathic physician, Dr. J. K. Lee, and an eclectic, Dr. Lemon Beam, are among the identified dead. It was natural that the afflicted survivors should feel an added pang, and for other than sentimental reasons, when the advice was given by medical men that they should refrain from endeavoring to save the dead bodies from destruction by the fire that followed the inundation; but the advice was sound nevertheless, and it is nothing short of providential that the fire continued to rage.

THE AMERICAN MEDICAL ASSOCIATION.

The official programme of the fortieth annual meeting of the American Medical Association appears in full in the "Journal" of the association for May 25th, illustrated with some attractive woodcuts of Newport scenery, including the meeting hall and other points. An enormous mass of material has been promised for the occasion, as is shown by the fact that nearly two hundred and fifty papers and addresses are specified for presentation before the ten different sections. Before the Section in State Medicine, for example, twenty-seven papers are announced to be read during the first three days, the veteran, Dr. N. S. Davis, leading with an essay on the relations of the association to the public health, probably a useful historical paper.

CIGARETTE-SELLING IN NEW YORK.

The smoking of cigarettes by boys is likely to undergo a wholesome restriction in the State of New York, a law having been enacted by the last Legislature making it a misdemeanor for dealers to sell cigarettes or any form of tobacco to persons under sixteen years of age. A police order was promulgated on May 31st, giving effect to this enactment.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending June 4, 1889:

DISEASES.	Week ending May 28.		Week ending June 4.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	15	1	10	3
Scarlet fever	159	27	176	26
Cerebro-spinal meningitis	0	0	4	4
Measles	129	7	100	10
Diphtheria	165	61	132	32

The State Commission in Lunacy.—It is announced that the presidency of the commission has been accepted by Dr. Carlos F. McDonald, of the State Asylum for Insane Criminals, at Auburn.

Change of Address.—Dr. George H. Cocks, to No. 218 East One Hundred and Twelfth Street.

The New York Dermatological Society.—At the recent annual meeting officers for the ensuing year were elected as follows: President, Dr. George Thomas Jackson; secretary and treasurer, Dr. Condit W. Cutler; executive committee, Dr. Edward L. Keyes, Dr. Henry G. Piffard, and Dr. Daniel Lewis.

The Massachusetts Medical Society will hold its one hundred and eighth annual meeting in Boston on Tuesday and Wednesday, the 11th and 12th inst., under the presidency of Dr. David W. Cheever, of Boston. The programme includes an annual discourse by Dr. Henry P. Walcott, of Cambridge, and the following-named papers: "Antipyretics," by Dr. E. N. Whittier, of Boston; "Malarial Fever in Massachusetts," by Dr. C. H. Cook, of Natick; "Aseptic and Antiseptic Surgery," by Dr. H. L. Burrell, of Boston; "Aseptic Obstetrics," by Dr. W. E. Boardman, of Boston; "The Third Stage of Labor," by Dr. J. B. Swift, of Boston; "The Surgical Treatment of Backward Displacements of the Uterus," by Dr. C. P. Strong, of Boston; "The Non-radical Treatment of Cancer of the Uterus and

Vagina," by Dr. H. C. Baldwin, of Boston; "On Pain in the Small of the Back and Hips," by Dr. J. A. Jeffries, of Boston; "Modern Methods in Teaching Clinical Obstetrics," by Dr. Edward Reynolds, of Boston; and "The Treatment of Malignant Disease by Escharotics," by Dr. J. C. Munro, of Boston.

Dartmouth College.—It is announced that Mr. Hiram Hitchcock, of the Fifth Avenue Hotel, has given the college a sum of money sufficient to build and equip a hospital, to be used in connection with the medical department, and to stand as a memorial of his deceased wife.

An Epidemic of Diphtheria.—At St. John's, Newfoundland, an epidemic of diphtheria has prevailed, causing deaths amounting to over two daily, which, being at the rate of 25 to 1,000 inhabitants per annum, from a single cause, marks it as a most lamentable and serious incursion of the disease. Much sickness has occurred in the provinces northeast of the United States, and by some this is held to be due to the open winter and a water-sodden soil. Influenza, complicated heavily with pneumonia, has been present in Prince Edward's Island and the adjoining territory during the early months of this year.

Recent Deaths.—Dr. Erasmus Allington Pond, who died at Rutland, Vt., on May 31st, was a prominent surgeon and formerly president of the State Medical Society. His name is familiar on two continents as the inventor of the sphygmograph that bears his name; several surgical instruments also testify to his inventive capacity. He was born in Franklin, Mass., in 1828, and obtained his degree in 1853 from the Harvard Medical School.

Dr. William A. Douglass, late professor of clinical surgery in the Cooper Medical College, of San Francisco, died on March 26th, aged seventy-two years. He was a native of Virginia and a graduate of the National Medical College at Washington of the class of 1850. He was a consultant physician to the St. Mary's and the German Hospitals.

Dr. Mortimer O'Connor, of Harrisburg, Pa., died in Paris, May 3d, aged sixty-one years, from pneumonia. He had gone to Europe for the benefit of his health, which had been greatly impaired in consequence of an epithelial growth in the mouth, which began last summer. He had spent the winter in Algeria without benefit, and gone thence to Nice and Paris. He was born in Ireland, graduated at Glasgow, a veteran of the Sepoy mutiny, a resident of Harrisburg for nearly twenty-five years, and a member of the Dauphin County Medical Society.

Dr. James B. Lawrence, of Clearwater, Kansas, died suddenly of heart disease on May 28th, aged forty-three years. He was an alumnus of the Georgetown Medical College, of the class of 1872.

The North Carolina State Board of Medical Examiners.—At the annual examination, held at Elizabeth City, April 16, 1889, there were fifty-nine candidates for the license to practice in the State. The average standard of excellence shown by the applicants is said to have been superior to that of any previous year. The annual prize, consisting of twenty-five dollars' worth of medical books, offered by the publishers of this journal to the candidate who should pass the most creditable examination, has been awarded to Dr. William H. Cobb, Jr., of Goldsboro.

The Medico-chirurgical College of Philadelphia.—The following changes have been made in the faculty: Dr. Frank Woodbury, Honorary Professor of Clinical Medicine; Dr. William B. Atkinson, Honorary Professor of Sanitary Science and Pædiatrics; Dr. John V. Shoemaker, Professor of Materia Medica, Pharmacology, Therapeutics, and Clinical Medicine; and Dr. James M. Anders, Ph. D., Professor of Hygiene and Clinical Diseases of Children.

Society Meetings for the Coming Week:

MONDAY, *June 10th:* New York Ophthalmological Society (private); New York Medico-historical Society (private); Lenox Medical and Surgical Society; Boston Society for Medical Improvement; Gynæcological Society of Boston; Burlington, Vt, Medical and Surgical Club; Norwalk, Conn., Medical Society (private); Baltimore Medical Association.

TUESDAY, *June 11th:* Delaware State Medical Society (Dover); Maine Medical Association (first day—Portland); Massachusetts Medical Society (first day—Boston); Oregon State Medical Society (Portland); New York Medical Union (private); Medical Societies of the Counties of Chemung (annual—Elmira), Chenango (semi-annual), Delaware (annual), Erie (semi-annual—Buffalo), Genesee (annual—Batavia), Livingston (annual—Geneseo), Onondaga (annual—Syracuse), Oswego (annual—Mexico), Rensselaer, St. Lawrence (semi-annual), Schenectady (semi-annual—Schenectady), Steuben (annual—Bath), Warren (annual—Lake George), and Wyoming (Warsaw), N. Y.; Newark, N. J., and Trenton (private), N. J., Medical Associations; Baltimore Gynæcological and Obstetrical Society.

WEDNESDAY, *June 12th:* Maine Medical Association (second day); Massachusetts Medical Society (second day); New York Pathological Society; American Microscopical Society of the City of New York; Medico-legal Society; Medical Societies of the Counties of Albany, Cortlandt (annual), Dutchess (semi-annual—Poughkeepsie), and Montgomery (annual—Fonda), N. Y.; Middlesex, N. J., County Medical Society (annual); Philadelphia County Medical Society.

THURSDAY, *June 13th:* Maine Medical Association (third day); Rhode Island Medical Society (Providence); New York Laryngological Society; Society of Medical Jurisprudence and State Medicine; Brooklyn Pathological Society; Medical Society of the County of Cayuga (annual), N. Y.; South Boston, Mass., Medical Club (private); Pathological Society of Philadelphia.

FRIDAY, *June 14th:* Medical Society of the Town of Saugerties.

SATURDAY, *June 15th:* Clinical Society of the New York Postgraduate Medical School and Hospital.

OBITUARY NOTES.

Dr. James Ethelbert Morgan, of Washington, emeritus professor of materia medica in the medical department of Georgetown University, died on the 2d inst. Dr. Morgan was born in St. Mary's County, Maryland, September 25, 1822. In 1845 he settled in Washington and continued in the active practice of his profession there until within a few months of his death. Coming to the city in the earlier days of its history, he grew up with the place, becoming widely known and possessing for years the highest confidence and esteem of its oldest and best residents, many of whom have been his earnest and devoted friends. Although mainly distinguished in the line of general practice, he contributed numerous articles upon medical topics to the literature of the day. His "Defense of Medicine and of the Medical Profession," an oration delivered before the Medical Society of the District of Columbia about five years ago, was a powerful and philosophic plea for the value of drugs in the curing of disease. He had been president of the Medical Association and of the Medical Society of the District of Columbia. He was consultant to the Columbia Lying-in Hospital and to the Central Dispensary, and for many years was a member of the Judicial Council of the American Medical Association. With Dr. Robert King Stone he was appointed to investigate the causes of the celebrated National Hotel disease, or epidemic of

historical importance which occurred in 1859, and which will be well remembered by our older readers.

A finished classical scholar, Dr. Morgan retained his proficiency in and fondness for study until the last. He leaves a widow and six children—three daughters, one of them the wife of the Hon. Emory Speer, U. S. Judge for the Southern District of Georgia, and three sons, two of whom, Dr. Ethelbert Carroll Morgan and Dr. J. Dudley Morgan, are physicians practicing in Washington.

Personally, Dr. Morgan was of commanding figure, fine address, and great geniality of disposition; a devoted physician, a courtly gentleman, and a man whose sterling qualities were recognized by everybody.

Proceedings of Societies.

AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

Third Annual Meeting, held at Newport, May 21 and 22, 1889.

The President, Dr. Robert W. Taylor, of New York, in the Chair.

The Question of the Radical Cure of Deep Urethral Stricture.—Dr. Edward L. Keyes, of New York, opened the session by reading a paper with this title in which he confined his remarks to organic stricture of the urethra situated at or beyond the bulbo-membranous junction. No one was yet in a position to say what, if any, operation would radically cure deep urethral stricture, while that of the anterior urethra might be pretty certainly cured. He defined three varieties of stricture encountered clinically in the deep urethra. First, the *soft stricture*, which was a very superficial organic lesion involving only the surface of the mucosa. It followed gonorrhœa and was generally situated at the bulbo-membranous junction, and might even cause complete retention of urine. Such a stricture would often not admit a filiform bougie, yet a blunt steel sound of ordinary size might pass in many cases. The second variety was the *purely fibrous cicatricial stricture* of traumatic origin found in a urethra which had not been the seat of gonorrhœa. It might involve only the mucous membrane or extend through all the tissues of the entire thickness of the perinæum. It might be unaccompanied by gleet. It cut like true fibrous tissue. This stricture was linear or annular, but clearly defined. The third variety was the *inodular stricture*, which might supervene after a traumatism, notably in strumous subjects, especially where there had been much suppuration or multiple fistulæ. It was often found in cases of stricture following gonorrhœa. This variety was lumpy, ill-defined, irregular, tortuous—never linear. Gleet was the rule, and fistulæ might be present.

The first question which the speaker sought to answer was: *Did dilatation ever radically cure deep urethral stricture?* He had notes of cases treated by himself and by his former partner, the late Dr. Van Buren, which demonstrated the possibility of cure by dilatation. He cited a case in which the stricture had at first admitted only a No. 14 F. instrument, but after a number of months of treatment was cured, and a No. 28 easily passed. Twelve years afterward, no instrument having been passed during the interval, a No. 24 entered without meeting an obstruction. This was a soft stricture, the variety in which a radical cure was possible by dilatation. *Did electrolysis ever radically cure deep urethral stricture?* The author had expressed a decidedly negative opinion on this subject, in a paper read before the meeting of this association in Washington last year (see the Journal for October 6, 1888, p. 365), and his opinion was the same still. It seemed probable that the dilatation produced by the electrolytic instruments caused what improvement there was in the strictures so treated. *Did perineal section ever radically cure deep urethral stricture?* The term radical is suited to this operation, as experience showed, since the advantage thus gained must be maintained by means of the sound. The difference of results obtained in different cases did not wholly lie in the extent of the cutting done, but must depend much upon the quality of the tissues cut. He thought it possible that a purely fibrous stricture might be radically cured by perineal section, but that an inodular stricture usually was not.

Two comparatively recent novelties in operative methods for deep-seated stricture merited attention; they were excision of the stricture and transplantation of mucous membrane derived from some outside source. Both seemed to offer more chance of radically curing inodular stricture than any other means we now possessed. Heusner had reported in the "Berl. klin. Wochenschr." an operation in which he dissected out a strictured area two centimetres in length, including a portion of the bulbous and of the membranous urethra. The divided ends of the urethra were then found to be three centimetres apart. The anterior end was loosened from the surrounding tissues and the severed ends were drawn together and held by five points of catgut suture. A catheter was kept in place for twelve days. No sound was used. On the thirty-fourth day a No. 24 F. catheter passed easily, and a year later the patient reported himself well. Three cases of impermeable stricture had been operated by Wölfler, of Gratz, in which he excised the diseased segment and after eight days transplanted strips of mucous membrane to the roof and sides of the granulating area. The strips were cut from some convenient vagina and were several centimetres long and one or two centimetres broad. They were kept in place by a packing of iodoform gauze, no sutures being used. The bladder was carefully drained during the process of union of the graft with the surrounding tissues. A small fistula remained in each case when reported. A year after the operation one of the patients could urinate in a large jet; another could admit a No. 20 F. sound.

The speaker concluded: 1. That there were three forms of deep organic urethral stricture—the soft stricture, the purely cicatricial stricture, and the inodular stricture. 2. That soft strictures were often cured by dilatation. 3. That the fibrous stricture in patients always free from gonorrhœa might sometimes be radically cured by longitudinal section of the roof and floor of the canal at the seat of the stricture followed by the passage of sounds. 4. That inodular strictures did not seem to be radically curable by this method. 5. That inodular stricture might possibly be radically cured by total excision of the diseased tissue and suturing of the ends of the urethra; when approximation of the separated ends was impossible, transplantation of healthy mucous membrane from an outside source might be employed.

Dr. J. P. Bryson, of St. Louis, said it was only when we regarded stricture as a *pathological* condition of urethral walls that we had a correct idea of the condition in question. It was, therefore, of stricture as a disease and not as a simple narrowing of the duct that he wished to speak. In congenital narrowing of the urethra an incision would produce an enlargement which would remain, but in stricture the opening tended constantly to diminish. The term stricture is really a no more accurate expression than the term gonorrhœa was for urethritis. Inflammation, even in a chronic form, was not stricture. A mere deposit of inflammatory substance beneath the mucous membrane, not involving this membrane, would not cause stricture. The speaker proposed, therefore, to designate this

disease as *chronic contracting peri-urethritis*. From this point of view we might thus exclude the microbe as a factor in the causation of this condition. Harrison, of Liverpool, had shown the true pathogeny of these submucous deposits by showing them to be formed by nature to oppose the escape of urine. It was not usual to be able to follow the natural course of this disease —its course when not interfered with surgically—but the following were the steps the pathological process naturally took: As the narrowing progressed, a dilatation of the portion of the urethra situated behind the seat of the stricture took place. The parts composing this portion were in an atrophic state and a thinning and devitalization of their tissues occurred. An ulcer began on the inferior wall of the canal, and a limited infiltration of urine occurred in the neighborhood of the ulcer. The urine finally found an exit through the skin, and a fistula was formed. The surrounding tissues began to become resistant and form the hard infiltrated walls of the fistula. How about the stricture in the mean time? It did not remain unchanged. Some portion of the urine came in contact with the posterior part of the band, stimulating the closure of the normal outlet. It seemed as though there was a battle between the urethra and the fistula for the carrying off of the urine. The behavior of the anterior part of the stricturing band was interesting to note. This band became thin, narrow, like a diaphragm placed across the urethra. The speaker had not found a broad strictural band where there existed one or more fistulous openings behind. The essential seemed to be to remove the urine from contact with the mucous membrane, and the effort of nature to close up the canal seemed clearly evident. If the effort was intended to re-enforce the urethra, the spread and increase of tissue would be eccentric as well as inward, but here the growth was toward the lumen of the urethra.

Aphorisms on the Treatment of Urethral Stricture was the title of a paper by Dr. A. W. Stein, of New York. After expressing regret that so many younger members of the profession should desire to operate on urethras or invent a new urethrotome to make their glory immortal, he dwelt upon the necessity of determining the patient's state of health before operating, and especially in regard to the manner in which the kidney fulfilled its function. It was also extremely important to decide whether the obstruction was a greater evil than the proposed remedy. The first proposition he offered was that gradual dilatation was unquestionably the safest way to treat urethral stricture. With this method it was unusual to observe rigors and urethral fever after operating. One objection to the method was that patients coming from a great distance often demanded a rapid cure, but the patient's life should not be jeopardized to save time. Thirdly, a urethra would support incision better, when this was necessary, if it had previously become accustomed to the passage of the dilating instruments. Fourthly, the nearer the coarctations were to the meatus, the more unyielding and resilient were they, and they were only amenable to dilating urethrotomy. It was rare that rigors and fever followed incisions near the meatus. Fifthly, the danger of internal urethrotomy increased with the distance of the stricture from the meatus. On the other hand, the nearer the stricture was to the bulbous portion of the urethra, the more dilatable it was. Dilatation should, therefore, be first thoroughly tried. Sixthly, an external incision should be made preferably to an internal incision, in strictures requiring incision, when accessible through the perinæum. Anterior strictures divided internally were rarely accompanied by unfavorable symptoms when the urine was made to escape by a perineal orifice. Eighthly, divulsion was unnecessary in the bulbous portion of the urethra, and was always dangerous, rude, and purely mechanical, requiring no surgical skill. Ninthly, the replacement of the term urethral fever by that of urinary fever was not a happy one. Urethral fever could often be proved to be a vaso-motor disturbance of reflex origin and not due to absorption of urine through a solution of continuity of the mucous membrane. Tenthly, in its results, thorough dilatation compared favorably with urethrotomy. An absolutely radical disappearance of a narrow stricture was of the rarest occurrence. In strictures of large caliber the results were more favorable by whichever method they were treated.

Dr. Watson, of Boston, related a case of stricture which had been operated upon by Dr. Cheever, who performed external urethrotomy. It was a tough fibrous stricture, extending from the bulbous portion of the urethra to the middle of the membranous portion. The stricture was incised and dilating instruments were used afterward, the last one used being a No. 29. During nine years the case was not treated in any way, and at the expiration of that time a No. 27 was easily passed, showing that the cure remained permanent. The speaker recommended external urethrotomy and the making of one clean incision on the floor of the urethra, and perhaps one on the roof of the canal.

Dr. Post, of Boston, said that many strictures of the deep urethra were not radically cured by an operation. It seemed rational that they should best be cured by external urethrotomy. If many were cured by internal urethrotomy, more still ought to be cured by the external operation, in which the sense of sight aided the sense of touch. The probability of cure must depend upon the care with which the operation was done. The threads used for sutures, if badly inserted, might cut and enlarge their passages, and contusions of the urethra might be made by bungling assistants with forceps, etc. After external urethrotomy the patients would mostly pass their urine by the normal urethra at the end of a week. The speaker then showed several charts upon which the temperature of patients having undergone external urethrotomy was traced. In most of them no rise of temperature was indicated. One patient with considerable fever after the operation experienced a fall of temperature to the normal when a urethral sound was passed, thus showing that it was not dangerous to pass a sound during urethral fever.

Dr. Arthur T. Cabot, of Boston, had seen two urethræ five weeks after the operation of divulsion had been done upon them. In one case the patient died three weeks after the operation, of Addison's disease. In both cases the strictures were pretty tight. After divulsion the sound, No. 30, passed easily, showing that the tissues were really broken. It seemed to him that divulsion was specially applicable to these soft strictures of the deep urethra, but that it was an improper operation in fibrous and inodular strictures.

The President highly recommended gradual dilatation as a means of cure. He said that any mode of treatment that added to the patient's comfort might still be used. He had seen the introduction into practice of the methods by dilating urethrotomy and by divulsion. After Dr. Otis's method of internal urethrotomy had become known, it was shortly so popular that a urethrotome might be seen sticking out of every hospital student's pocket. He thought that in the majority of cases soft stricture might be cured by gradual dilatation, if the patient and the doctor took time enough about it. It was to be regretted that the love of cutting had made the method of gradual dilatation fall into bad repute. The excellent results of gradual dilatation were shown by the report of a case that he had first seen in 1870 or 1871. The stricture had its origin in a mistake made by another practitioner, who had injected nitric acid into the patient's urethra instead of the solution he intended to use. When the speaker saw him there was a sausage-like mass of

tissue, as hard as India rubber, situated between the urethra and the rectum. It was a fibrous coarctation around the urethra, and only a No. 4 or a No. 5 bougie would pass. The opening was gradually enlarged to admit a No. 20 (English) *bougie à boule*, but it required two or three years to accomplish this. The patient, who was a boy, had continued to develop, and a No. 34 could now be passed into the bladder. He had not been laid up a day since the cure was effected, over seventeen years ago. Sometimes the speaker was not satisfied with the slowness of gradual dilatation. He would then make a superficial incision of the stricture with a small urethrotome and afterward use a dilator. That method of procedure gave him much satisfaction.

Dr. Watson thought that the president had underestimated the value in which gradual dilatation was held by genito-urinary surgeons generally. As for himself, he employed dilatation ten times where he employed urethrotomy once.

Dr. Keyes did not think that Harrison's explanation of the formation of fibrous or inodular tissue was the only correct one. He thought that, over and above the chemical element in the formation of a stricture, there was also an irritative element. In follicular abscess of the urethra the urine was in contact with the seat of inflammation, yet often no inodular tissue was formed. He would not absolutely condemn divulsion; he thought that it was still defensible in certain cases of soft stricture. In one instance, while performing urethrotomy, he had incised the stricture so thoroughly that the only tissue left uncut was the skin of the penis. The patient disobeyed orders and passed his urine without the use of the catheter, producing thereby an infiltration of urine which was cured without suppuration by multiple incisions. Surgery had made so little progress in the treatment of deep urethral strictures that it was to be hoped that the procedure of cutting out the inodular tissue and replacing it by three fourths of an inch of somebody else's mucous membrane would be successful. Sometimes much difficulty was experienced in passing an instrument after external urethrotomy. In one case which the speaker had seen operated upon the perinæum was incised and a large sound was passed through the urethra to the bladder, but afterward no instrument whatever could be passed, and a fistula formed at the seat of operation. This operation had to be repeated in three or four weeks, when the perineal fistula closed. It was then found that the obstacle to the passage of a sound consisted in a fold or mucous structure upon the roof of the canal, and his custom now was never to open the urethra without feeling along the roof to see that no such fold or structure existed; if one was found it was incised.

Dr. Bryson reported a case showing the effects of urethrotomy and of divulsion on the same urethra, which was the seat of two strictures. The first stricture was situated at the distance of two inches and a half from the meatus; the second, which would admit a No. 12 French, was in the bulbous portion of the urethra. The first was cut with an Otis's urethrotome, with anæsthesia; the other one was divulsed. After two years the patient came back, when it was found that the first stricture had remained cured, while the second had recontracted. For two months the patient had been passing his urine through fistulæ, one of which opened near the umbilicus. This did not give escape to the urine in a periodical or regular manner, as the normal urethra would, but, on the contrary, the urine flowed from it whenever there was any to flow. The diaphragm-like stricture on the roof and floor of the canal was divided, but the patient died subsequently from nephritic complications. As to the question, Did dilatation ever radically cure deep urethral stricture? he believed it did, and that there were cases in which not only was the stricture got rid of, but the mucous membrane was so modified that the cure was radical. If the speaker cut a stricture, it was done invariably with the intention of dilating it afterward. In regard to the question, Did electrolysis ever cure deep urethral stricture? he said that the electrolytic action might stimulate the parts to aid dilatation. Did perineal urethrotomy ever cure stricture? It certainly did, as Dr. Keyes's cases showed. He believed that the excision of cicatricial tissue should be resorted to, and that the idea of urine-leakage as the origin of stricture led also to that conclusion.

Dr. Stein failed to see what good divulsion would do when other means of dilatation might be used. Gradual dilatation was simple, with comparatively little danger. He regretted the tendency of many of the younger men to cut and slash every urethra they came across.

Dr. Bryson remarked that gradual dilatation was the ideal method of treatment of stricture.

Dr. Post presented an anatomical specimen showing the formation of new intervening tissue after external urethrotomy. The stricture was situated in the posterior part of the membranous portion of the urethra, and on opening the canal from above, the two halves of the stricture were separated, showing the cicatricial splice resulting from the operation, which was performed seventeen days before death from an intercurrent disease.

Primary Syphilitic Lesions at the Meatus Urinarius was the title of a paper by Dr. Francis B. Greenough, of Boston. He said that the syphilitic lesion situated in the urethra was in different circumstances from that situated in other portions of the body in that it was frequently washed by urine. The pain caused by this might be lessened by dressings of iodoform and by immersion of the penis in tepid water. The local influence of lesions of the urethra might not cease even when they were healed, as the action of a cicatrix, of adhesions, etc., might continue indefinitely. Many lesions of the meatus might show themselves as indurations without a solution of continuity. Cases supposed to be mere examples of gleet had been sent to the speaker, who had discovered an indurated lesion of the meatus, which was soon followed by the eruption of a rich syphilitic roseola. The amount of induration varied in different cases. Often it would not extend beyond the meatus, while again it might involve the whole glans, which became resisting and cartilaginous. Not infrequently syphilis was not recognized at first because the primary lesion was not seen, being hid in the urethra. A sclerosis at the meatus acted as a stricture and might give rise to the same series of symptoms as the latter. Was it not possible for the follicular opening which was sometimes seen in a meatus that had been the seat of follicular abscess to be the seat of the primary lesion? In one case a man of thirty-five had come under the speaker's notice on account of a rash that he had. The patient did not admit the existence of any specific lesion, but the lymphatic glands of the groin were indurated, and he had chordee at night and pain on micturition. The urine was heavily loaded with pus. He was treated with mercury, and the stenosis of the meatus was gradually dilated. This treatment speedily caused a marked amelioration in the symptoms, which soon disappeared altogether. The local treatment of the lesion by means of a plug covered with mercurial ointment aided resorption of the induration. It might sometimes be necessary to resort to incision to enlarge the narrowed orifice. The chancre at the meatus might be so irritated by contact with urine as to be exceedingly difficult to recognize.

Dr. Post remarked that a true chancre must be more frequent at the meatus than chancroid. Whenever he saw a suspicious sore in that region he felt warranted in putting the patient upon an antisyphilitic treatment as soon as possible, as many unpleasant symptoms might be avoided in this manner.

In one case that had come under his observation the disease was unrecognized and the patient was treated a long time by catheterism. The use of the medicated plug in the treatment of lesions of the meatus had all the advantages that Dr. Greenough had mentioned. Sometimes it had irritated the lesion and caused unpleasantness to the patient, but in these cases it was probable that the plug had not been well applied.

Dr. Bryson remarked that, from what had been said some time before, it might be thought that stricture near the meatus was a rather insignificant affair, but he thought it was often a very serious matter. It was well known that syphilitic lesions had little disposition toward ulceration, but the speaker recalled a case in which a stricture was caused by what was called a chancroid with ulceration, but which might have been a syphilitic lesion, as that was so much more common. The patient was found dead seated over a bucket of water, having evidently tried to evacuate the bladder. The autopsy showed that death was due to heart-failure.

Dr. E. E. King, of Toronto, related a case of lesion of the meatus in a young man who could not pass his urine well. He found the meatus very small and performed urethrotomy. Shortly afterward, symptoms of constitutional syphilis occurred.

Dr. Cabot had had a patient with a similar stricture which on one occasion was accompanied by a violent urethral fever. No operation was performed, but constitutional treatment was directed against his syphilis and brought relief.

The President reported having observed six cases of venereal lesion at the meatus, only one of which was chancroid. He thought that the proportion of one to six was a large proportion for chancroids. Sometimes the lesions of this region took the form of exuberant growths, but the condition of the parts was such that this was rarely seen. As a rule, Jews with small meatuses had urethral chancre oftener than Gentiles. When the meatus was small and the lesion great, the discharge from a syphilitic lesion in the urethra could not be distinguished from gonorrhœa otherwise than by the gonococci, which might or might not be present, according to the case.

Dr. Greenough agreed with Dr. Post in regard to the difficulty of making a correct diagnosis in these cases. The mere fact that the lesion was situated at the meatus would lead the speaker to regard it as syphilitic, as cases of chancroid seemed to be getting rare. He would not incise this sort of stricture if he could avoid it.

Induration of Venereal Sores not always an Indication that Constitutional Syphilis will Follow.—A paper with this title, written by Dr. Edwin C. Burnett, of St. Louis, was read by Dr. Bryson in the absence of the author. The author stated that there were sores that presented the aspect of the Hunterian chancres that were not followed by induration of the lesion, and also that certain indurated sores of venereal origin were not followed by signs of constitutional syphilis. In one case a physician had presented himself for examination with a typical indurated chancre situated in the sulcus coronarius. At first this lesion was only an excoriation, but it progressively increased in extent and in depth. The patient had done nothing to the sore beyond keeping it clean. The lymphatic glands in the left groin were hard and enlarged. The author prescribed simply lotions with a twenty-per-cent. solution of salicylic acid. At the end of three months the enlargement of the glands of the groin disappeared, but no signs of constitutional syphilis had yet made their appearance. The lesion had been observed sixteen months ago. Another physician had a suspicious intercourse which was duly followed by a typical lesion presenting the usual characteristics of an infecting chancre. After five months he showed no signs of syphilis, although no specific treatment had been used. Finger had attempted to explain the occurrence of such induration of non-syphilitic sores by invoking a peculiar arrangement of the blood-vessels of the region, or a local artificial irritation of the lesion. The author did not believe that induration took place by local irritation when the syphilitic virus was not present.

Dr. Post could not believe it possible for a true primary syphilitic lesion not to be followed by constitutional syphilis. He cited the case of a little girl who had been criminally assaulted by a man for sexual purposes. A short time after the event the girl had a local lesion which the attending physician pronounced to be syphilitic. No care was given to the lesion, however, except cleanliness. Syphilis, notwithstanding, did not develop in the child, and the physician could not swear in the suit, as he expected to do, that the child had received syphilis from the assault. He also stated that there were some indurated lesions that were not syphilitic.

Dr. Greenough narrated a case resembling that of Dr. Post, and said that syphilitic lesions had often existed which had eluded observation.

Dr. Keyes said that the symptoms of syphilis were so varied and irregular that it was no wonder that specific lesions were often unrecognized. There were sores which could not be considered as other than typical, yet they were not followed by signs of constitutional syphilis. In one case of his the appearance of the lesion "would have deceived the very elect." There were a slight erosion, a slight oozing, and a positive induration under the lesion, but there was no invasion of the inguinal glands. Two years passed without the showing of the least constitutional symptom.

Dr. Stein also reported a typical case of Hunterian chancre in the female which in nine months was followed by no other sign of general infection than a mucous patch on the tonsil.

The President said he was sorry to see that the author of the paper was convinced of the mutability and the fallibility of natural processes by two adverse cases. It was rather an instance of the fallibility of man than that of nature. There was no doubt that non-syphilitic induration sometimes occurred. The usual seat of such induration was the balano-preputial sulcus, the depression or fossette on each side of the frenum, and occasionally on the muco-cutaneous border of the prepuce. In certain non-syphilitic cases of balanitis there were sometimes formed plaques of indurated tissue beneath the surface of the glands which might easily be mistaken for syphilitic indurations. The tendency of syphilitic lesions was to condense into sclerosis.

Dr. Bryson remarked that Dr. Burnett had evidently meant to accentuate the idea that there were indurated lesions that were not syphilitic. He did not believe that any positive rule could be laid down in this matter, because the same virus produced such different appearances in different persons. The discovery of the microbe of syphilis seemed to him to be the only way to solve the problem.

The President cited a case which had at first appeared quite remarkable and seemingly in contradiction to well-established clinical facts concerning the period of incubation of syphilis. In 1870 he had had a patient in whom the primary chancre occurred *within forty-eight hours* after a single intercourse with one woman. Careful and repeated questioning could not elicit evidence of any other sexual connection than the one admitted by the patient. The chancre was situated at the meatus. The case was shown to the late Dr. Bumstead, and its history made known to him, when he said: "It is a very nice case; but one case in the hands of one man is not going to contradict the general opinion in regard to this question." The patient, who was a Jew, returned after a certain lapse of time with an ex-

coriation on the back of the glans which extended also on to the dorsum of the penis. Here the patient admitted having had connection with a woman *per os*. The speaker recalled the patient's former chancre, and instantly concluded that it was obtained in the same way as this excoriation. Upon being questioned, the patient admitted having had such connection by the mouth about *three weeks* before the chancre appeared, and the seeming unusually short period of incubation was thus clearly explained.

Primary Melano-sarcoma of the Vulva.—The President read a paper with this title. (To be published.)

Dr. Stein remarked that the question before the meeting was the relation of melanosis to malignant growths. He doubted whether the president's case was one of melano-sarcoma.

The President said: Look at the preparations from the tumor under the microscope over there in the window.

Dr. Stein knew that the tumor contained spindle-shaped cells with melanotic matter, but the life-history in the cases cited by the president was longer than that of sarcoma in general. This was indeed variable in man, but not so in the lower animals, as in horses the melanomatous masses persisted a very great length of time.

Dr. Keyes had always supposed that the association of melanotic pigment with a neoplasm indicated a highly malignant nature of the new growth.

Dr. Cabot thought it better to excise the tumor with a clean cut rather than to enucleate it by the method described by the president, as the danger of its return might thus be more surely avoided.

The President replied by saying that there were two kinds of pigmented tumors found in the human organism; one was sometimes observed in the nervous system, and consisted simply of a deposit of pigment without malignant cells; the other was the melano-sarcoma or the melano-carcinoma. Terrillon had stated in his histories that the melanotic tumors were accompanied by pigment granules in the blood. These tumors were often unaccompanied by digital prolongations into the underlying tissues, as in ordinary epitheliomata, but, on the contrary, they might often be easily enucleated with the thumb-nail or with the handle of the scalpel, leaving the surface of the wound as smooth as the palm of the hand.

The Relation of the Prostate to Chronic Urethral Discharge.—This paper, by Dr. J. William White, of Philadelphia, was read by the secretary. Speaking of the posterior portion of the urethra, the author said that Ultzmann had long ago described the prostatic urethra as the true neck of the bladder, which he would include between two sphincters, the internal at the vesical orifice, the external being the compressor urethræ. He believed the latter to be much more powerful in its resistance either to fluid injected from without or to the passage of urine or other liquids from within outward, and he thought that discharges which appeared at the meatus were due to the existence of inflammation somewhere in front of the triangular ligament, while those found in the urine were to be referred to inflammation posterior to that point. Of the general truth of these views there could be no question. The author believed, however, that the compressor urethræ did not form an absolute barrier to the escape of discharges originating behind it. He then cited several authorities to show that follicular prostatitis, hypertrophy of the prostate, and one or two other affections of this gland, often produced a slight discharge at the meatus. The chief diagnostic points in a chronic gleet due to some affection of the prostate were the following: 1. Undue frequency of micturition with pain felt at or near the end of the penis at the conclusion of the act. 2. The feeling of weight or fullness in the perinæum and rectum, especially during the passage of hardened fæces. 3. Diminution in the force of the stream of urine associated with dribbling toward the end of the act. 4. The first portion of urine passed, if collected in a glass, would be found more turbid than the second portion. 5. The sediment in the urine would be found to consist of prostatic epithelium, muco-pus, and a few mucous shreds, often casts of the follicles and prostatic ducts. 6. There was often associated with these conditions a certain amount of sexual excitability, frequent erections, and premature ejaculations during attempts at intercourse. In addition to the various well-known methods of treatment, he recommended the application of cold in the form of a jet of water, and the employment of massage. He prescribed the persistent and thorough use of the bidet at least twice daily—once after the evacuation of the bowels and once upon going to bed. It was well at both these times to wash out the rectum with warm or tepid water and then to employ the cold jet directed against the perinæum. The patient should spend as much time as possible in the recumbent posture.

The Treatment of Gonorrhœa and Gonorrhœal Cystitis.—Dr. Edward R. Palmer, of Louisville, had prepared a paper on this subject, which was read in his absence by the secretary. He had recently treated fifty-five cases of gonorrhœa in which the average duration of treatment producing a cure had been 45·18 days. All these cases were in private out-patients. The results, to his mind, were highly favorable to the "mixed" method of treatment. The plan was practiced as follows: Hot irrigation with a nozzle, except in cases of high inflammation, beginning with solutions of bichloride of mercury as weak as 1 to 30,000, increasing gradually in obedience to personal idiosyncrasies, with citrate of potassium internally, a teaspoonful every few hours. The irrigation should be made with from thirty to sixty ounces of the solution twice daily.

When the acute inflammatory process was passed, the "mixed" method should be used. This was employed by the patient, using a 1-to-500 solution of zinc sulphate in a siphon with seven feet head (the solution to be placed in a receptacle seven feet higher than the penis), to be ballooned with half an ounce or more of the solution of zinc by placing the nozzle of the siphon against the meatus. In most cases two such treatments daily, with the internal treatment, would effect a cure in three or four weeks. Experience showed that the bichloride of mercury in solution was the best drug for urethral irrigation. In these fifty-five cases the bladder had been partly filled in some instances, and the absence of all untoward complications, such as prostatitis, epididymitis, and cystitis, proved the safety and also the prophylactic power of this treatment.

An Unusual Form of Vesical Calculus.—Dr. George Chismore, of San Francisco, had sent a paper with this title. (To be published.)

The Toxic Action of Chromic Acid used as a Cauterant.—Dr. J. William White, of Philadelphia, had sent a paper with this title, to be read. For years he had been in the habit of using the above-named agent in obstinate cases of recurrent vegetations upon the genitals. Although such papillary growths sometimes accompanied specific discharges from the genitals and ulcers of venereal origin, yet they were not dependent upon the specific poisons of these diseases, and were often found upon persons in no way affected with any venereal taint. A young woman, an inmate of the venereal wards of the Philadelphia Hospital last October, had a mass of vegetations of this nature covering the labia majora and nymphæ, extending up toward the pubes and down toward the anus. This mass was several inches thick. After two weeks of treatment by cold poultices and water dressings, the application of chromic acid was ordered. The solution used contained 100 grains to the ounce of water. About half an ounce of the

liquid was used, the vagina and anus being protected by tampons of cotton soaked in carbolized oil. After this single application the patient passed a restless night, and called frequently for water. At 4 P. M. she rose to urinate and fell; she was carried to bed and slept three hours. Thirst continued all the morning without fever, and nausea supervened. At 3 A. M. she was pale, with cold extremities, pain in the left hypochondriac region, and fear of approaching death. The axillary temperature was 99° F. Active treatment failed to benefit her, and she died at 6.30 P. M., twenty-seven hours after the application of the acid. Intellection was preserved to the last. Little was found macroscopically at the autopsy. The stomach was distended and its mucous membrane showed numerous fine ecchymoses, the result of vomiting. The biliary ducts were patulous. The liver was small and weighed forty ounces; a section showed the nutmeg change. The gall-bladder was distended with a very dark-colored secretion. The spleen was flabby and pale and weighed five ounces. The kidneys were the seat of passive congestion, and their capsules were easily stripped off. Section of the vagina showed the mucous membrane dark-red in color, covered with yellowish discharge, with no evidences of contact of the acid. The membranes and chorioid plexus of the brain were injected. Dr. John Marshall had analyzed the viscera with the following results: The kidneys and liver contained chromium, probably sodium chromate, which was poisonous in doses of from one to three grains. The rectus muscle was free from chromium. The chromic acid had probably combined with the sodium carbonate of the blood to form sodium chromate. The sudden death in this case, the author continued, was surprising, as the text-books contained no word of warning against the dangers of using chromic acid, while recommending its employment. Gubler, however, in the "Gazette méd. de Paris," 1871, had said that the absorption of chromic acid was not free from danger, and patients had been poisoned by a too extensive application to the surface of their bodies.

(*To be concluded.*)

NEW YORK NEUROLOGICAL SOCIETY.

Meeting of May 7, 1889.

The President, Dr. GEORGE W. JACOBY, in the Chair.

State Care versus County Care of the Insane was the subject of the annual address, which was delivered by the President. (See page 589.)

Pachymeningitis Hæmorrhagica Interna.—Dr. G. R. ELLIOTT presented an anatomical specimen of a case of this disease, taken from the body of a laborer sixty-five years old, admitted on March 27th into the Randall's Island Hospital, in a semi-conscious condition. He lay with his head thrown backward and to the right, the left eye closed, the right partly open. When loudly spoken to he would open the left eye. His pupils were markedly contracted, his respiration was labored, urine and fæces were passed involuntarily, the tendinous reflexes were exaggerated, and the muscles of his legs were rather rigid. Death occurred on March 31st, the temperature having been at 102·5° F. for several days. The necropsy showed old lesions of the right lung and pleura, of the endocardium and aortic valves, of the liver (incipient cirrhosis), and of the kidneys (chronic diffuse nephritis). The dura mater on the right side of the brain was of a sallow appearance and showed, when incised, the presence of an apparently recent extravasation of blood into its substance, which was here separated into two layers. This mass was bounded anteriorly by a vertical plane at the middle of the frontal lobe, posteriorly by the parieto-occipital fissure, medially by the median fissure, and laterally by the fissure of Sylvius. Its greatest thickness was one fourth of an inch; its edges were gradually lost in the normal dura. The external layer of the dura was but slightly adherent to the skull; the internal layer was easily detached from the pia mater. The surface of the right hemisphere was notably depressed, especially in the anterior third of the parietal region.

Upon transverse section of the tumor, the dura showed itself lined internally by a membrane of new formation, whose circumference was limited by that of the clot. No examination relative to the presence or absence of the decussation of the anterior pyramids had been made in this case. Dr. Elliott believed the process of formation of this lesion to have been inflammatory.

Dr. HERTER said it was difficult to decide what the condition really was in the majority of cases, but that he thought the new membrane was formed secondarily in the same manner as connective tissue generally.

The Place that Naupathia or Seasickness should occupy in Nosology.—Dr. W. W. SKINNER read a paper with this title. (See page 626.)

Miscellany.

Report on the Prevention of Tuberculosis to the Board of Health of New York City.—The disease known as tuberculosis, and when affecting the lungs, as pulmonary tuberculosis (consumption), is very common in the human being and in certain of the domestic animals, especially cattle. About one fourth of all deaths occurring in the human being during adult life are caused by it, and nearly one half of the entire population at some time in life acquire it. The disease is the same in nature in animals and in man, and has the same cause.

It has been proved beyond a doubt that a living germ, called the tubercle bacillus, is the cause and the only cause of tuberculosis. It does not seem necessary to state the facts upon which this assertion is based, for the observation first made by Robert Koch in 1882 has been confirmed so often and so completely that it now constitutes one of the most absolutely demonstrated facts in medicine.

Tuberculosis may affect any organ of the body, but most frequently first involves the lungs. When the living germs find their way into the body they multiply there, if favorable conditions for their growth exist, and produce small new growths or nodules (tubercles) which tend to soften. The discharges from these softened tubercles, containing the living germs, are thrown off from the body. In pulmonary tuberculosis these discharges constitute, in part, the expectoration. The germs thus thrown off do not grow outside the living human or animal body, except under artificial conditions, although they may retain their vitality and virulence for long periods of time, even when thoroughly dried. As tuberculosis can only result from the action of these germs, it follows, from what has just been said, that, when the disease is acquired, it must result from receiving into the body the living germs that have come from some other human being or animal affected with the disease.

It has been abundantly established that the disease may be transmitted by meat or milk from tuberculous animals. The milk glands in milch cows often become affected with the disease when their lungs are involved, and the milk from such animals may contain the living germs and is capable of producing the disease. Among stall-fed dairy cows twenty or thirty per cent. are sometimes found to be affected with the disease. Tuberculous animals are also frequently killed for food; their flesh sometimes contains the germs, and, if not thoroughly cooked, is capable of transmitting the disease. Boiling the milk or thoroughly cooking the meat destroys the germs. Although the meat and milk from tuberculous animals constitute actual and important sources of danger, the disease is acquired, as a rule, through its communication from man to man.

Tuberculosis is commonly produced in the lungs (which are the organs most frequently affected) by breathing air in which the living germs are suspended as dust. The material which is coughed up, sometimes in large quantities, by persons suffering from consumption contains these germs, often in enormous numbers. This material when expectorated frequently lodges in places where it afterward dries, as on the streets, floors, carpets, clothing, handkerchiefs, etc. After drying, in one way or another, it is very apt to become pulverized and float in the air as dust. It has been shown experimentally that dust collected from the most varied points—in hospital wards, asylums, prisons, private houses, etc., where consumptive patients are present or have been present—is capable of producing tuberculosis in animals when used for their inoculation. Such dust may retain for weeks its power of producing the disease. On the other hand, dust collected from rooms in institutions or houses that have not been occupied by tuberculous patients does not produce the disease when used for the inoculation of animals. These observations show that, where there are cases of pulmonary tuberculosis, under ordinary conditions, the dust surrounding them often contains the tubercle bacilli; and persons inhaling the air in which this dust is suspended may be taking in the living germs. It should, however, be distinctly understood that the breath of tuberculous patients and the moist sputum, received in proper cups, are not elements of danger, but only the dried and pulverized sputum. The breath and moist sputum are free from danger, because the germs are not dislodged from moist surfaces by currents of air. If all discharges were destroyed at the time of exit from the body, the greatest danger of communication from man to man would be removed.

It then follows, from what has been said, that tuberculosis is a distinctly preventable disease.

It is a well-known fact that some persons, and especially the members of certain families, are particularly liable to tuberculosis, and this liability can be transmitted from parents to children. So marked and so frequent is this liability, and so frequent is the development of the disease in particular families, that the affection has long been considered hereditary. We know that tuberculosis can only be caused by the entrance of the germ into the body, and that this transmitted liability simply renders the individual an easier prey to the living germs when once they have gained entrance.

The frequent occurrence of several cases of pulmonary tuberculosis in a family is, then, to be explained, not on the supposition that the disease itself has been inherited, but that it has been produced after birth by transmission directly from some affected individual. Where the parents are affected with tuberculosis, the children from the earliest moments of life are exposed to the disease under the most favorable conditions for its transmission, for not only is the dust of the house likely to contain the bacilli, but the relationship also between parents and children, especially between the mother and the child, are of that close and intimate nature especially favorable for the transmission by direct contact.

If, then, tuberculosis is not inherited, the question of prevention resolves itself principally into the avoidance of tuberculous meat and milk and the destruction of the discharges, especially the sputum, of tuberculous individuals. As to the first means of communication, those measures of prevention alone answer the requirements which embrace the governmental inspection of dairy cows and of animals slaughtered for food and the rigid exclusion and destruction of all those found to be tubercular.

For the removal of the second means of communication—*i. e.*, the sputum of tubercular individuals—the problem is simple when the patients are confined to their rooms or houses; then wooden or pasteboard cups with covers should always be at hand for the reception of the sputum. These cups are supported in simple racks, and at least once daily, or more frequently if necessary, should be removed from the racks and thrown with their contents into the fire.*

The disposition of the expectoration of persons who are not confined to their rooms or homes is a far more difficult problem. The expectoration certainly should not be discharged on the street, and the only practicable means for its collection seems to be in handkerchiefs, which, when soiled, should at the earliest possible moment be soaked in a five-per-cent. solution of carbolic acid and then boiled and washed. Handkerchiefs thus soiled are exceedingly dangerous factors in distributing tubercle bacilli, for when the sputum becomes dry it is easily separated in flakes from the cloth, and then soon becomes pulverized and suspended as dust.

It becomes evident, from what has been said, that the means which will most certainly prevent the spread of this disease from one individual to another are those of scrupulous cleanliness regarding the sputum. These means lie largely within the power of the affected individual. It is furthermore to be remembered that consumption is not always, as was formerly supposed, a fatal disease, but that it is in very many cases a distinctly curable affection. An individual who is well on the road to recovery may, if he does not with the greatest care destroy his sputum, diminish greatly his chances of recovery by self-inoculation.

While the greatest danger of the spread of the disease from the sick to the well is in private houses and in hospitals, yet, if this danger is thoroughly appreciated, it is, for the most part, quite under control, through the immediate destruction of the sputum and the enforcement of habits of cleanliness. But in places of public assembly, such as churches and theatres, particularly the latter, the conditions are different, and safety would seem to depend largely upon a dilution and partial removal of the floating and possibly dangerous dust by means of adequate ventilation. Rooms in private houses and hospital wards that are occupied by phthisical patients should from time to time be thoroughly cleaned and disinfected, and this should always be done after they are vacated, before they are again occupied by other individuals. Steamship companies should be obliged to furnish separate apartments for consumptive persons, so that no person in the exigencies of travel need be forced to share his room with one who might be a source of active danger to him.

We desire to especially emphasize the following facts: 1st, that tuberculosis is a distinctly preventable disease; 2d, that it is not directly inherited; and 3d, that it is acquired by the direct transmission of the tubercle bacillus from the sick to the healthy, usually by means of the dried and pulverized sputum floating as dust in the air.

The measures, then, which are suggested for the prevention of the spread of tuberculosis are: 1st, the security of the public against tuberculous meat and milk, attained by a system of rigid official inspection of cattle; 2d, the dissemination among the people of the knowledge that every tuberculous person may be a source of actual danger to his associates, if the discharges from the lungs are not immediately destroyed or rendered harmless; and 3d, the careful disinfection of rooms and hospital wards that are occupied or have been occupied by phthisical patients.

[Signed.] Hermann M. Biggs, T. Mitchell Prudden, Henry P. Loomis, *Pathologists to the New York City Health Department.*

The Ohio State Medical Society held its forty-ninth annual meeting at Youngstown on the 22d, 23d, and 24th of May, under the presidency of Dr. P. S. Connor, of Cincinnati. Dr. John C. Reeve, of Dayton, read a paper on "The Early Diagnosis of Extra-uterine Pregnancy"; Dr. Max Thorner, of Cincinnati, one on "Chronic Painful Affections of the Throat"; Dr. A. B. Thrasher, of Cincinnati, one on "Laryngeal Phthisis"; Dr. Orpheus Evarts, of College Hill, one on "The Natural and the Supernatural in Medicine"; Dr. Henry S. Upson, of Cleveland, one on "Localization in Diseases of the Spinal Cord"; Dr. Rufus B. Hall, of Cincinnati, one on "Abdominal Section for Inflammatory Diseases"; Dr. J. A. Battles, of Youngstown, a poem entitled "The Physician and Surgeon"; Dr. A. R. Baker, of Cleveland, a paper on "The Ætiology, Prognosis, and Cure of Incipient Cataract without Operative Interference"; Dr. G. M. Allen, of Cleveland, one on "Injuries to the Head"; Dr. John McCurdy, of Youngstown, one on "Pressure as a Remedial Agent"; Dr. R. A. Vance, of Cleveland, one on "Intestinovaginal Fistula"; Dr. George Goodhue, of Dayton, one on "Trephining"; and Dr. H. J. Herrick, of Cleveland, one on "Modern Theories of Tubercle, and Therapeutic Tests." Officers for the ensuing year

* A cheap and efficient cup answering this purpose is now on the market and is supplied by the druggists.

were elected as follows: President, Dr. John McCurdy, of Youngstown; vice-presidents, Dr. W. J. Conklin, of Dayton, Dr. A. W. Ridenour, of Massilon, Dr. C. W. Tangeman, of Cincinnati, and Dr. J. E. Woodbridge, of Youngstown; secretary, Dr. G. A. Collamore, of Toledo; assistant secretary, Dr. E. C. Brush, of Zanesville; treasurer and librarian, Dr. T. W. Jones, of Columbus. It was voted to hold the next annual meeting at Columbus, beginning on the first Wednesday in June, 1890.

Exophthalmic Goitre at the Salpetriere.—The following is a translation, by Louise Fiske Bryson, M. D., of an article that appeared in the "Gazette hebdomadaire de médecine et de chirurgie" for March 22, 1889: At Charcot's clinic of January 22d there was presented a weak, emaciated man, attacked with tremor, in consequence of grief, the tremor being equally fine and rhythmic throughout all the muscles of the body, resembling somewhat the process known as shivering with cold. The heart-beats were from 120 to 130, and the temperature from 37° to 38° C. (98·6° to 100·4° F.). As in tuberculosis, profuse sweating existed, also profuse diarrhœa, another point of resemblance to the same disease. The patient stated that, without vertigo or loss of consciousness, he would sometimes fall while walking. The legs would give out under the weight of the body, just as in locomotor ataxia, without, however, any of the lightning-like pains of the latter disorder accompanying the fall. M. Charcot considered this special condition of weakness to be the beginning of a paralysis, peculiar to Basedow's disease, in which the reflexes are slight and the paraplegia circumscribed, being in fact a kind of paresis of the lower limbs.

Another case of exophthalmic goître, that of a woman, presented a train of symptoms that might possibly be considered evidences of tuberculosis. There were fever, cough, sweats, and diarrhœa. In a thesis inspired by Professor Renaud and defended at Lyons, elevation in temperature is proved to exist always in exophthalmic goître; but, in spite of strong indications, tuberculosis does not develop. This patient was also subject to sudden loss of power in the legs. A case was referred to of the simultaneous appearance of exophthalmic goître and hysteria, and the professor called attention to the close relation and frequent coincidence of these two neuroses. The complex of symptoms known as Basedow's disease may be tabulated as follows: First Order—*Cardinal Symptoms.*—Tachycardia (asystolic), goître, exophthalmia, and tremor. Second Order—*Secondary Symptoms.*—*a.* Digestive: Vomiting, characteristic diarrhœa, sudden and excessive hunger, and icterus. *b.* Respiratory: Cough, frequent respiration, and symptoms of angina pectoris. *c.* Motor: Paralyses, Von Graefe's symptom, impossibility of convergence (Möbius), convulsions, and epileptoid attacks. *d.* Psychic: The characteristic mental state. *e.* Cutaneous: Urticaria, pigmentation, vitiligo, perspiration, heat, and diminution of electrical resistance. *f.* Urinary: Polyuria, albuminuria, glycosuria. *g.* Genital: Impotence and menstrual disturbances. *h.* General: Profound anæmia, cachexia, œdema, and final asystole.

The German Dermatological Society will hold its first meeting in Prague, on the 11th and 12th inst. The programme includes the following items: "Contributions on Lepra, with the exhibition of Plaster Casts," by Dr. Arning, of Hamburg; "Remarks on the Hairs in Alopecia Areata, with the exhibition of Microscopical Preparations," by Dr. Behrend, of Berlin; "On the Initial Signs of Hereditary Syphilis," by Dr. Caspary, of Königsberg; "Further Contributions to the Subject of Orchitis Variolosa" and "On Polypoid Cutaneous Outgrowths of the Rhaphe Perinæi," by Dr. Chiari, of Prague; "On Xanthoma Tuberosum, with Microscopical Preparations," by Dr. Epstein, of Nuremberg; "Remarks on the Regurgitation of Pus from the Posterior Part of the Urethra into the Bladder, with a Demonstration," by Dr. Finger, of Vienna; "On the Domestic Treatment of Syphilis in Bosnia and Herzegovina," by Dr. Glück, of Zenica; "On Dermatitis Herpetiformis," by Dr. Ittmann, of Breslau; "On the Gonorrhœal Vulvitis of Prostitutes," by Dr. Jacobi, of Breslau; "On Urethritis Posterior" and "A Demonstration of Favus Cultivations," by Dr. Jadassohn, of Breslau; "On Acute Circumscribed Œdema of the Skin and Paroxysmal Hæmoglobinuria," by Dr. Joseph, of Berlin; "Remarks on the most recent Epidemic of Zoster," "On a Fatal Case of Acute Mercurial Poisoning from the Subcutaneous Injection of Oleum Cinereum, with Microscopical Preparations," and "A Case of Acute Development of Lepra Anæsthetica in a Syphilitic Person," by Dr. Kaposi, of Vienna; "On Prodromal Localized Syphilides" and "A Word in favor of the Endoscopic Treatment of Chronic Gonorrhœa," by Dr. Klotz, of New York; "On the Microphytes of the Skin and Explanatory Remarks on their Bacteriological Exposition," by Dr. Kral, of Prague; "The Ætiology and Treatment of Psoriasis" and "The Use of Preparations of Ichthyol in Dermatological Practice," by Dr. Kopp, of Munich; "On the Keratohyalin Question," by Dr. Lazansky, of Prague; "On the Collateral Effects of Injections of Insoluble Preparations of Mercury," by Dr. Lesser, of Leipsic; "On Leucoderma Syphiliticum, with special reference to its Ætiology and to the Significance of the Pigment," "The Minute Anatomy of the Skin, with a Pictorial Representation," and "On Relapses of Syphilis after Various Modes of Treatment," by Dr. Lewin, of Berlin; "Dermatological Contributions," by Dr. Lipp, of Graz; "On Bacterial Inflammation of the Hair-follicles, a hitherto undescribed Form of Alopecia, with Microscopical Preparations" and "Is a Special Place in the Pathology of Syphilis to be assigned to the Lichenoid Syphilides? with Microscopical Preparations," by Dr. Michelson, of Königsberg; a report on "The Significance of the Gonococcus in Diagnosis and Treatment," "On the Structure of the Bacilli of Lepra and Tuberculosis, with special reference to Rosaniline and Pararosaniline as Staining Agents," and "On Lepra Cells," by Dr. Neisser, of Breslau; "On the Recognition of the Clinical and Histological Changes in Diseases of the Vaginal Mucous Membrane," by Dr. Neumann, of Vienna; "The Pathology and Treatment of Eczema," "Urticaria Pigmentosa," and "Melanosis Lenticularis Progressiva" (each with the exhibition of patients), by Dr. Pick, of Prague; "The Morbid Changes in the Neighboring Lymphatic Glands in Primary Tuberculosis of the Skin" and "The Histological Appearances in Urethritis Externa," by Dr. Richter, of Prague; "Examinations of the Gonococci and Diplococci of the Urinary Passages," by Dr. Steinschneider and Dr. Galewsky; "Gonorrhœal Vulvo-vaginitis," by Dr. Steinschneider, of Franzensbad; "The Causes and Nature of Rhinoscleroma," by Mr. Squire, of London; "The Quantitative Determination of Mercury and its Value in the Mercurial Treatment of Syphilis by Various Methods," by Dr. Winternitz, of Prague; and "On the Toxic Effects of Various Mercurial Preparations," by Dr. Zeising, of Breslau.

The "Journal of the American Medical Association."—An edition of 70,000 copies was recently printed, enough to enable our excellent contemporary to bring itself to the notice of almost every physician in the country.

The North Texas Medical Association will hold its next semi-annual meeting in Paris, on the 11th, 12th, and 13th inst., under the presidency of Dr. J. T. Wilson. The programme includes the following papers: "The Treatment of Diseases of the Cæcum and its Appendix," by Dr. Bacon Saunders, of Bonham; "Surgical Interference in Mastoiditis," by Dr. J. H. Smith, of Dallas; "The Mortality of Amputations," by Dr. W. F. T. Savage, of Mt. Pleasant; "Lacerated Cervix Uteri," by Dr. J. F. Hooks, of Paris; "Lacerated Perinæum," by Dr. S. F. King, of Bells; "Puerperal Eclampsia," by Dr. R. R. Walker, of Paris; "Dysentery," by Dr. V. A. Howeth, of Gainesville; "The Use of the Microscope in the Diagnosis of Disease," by Dr. F. E. Yoakum, of Greenville; and "Cerebro-spinal Meningitis," by Dr. T. G. Bates, of Anna.

The Medical Society of New Jersey.—The one hundred and twenty-third annual meeting will be held at Asbury Park, on Tuesday and Wednesday, June 18th and 19th. The programme includes the following papers: "Retrospection of the Medical Society of New Jersey, with some Suggestions as to its Improvement," annual address by the President, Dr. H. G. Taylor, of Camden; discussions upon subjects presented at the last annual meeting: "Perityphlitis, its Diagnosis, Pathology, and Treatment," the discussion to be opened by Dr. J. G. Ryerson; "The Advantages and Disadvantages of Intubation of the Larynx, in Lieu of Tracheotomy," the discussion to be opened by Dr. W. U. Selover, of Rahway; "The Revived Use of Calomel, with Especial Reference to its preventing Plastic Exudation," the discussion to be opened by Dr. J. D. Osborne, of Newark; "The Inheritance of Disease," by Dr. E. J. Marsh,

of Paterson; "Some Recent Advancements in Pelvic Surgery," by Dr. H. M. Weeks, of Trenton; "The Value of Creasote in Fifty Cases of Chronic Disease of the Air Passages," by Dr. W. P. Watson, of Jersey City. Committees will also report on "The Propriety of Establishing State Board Examiners," Dr. C. F. J. Lehlbach, chairman; and "To Secure such Modification of the State Laws as may be necessary to Permit and Regulate the Practice of Dissection within the State," Dr. J. P. Davis, chairman.

The Rush Monument Committee gives notice that it will meet in the right gallery room at Music Hall, Newport, R. I., on Tuesday, June 25th, at 1 P. M., or immediately after the adjournment of the morning session of the American Medical Association. The attendance of others interested in the project is invited. Collections and subscriptions should be forwarded to the treasurer, Dr. Joseph M. Toner, 615 Louisiana Avenue, Washington, D. C., before June 15th.

Vital Statistics for the Eleventh Census.—The superintendent of the census has issued the following circular to the medical profession, dated May 1, 1889:

"The various medical associations and the medical profession will be glad to learn that Dr. John S. Billings, Surgeon, U. S. Army, has consented to take charge of the Report on the Mortality and Vital Statistics of the United States as returned by the Eleventh Census. As the United States has no system of registration of vital statistics, such as is relied upon by other civilized nations for the purpose of ascertaining the actual movement of population, our census affords the only opportunity of obtaining near an approximate estimate of the birth and death rates of much the larger part of the country, which is entirely unprovided with any satisfactory system of State and municipal registration. In view of this, the Census Office, during the month of May this year, will issue to the medical profession throughout the country "Physician's Registers" for the purpose of obtaining more accurate returns of deaths than it is possible for the enumerators to make. It is earnestly hoped that physicians in every part of the country will co-operate with the Census Office in this important work. The record should be kept from June 1, 1889, to May 31, 1890. Nearly 26,000 of these registration books were filled up and returned to the office in 1880, and nearly all of them used for statistical purposes. It is hoped that double this number will be obtained for the Eleventh Census. Physicians not receiving Registers can obtain them by sending their names and addresses to the Census Office, and, with the Register, an official envelope which requires no stamp will be provided for their return to Washington. If all medical and surgical practitioners throughout the country will lend their aid, the mortality and vital statistics of the Eleventh Census will be more comprehensive and complete than they have ever been. Every physician should take a personal pride in having this report as full and accurate as it is possible to make it. It is hereby promised that all information obtained through this source shall be held strictly confidential."

The New Hampshire Medical Society.—The ninety-eighth annual meeting will be held at Concord on Monday and Tuesday, June 17th and 18th. The following papers are included in the programme: "Physical Culture," by Dr. A. P. Chesley, of Concord, the discussion to be opened by Dr. G. Cook, of Concord; "Report on Surgery," by Dr. M. W. Russell, of Concord, the discussion to be opened by Dr. J. J. Berry, of Portsmouth; "Use of Antiseptics by Country Surgeons," by Robert Burns, of Plymouth, the discussion to be opened by Dr. L. G. Hill, of Dover; "Pneumonia: its Ætiology and Differential Diagnosis," by Dr. F. T. Moffett, of Littleton; "Pneumonia: its Mortality and Therapeutics," by Dr. W. B. Porter, of Walpole, the discussion to be opened by Dr. Thomas Hiland, of Concord; Report of the Committee on Necrology, by Dr. J. J. Berry, of Portsmouth; "The Use and Abuse of Narcotics and Alcoholics," by Dr. William Child, of New Hampton, the discussion to be opened by Dr. D. S. Adams, of Manchester; "Disposal of Garbage," by Dr. G. P. Conn, of Concord, the discussion to be opened by Dr. J. W. Parsons, of Portsmouth.

The Treatment of Hiccough.—Dr. C. W. Sillin, of Spencerville, Ohio, writes expressing the hope that some of our readers will give brief answers to the question, What is the best treatment for hiccough?

ANSWERS TO CORRESPONDENTS.

No. 263.—1. Assuming the resistance to be 200 ohms, and that you use large electrodes, you might get a current of 150 milliampères or more. 2. It is not considered advisable to use two sorts of cells in the same circuit.

No. 264.—We are not aware of any widespread feeling against the practice, and we think it justified by the fact that such officers are insufficiently paid by the Government.

No. 265.—The antrophore is made by Mr. George Morlot, No. 96 Spring Street, New York.

No. 266.—Lectures on massage are given at the Bellevue Hospital Training School for Nurses by Mr. T. Cecil.

No. 267.—1. We do not know. 2. Probably the substance of what the doctrines were is to be found in an article by Dr. Ely Van de Warker, published within the last two or three years in the "American Journal of Obstetrics."

No. 268.—They are used with great success. See Dr. Willy Meyer's article in our issue for April 21, 1888, page 426. They are made by J. Leiter, of Vienna, and by P. Hartwig, of Berlin.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

THE RELATIONSHIP EXISTING BETWEEN HUMAN AND BOVINE TUBERCULOSIS.*

BY E. F. BRUSH, M. D.,
MOUNT VERNON, N. Y.

A STRANGELY interesting phase of the study of phthisis is that presented by the disease in living beings. In the human race the afflicted are generally the most attractive members of society. Scrofulous females are usually among the most beautiful people we meet, with their transparent complexion and large languid eyes, while the scrofulous males are either intensely intellectual or correspondingly erotic. The same rule holds good in the bovine race; the small inbred tubercular Jersey is in appearance the most attractive of any of the cow tribe, while even the common scrub cow that is tubercular has a certain beauty that distinguishes her from her more robust sisters. I know a famous animal painter who will always unconsciously select from a herd of cows the scrofulous one for his study whenever he makes a study of a single animal from a herd.

This is not the only strange feature of the disease. No one seems to be afraid of it. For years men of undoubted scientific ability have been proclaiming to the world the still hardly recognized fact that bacillary phthisis is contagious, but the human family take little heed. Furthermore, the individual, sorely afflicted, beyond human aid, and shortly to die, is not convinced of the fact, but, with the same strange fatality that surrounds the disease in all its phases, the consumptive is still hopeful and imagines he is getting better even while he is dying.

This insidious and delusive disease is not the result of civilization, as many suppose. Barbarous and uncivilized races are afflicted as severely as many of the most advanced civilized races. Neither geographical position nor climatic conditions are a factor in the distribution of pulmonary phthisis, notwithstanding that our best workers in the study of the disease attempt at times to account for its prevalence in certain localities by reason of temperature or other climatic conditions. Nevertheless, every known part of the globe, with a few isolated areas excluded, is a habitat of the disease. After several years of close study of the affection, and consulting all accessible statistics and the habits of the people where the disease prevails, the only constant associated factor is found, in my opinion, in the inbred bovine species, without any regard to the social position of a community, its geographical habitation, terrestrial or atmospheric condition. If a community is closely associated with inbred dairy cattle, tuberculosis prevails.

This position which I take is susceptible of strong proof.

In establishing my proof I will first draw your attention to some barbarous races of Africa. Speaking of the natives of South Africa, P. L. Simmonds, in his book on "Animal Products," says: "This people delight in horned cattle of the bovine species," "the natives are great milk drinkers," "these barbarous people suck the blood from the jugular vein of the living bullock," and also "churn together blood and milk for a drink." Professor Low, in his "History of the Ox," tells us: "In the vast regions of southern Africa, peopled by tribes of warriors and herdsmen, cattle abound and multiply, and form the wealth of little communities. The Hottentots, while yet they had a country they could call their own, were rich in this kind of possession." In Hirsch's book on the "Geographical Distribution of Phthisis" we find the following: "In Cape Colony phthisis is oftenest met with among the Hottentots inhabiting the plains near the coast." In proof of the fact that these African cattle are inbred, we have the writings of Anderson, quoted by Darwin as follows: "The Damaras take great delight in having whole droves of cattle of the same color, and take great pride in their oxen in proportion to the size of their horns. The Namaquas have a perfect mania for a uniform team, and almost all the people of southern Africa value their cattle next to their women, and take great pride in possessing animals that look high-bred." Darwin, from whose "Animals and Plants under Domestication" we take this quotation, adds in his own words: "As numerous breeds are generally found only in long-civilized countries, it may be well to show that in some countries inhabited by barbarous races, who are frequently at war with each other, and therefore have little free communication, several distinct breeds of cattle now exist, or formerly existed, at the Cape of Good Hope. Lignat observed in 1720 three kinds; at the present day (1868) various travelers have noticed the difference of the breeds in southern Africa. Sir Andrew Smith several years ago remarked to me that the cattle possessed by the different tribes of Kaffirs, though living near each other under the same latitude and in the same kind of country, yet differed, and he expressed much surprise at the fact." *

These facts relating to the cattle-breeding propensities of the negroes account for the statements of Daniell, that "phthisis is widely prevalent and very malignant among the negroes of the west coast of Africa." In the interior plateaus of southern Africa phthisis, however, hardly ever occurs. This immunity can be accounted for by the presence of the tsetse fly. This fly inhabits well-defined regions in central Africa, and where it exists, cattle, horses, and dogs can not live.†

Let us now take the civilized inhabitants of a colder clime, and we find that in Denmark, one of the noted dairy countries, there are 1,470,078 cows to 2,033,959 inhabitants, or one cow to $1\frac{5}{14}$ inhabitant. The mortality from phthisis in that country ranges from three in a thousand to 2·1 in a thousand. Now Iceland, an island belonging to the King of Denmark, where the climatic conditions are nearly the same, has 20,000 cows to 80,000 inhabitants. There

* Read before the New York Academy of Medicine, April 18, 1889.

* Guiol says that consumption is not uncommon among the colored races, particularly the Kaffirs. Guiol, "Archives gén. de médecine," November, 1882, p. 329.

† Wallace, "The Geographical Distribution of Animals," 1876, vol i, p. 945.

are no definite statistics about this, but, taking the most trustworthy accounts of the island as a guide, this is about the condition of affairs. The people of Denmark are well to do, and can use for themselves more of their dairy productions, while the poor Icelander pays his rent with his dairy product. With the exception of milk, the Icelander uses very little from his herd for food. In several accounts of travelers in that country giving a description of the entertainment extended to them, I never find beef in a single instance, while in the winter nearly all the milk used is obtained from the sheep. Owing to the short hay crops, the cows are fed in winter on dried fish, and consequently the cattle will not give milk on the same low diet as the sheep do. With all these modifying influences, and only one cow to four individuals, the rarity of phthisis in the island can be accounted for, if my theory is correct. That the disease is rare we know from the writings of Schleisner, who says: "According to the unanimous testimony of practitioners on the island, consumption does indeed occur there, although remarkably seldom. In my own practice I have most carefully examined every patient who complained of even the slightest trouble in the chest, and out of three hundred and twenty-seven persons suffering from chronic diseases of the organs of respiration, I found only three with phthisis." Evans says that "this statement is borne out by the more recent writings on the state of health in Iceland by Leared, Hjaltlin, and Finsen. It would appear that it is not with any national peculiarity that we have here to do, from the fact that Icelanders who migrate to Denmark fall into consumption not infrequently." *

Now let us look into the affairs of a little island in the Atlantic Ocean as they existed sixty-eight years ago. It will be remembered that in my former paper on this subject I made the statement that asses and goats were not tubercular animals. The following is quoted from "A Description of the Island of Saint Michael," by John W. Webster, M. D., 1821: "Every family in Saint Michael has one or more asses, which are the principal beasts of burden in common use, subsisting on the coarsest kind of food; the females afford considerable milk, which is sold to sick persons. Although the island is so well stocked with black cattle, sheep, and goats as to allow considerable exportation, few of these belong to the peasanty. Cows are mostly attached to the estates, and the peasant who hires a farm, in addition to a certain quantity of work to be performed for his landlord, is required to take charge of these, and convey the milk, butter, and cheese to town, where they are sold for the benefit of the *morgado*, and the poor peasant receives no other recompense for his trouble than some slight abatement in his rent. The milk is carried to town in skins, on the backs of asses, but, from the agitation it undergoes, on its arrival most of the families in the city prefer using the milk of the goats, herds of which are kept in the vicinity, and daily driven into town and milked at the door of the customers." Dr. Webster adds: "Although the climate of St. Michael can not be safely recommended to a consumptive patient, it is, nevertheless, rare to see the disease in a native." Dr. Webster would not have been astonished at this condition of affairs had he realized the truth that phthisis is a disease acquired from the bovine race, for it is a fact that the only people on the face of the globe who enjoy an absolute immunity from phthisis are those who are not in possession of the domestic cow. Take, for instance, the Kirghiz on the steppes of Russia; these people consume large quantities of mare's milk and eat the flesh of horses and sheep; but they have no cows. According to Dr. Neftel and other authority, a case of phthisis among these people was never known.* Likewise, the Esquimaux also enjoy immunity, because they have domesticated the reindeer, not the cow.

But this allusion to the Esquimaux does not apply to those who inhabit Greenland and that part of the Danish dominions in the Arctic region. There are Esquimaux that know not the cow and there are Esquimaux who have domesticated the cow. So there are authorities that state that the Esquimaux are exempt from phthisis, and other authorities equally as positively state that "consumption is common" † among them. Thus, in the government list of mortality for the province of Julianshaab, "forty-six persons died (out of a population of 4,115, Esquimaux and mixed breeds) of diseases of the chest, which include phthisis, pneumonia, bronchitis, pleuritis, etc." ‡ This prevalence of tuberculosis is perfectly explained by the facts given in Dr. Hayes's book, "The Land of Desolation." # He writes in his visit to Julianshaab: "Around the lake were extensive pasture grounds, upon which were browsing a herd of cows. . . . At this I was not a little surprised, for, although I knew that in former times cattle had been reared here in great numbers, I had received the impression that at the present time they would not thrive. Mr. Arthur informed me there was no difficulty in raising them, except the very important one of forage for the winter, for at Julianshaab the grass never grows high enough for hay; further up the fjord, however, it is abundant. But since the hay must all be brought in boats, it was both a tedious and expensive operation to gather it. Yet he managed to keep three cows, the governor had an equal number, the doctor had two, others had each one; and, indeed, all the well-to-do people in the village—Danes, half-breeds, and the better class of Greenlanders—had a daily supply of milk the year round." Therefore, according to this testimony, the average of dairy cattle in this community is higher than in many better-known localities, and the prevalence of phthisis is not at all surprising.

Now let us look at a locality which once enjoyed immunity but now is notoriously a place for consumption. Wallace, in his work on "The Geographical Distribution of Animals," tells us that Australia was the poorest zoological region on the globe. A story is told by Simmonds as follows, which illustrates the scarcity of animals in this region: "Mr. Oldfield, who has seen so much of the aborigines of

* Hirsch, "Handbook of Geographical and Historical Pathology," 1886, vol. iii, p. 177.

* Maydell, quoted by Williams.

† Williams, "Influence of Climate in Pulmonary Consumption," p. 17.

‡ *Ibid.*, p. 16.

Dr. Hayes, "Land of Desolation," p. 36.

Australia, informs me that they are all very glad to get a dog, and several instances have been known of the father killing his own infant in order that the mother might suckle the much-prized puppy." The only animals that existed in this island before its invasion by Europeans were, according to Wallace, a few marsupials. Previous to 1788 no ruminants existed in Australia. In that year 1,030 convicts and sailors were landed; they had with them as public stock one bull, four cows, one calf, one stallion, three mares, and three colts. In 1790 provisions gave out, and they were obliged to kill all the live stock they possessed. In 1796 two bulls and three cows of the Cape of Good Hope breed were introduced, but they escaped and fled into the interior, where they were lost for several years. During this year several attempts were made to introduce European cattle, but they all died on the passage. In 1807 the Government had a herd of cattle in the colony, and cows were worth $400 a piece. In 1821, the Government becoming convinced of the great advantages of Australia as a grazing country, emigrants were allowed a grant of from five hundred to two thousand acres of grazing land, and rations from the King's stores were also allowed to each settler; a certain number of convict servants were likewise apportioned to them. They were also allowed a certain number of cattle from the Government herd, and a loan of money to be repaid in seven years. This was the beginning of the cattle raising in Australia. It proved so successful that in 1826 the Australian Agricultural Company commenced its operations, which was the origin of the "*sheep and cattle mania*," and, as the historian puts it, "the priest forsook his altar and became a herdsman of cattle." A drought, beginning in 1827 and lasting for three years, cured the mania. But within a year after the drought, cattle became so plentiful that the meat of the best quality was sold at a cent and a half a pound. In 1833 good cattle could be bought for $4 or $5 a head. At the present time, or according to the last consular reports, there are three million inhabitants and eight million cattle—nearly three animals to each individual. This great increase will be seen by the foregoing to have taken place within sixty years. Australia enjoyed a reputation for immunity from consumption and the favorable influence of its climate on the course of the malady, but, as Hirsch says, "this has of late been shown to be a mistake. In Victoria," he continues, "where the disease, it is true, has been a good deal more common *only in recent years*, the mortality from phthisis in 1866 was 6 per cent. of the mortality from all causes, while in Melbourne itself the death-rate rose between 1865 and 1869 from 2·22 to 2·52 to a thousand of the population. In New Zealand phthisis has made frightful ravages among the Maoris, and has been one of the chief causes of the gradual extinction of that race." In my opinion, the death-rate from phthisis will keep on increasing in that locality if the breeding of cattle is not properly regulated by law. We know from other historical facts that cattle can be raised without this great danger, because Hirsch and others tell us that in the Hebrides,* the Highlands of Scotland, and North Wales consumption is remarkably rare. The rarity of the disease in these localities is accounted for by Darwin's observation while he was studying the conditions of cattle under domestication. He says: "So with the mountain cattle of North Wales and the Hebrides it has been found that they could not withstand being crossed with the larger and more delicate lowland breeds. Our *improved* heavy breeds of cattle could not have been formed on mountainous pastures." Now, any one who has paid much attention to the history of cattle breeding knows that the improved races, as we understand them, are the result of the closest inbreeding. The rarity of the disease in mountainous countries also explains the following quotation from Hirsch: "Few countries of Europe enjoy, on the whole, so favorable conditions as Switzerland in respect to the infrequency of consumption, the figures for the entire country, according to Müller, being 1·86 in a thousand. In studying, however, the statistics of the different cantos, we find the mortality ranging from 3·57 to only 0·81. We know that there are localities in this mountainous country where Darwin's observations respecting mountain breeds would explain this condition of facts. The number of cattle in Switzerland is 1,210,849, and the population 2,906,750, or one animal to $2\frac{4}{5}$ inhabitants. Of course, too, there are regions of Switzerland where only the goat can range. We find from the official returns* of 1866 that there were 375,482 of these animals in that country, and we know, from the reports of travelers,† that the milk from the goat is used exclusively in some localities.

Having considered the conditions of some barbarous and some civilized communities, let us now look at the semi-civilized tribes of Madagascar. Both Hirsch and Evans,‡ quoting Grenet, say that in this island consumption is as common as it is in any part of Europe, and rapidly fatal. We have no statistics of the numbers of the population or of the cattle, but all the writers who have visited the country speak of the enormous herds of cattle, and say that the principal diet of the natives is meat, milk, and rice. The principal occupation of the Malagasy is the raising of cattle, thousands of which are shipped to the other islands in the Indian Ocean. In fact, the Island of Mauritius, with its mixed inhabitants, depends entirely on Madagascar for its meat supply. The Rev. William Ellis, describing his trip from Tamatave on the coast to the capital, a distance of about three hundred miles, tells of the natives presenting him, at the end of every few miles' journey, with a bullock, while the Queen herself, as a token of friendship, presented him with eleven. He also adds that the natives never skin their animals, but cut them up and eat the hide as well as the meat.

We have well-authenticated statements respecting another semi-civilized race, the natives of Great Kabylia, who, according to Hirsch and Evans and other authorities,# enjoy an almost absolute immunity from phthisis. According

* MacCormac, "Brit. Med. Jour.," 1868, ii, p. 571.

* Simmonds, "Animal Products," p. 56.

† Prime, "Letters from Switzerland," p. 44.

‡ Hirsch, *op. cit.*, vol. iii, p. 186.

Armand, "Méd. et hygiène des pays chauds," Paris, 1853, p. 375. Bortheraud, "Méd. et hyg. des Arabes," Paris, 1855.

to the best authorities I could consult as to the history of the people, there is no evidence of the presence of the bovine tribe among them, but they possess large flocks of sheep and goats, and each family has usually one buffalo ox to do the plowing.* As these are a peculiar people, with peculiar ideas and peculiar habits, not calculated to encourage visits from European invalids, they retain their immunity from phthisis to the present day. But not so with their neighbors, the Algerians. This country, having been occupied for over half a century by the French, has been therefore rendered sufficiently civilized to offer an asylum for European invalids. When first occupied by the French, the country was exempt from phthisis, and, of course, the publication of this fact drew to it many consumptive invalids. The dairy cow was unknown in Algiers before the French conquest. There were innumerable herds of buffalo, indeed; but the French in vain offered a premium of fifty francs a head for the importation of dairy stock.† Up to 1854 they were unsuccessful, all these attempts proving futile. In the latest statistics from that country we find the largest proportion of deaths from phthisis among the European civil residents.‡

Dr. Scoresby Jackson makes the following remark about Algiers: "It is not necessary to prove the absence of pulmonary consumption from the natives of a country in order to demonstrate the beneficial influence of its climate upon those so affected from other countries. It would be difficult to find such a place, . . . but Algiers, at all events, approximates such a condition."

There are many other countries furnishing statistics of death-rate from phthisis where the disease is not indigenous but due to importation. I think this can be said of Greece. According to Roser # and Olympios, the disease is very rare in that country, and Edmond About, in his book on "Greece and the Grecians," tells us that "the town of Athens possesses only five or six cows; no other milk is drank than that of the sheep; their butter alone is eaten. They eat meat but once a year. The entire population eats meat at Easter for the whole year," ‖ and this meat is lamb.△

In studying the relations existing between the human and the bovine races I find that religion plays a prominent part. Thus, in India, with the Mohammedan, Brahmin, and Buddhist religions, but where, as a rule, dairy cattle have not been domesticated, there was undoubtedly an absence of phthisis before the English occupation. Hence, to-day we find all statements regarding the presence of tuberculosis uncertain. Thus Hirsch ◊ says: "So also in India the prevalence of phthisis can not be given in figures. It is, on the whole, rarer in that part of the world than in the temperate zone of the Eastern Hemisphere, but by no means so rare as the earlier observers supposed from their imperfect means of diagnosis." Now, here is that expression of the feeling of doubt and uncertainty which we find in many works relating to this elusive disease. A man of scientific ability goes to a country and finds no phthisis among the inhabitants. After some years, under circumstances that change the habits of the people, he begins to find phthisis, and therefore imagines he was mistaken in his first observations. We find this taking place in Australia, Algiers, and Greenland. In India this vacillating expression of doubt is easily accounted for. When the English first occupied the country, the only cow they had was the small Hindoo variety, not related to our dairy cow, and this animal was and is an object of veneration, and the milk used in the country was derived from the buffalo. All the Buddhists and many of the Brahmin castes abstain from the use of meat in any form. Ansell, an early writer, says: "It appears that tuberculosis is correspondingly non-existent in certain localities in India." Now, there is a constant change always taking place in such a country as India. Prejudices are dying out, and many of the people have undoubtedly adopted the habits of their conquerors. The English dairy cow is slowly but surely finding her way into India, or, as Mair, a deputy coroner of Madras, says: "Beef is not at all times procurable, but is generally sold about once a week in every station where there is a sufficient number of Europeans to render the slaughter of an animal worth the butcher's while, for little beef is used among the natives. Occasionally the slaughter of a fine English stall-fed cow is advertised. In some districts the sale of beef is prohibited by law, out of respect for caste prejudices. Butter is an article difficult to procure of good quality, except on the hills, where it is sold by European settlers, who make dairy keeping contribute to their support. The native tendency is to palm off buffalo butter for that made of cow's milk." There is little doubt that when the English dairy system becomes well established in India, the statistics of phthisis will be uniform and undoubtful. Of course, the Buddhists and the Brahmins will be the last to adopt the dairy cow as a food producer.

Geographical and climatic conditions have little, then, to do with the prevalence of tuberculosis. There are undoubtedly conditions of climate, habitation, etc., that favor the development of the disease, if the contagium is present; and the contagion, I think, is always derived *primarily* from the dairy cow. The Kirghiz inhabiting the steppes of Russia, one hundred feet below the sea-level, with a rigorous clime, intensely cold winters and warm summers, badly housed and fed during the long months of cold weather, no dairy cows, and an entire absence of phthisis. Take, as nearly as we can get, a diametrically opposite geographical and climatic condition, and we find Quito, the highest city in the world, situated ten thousand feet above the sea-level, located at the equator. "No torrid heat enervates the inhabitant of this favored spot, no icy breeze sends him shivering to the fire." "The mean annual temperature is 58°, the extremes 45° and 70° F."* Now, we have quite positive and authoritative statements regarding this city. Professor James Orton, of Vassar

* Daumas, "La Grande Kabylie." Morell, "Algeria," 1854.

† Morell, "Algeria," p. 477.

‡ Jackson, "Medical Climatology," p. 138.

Roser, "Ueber einige Krankheit. des Orients," p. 79. Olympios, "Corresp. bayerischer Aerzte," p. 181.

‖ Edmond About, "Greece and the Grecians," p. 33.

△ *Ibid.*, p. 102.

◊ Hirsch, *op. cit.*, vol. iii, p. 185.

* Orton, "Andes and Amazon," p. 92.

College, who made a scientific expedition to the equatorial Andes in 1867, under the auspices of the Smithsonian Institution, says, at Quito, "suddenly we are looking down into the valley of Chimbo; there are herds of cattle and fields of grain, yet we shall not find a quart of milk or a loaf of bread for sale. Thousands of cattle are raised on the Paramos, but almost wholly for beef. A dislike to milk (observed by Humboldt), or at least an absence of its use before the arrival of Europeans, was, generally speaking, a feature common to all natives of the new continent. Some cheese, mostly unpressed curd, and a little butter, are made, but in the patriarchal style; only one American churn is in operation (in Quito, with a population of 80,000). The people insist on first boiling the milk, and then stirring it with a spoon; custom is omnipotent here, and its effect is hereditary." Professor Orton further says: "Consumption is unknown in the city." The testimony is unanimous that phthisis does not exist in Quito, but on the plains in Ecuador, according to Dr. Archibald Smith, who practiced there for twenty-five years, "the disease is not uncommon."

Professor Orton, after leaving Quito and traveling toward the Amazon, makes the following observation, which clearly indicates that the dairy cow exists in other parts of this country: "The following day we advanced five miles to Tablon, an Indian hamlet on the mountain-side. There we waited over night, and this was the only spot in South America where we found milk to our stomachs' content."

Without going into further details respecting separate communities, let us consider the statistics of Europe, and there we find that the prevalence of phthisis is regulated by the ratio of the bovine to the human race. Thus, in Ireland, where the cattle number 4,570,000, nearly an equal proportion to that of the inhabitants, according to Dr. Wylde, phthisis is by far the most fatal affection to which the inhabitants of that country are subject. Denmark, with about the same ratio of cattle to inhabitants, sustains about the same rate from consumption. In Portugal, where there are six inhabitants to one bovine animal, consumption attracts so little attention that few notices can be found relating to the disease in that country. In Italy, the distribution of cattle being one to six inhabitants, the mortality from phthisis varies greatly in different parts of the country, reaching the exceedingly low rate of 0·86 in a thousand in the Basilicata. In Egypt, where the ratio is one animal to nearly thirty inhabitants, Pruner tells us "that the disease becomes less in exact proportion as we proceed southward from the shore of the Mediterranean. In Central and Upper Egypt it is decidedly uncommon."*

Thus the statistics go on, and where the exceptions arise, the cause is always evident in the conditions that influence the breeds of cattle. Taking into consideration all the foregoing facts, there can be little doubt that the inbred species of the bovine race is the prime ætiological factor of phthisis in the human race. They not only nurse the germ and prevent its extinction, but sow it in the human race continually and abundantly; without their aid the germ would die, for of all the germs known none have so hard a struggle for existence in the human kind as the bacillus of tubercle, when we consider the comparatively few of the human race who are afflicted, and the immense number who are exposed to the infection and escape it.

The cow is the only known animal that has transmitted tuberculosis to her offspring in inheritance. I am fully aware that this statement will meet with considerable opposition, as many of our best workers are of opinion that bacillary phthisis is hereditary in the human race. But I have concluded that this is merely a theory, because, after diligent search, I have failed to find a well-authenticated case on record of a human fœtus at term showing evidence of tuberculosis. We have, however, on record in the "Fortschritte der Medizin," No. 7, vol. iii, 1885, a case given by Johne of congenital tuberculosis in a fœtal calf of eight months, and in Crookshank's "Manual of Bacteriology" (plate 18) is a stained illustration of the bacilli from this undoubted case. Just in the line of this hereditary tendency let me narrate an experiment of my own. Last summer I took the entire lungs and all the largely involved lymphatic glands from a cow dead from acute miliary tuberculosis, and, confining five laying hens and a cock, fed them exclusively on this matter till it was all consumed. I found after eight days one of the hens, which I killed, had tubercular affection of the laryngeal glands; I took twenty-six of the last eggs laid by these hens and put them under two sitting hens in another part of the farm. Twenty-three of these eggs developed fœtal chicks, but not a single one lived to come out of the shell. Two or three days after the period of incubation had expired, the hens themselves broke the eggs, but every chick was dead. I took some of the eggs that I had not used for setting to the Carnegie laboratory, and Dr. Grauer searched diligently for the bacillus tuberculosis, but failed to find any. He found, however, the presence of the germ in the lymphatic glands of the hen I had killed; he now has some of the chicks, but I have received no report from him as to their condition. Of the four remaining hens and cock, some one stole the latter when he was apparently quite ill, three of the hens died extremely emaciated, notwithstanding that they had abundance of good food after they had finished the tuberculized matter, and the remaining hen was killed by the burning of the building in which she was confined. This experiment needs confirmation by further experimentation. I had no idea that the eggs would not mature, or I should have placed with them under the same hens eggs from healthy birds; there was no appreciable cause in the surroundings or other conditions to prevent the hatching except the before-mentioned tubercular condition of the layers. I shall repeat this experiment, using eggs from healthy birds with those from tuberculous layers.

Without knowing that the fact is so, I have been looking up statistics of zoological gardens, and find that tuberculous animals fail to breed while in confinement. Of course we have no means of knowing how they behave themselves in their wild state, but I feel pretty safe in asserting that no one ever found a wild animal with tuberculosis. Darwin's statement while writing on inheritance—

* Hirsch, p. 192.

"that, unfortunately, it matters not, as far as inheritance is concerned, how injurious a quality or structure may be if compatible with life"—only applies to the human race and animals which the human race is instrumental in breeding. To such animals, bred by the human race, Darwin applies the term artificial. We all know that in cattle one that is injured or unable to follow the herd is killed by the herd, and bulls in their wild state only maintain their supremacy by their vigor. The moment the head of a herd suffers from age or disease he is put away by the next strongest, and thus the vigor of the herd is preserved by this law of the survival of the fittest.

Man can not generate new forms, but he can so control and interfere with nature's processes as to modify the original design. Inbred cattle are selected, sheltered, and pampered, as they would be unable to withstand the rigorous conditions of the wild state; they propagate earlier and are larger milkers and more efficient beef-producers, and their meat is more delicate and tender than that of the wild animal. All this is achieved by man at the expense of his own health.

A BRIEF SUMMARY OF NASAL CATARRH AND ITS TREATMENT.*

By BEVERLEY ROBINSON, M. D.

It has seemed to me that I might hold your attention this evening if I read you a short paper on a subject that has some interest for most of us—*i. e.*, nasal catarrh.†

One objection to the selection of this subject is that it is an extensive one, and I shall have the time only to touch upon it in outline. You will doubtless pardon me if I do not treat it in as methodical a way as would otherwise be desirable. I presume if we were to ask doctors generally what they mean by nasal catarrh, the answer, except it came from specialists, would not be very definite; and if you were to ask the laity you would get a reply which, from a medical point of view, would not be wholly satisfactory. In a general way—I repeat, in a general way—people are said to have nasal catarrh when they have one of two symptoms, or both—stuffiness in the nose, hawking and spitting from the throat. Patients may have, and often do have, the two symptoms combined. Frequently it is easy to determine the locality in which the phlegm is formed. At times it requires a very careful examination with the rhinoscope, with the laryngoscope, and by means of physical exploration of the chest, to be convinced as to the precise origin of the expectoration. Indeed, it is not unusual, after we have made the most searching inquiries and employed all exact methods of diagnosis, to conclude that an extensive area of the respiratory tract is more or less involved, and that the sputa come from the naso-pharynx, the middle and lower pharynx, the larynx, the trachea, and perhaps the large bronchial tubes.

It is easy to appreciate, under these circumstances, that a problem is involved which may call for a fair amount of medical acumen to properly solve in its different aspects. For the over-enthusiastic and somewhat narrow specialist, who is too ready to accept the doctrine that most, if not all, pharyngeal, laryngeal, and tracheal inflammations are the inevitable sequelæ of nasal disease, and that the nasal disease is usually due to obstruction of nasal respiration, it is relatively simple to say, Free the nasal chambers by judicious operative procedure and a cure will follow. To those of us, however, who look at the ills of humanity from a wider field of vision, such an affirmation often falls far short of truth. We know only too well that, while occluded nasal passages are highly detrimental to a good condition of the remaining portion of the respiratory tract, yet morbid affections of the throat and bronchi may and do occur frequently when no nasal occlusion exists; and, further, that a simple operative procedure which opens the nasal fossæ when they are obstructed is by no means always sufficient to effect a cure of catarrhal inflammation of the naso-pharynx or lower down in the air tubes. This is due to the fact that inflammation of the respiratory mucous membrane may be occasioned by a large number of conditions, some of which act directly or as mere local irritants; others, which affect the general system, are thus in an indirect manner the efficient factors which occasion the local disturbance. In another and very wide category may be placed the influence of geographical position; in another, winds and rapid changes of temperature; in another, the effects of climates and seasons; in another, hereditary tendencies; in another, modes of life and habitual surroundings; in another, fatigue, emotional disturbances, and numerous accidental causes, etc. To continue and enumerate all possible causes of catarrhal inflammation of the nose and other portions of the air-tract becomes indeed a difficult task.

In connection with the symptoms of nasal catarrh referred to above there may be discovered certain local abnormal physical conditions—*i. e.*, deviation of the septum, mucous polypi, adenoid vegetations, etc. Again, the general system may be vitiated with gout, syphilis, or tuberculosis. Finally, all evidences of dyscrasia may be wanting, and the affected person may be in other respects perfectly healthy, and, except for the obstructive feeling in the nose or the hawking and spitting from the throat, or these united conditions, would have absolutely no source of physical grievance. Now, if we look back through the history of the ages, we shall find all sorts of theories regarding catarrh. Catarrh is not a disease only of to-day; it has probably existed since the origin of man. Hippocrates wrote about it when it was regarded as a mere local disease. Later on it was supposed to be a disease of the blood, and this theory was more particularly evolved by Schneider, whose name has become associated with the membrane lining the nose—the Schneiderian or pituitary membrane. Subse-

* Read before the New York Clinical Society, April 26, 1889.

† In explanation, regarding the use of this name, I would say that I am aware how faulty the term nasal catarrh has become in view of the subdivisions that have been made of rhinitis. I believe, however, I may be pardoned for using it, inasmuch as I am of the opinion that it is sufficiently exact for the general practitioner of the present time. I may add for the solace of the advanced specialist that I refer in my description and treatment mainly to hypertrophic rhinitis, which, in my experience, embraces a very large proportion of all cases of catarrhal disease of the nose we are called upon to treat.

quently there have been different opinions, good men being arrayed on both sides of the question. Some hold that catarrh is due to a diathesis; and this view is supported more particularly by the French school. One of the ablest exponents of the doctrine, Bouillaud, is more widely known by his treatise on cardiac disease. To me it seems that the justification of the view that there is a constitutional cause for catarrh is in some instances discovered without difficulty.

There are other observers, however, especially of the German school, of whom Niemeyer is an example, who hold steadfastly to the notion that catarrh is altogether a local trouble. There is at times undoubted truth in that view, so we perceive there is some truth on one side and some on the other. It remains for us to determine where the exact truth lies in individual cases. That there may be a constitutional condition to account for catarrh I believe as firmly as I did fifteen years ago, but we may not be able always to discover it or to tell in what cases it is or is not present. It may be obscured by other diathetic conditions, such as gout, syphilis, rheumatism, or tuberculosis. You may not, however, be able to recognize any of these dyscrasiæ in a given case, yet the patient, although quite healthy in other respects, has persistent catarrh. This condition, in my opinion, is to be accounted for in one of two ways—either by a special dyscrasia, which keeps up the catarrh, or by external conditions, such as those due to atmospheric changes, soil, climate, dust, special vocations, habits, etc. In certain surroundings one man will be bothered by catarrh, while another will be entirely free from it. The interior conformation of the nose has its importance as an exciting factor. In many noses the nasal septum deviates notably to one side. This can be demonstrated either by the examination of numerous individuals successively or by inspecting human crania in a museum. The amount of deviation is variable. In the larger number of persons it is slight and only causes annoyance at times, when there is suffering from a cold or irrational treatment. In a few individuals, relatively rare when compared with the vast number who have no such infirmity, the amount of obstruction due to the deviation of the septum necessitates an operation for the relief of the symptoms caused by it. It should be remembered, however, that it is not well to attempt to correct all septal deviations, as some of them occasion little or no disturbance. Frequently nasal catarrh is little more than the consequence of a bad habit which has been persisted in. When the habit is abandoned the nasal difficulty can be cured with ease.

I have recognized (as a good many others have recognized) and demonstrated that douches through the nose can only wash, cleanse, or purify a portion of the nasal cavity. The opening at the posterior nares is of not more than half the height of the nasal chambers at the median portion, and the douche will only wash out the lower portion, including, sometimes, the median meatus. It may cleanse the inferior turbinated bodies and a portion of the median, but, as usually employed, it never reaches the upper part of the nasal passages. This I can prove by mathematical measurements and by the effects on the patients. I have again and again seen patients wash out the nose with the douche, and immediately afterward have found secretions sticking to the upper part of the passages. Then, the douche has often given rise to median otitis. This has been proved by Roosa, Knapp, and others, and I have helped spread the knowledge myself somewhat. As to the kind of solution employed, it has been variable. During the past ten years pretty much everything has been tried that one could think of.

But if a man has an occluded nose and uses douches, he will find out that they will occlude it more. If he has a pretty free nasal cavity, they will at first tend to cleanse it, but after a week or a month he will tell you that his condition is as bad as it ever was. Only temporarily is his obstruction relieved. Still, here and there, it has been maintained with some show of truth that the use of the douche is attended by cure of catarrh, but such cases in my experience have never been observed. Now, with regard to the sprays, some years ago I believed the spray was curative of many nasal troubles, but now I hardly believe it will cure any case. I believe, however, it is sometimes an aid. Some sprays are better than others, and some are really injurious. Good sprays act as a cleansing measure better than the douche. A cure may be effected in a few cases by their use, but such cases must be very infrequent. If the spray is too dilute, not carrying sufficient of the active medicament, positive results will not be produced; if it is too concentrated, it hurts, and produces unfortunate results, because you can not limit it to the points requiring treatment. After forming the notions just mentioned, I began to use powders in all forms, and for a while I believed we could often cure catarrh with them, but I no longer believe it. I believe they are better than douches; they do less harm. I believe also they are better than sprays, because the medicament which they may carry remains for a longer time in contact with the parts affected. It is only necessary to recall the form of the nasal passages to be impressed at once with the impossibility of limiting the douche, the spray, or the powder, to the part from which the secretions flow in nasal catarrh; that is, to the diseased tissue. But of the three measures mentioned, I think powders are rather better than sprays, and certainly better than douches. For a year or two past I have, so far as concerns the anterior and median portion of the nose, relied more on ointments to produce curative results. There is one objection to them, namely, that they can not be made to reach so much surface as the spray, douche, or powder does, but I believe an ointment is better for application to an inflamed mucous membrane than a water, the reasons for such belief being physiological. I have not time to repeat them here; they are to be found in some of my writings. I introduce the ointments on applicators, or have the patients sniff them up. At present I am using a spray of carbolized oil. This, being a spray, has, in the first place, the advantages of a spray; it further possesses the advantage of an oleaginous agent, and in addition is a medicament, since it carries carbolic acid. Another method of employing medicinal agents locally is in the form of vapors. You may put the medicament (it must be volatile) into water and raise this to a sufficient temperature to make a vapor to be inhaled. It will come in contact with all parts of the mucous membrane,

and might be supposed to be an excellent method, but practically it is a failure, for under it patients grow worse. Dry vapors properly used are, in my estimation, sometimes very valuable. They may be employed in various ways. I now use a little inhaler which bears my name. It costs only fifty cents and is, I believe, more serviceable than any instrument for a similar purpose which can be bought even at a much higher price.

Sometimes these local medicinal measures will all fail to relieve materially, much less to cure entirely, and you may not be able to recognize any diathesis to account for the catarrh. In this position you may recur with some advantage at times to one of three remedies for internal administration. These are cubeb, sulphur, and ammoniacum, which have been recognized for more than a hundred years as of benefit in inflammation of mucous membranes. Sulphur may be used in spray,* or it may be taken internally in the form of sulphur water. Such waters, abroad and in our own country, have been used beneficially in catarrhal affections. This treatment has its objections, but I will not stop to point them out.

Regarding cubeb, I think I was the first to use it in nasal catarrh in an extensive way. I think well of its use in selected cases, and believe it has a desirable modifying effect upon the diseased condition of the mucous membrane. It may be given with a probability of being useful in cases in which catarrhal dyscrasia is apparently present, and provided the digestive organs are undisturbed. Ammoniacum is also useful only in certain cases, for in some it causes the secretions to become too thick and tenacious and hard to remove from the nose or naso-pharynx, so that it has to be given up. So much can properly be said in regard to the intelligent medicinal treatment, local and general, of numerous cases of nasal catarrh—in persons in whom it may or may not be due to a diathetic condition, who are otherwise in good general health, and have, so far as can be recognized, no invincible or considerable degree of local obstruction which acts as the evident or sole cause of the catarrh.

There is, however, a surgery of the nose apart from the medical treatment in cases of catarrh; and when conditions do exist which surgery should take hold of, then by all means employ surgery. But do not expect to cure every case of catarrh by surgical means. There is no use of imagining that all ailments center in the nose, and that everybody who has catarrh must be butchered for it. I am perfectly willing to hurt or mutilate people by the use of instruments when it is necessary, but I do not believe in doing too much of certain kinds of meddlesome and injurious surgery. There are many persons who come to the physician with catarrh and have some obstruction due to hypertrophy of the turbinated bodies, yet who can be cured by milder measures if the catarrh has not existed for too long a time. But when you find that ointments, vapors, etc., and some judicious general medication, with proper attention to coincident or complicating affections, habits, surroundings, and all measures of good hygiene, do not produce curative results, try something a little more severe; sometimes acids avail. We all know that at present we need not hurt the patient in making these applications, since we can use cocaine or rhigolene with the happiest effects to reduce the sensibility of the mucous membrane.

A few years ago I used nitric acid considerably, but I do not think so much of it now. Then glacial acetic acid was used by me, then monochloracetic acid, which I still employ and regard as one of the best acids for cauterizing the nasal mucous membrane.

If milder measures do not avail, you can wrap a piece of cotton on a steel carrier, dip it into one of these acids, and carry it up and through the nasal passage, following particularly the lower meatus, or the inner margin of the middle turbinated body. I think, to be prudent, you had better cover one side of the applicator with vaseline or oil, using the monochloracetic or other acid on one side only. The monochloracetic acid acts somewhat curiously; it produces a slough, but the slough does not come away until the mucous membrane beneath is so far healed that there is no danger of adhesions. Another acid used by a number of specialists in this city with a very liberal hand is chromic acid, and I may say that, on the whole, this is one of the best agents we have for producing a cauterizing effect, and if used properly it is not followed by unpleasant results. But try your patient. Do not use too much of the acid at once; do not get the poisonous effects from absorption as occasionally occurs when it is employed too freely.* I have never been troubled with symptoms of poisoning, but, unless care is used, it is not impossible for them to take place, as a portion of the acid employed may not come in contact with the soft tissues and may not therefore be entirely neutralized.

When, then, monochloracetic acid fails, I believe chromic acid to be the next best for freeing the obstruction of the nose, especially when there is beginning hypertrophy of the turbinated bodies. Any ordinary carrier—the simplest of all being a piece of copper wire flattened and bent at one extremity—will answer usually to make these applications. Occasionally, however, where it is desirable to make the contact far back in the nasal passages and where the anterior and middle portions of the nasal chambers are not very open, it is advisable to make use of a shortened McCoy's applicator, which enables one to apply the chromic acid at any particular point without risk of touching neighboring surfaces.† Sometimes the obstruction is due in part to a chronic inflammatory condition with thickening of the turbinated bodies, and in part to deviation of the septum. Occasionally the obstruction from thickened turbinated bodies may be overcome and the patient still complains of the nose being occluded. In these instances, and when the septum is obviously the cause of the occlusion, a suitable

* Sometimes advantageously mixed with pine-needle extract, as is now done at Sharon Springs, N. Y., and at certain springs in Europe.

* According to Dr. Squibb, "every molecule of chromic acid which destroys a molecule of organic tissue is itself destroyed and rendered inert by being reduced to an insoluble and inert oxide of chromium." Hence, it may be, these fears of some persons are groundless.

† Latterly I have relieved a patient, who suffered from a large mucous polyp, lodged high up in the posterior nares, that I was unable to get hold of with forceps or snare, by means of this useful instrument.

operation must be performed for a removal of the offending portion of it.

Some years ago there were physicians who asserted that one of the best agents for overcoming deviation of the septum and thickening of the turbinated bodies was the galvano-cautery, but others professed to get only bad results from it; they said that it set up otitis or erysipelas, and did untold harm by producing adhesions between adjacent parts. From my present standpoint, I believe the latter class did not employ a good instrument, or did not know how to use it. I have never excited erysipelas or otitis with suppuration by this method, and I believe thoroughly in the method in very many and suitable cases. The use of the cautery, properly applied, after the diseased parts have been anæsthetized with cocaine, is attended with neither pain nor more than very slight bleeding, as a rule. Bad results do not follow. Of course, I am not prepared to affirm that bad results can not follow the use of the cautery, but in my hands I have yet to notice anything worse than temporary adhesions thus produced in very narrow nasal passages in which almost any cauterizing agent would be followed by similar bad results, with the single exception of monochloracetic acid. The cautery is objected to by some nowadays on account of the inconvenience and trouble in using it. Such an objection is occasionally real and should be attended to, but in the offices of many physicians this objection is no longer valid since the widespread introduction of storage batteries. Usually, when I find a septum with a prominent deviation anteriorly, I take a Jarvis's or Weir's cutting forceps, and in a few moments, after cocaine has been applied, cut away as much tissue as is required to relieve obstructed breathing from this source. This method, in many instances, is better than the use of the saw, for you can stop when you want to, whereas when you begin to excise a piece with the saw you must go all the way through, or else you leave a strip or plate of tissue half removed and half attached, which keeps up bleeding and is a source of discomfort until it is removed entirely. The cartilage nippers are a little more tedious to use than the saw, but they are often preferable. Of course, if you want to have every septum present a surface as straight as the walls of a room, you will be disappointed unless you attempt to do unnecessary and injurious work. Bear in mind that, in the human family at least, a somewhat deviated septum is the rule, and by no means the exception. Neither the saw, the drill, nor any other instrument can therefore be relied upon to bring about an *impossible result*. The saw is an excellent instrument for many cases. I have used it and shall continue to use it whenever I believe its use is indicated. It has, however, its drawbacks. You can not saw around the corner; the saw must go straight ahead. With it you can not take away more tissue here and less there; and you can not always stop when you may want to, but must go on and remove the piece and take it out. Suppose the patient is weak and there is more bleeding than is desirable, yet you must go on with the operation. Despite many advantages that the saw undoubtedly possesses, it is in the hands of a few very like the trephine in the hands of a few—raised to the pedestal of a "cure-all." In view of my opinions previously expressed, the error of this extreme view must be obvious. Whenever the means described fail to relieve intranasal obstruction, we may have recourse to the trephine. Having a battery of sufficient power, get a nasal trephine and, in cases demanding it, bore one or more holes through or along the projecting spurs of the septum. The ridges which remain after the use of the trephine may be pared down with suitable scissors, with nippers, or even at times with the snare. The operation by means of the trephine may occasion quite smart hæmorrhage, and you may wish, after performing it many times successfully, that on some special occasion you had been content with a means less brilliant, but also less liable to unpleasant consequences. Yet the trephine is an excellent instrument and, in the hands of a skillful manipulator, not likely to do harm.

It must be borne in mind that, in order to use the trephine satisfactorily, you must be provided with a suitable battery, and one proper for use in connection with this instrument is quite expensive, and requires a considerable space in or out of the office for its location. Moreover, an electric motor, a handle, stand, and trephines of different sizes are essential. All this apparatus is very well for one to possess who meets with cases requiring its use often, as a prominent specialist in throat and nasal affections may. Not so, however, for the general practitioner, who may not have occasion to employ the trephine once in a life-time, as a matter of necessity, and because other means fail in producing good results. In my experience I have seen very few cases in which I considered the employment of the trephine necessary, meaning by this term that an equally good result could not be obtained by other and simpler means. A notable instance of this kind, however, was that of a child suffering from congenital occlusion of the nasal passages. He was operated upon successfully by Dr. William C. Jarvis by means of the trephine. Such conditions are extremely rare, and, so far as I know, very few similar cases have been recorded. I would not be misunderstood, however, in the estimate I make of this instrument at present in vogue for those who are afflicted with deviated septa and occluded noses. By its aid almost any form of obstruction may be relieved, and the result may be that the patient is cured of one of his worst symptoms of disease. But it is not, in my judgment, the best instrument to use in many instances, and in a very large proportion of cases both it and other operative procedures are uncalled for; and, instead of curing the patient, merely palliate symptoms for a while, and later on are shown to have no marked remedial effect.

If you have a case of nasal polyps, one way to get rid of them is by the forceps. But it is not a very pleasant method. You may snare them off with the cold wire snare or with the galvano-cautery wire. The snare is a pleasant means of removing them, but you must first use cocaine to prevent slight pain and uncontrollable sneezing. The galvano-cautery or cold wire may also be employed in treating posterior hypertrophies of the turbinated bodies, but it may prove easier to try chromic acid. Some years ago some physicians professed to be able to cure nasal catarrh by

applications of strong solutions of nitrate of silver to the naso-pharynx and posterior nares. I was once a victim of that method of treatment. The application of nitrate of silver relieved me for twenty four hours, but afterward the catarrh returned as bad as previously. The silver salt had simply placed a film over the secreting surface and given relief for a while, or until the film came away. Then there are all sorts of quack cures for catarrh. Some of these remedies which are advertised possess certain curative properties for certain cases, but it is not safe to use them unless their composition has been determined by analysis, in which case you can as well prescribe your own mixture, which will cost the patient much less and do, of course, just as much good. When a quack remedy gets a hold in the market it is well to learn what its principal ingredients are, since it may prove of some use to you in practice. But do not prescribe a quack article. Formulate a remedy of your own to use in its place. While all sorts of quack catarrh remedies are to be found in the shops—some from London, some from Paris, and some of home make—yet it will be observed that they do not cure cases of nasal polyp, septal deviations, ulcers, etc. So-called catarrh remedies, seen mentioned in advertisements, are usually injurious in a greater or less degree to the patient, although occasionally they are employed in cases in which it is possible for them to do some good.

After all that has been said it must be admitted that changes in the climate, filth, sewer gas, malaria, and what not have much to do with the production of catarrh. Even Fifth Avenue is so filthy half the time as to make us feel disgusted with it. Catarrh in many cases is nothing but a filth disease, and Dr. Mackenzie, of London, says that that is the chief cause of catarrh in the United States. He says there is no such thing as scavenging in this country. This is quite true of some places, but there are towns where catarrh prevails which are as well scavenged as any town in England. But it is not New York city. There are cases of catarrh in this city which are undoubtedly kept up by filth, by irritating particles floating in the atmosphere, carried hither and thither by the winds, such as horse-dung and fermenting, putrefying substances. Do not consider, then, that any specialty by itself will control the situation. The treatment of the nose may be well enough where it is indicated, but where filth is the cause of catarrh something more must be done. At the Congress of American Physicians and Surgeons, held in Washington last September, Dr. William H. Draper, in his presidential address before the Association of American Physicians, presented in a very graphic and striking manner what should be regarded as the qualifications of the practical physician to-day. He must be a man of broad views, who has all kinds of knowledge; who controls the whole medical situation. He is not a bacteriologist; he is not a pathologist; he is not a chemist or a physicist; he is not merely a therapeutist; he is not a specialist of any sort, nor does he look at clinical medicine from any limited horizon; but he is a man who in some sense is master of all these several branches of medical education by reason of combining as much as is possible of the sciences which these different divisions represent, and thus perfects the most beneficent of all the arts. "It is he who, in his high position as the servant of humanity, must attain that wisdom which results from combining knowledge with the instinct and the skill for its useful application." Therefore get as much knowledge of specialties as you can, but always feel that the broad standpoint is the correct one. The family physician, be certain, will one day resume his former position in the household, using all the power that rightfully belongs to him, but it will be in a modified manner and more in accordance with the wide extension of knowledge. He will no longer be expected to know everything in such a way that he is able to pass unaided expert judgment on all human ills, nor will he be expected to operate in all cases requiring surgical interference. He will, however, be the person to whom each member will turn for advice in all bodily ailments, and by whom he will be guided entirely whenever it is a question of special interference with any particular organ. Nor will he ever lose, as he frequently does at present, any of his laboriously earned prestige because he is not wholly "up" with the very latest "wrinkle" in all departments, nor because he hesitates wisely in adopting every novel idea before it is proved to be *good* as well as new.

What I have said to you previously does not embrace the whole subject of nasal catarrh. It is only a part, and perhaps a small part; but I hope it may be suggestive, and in this way, as the judgment which comes of considerable experience in the treatment of this disease, be of service to you all. No one, let me add in conclusion, appreciates more than I the real progress which has been made during the past ten years in the correct management of nasal catarrh. Yet, on the other hand, and in view of the increasing surgical tendencies in the care of this disease, we are witnessing daily unnecessary and injurious operations which do not really benefit the patient, and should not, with a more enlightened appreciation on the part of the general profession, increase the renown of the specialist.

THE EARLY OPERATION FOR HARE-LIP,

WITH REPORT OF A CASE.

By THOMAS H. MANLEY, M. D.,
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Among the many defects occasionally met with at birth, there is scarcely a single one of a more repulsive character to the eye than the deformity known as hare-lip.

The peculiar displacement of the tissues seen here produces a most unpleasant distortion of the features, and, if left unrelieved by operative measures, destroys forever the normal harmony of action of the facial muscles, leaving the unfortunate victim throughout life with the unsightly, ugly grimace peculiar to this defect.

Next to the eye, the mouth is the most expressive portion of the face. The set of the jaws, the full and free play of the lips, are indispensable in giving expression to sentiment or emotion, so that anything either congenital or acquired which interferes with the integrity of this part of the face becomes, indeed, a sad misfortune.

Authors are much divided in opinion as to the time or age at which the operation for the relief of this blemish is most appropriate. Some prefer the period after the incisors come through—fourth or fifth month; others advise waiting till after weaning; again a few would operate after the first or second month, but I can find no author who justifies an operation in the first or second week of infantile life.

The reasons which have been set forth for an early operation are that it is usually well borne, that now the tissues heal very rapidly, that the displaced parts are more readily brought into their normal position, and that there are better prospects of securing a good result.

On the other hand, the surgeons who prefer to wait till the child has passed his first year maintain that the infant, at a very tender age, after mutilation of the parts is very liable to convulsions; that the infant's general health is much imperiled by the interdiction of nursing which a cutting operation involves.

I believe that each case must be treated on its individual merits, and that no uniform rule is safe to follow, in all cases, in this matter of age.

I think, however, that few will take exception to the following propositions who have had much experience with the operation:

1. To consider the mother's and child's condition of health; whether the mother is nursing or not, and if the child is vigorous and in good health. If the child is strong and well fed, I see nothing in the way of an operation in the early months.

2. If the cleft is confined to the skin and fleshy tissues alone and is of considerable extent, then wait—if the child is nursing—till weaned.

3. Always operate as early as possible, if the rent or fissure extends into bony structures, when the gums or palate are involved. Under these circumstances do not delay on the score of health, for feeble-looking infants sometimes bear cutting operations better than those who are very fat.

It seems to me that it is of paramount importance to commence remedies for relief of all deformities as soon after birth as possible, with few exceptions; and with these hare-lip cases opening up the nasal with the oral cavities, it would appear well to always do what I designate the "immediate operation"—*i. e.*, within ten days.

The following case illustrates what I think may be designated the "immediate operation." After careful reasoning and extended study on the subject, I ignored the advice of many who only do the operation after the first year, and took my little patient in hand when she was seven days old:

She was born February 4, 1889; operated on, February 11, 1889; as the mother was delivered on Monday morning, and the *next* Monday afternoon the child was brought to the Harlem Hospital for operation. She was of healthy parents, well formed, and vigorous; the fourth child, the first girl. The cleft in this case was on the left side, extending through the lip, gum, nostril, and backward about half way through the hard palate, opening up through the mouth into the nasal cavity, and, as seen in the cut (Fig. 1), not only making a breech between the left maxillary and intermaxillary bones, but also crowding forward and outward the intermaxillary segment of osseous tissue, the lip, and other coverings with it.



Fig. 1.

Another strange freak of nature in the case was the presence of two fully developed lower incisors. Though the mother had an ample supply of milk, the infant could not suck, or, rather, when it made an attempt it oozed out through the opening in the nostril.

The ætiology of hare-lip is rather obscure, but the history of the maternal state and of the intra-uterine life of this infant are quite interesting. Immediately on delivery the mother declared that she feared the infant was "marked"; and this presentiment was so strong that she would not submit to the importunities of the nurse and friends, who, by evasive answers, tried to persuade her that there was nothing to worry about, and they warned her of the danger of emotion and excitement at this juncture. She was irrepressible, however, and had to see her offspring, when, much to the surprise of those present, she did not manifest any wonder, but said that she got a fright when four months pregnant, which she was slow in recovering from. She said that one day in the previous summer, while going out, she was terrible startled by a boy who ran almost into her arms in the hall. Blood was streaming from his mouth and nose, and as he removed his hand she saw a wound or cut, which bared the gum and teeth, extending through the lip to the nostril. On seeing this she became quite faint, returned to her apartments, and, as she put it, "could not banish the thought of what she saw to that day."

Fortunately for the purposes of verification, the lad still resided in the same house. At my request, he was sent to me, when there, plainly to be seen, was a linear scar on the left side, running in exactly the same direction as the opening in the baby's lip.

I tried to have him photographed, but his parents would not consent to it. This lad's lip had been opened by being hit with a sharp-edged stone, thrown by another.

This, indeed, was a well-marked instance of a blemish in development due to maternal impression.

I wish to mention in connection with this case, though it is hardly the place, another of most remarkable interest in support of the alleged connection between congenital defects and faulty development which came under my observation.

A woman, pregnant four months, was suddenly summoned to the door by a knock. On opening it, a man stood there, with extended hand, soliciting alms. She was about to close the door when he removed his hat, which she thought he held on the elbow, and suddenly, as it were, to enforce his appeal to her

sympathies, thrust the bared stump of an amputated arm almost into her face. It is needless to say that she was quite shocked, but when she was delivered at term her infant son was *without an arm* from just above the elbow; and I never saw a prettier stump than this one which nature had elaborated.

Operation.—The indications in this case were simple, but the manner in which they could be carried out with the best result was something else.

It seemed to me that, especially owing to the sex and to the fact that osseous structures were involved and the infant unable to nurse, an effort should be immediately undertaken to obliterate the repulsive disfigurement.

It seemed quite evident that there was neither absorption nor atrophy, but simply displacement, and it occurred to me also, if one manœuvre could be successfully executed, the greater part of the difficulty would be at once removed; hence, after having the baby placed in the nurse's lap, with the head secured against the chest and a few whiffs of chloroform given, I commenced by seizing the whole of the deflected and displaced maxillary and intermaxillary bones between the fingers of the right hand, and applied sufficient force—to bend or break—to crowd them into their proper position. Using the hand then as an osteoclast, I felt the delicate bony structures gradually give way, and very readily adjust themselves in the direction inclined.

With the simple and successful execution of this movement nearly the whole deformity disappeared. This break in the *segment of a circle*—as normally the formed upper jaw really is—effaced the separated edges of divided shell-like roof of the mouth, the bones coming into easy apposition, and the widely separated edges of gum and lip came flush together. The nostril only resisted the process of replacement, and failed to exhibit as much improvement from our manipulation as other parts. This I think was due to the long strain put on the muscles, which give regularity to outline. No doubt all the muscles of the ala nasi had lost their tonicity, and failed, as a result, to restore that harmony of position and symmetry so essential to the features.

With a delicate scalpel I refreshened the divided edges of the palate and inserted a continuous stitch in order to solidly close this vent. With the edges of the maxillary bones I dealt by cutting into their partly ossified edges and securing them together with delicate silver wire.

We had to conclude the operation now by sealing the ends of the lip. I did this by the method of the distinguished Irish surgeon, Maurice Collis,* who *saved the parings—i. e.*, he didn't make any. The incision was carried down on either side quite freely between the cutaneous and vermilion borders, from the base of the nostril to a line with the normal border; then on each side the lower and the outer were sewed separately together with catgut suture—very fine; the outer sutures were deeply inserted in order to secure solid and permanent union. A strip of rubber sticking-plaster was carried across the line of division to add to the support of the mutilated parts. The little one was brought home the same night and made a rapid and, I think I might say, good recovery. At no time did the temperature go above 99° F. The first few days she slept little, but took milk drawn from the mother's breast with much relish.

After the first five days we commenced to break her into nursing with the nipple and bottle. In eight days the superficial tissues and palate seams had solidly healed, and she was put to the mother's breast. How well she has thrived her photograph (Fig. 2) will show. This was taken when she was just two months old.

* "Dublin Quarterly Surg.," 1866.

The gums closed firmly and the wire was removed on the twenty-fourth day by simply raising the lip and, after division, picking them out.



Fig. 2.

In conclusion, it may be well to clearly define the class of cases in which this extremely early operation should be advocated and employed.

It would seem the ideal method when the osseous structures share with the lip in the cleft, because now the bones are only in their formative stages of development, osseous deposit being yet but slightly advanced, and the young bone, like the horn of a yearling, will grow in almost any direction in which it is forced.

Besides, it seems to me, from a careful study of comparative anatomy and the physiological laws of normal development, that any kind of malformations and congenital defects should be taken in hand by the surgeon as speedily after birth as possible. The longer we wait, with the body rapidly growing, the more difficult will be any kind of treatment; hence the necessity of decisive, prompt, and heroic measures.

FLOATING LIVER IN AN INFANT.

By EDWARD H. PARKER, A.M., M.D.,
POUGHKEEPSIE, N. Y.

There is but little satisfaction in putting on record a case, especially if it is of an unusual character, which can not be said to be complete. Still this is sometimes necessary.

The case which I now report is of this class. It has excited great interest in all the professional gentlemen who have seen it, and, if I am correct in my diagnosis, it is, so far as I can learn, entirely unique.

The patient is a boy, born in March, 1886, in the city of New York. About the middle of June of that year I saw him for the purpose of vaccinating him. He was then of fair size for his age, plump as to flesh, lips of good color, and in every way an apparently healthy child. Early in July the family went to the sea-shore.

While there it was found that the child's wet-nurse was not a satisfactory one outside of her duties as nurse, and another was obtained. As he did not thrive, competent medical advice was sought, and the child was in part fed by other means than the breast milk. Although there was no diarrhœa, severe vomiting occurred. The temperature was persistently high, ranging in the neighborhood of 101° F. A more careful exami-

nation was now made, when a tumor was found in the right inguinal region, extending upward nearly to the level of the umbilicus and to or a little beyond the median line of the abdomen. Consultation was then had at different times with two eminent medical men of Boston, and their opinion was that it was probably a cancerous growth, the prognosis being, of course, very unfavorable. Meantime the child began to lose flesh at the rate of about three ounces a week—tested by scales—became very restless, sleeping insufficiently, and digesting his food imperfectly. On returning from the sea-shore the child was examined in New York by the family physician, a man of eminence, and his partner. The suggestion was made at this time that the tumor was a floating kidney, but more careful examination showed this theory to be untenable and it was abandoned. No further opinion was expressed, but the advice was given to take the child into the country, and when he had got into better condition exploration could be made by laparotomy, and the tumor removed if possible.

It was at this time, September 28th, and with this history, that the child came under my care. There was no satisfactory evidence that the tumor had grown since it was first discovered. The temperature was still too high, varying from 99·5° to 101°. The wasting continued, as shown by weighing the child every week. The second nurse, who still remained with the child, did not have sufficient milk for it, so that the artificial feeding was continued. Each night eighty-five drops of paregoric were given, or the attempt was made to give it, not always successfully, and twenty drops of brandy were given every three hours. The amount of sleep thus obtained was very unsatisfactory, and there was profuse sweating of the arms and head whenever the child did sleep.

Proceeding to examine the child, I found him pale and thin, but could not call him anæmic or emaciated. There was a fullness of the right side of the scrotum, and I was told that it had been diagnosticated as a hydrocele. At this time I did not examine this carefully, but a few weeks later I found a large right scrotal hernia and very little fluid. My attention was mainly given to the tumor.

The lower edge of this mass was a little above the pubes, and the upper edge, which was more irregular than the lower, was nearly on a line with the umbilicus. Its right side reached to the ilium, and nearly to the axillary line. The left extended a little beyond the median line of the abdomen. The surface presenting toward the abdominal walls was smooth, without nodulations, not so hard as cancerous growths of the hard variety, and not so soft as others. This mass could be pressed upward till its lower border was nearly on a level with the umbilicus, and its upper surface passed slightly behind the margin of the cartilages of the ribs. It could be carried to the left side till it reached well toward the left ilium. This examination reminded me of a case which I had seen nearly forty years before, and which was verified by an autopsy. In that case malformation of the liver was recognized, and in the examination it was found lying directly behind the umbilicus. In shape it was almost a perfect hemisphere, its convex surface being that toward the abdominal wall in front. With this thought I proceeded to examine the hepatic region of the patient. There was entire absence of the natural flat sound of this region, and resonance throughout, which was not due to distension of the colon or other intestines by gas. Careful auscultation detected puerile respiratory murmurs down to the very edge of the costal cartilages, and distinct normal pulmonary sounds throughout the whole of the right thorax. Neither was there any evidence of a malformation by the location of the liver on the left side. On turning the child upon his left side, the tumor fell down almost to the left ilium. It returned to its former position when the child was turned upon its right side. On holding the child as nearly vertical as possible, with his feet up and head down, the tumor at once fell to the margin of the ribs, as it had previously done when pressed up by my hand. All these examinations were made with the child entirely nude. At no time did he give any sign that they caused him the least pain, or anything more than slight annoyance or discomfort.

It is not necessary to give the details of other repeated examinations of this patient, made not only by myself, but by medical friends. My opinion, formed at my first examination, confirmed by my colleagues and supported, I believe, by the few authorities upon the subject which were accessible to me, is that the tumor is the liver—dislocated and movable—so that, following the bad nomenclature used in a similar condition of the kidney, which calls it floating or wandering, I called it a floating liver, or a wandering liver.

Before passing to the treatment of the child, for the sake of unity, I will here add that about five months after the child came under my care, at the request of a medical relative of the family, the patient was seen by a physician of New York largely occupied in the study of children's diseases. He made a careful examination, and gave a very decided opinion that the tumor was a sarcoma of the kidney. He disagreed with me as to the physical signs of absence of the liver from its normal position, but did not seem to me to be very thorough in his examinations in this particular, and did not auscultate the region. About one year later he visited the child with me again. He then frankly stated that he was in error, but did not, while abandoning his theory, say that he accepted mine. Meantime the child has continued in good health, except when suffering from occasional colds, usually bronchitic, and when he had the measles during the last summer while in England. The hernia was cured by the regular and systematic retention of the intestine by a compress secured by a T-bandage. The child is now quite up to the average weight of children of his age and seems to be in perfect health.

The treatment of the child has been as follows: As rapidly as possible the brandy and the paregoric were withdrawn, the former within a fortnight, and the latter in about four weeks. A new nurse, an excellent one, was obtained, and all artificial feeding was stopped. To prevent the profuse sweating, a solution of quinine in whisky (twenty grains of quinine, one ounce of whisky, and sufficient sulphuric acid to dissolve the quinine) was rubbed into his back. Of this solution one teaspoonful in two more of whisky was used night and morning. One teaspoonful of Muller's cod-liver oil was rubbed into the skin of the abdomen each day. The epidermic use of the oil was discontinued in December. The quinine mixture was lessened to one application in December and entirely discontinued in January. No medicines were given by the mouth. Under this treatment the sweatings became less and finally disappeared, excepting occasional perspiration about the head during sleep, but this was not more than often occurs in children of average good health. The child began to sleep more, and, although not often for more than two hours at a time, he got twelve or fourteen hours of sleep out of the twenty-four.

After changing nurses the last time there was a little looseness of the bowels, some undigested though small curds appearing in the stools. The curds gradually disappeared in four or five weeks. Slight constipation followed, which was easily removed by soap suppositories or enemata. There has never been any marked absence or excess of bile in the stools. The history of the child's nourishment from this time has been that of healthy children.

For a month after the child came under my care he continued to lose in weight from one to three ounces a week, as

shown by weighing him regularly. Then he neither gained nor lost for two weeks. After that he began to gain in weight about as rapidly at first as he had formerly lost, and then progressively more and more, until he had reached the limit of the capacity of the stockyard used.

When two and a half years old he weighed twenty nine pounds.

On the thirty-first day of October, 1888, I again examined the child carefully. He does not yet walk, but there is no paralysis, and he is simply backward in this respect. The tumor remains in the same place, has not increased in size materially, and is not as movable as formerly. The increase of adipose tissue prevents one from examining it as completely as formerly. The conditions in the normal seat of the liver remain the same that they have always been.

Immediately after my first examination of the child I was so urged by his parents to tell them what my diagnosis was that I consented to do so, but reserving the right to change it, if I desired to do so, after consulting books. I have found only one book in which the subject is mentioned. In von Ziemssen's "Cyclopædia" (vol. ix, Am. ed., pp. 48 to 57) Thierfelder has brought together nine cases under the titles of "floating liver," "hepar migrans," and "fegato ambulante," but none of them had been verified by autopsy. All of these cases occurred in women who had borne children. In seven of the cases there is scarcely any doubt of the correctness of the diagnosis (Thierfelder), though the remaining two are not quite so clear. The ages varied from twenty-nine to fifty-four years. In at least half the cases there was a relaxed pendulous abdomen. The only ætiological factor to which any influence can be ascribed is sex.

The peculiar diagnostic sign mentioned by Thierfelder—that in making efforts to carry the liver to the left side it was observed to swing in the arc of a circle, approaching the left costal cartilages—was, I think, evident in this case, but the abdomen was so small that it was impossible to say positively that it was so.

In connection with Thierfelder's cases it is of interest to note the report by Dr. Alexander Y. P. Garnett ("Am. Journal of the Med. Sciences," January, 1881, p. 110) of a case of "Accidental and Sudden Dislocation of the Liver, with Recovery." The patient was a woman of about fifty years, the mother of several children, so that it comes in line with Thierfelder's cases as to sex and probable distension and weakening of the abdominal walls. The cases in von Ziemssen's "Cyclopædia" do not seem to have been known to Dr. Garnett, and there is no account of the application of Thierfelder's diagnostic marks to this case. Mention is made, however, of the lung sounds in the hepatic region, and these correspond with those of my case. Dorsal decubitus, lower limbs flexed, warm fomentations with an anodyne, followed by an enema, resulted in the return of the liver to its place on the fourth day. In reply to my inquiries concerning this case, Dr. Garnett wrote to me on the 16th of May, 1888: "It was evidently an accidental dislocation, produced by mechanical force, and not the result of any pathological processes going on in any adjacent organs. The woman has enjoyed perfect health ever since."

Displacement of the liver taking place gradually has long been recognized as the result of tight lacing. The ill health accompanying this condition seems to be due as much to the derangement of other organs by the lacing as to the changed position of the liver. Entire transposition of the heart and liver—congenital—has been recognized in persons otherwise in good condition so far as the functions of these organs are concerned. An instance of this was reported by Dr. E. C. Seguin in the issue of the "Medical and Surgical Reporter," Philadelphia, for January 15, 1887.

In reference to the diagnosis of sarcoma mentioned before, it is proper to say that it was a natural and probable diagnosis at the time it was made. The history of the child, the abdominal tumor, and the continued loss in weight might well suggest this disease. In my judgment, this could have been corrected only by observing the absence of the liver from its normal position. The subsequent history of the case shuts this diagnosis out. So far as I can learn, there is no record of any case of this disease in which any amount of activity has been followed by perfect quiescence. When it once begins to be active it continues till it destroys life.

Reference has been made to the fact that in no case has the diagnosis of floating liver been tested by autopsy. This leaves it still an open question whether or not the diagnosis is justifiable. If it was so in Thierfelder's cases, I believe it is so in mine, and this is unique from its occurrence in an infant and in a male. All speculation as to whether or not any departure from the normal conditions of the liver attachments exists must still remain a mere matter of speculation.

Clearly, however, the history of this case is sufficient to make one hesitate as to doing any operation for the removal of such a tumor till the malignant nature of the disease has shown itself by more or less rapid growth. One case has come to my knowledge in which, a portion of an abdominal tumor having been removed, a microscopical examination showed it to be a portion of the liver. No autopsy was allowed when the necessarily fatal result followed.

RARE FORM OF URINARY CONCRETION IN THE BLADDER REMOVED BY LITHOLAPAXY.*

By GEORGE CHISMORE, M. D.

Early in January, 1889, I removed from the bladder of Dr. J. W. a small but very peculiar foreign body, unlike anything I have heretofore encountered. I regret my inability to present a fuller history of the case, as a promised statement from the patient himself has not yet come to hand.

He was about forty years of age, and had suffered for several years, at intervals, from vesical distress, for which he had consulted a number of specialists in genito-urinary surgery. The general opinion, in which he concurred, had been to attribute his distress to stricture of large caliber, and he had undergone both internal urethrotomy and gradual dilatation, experiencing temporary relief from each.

When he consulted me he was passing large quantities of pale, turbid urine of low specific gravity, loaded with phos-

* Read before the American Association of Genito-urinary Surgeons at its third annual meeting, May 22, 1889.

phates, but devoid of albumin; it was alkaline at times, but not ammoniacal; micturition was frequent and occasionally painful, and he suffered from a constant discomfort in the prostatic region. He was of nervous temperament, inclined to be despondent, and had been passing sounds and washing out the bladder, irregularly, himself. I took the view that the case was one of over-treatment and hypochondria, directed him to cease all local measures, and prescribed a mineral acid. Finding the symptoms persist, I explored the urethra with negative results, and at length made a search of the bladder. When about removing the searcher, confident that there was nothing wrong with the viscus, I caught a faint sense of touching some soft, movable body. It did not feel gritty, nor could I find it again after many attempts. To solve the puzzle, I introduced my combined lithotrite and evacuating tube, having first cocainized the bladder and urethra. After connecting with the aspirator and washing back and forth a few times, on closing the jaws of the lithotrite a body a centimeter and a half in diameter was found within the grasp. It did not impart the slightest feeling of *grit*, but seemed a fold of the bladder or some fleshy mass. Movement soon convinced me that it was unattached, and, closing the instrument firmly, I proceeded to crush it. Soon pieces appeared in the reservoir, and I completed the operation as in an ordinary litholapaxy. The substance removed consisted of fragments of brownish matter, looking and feeling like small pieces of well-soaked slippery elm; rubbed between the fingers, a few particles of sandy matter could be felt. He recovered without an unfavorable symptom, passing *per urethram* one rather large and several small pieces of the same material. No blood was drawn during the operation.

When dry, the color changed to white, and the fragments assumed the appearance of tough, dry punk, interspersed with a few thin, small iridescent scales. I have not had the time to attempt to make out its composition. This is not material to the purpose of this report, which is to call attention to the fact that a foreign body capable of giving rise to much vesical distress may exist and readily escape even a careful search made in the usual manner, and to ask if any fellow-member has met with a similar experience.

I have seen the doctor many times since the operation, the last time early in April, and he has remained completely free of his old trouble and has improved greatly in his general health. An analysis of a specimen of his urine, made March 16, 1889, over two months after the operation, gave the following results: Clear, pale yellow, strong urinous odor, acid; specific gravity 1·010; no albumin, indican, or sugar; 1·4 per cent. urea. Under the microscope there were a few cells of pavement epithelium; a few pus corpuscles; no casts.

San Francisco, *May 3, 1889.*

A CASE OF CYSTIC DEGENERATION OF THE KIDNEYS.

By B. C. LOVELAND, M. D., F. R. M. S.,
CLIFTON SPRINGS, N. Y.

Last autumn I conducted a post-mortem examination on a case of much interest and withal a rare one, and, since none of the physicians who from time to time had the case in charge have reported it, I will give you the results of what I found.

The man, Mr. W. V., died August 2, 1888, forty-three years old. I had not seen him during his illness, but during the last week of his life his urine was frequently brought me to examine. I first found it of the smoky tint peculiar to hæmorrhage from the kidney, but did not find casts till a day or two later, when I found granular casts. The specific gravity was 1·015; the reaction neutral or slightly alkaline. Until the day before his death the quantity was large; the attending physician told me he measured it one period of twenty-four hours and found it five pints. It gave tests for albumin, but scarcely more than the blood and pus would account for. One peculiarity which I noticed in the microscopical examination, and also showed to Dr. Marshall and others, was that the white blood-corpuscles were alive and undergoing amœboid movements for several hours after the urine was voided. I watched them flow around and envelope bacteria or vibriones, which were numerous in the urine, and, after apparently digesting them, again resume their original spherical form.

I was asked to conduct the post-mortem examination. There were present Dr. Gault, Dr. Archer, Dr. Vincent, and Dr. Marshall. It was proposed to examine the abdominal and thoracic viscera, and I, with the aid of Dr. Marshall, proceeded to open and examine the contents of those cavities. The first we noticed after getting into the abdomen was two large tumors nearly filling the cavity, extending from the liver, which seemed healthy, on the right side and the diaphragm on the left side to the iliac fossa of each side. The ascending colon and small intestines were considerably displaced toward the median line and were tympanitic; the transverse colon was also filled with gas; the descending colon not displaced, empty, and contracted; bladder empty. The tumors referred to were the kidneys, having undergone cystic degeneration, and measured and weighed as follows: Right kidney, length twelve inches, breadth eight inches, weight eight pounds. Left kidney, length fourteen inches, breadth nine inches, weight ten pounds. I did not measure the thickness, but they were five or six inches thick. They were composed mainly of cysts containing urine. The cysts varied in size from the size of a pea or smaller to that of a large hen's egg. There was no ascites. The heart was slightly hypertrophied. The lungs were normal, but with a few pleuritic adhesions. Photographs were made of the kidneys, and one of the kidneys I have preserved.

I learn that the history of the case had been one of chronic Bright's disease running over some five or six years. During the last two years he had had frequent hæmorrhages from the kidneys, but had been up and attending to business till within a week or so of his death.

The case seemed an interesting one to me, by reason of the size and condition of the kidneys, the way the white blood-corpuscles lived in the urine, which I had not noticed in any case before, and also because the man seemed to suffer so little inconvenience for so long a time after the disease must have been well advanced.

The Prevention of Consumption in Berlin.—The "Lancet's" Berlin correspondent says that, as it has been proved that the spread of consumption is largely due to the circumstance that the sputum of consumptive patients, which always contains tubercle bacilli, floats about in the air after being dried and pulverized, and is inhaled by healthy people, the President of Police has, therefore, ordered that consumptive patients in hospitals shall be kept in special wards, and forbidden to expectorate on the floor or into their handkerchiefs, but only into vessels partly filled with water; that the sputa shall be removed in a wet condition; and that their clothes and linen shall be thoroughly boiled and disinfected. These regulations are to be enforced not only in hospitals, but also wherever consumptive patients live.

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A WORTHY CHARITY.

The relation existing between the medical charity institution and the medical man who is connected therewith has for so long a time been one of glory and profit to the former and of hard labor, with experience for pay, to the latter, that we were but ill-prepared for the movement which has recently been instituted by the "Evening World." The founding of an eleemosynary institution has of late years been accomplished by the incorporation of a variable number of persons of more or less prominence in society or business circles into a benevolent association as a beginning. With perhaps a large sum of money, which has been given or bequeathed by one person, and what other amounts are subscribed by churches or individuals, a more or less pretentious building is erected, and the hospital is opened with the idea of paying a large part of its current expenses by the receipts from board ("including medical attendance") paid by the patients, to whom charity is to be lavishly supplied. Incidentally a certain number of physicians are kindly allowed to give a greater or smaller part of their time and professional skill to the service of the hospital, and are sometimes permitted to make suggestions as to the sanitary condition of the building, or as to what members of their profession should be associated with them in their work. By a most ingenious, albeit complicated, system of rules and of espionage the amount of time and labor given by the medical staff is regulated, so that the recipients of its charity may not complain too loudly of the neglect or harsh treatment shown them when their whims are disregarded or their refusal to comply with the regulations laid down by the physicians is not deprecated by the latter.

At the annual ceremony of removing the opaque bushel from the shining light of the institution the medical staff is mentioned as worthy of commendation for its labor, but this is usually done as an afterthought, and as evincing a determination to give credit to all impartially. It is apt to take some such form as this: "In this connection it is but simple justice to express our appreciation of the faithful and efficient service rendered by our superintendent and the physicians of the visiting and house staff. . . . To each one the managers offer their sincere thanks for the faithful co-operation which has so greatly lightened the labors and responsibilities of the managers." Ah, a pretty wit hath the hospital manager! By dint of attending a monthly meeting of an hour's duration, or by the experience gained from a few figures and a glance or two at reports, the manager gains a knowledge of the medical needs of hospital patients more extensive than any medical education or experience could afford him. To his mind, therefore, the necessity for a medical staff exists only in the popular delusion that a hospital and a physician form a combination that is necessary to the existence of the former. To him it really is but simple justice to mention the fact that his labors have been lightened by the physician, even as his stenographer or his managing clerk is of service to him in his business. They all spare him the trouble of doing everything himself. He never appreciates the fact that he borrows from Peter in order to benefit Paul, and, although he allows his note to go to protest, he figures as the true benefactor of the latter. Peter may be a fool to lend his money without security, but that does not change matters in the least so far as equity is concerned. He gets neither his money nor the credit of giving it, while he at least deserves one or the other recompense; and often he is accused by the beneficiary, Paul, of foisting ragged bank notes or plugged coin upon him in lieu of lawful money. The manager wallows in a reputation of benevolence meantime, and despises both the stepping-stones that he has made use of in mounting to the conspicuous position he occupies.

But to return to the project of our contemporary. Having noticed the fact that the need for medical care of the sick children of New York was great during the hot term, it heads a subscription list with a contribution, and solicits others to follow its example; and for what purpose? Not that of renting a suite of offices; not to print and distribute circulars appealing to the rich to contribute; not to employ district agents, secretaries, spiers-out of the land whence comes the cry of distress; not to erect some costly chapel, with the names of the original promoters of the charity engraved upon a tablet, but for the ridiculous and unprecedented purpose of employing a few physicians—actually paying doctors for their time and work—to relieve the sore distress of the infants who die like flies in a wire trap every summer in New York. The hospital manager, if he is in town, will laugh at the idea of paying for what he almost receives payment for receiving; but the man who sends the dollar, which represents a greater loss to him than a ten-thousand-dollar check would to the manager, understands by the term charity the giving of what costs something to the giver; not that which costs nothing as a kind of prize chromo to induce the object of the charity to pay for what the benefactor is obliged to buy, or to help make up the discrepancies existing in the profit-and-loss account of the charity—borrowing from Peter and not paying back the loan; giving this to Paul; then exacting a large mileage and commission from the latter, and posing before the public as the benefactor of all parties concerned!

This charity deserves the hearty support of the medical profession, for it smacks of practical benevolence. Let each member give it his support, either by his influence or by his money, and thus show his appreciation of a truly charitable enterprise, which emulates the example of the Good Samaritan, who not only bound up the sufferer's wounds, but deposited his penny to pay the subsequent expenses of the treatment.

MINOR PARAGRAPHS.

A COMMUTATION OF ANNUAL DUES.

At the Brooklyn meeting of the Fifth Branch of the New York State Medical Association the success was reported of a scheme whereby the members could avoid the inconvenience of having to pay small sums, year by year, by the payment of a lump-sum in advance. A sufficient subscription has been received to enable the branch to purchase a bond the interest of which will cover all ordinary annual expenses. To all intents and purposes, therefore, the branch will become a "free" institution. This plan was carried through by the printing and employment of two short circulars and a few letters of explanation. This method of creating a fund should commend itself to nearly all our minor organizations having a widely scattered membership, whose very perpetuity is sometimes endangered on account of the embarrassment which, in the minds of many, attends the sending of a small sum to a distance. This example, having been made a success, may be followed with much comfort and satisfaction in other quarters. Information concerning the execution of the plan may be had of Dr. Edward H. Squibb, of Brooklyn, the permanent secretary of the society mentioned.

THE ILLINOIS STATE BOARD OF HEALTH.

The aggressive board of health of Illinois has, by its faithful efforts to suppress illegal practice in that State, aroused much enmity among the baser sort, and an attempt was made in the last Legislature to repeal the act under which the board was organized. This did not succeed, being smothered in committee. Another attack was made in the form of a motion to strike out its appropriation, and this has mistakingly been reported as having been carried. This measure was defeated, and the administration, under Dr. Rauch, the secretary, will not be paralyzed for the want of funds. The attack will probably be renewed in the Legislature next year, in one form or another.

JOY AMONG THE CONVICTS.

The prisoners at Sing Sing are said to have sent up a shout of joy when they heard that the bill permitting them to go to work had become a law. For a year they have been idle, in consequence of the Yates bill, and sickness and lunacy have been more frequent than ever before in the history of the prison. Largely through the efforts of the State Charities Aid Association the Fassitt bill has been passed, permitting the prisoners to go back to the shops. Work in the factories will be resumed in a short time, and the prisoners are themselves hard at work putting the machinery and shops in order. The testimony of the physicians and keepers shows that the prisoners have suffered to a surprising degree, both in body and in mind, from their enforced idleness.

THE PENNSYLVANIA STATE MEDICAL SOCIETY.

The annual meeting of this society was appointed for Tuesday, June 4th, at Pittsburgh, but we learn that the interruption to railroad travel and other considerations consequent upon the recent disasters in the western part of the State rendered it advisable for the meeting to adjourn until September. So far as is known at present, no member of the society residing in the Conemaugh Valley lost his life, but the local society of Cambria County has lost severely. Among these lost members were Dr. Brinkey, Dr. Cooper, Dr. Marbourg, Dr. Wagoner, and Dr. Wilson. It is reported concerning Dr. Wilson that he and his entire family were swept away together, his residence having been in East Conemaugh.

ETHER-DRINKING IN IRELAND.

In the counties of Tyrone and Londonderry, Ireland, the use of ether in the place of whisky, as an intoxicant, has become prevalent to such a degree that the synod of the Church of Ireland have addressed the authorities with a petition in favor of the restriction of traffic in ether. In Londonderry the police have reported a wide extension of the habit, and the insane asylum records recognize the practice as becoming one of the contributory causes of insanity. In Tyrone ether-drinking has been less common and has not been considered to have any causative bearing on mental disease.

THE BROOKLYN WOMAN'S HOSPITAL AFFAIR.

For several weeks past some of the Brooklyn newspapers have devoted much of their space to statements damaging to the conduct pursued by two medical officers of the hospital and to counter-statements sustaining their course. We have refrained from comment on the affair, for, pending the judicial investigation, it is impossible to get at the real facts in the case. It is proper for us to say, however, that the probability of the necessary impairment of the hospital's usefulness is not pleasant to contemplate, and that the accused physicians deserve at least a suspension of popular judgment until the trial determines in what respects they have offended, if at all.

THE BISHOP AUTOPSY CASE.

Now that indictments have been found against the three reputable physicians who took part in the autopsy in the case of Bishop, the mind-reader, it is to be hoped that the sensation-mongers are appeased for the time being, and there is still more ground for hoping that the Court will content itself with imposing upon them, in case of their conviction, the lightest penalty allowable. It can not be charged that what they did was done with any evil intention; it was a mere technical violation of a law that is almost unknown to the profession and that seems to have been disregarded by the coroners on occasion. We are aware that ignorance of the law is not held to be a legal defense of its infraction, but it certainly should go far in palliation. As for the allegation that Bishop was not really dead at the time of the autopsy, it is too unwarranted to call for argument.

THE JEFFERSON MEDICAL COLLEGE.

Four of the physicians lost by the Johnstown disaster were alumni of the Jefferson Medical College, namely, Dr. Brinkey, Dr. Cooper, Dr. Marbourg, and Dr. Wilson. This will not appear strange when it is known that the Jefferson representatives in the county society are nearly as numerous as those of all other schools combined. Recognizing the perils of her sons in the ill-fated valley, the faculty of Jefferson has been promptly on the field with a relief corps with one of her professors at its head.

ITEMS, ETC.

The Medical Society of New Jersey will hold its one hundred and twenty-third annual meeting at the Coleman House, Asbury Park on Tuesday and Wednesday, the 18th and 19th inst., under the presidency of Dr. H. Genet Taylor, of Camden, who will give an address entitled "Retrospection of the Medi-

cal Society of New Jersey, with some Suggestions as to its Improvement." Discussions of the following subjects are announced: "Perityphlitis, its Diagnosis, Pathology, and Treatment" (to be opened by Dr. J. G. Ryerson); "The Advantages and Disadvantages of Intubation of the Larynx in lieu of Tracheotomy" (to be opened by Dr. W. C. Schover, of Rahway); "The Revived Use of Calomel, with Special Reference to its Preventing Plastic Exudation" (to be opened by Dr. J. D. Osborne, of Newark). Among the papers to be read are the following: "The Inheritance of Disease," by Dr. E. J. Marsh, of Paterson; "Some Recent Advances in Pelvic Surgery," by Dr. H. M. Weeks, of Trenton; and "The Value of Creasote in Fifty Cases of Chronic Disease of the Air passages," by Dr. W. P. Watson, of Jersey City.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending June 11, 1889:

DISEASES.	Week ending June 4.		Week ending June 11.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	10	3	12	2
Scarlet fever	176	26	127	27
Cerebro-spinal meningitis	4	4	4	4
Measles	100	10	104	7
Diphtheria	132	32	146	41

Change of Address.—Dr. F. Le Roy Satterlee, to No. 8 West Eighteenth Street.

The Nu Sigma Nu Fraternity.—The Beta Chapter of the fraternity was instituted at Detroit on the 30th of May. The ceremonies of the evening were conducted by Dr. F. W. Main, of Jackson, Michigan, with the assistance of officers of the Alpha Chapter at Ann Arbor. This organization is strictly confined to regular practitioners and students of medicine. It is said to be growing rapidly, and it is thought that several new chapters will be instituted in other cities during the year.

The New York Polyclinic.—This institution has increased its hospital facilities by the purchase of a large building immediately adjoining its original property, and, after making the necessary changes, will furnish the new building and open it on the 16th of September, when the regular session will begin. New appointments have been made as follows: Dr. Thomas R. Pooley, professor of ophthalmology; Dr. B. Sachs, professor of neurology; Dr. L. Emmett Holt and Dr. August Seibert, professors of diseases of children; Dr. H. Marion-Sims, professor of gynæcology; and Dr. William H. Fluhrer, professor of genito-urinary surgery.

The New York Post-graduate Medical School.—The summer term will open on the 17th of June. Although the clinical facilities are equal to those of the winter, the fees for this session are only half as large as those for the winter term.

Sir William Stokes, Bart., M. D.—This eminent Dublin surgeon was made a baronet by the Queen, on her last birthday, May 24th. Dr. Stokes and three other faithful citizens were distinguished from their fellows by the bestowal of titles in commemoration of the day. He had received knighthood three years before, he had been honored by the profession by election to the presidency of the Royal College of Surgeons in Ireland, and he may be said to have reaped all the honors that can be attained by surgical eminence in his country.

Journalistic Changes.—The "Medical and Surgical Reporter" for June 1st states that the "Medical News," now edited by Dr. I. Minis Hays, will soon come under the direction of Dr. Hobart A. Hare, one of the editorial committee of the "University Medical Magazine." Dr. Hays will continue to have charge of the "American Journal of the Medical Sciences." The new arrangements in regard to the "News" will take effect on the 1st of October. Dr. Hare is known as a painstaking contributor to the journals and as an instructor in the Medical Department of the University of Pennsylvania. He is also a member of the faculty in the department of biology. A change of publishers has taken place for the "Boston Medical and Surgical Journal," Damrell and Upham now having the journal in charge.

Triple Births.—Dr. Bernard Ornstein, ex-surgeon-general of the Greek army, is engaged upon a memoir pertaining to information relative to the frequency of triple births in the human race and the length of time the children may survive. The points on which information is earnestly desired are: 1. Give the number of well-authenticated cases of triplets in which all the children have reached the age of two years or more. 2. Give cases in which two of the triplets have survived the age of one year or more, and also in which one of the three has lived one year or more. Information will be thankfully received by Dr. Ornstein, Athens, Greece, or it may be forwarded to Dr. W. J. Hoffman, of the Bureau of Ethnology, Washington, D. C., who will transmit the same.

The University of Vienna has recently lost two well-known members of its medical faculty by the death of Dr. August Breisky, ordinary professor of obstetrics, and Dr. R. Ultzmann, extraordinary professor of diseases of the urinary organs.

The American Climatological Association will hold its sixth annual meeting in Boston on Monday and Tuesday, the 24th and 25th inst. We shall publish the substance of the programme in our next issue.

Recent Deaths.—Dr. George William Cooke died at Kingston, Ulster County, N. Y., on the 8th inst., of cardiac disease. He was born at Otego, N. Y., in 1828, and was a resident of that town for fifty-four years. He was graduated in medicine from the Castleton Medical College, Vermont, in 1849; in 1872 he took an *ad eundem* degree at Bellevue Hospital Medical College. He was prominent in the Otsego County society, whence he served as delegate to the State society, becoming a permanent member in 1875. He was one of the charter members of the State Medical Association. He removed to Kingston in 1882, and two years later was appointed by Governor Cleveland a commissioner in the State Board of Health.

Dr. Samuel P. Moore, of Richmond, Va., died suddenly on the 31st of May, aged seventy-four years. He was the Surgeon-General of the Confederate forces during four years of the late war. He was a native of South Carolina, and was appointed from that State an assistant surgeon in the army in 1835, was promoted to be surgeon in 1849, and resigned in February, 1861, to enter the Confederate service. During recent years his home has been in Richmond, where he was enlisted in educational matters, becoming a member of the School Board. His sudden demise was referable to congestion of the lungs.

Dr. Abner Marshall Smith died at Pittsfield, Mass., on May 23d, of peritonitis, after an illness of ten days. He was sixty-eight years of age, and had been a resident of Pittsfield for thirty-five years. His degree in medicine he obtained in 1846 from the old Berkshire school. He was a prominent figure in the medical societies of his State, and had been the presiding officer of the Berkshire District Association. He was one of the pension examiners for a number of years for the western part of his State. He had been a member since 1854 of the State society, and a councilor for several terms.

Dr. William H. Whitley died on the 29th of May in Paterson, N. J., in which city he was born on November 23, 1833, his father having been the late Thomas Whitley, the artist. During the late civil war he resided at Washington, serving both as hospital steward in the regular army and as ordnance clerk. While there he studied medicine, and was graduated from the Georgetown Medical College in 1866. He was a member of the Medical Society of the District of Columbia from 1867 to 1872, in which latter year he relinquished practice in Washington and moved to Paterson. His death was sudden, and is believed to have been due to a congestive chill.

Dr. Frederick A. Rehwinkle, of Chillicothe, Ohio, died of apoplexy on the 8th of June. He was a surgeon of high repute in southern Ohio, and had been selected to preside over the Section in Dental and Oral Surgery at the coming annual meeting of the American Medical Association, his address before the Section being set down for June 25th. He was one of the secretaries of the International Medical Congress of 1887, and his marked linguistic attainments contributed largely to his usefulness in that position. His obsequies were ordered according to the most solemn rites of the Masonic body, the deceased having risen to the thirty-third degree of his fraternity.

Dr. Charles T. Reber died on May 10th, at Faucher, Ill., aged fifty-three years. He was a graduate of Jefferson Medical College in 1856, formerly a resident of Reading, Pa., and surgeon of the Forty-eighth Regiment of Pennsylvania Volunteers. He moved to Illinois about two years ago.

Dr. Samuel G. Lane, of Chambersburg, Pa., died on June 4th, in his sixty-third year. He was an alumnus of the University of Pennsylvania of the class of 1849. He had been surgeon of the Fifth Regiment, State Reserves, and assistant surgeon-general, secretary of the Franklin County Medical Society, and at the time of his decease a trustee of the State Lunatic Asylum. The cause of his death was apoplexy.

Dr. James Murphy died at his home in Brooklyn on the 8th of June, at the age of twenty-eight years, after an attack of acute rheumatism of a week's duration. He was a graduate of the Medical Department of the University of the City of New York of the class of 1883. He had been an assistant inspector in the service of the Brooklyn Board of Health.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from May 26 to June 8, 1889:*

Billings, John S., Major and Surgeon, by direction of the Secretary of War, is authorized to make, in connection with his duties as supervisor of mortality and vital statistics of the eleventh census, such journeys as may be ordered by the superintendent of the census, provided that, in each case, the approval of the Surgeon-General shall be obtained; and provided, further, that the journeys shall involve no charge against the fund for transportation of the army. Par. 12, S. O. 122, A. G. O., May 27, 1889.

Brown, Paul R., Captain and Assistant Surgeon, by direction of the Secretary of War, is granted leave of absence for six months on account of sickness. Par. 13, S. O. 122, A. G. O., May 27, 1889.

The resignation of Wilson, George F., Captain and Assistant Surgeon, was accepted by the President, and took effect May 31, 1889.

Fisher, Walter W. R., Captain and Assistant Surgeon. The leave of absence for one month granted by S. O. No. 30, c. s., Department of California, is extended fifteen days. Par. 3, S. O. 37, Headquarters Division of the Pacific, San Francisco, Cal., May 22, 1889.

Glennan, James D., First Lieutenant and Assistant Surgeon, by direction of the Acting Secretary of War, is relieved from duty at Willet's Point, N. Y., to take effect June 1, 1889, and will proceed to Fort Riley, Kansas. Par. 5, S. O. 121, A. G. O., May 5, 1889.

Rafferty, Ogden, First Lieutenant and Assistant Surgeon. Ordered with troops for field practice to Galveston, Texas, where troops will camp for such time as may be hereafter directed. Par. 1, S. O. 29, Headquarters Department of Texas, San Antonio, Texas, May 13, 1889.

Merrill, James C., Captain and Assistant Surgeon, is, by direction of the Acting Secretary of War, detailed as a member of the board of medical officers appointed by Par. 9, S. O. 108, May 10, 1889, from this office, to meet at the U. S. Military Academy, West Point, N. Y., on June 1, 1889, or as soon thereafter as necessary, to examine candidates for admission to the Academy, etc., vice Captain Fred. C. Ainsworth, Assistant Surgeon, hereby relieved as a member of the board. Par. 4, S. O. 127, A. G. O., June 3, 1889.

Owen, W. O., Jr., Captain and Assistant Surgeon. The leave of absence for seven days granted in Orders No. 48, c. s., Fort Gibson, Indian Territory, is extended twenty-three days. Par. 2, S. O. 67, Headquarters Department of the Missouri, Fort Leavenworth, Kansas, May 29, 1889.

Kean, Jefferson R., First Lieutenant and Assistant Surgeon. By direction of the Secretary of War, the leave of absence granted in S. O. No. 48, May 13, 1889, Department of the Platte, is extended fifteen days. Par. 3, S. O. 129, A. G. O., June 5, 1889.

Appointments.

Wales, Philip G., appointed Assistant Surgeon, with rank of First Lieutenant, from June 7, 1889.

DeWitt, Theodore F., appointed Assistant Surgeon, with rank of First Lieutenant, from June 7, 1889.

Ten Eyck, Benjamin L., appointed Assistant Surgeon, with rank of First Lieutenant, from June 7, 1889.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending June 8, 1889:*

Page, J. J., Assistant Surgeon (retired). Granted one year's leave of absence to leave the United States.

Bailey, Thomas B. Appointed an Assistant Surgeon in the Navy, May 23, 1889.

Barber, George H. Appointed an Assistant Surgeon in the Navy, May 23, 1889.

Rothganger, George. Appointed an Assistant Surgeon in the Navy, May 24, 1889.

Smith, George Tucker. Appointed an Assistant Surgeon in the Navy, June 3, 1889.

Bailey, T. B., Assistant Surgeon. Ordered to the Receiving-ship Dale at Washington, D. C.

Barber, George H., Assistant Surgeon. Ordered to the Receiving-ship Vermont at New York.

Ogden, F. N., Assistant Surgeon. Ordered to examination preliminary to promotion.

Bryant, P. H., Assistant Surgeon. Detached from Naval Hospital Chelsea, and granted a month's leave of absence.

Mayo, H. O., Medical Director (retired). Granted one year's leave of absence, with permission to leave the United States.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the two weeks ending June 8, 1889:*

Mead, F. W., Passed Assistant Surgeon. Ordered to examination for promotion. May 31, 1889.

Carrington, P. M., Passed Assistant Surgeon. To proceed to Johnstown, Pa., on special duty. June 3, 1889.

McIntosh, W. P., Passed Assistant Surgeon. When relieved at New Orleans, La., to proceed to San Francisco, Cal., for temporary duty. May 29, 1889.

Smith, A. C., Assistant Surgeon. Relieved from duty at Louisville, Ky.; ordered to Marine Hospital, New Orleans, La. May 29, 1889.

Society Meetings for the Coming Week:

Monday, *June 17th:* New Hampshire Medical Society (first day—Concord); New York County Medical Association; Medico-chirurgical Society of German Physicians; Hartford, Conn., City Medical Association; Chicago Medical Society.

Tuesday, *June 18th:* Colorado State Medical Society (Denver); Medical Society of New Jersey (first day—Asbury Park); New Hampshire Medical Society (second day); Medical Societies of the Counties of Kings, Washington (annual), and Westchester (annual), N. Y.; Ogdensburgh Medical Association; Baltimore Academy of Medicine.

Wednesday, *June 19th:* Medical Society of New Jersey (second day); Northwestern Medical and Surgical Society of New York (private); Harlem Medical Association of the City of New York; Medical Societies of the Counties of Alleghany (annual) and Tompkins (annual—Ithaca), N. Y.; New Jersey Academy of Medicine (Newark); Philadelphia County Medical Society.

Thursday, *June 20th:* Dakota Medical Society (Mitchell); Minnesota State Medical Society (Minneapolis); New Bedford, Mass., Society for Medical Improvement (private).

Friday, *June 21st:* Chicago Gynæcological Society; Baltimore Clinical Society.

Obituaries.

James Bradbridge Hunter, M. D., died at his house, in New York, on Monday, the 10th inst., as the result of an acute illness that began with acute articular rheumatism and ended in pericarditis and endocarditis. Dr. Hunter was born in Geneva, N. Y., of Scotch parents, who subsequently went to live in Canada. He took part in the late civil war as a medical officer of an Indiana regiment of volunteers. At the close of the war he resumed the study of medicine, and was graduated from the College of Physicians and Surgeons, in the class of 1866. He then went to London, where he pursued a course of study in ophthalmology at the Moorfields Hospital. On his return to New York he became interested in gynæcology, and for many years was associated with Dr. T. Gaillard Thomas in hospital and college work. In 1872 he became one of the editors of this journal, and was its sole editor from 1874 to 1880, immediately preceding the present editor. For several years before his death he was one of the surgeons of the Woman's Hospital; he was one of the early members of the faculty of the New York Polyclinic, holding the chair of gynæcology; and he was an original and prominent member of the medical board of the new Cancer Hospital.

Although Dr. Hunter always remained a general practitioner, he was best known by his work in gynæcology. He was an acute diagnostician and an exceptionally cool and neat operator. He often contributed to the current gynæcological literature, and for the past ten years he had devoted as much time as he could spare from a very busy life to the preparation of a book on gynæcological operations. It is to be hoped that the manuscript of this work will be found to have been brought near enough to completion to warrant its publication. It is probable that he was not generally regarded as a brilliant man, but every intelligent observer of his career credited him with much more than ordinary carefulness and precision. There was never anything pretentious about his undertakings, but he was wont to carry them through where more showy men would have failed. As a family physician he was painstaking and in the highest degree competent. His patients felt for him more than mere appreciation—he won their devotion by showing his own. In his editorial career he evinced the same qualities of carefulness and good judgment that he showed in his professional work. When he ceased to edit this journal he did not cease to care for its welfare, as the present editor has had many opportunities of observing. As a teacher Dr. Hunter was methodical and effective. His character as a man was difficult of estimation except by those who knew him long and intimately; he had the demeanor and the facial expression of a cold-hearted man, but beneath the surface there was a glow of humanity that warmed many an aching heart by acts of beneficence that he studiously concealed even from those who were much with him. His death in the prime of life—at the age of fifty-two—leaves a void in the New York profession that will be widely recognized.

Letters to the Editor.

THE CATSKILLS AS A HEALTH RESORT.

1602 West Fayette Street, Baltimore, *April 30, 1889.*

To the Editor of the New York Medical Journal:

Sir: I have been personally interested for some time past, both for the improvement of my own health and for that of others, in finding some suitable place not too distant from home that would afford relief, if not cure, in those forms of pulmonary disease likely to be benefited by a drier atmosphere and greater altitude. The Catskill Mountains have of late been brought more prominently before the profession by Dr. H. M. Wilson, Jr., who went there for his health after vainly trying southern resorts. The benefits he himself has derived from his residence near Tannersville have formed the basis of more extended investigations into the merits of the climate. Finding an opportunity to visit these mountains, I determined to take advantage of it and try the effect of the atmosphere in my own case. It is quite clear, of course, that a stay of two weeks can not give one an opportunity to judge how great the effect of several months' or a year's stay might be, and therefore the complete removal of laryngeal irritation, lessening of cough, cessation of purulent expectoration, disappearance of nausea, non-occurrence of evening fevers, and a feeling of increased muscular strength which have occurred in my own case, I do not look upon as being conclusive evidence of the value of the climate, but my sojourn has given me the opportunity to see those who came to this region some years ago for relief, and have found it even to the apparent entire cessation of pulmonary disease. I have therefore been much encouraged in the belief that we have here, comparatively near us, a place that presents advantages as a health resort which will certainly be more generally recognized in the near future by the profession.

The delightfulness of the Catskills as a summer resort is

well known, and it will be only a short time, in my opinion, before it will be equally well known as a winter sanitarium for pulmonary complaints.

C. Hampson Jones, M. B., C. M. (Edin.).

Proceedings of Societies.

AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

Third Annual Meeting, held at Newport, May 21 and 22, 1889.

The President, Dr. Robert W. Taylor, of New York, in the Chair.

(*Concluded from page 641.*)

Hunterian Chancre in the Female.—Dr. Alexander W. Stein, of New York, read a paper which figured on the programme as "Cases." The first was that of a Hunterian chancre in a female. The patient was a domestic, aged nineteen years, who had noticed a marked degree of soreness in her genitals during a menstrual period, and shortly afterward a pimple below the left labium majus, which pimple had broken, according to her statement, leaving an erosion. The ulcerated surface was situated on an indurated base, and was not painful. The inguinal glands, as well as the cervical, were enlarged and hard; a mucous patch appeared upon the left tonsil and was cured with 0·6 grain of mercury protiodide daily, and the use of an astringent gargle. The sore on the vulva was treated with applications of black oxide of mercury. Twenty days later a mucous patch appeared on the right tonsil, but disappeared after specific treatment was employed. Well-authenticated cases of true Hunterian chancre in the female were not so common but that the report of this one might be of interest.

Serpiginous Chancroid of the Vagina.—The second case, one which the speaker believed to be unique, was that of a serpiginous chancroid of the vagina. The patient, aged twenty-five, had not been pregnant. One month before entering the hospital she contracted a sore in her genitals from her husband. At her entry there were scalding pain on micturition and acute pain in the left hip and thigh, and examination showed the presence of a phagedenic ulcer on the left wall of the vagina. The left inguinal glands were enlarged. The patient limped when walking, because of the pain in the left side, and there was an abundant purulent discharge from the vagina. She was very emaciated and weakened. Some time later a profuse hæmorrhage from the vagina occurred, which seemed to have its origin in the ulceration of the vagina, and for which the patient was treated with morphine and whisky. Other hæmorrhages occurred, but ceased before the house surgeon could arrive. Then followed retention of urine, requiring the use of the catheter. On a subsequent occasion, however, a stream of blood burst from the vagina, and tampons impregnated with solution of subsulphate of iron were applied, but the patient died shortly afterward from exhaustion. At the autopsy, twenty-four hours after death, the viscera in general were found markedly anæmic. All the pelvic organs were removed *en masse*. With the superficial ulceration on the left wall of the vagina there was connected a fistula leading upward and backward to the left side of the pelvic cavity, which was filled with blood in various stages of coagulation. The pelvic fascia was thickened, the lesser sacro-sciatic ligament was destroyed, and the gluteal muscles were dissected by the burrowing sinuses. The cause of the hæmorrhages was found to be an erosion of one of the branches of the anterior branch of the internal iliac artery.

The President had seen cases of chancroid in which fistulæ had burrowed among the muscles of the pelvis and dissected the rectum away from the surrounding tissues.

Hereditary Syphilitic Transmission through Two Generations was the title of a paper by Dr. E. E. King, of Toronto, in which he described the case of twins, a boy and a girl, who presented a rash when two days old, and each had sore mouth or sore throat, with diarrhœa and general debility. Two weeks later the skin of the girl became copper-colored and an eruption of a pemphigoid nature appeared; then both children had condylomata at the anus. Treatment with mercury caused the diarrhœa to cease, and the nutrition of the children improved for a time. The girl, however, died soon, but no autopsy was permitted. Desirous of ascertaining how these infants had come by their syphilis, the speaker had sought the source in the parents, but, to his surprise, the father showed no signs of having had the disease, and the mother had not had any symptoms of it up to the moment of birth of the twins. Soon after beginning to nurse them, however, she had an indurated lesion of the breast, which the speaker regarded as a chancre contracted from the mouths of the nurslings. She afterward showed roseola and other indubitable signs of syphilis recently developed. On the other hand, she presented no signs of hereditary syphilis, such as notched teeth, exostoses, etc. Her mother had had several miscarriages, which rendered admissible the theory of syphilis in her.

Dr. L. Bolton Bangs, of New York, said it was difficult to obtain clinical evidence of the sources of syphilis. This case seemed to him one of primary syphilis in the mother. If the theory of the transmission of syphilis to the third generation was admitted, it would open a horrible vista of suffering from this disease. When such cases seemingly presented themselves it was probable that some clinical facts which would elucidate the origin of the infection had not been obtained.

The President said that the presence of bullous lesions in syphilitic children was unusual at a late date. These lesions ordinarily came early, being among the first symptoms in children born syphilitic.

Dr. Abner Post, of Boston, remarked that there was no evidence that the mother had latent hereditary syphilis.

Dr. E. L. Keyes, of New York, agreed to the opinion that the mother had acquired syphilis from some other source than her children.

The President added that roseola due to hereditary syphilis in a woman twenty-four years old was unheard of. At that age quite different symptoms were found, such as gummata, lesions of the bones, etc.

Malignant Tumors of the Inguinal Ganglia Secondary to Epithelioma of the Penis.—The President, in this paper, said that the rarity of the occurrence of these hideous complications was probably the cause of the present want of knowledge on this subject. The first case reported was that of a man, fifty-four years old, with no history of cancer in his family. His last coitus had been nine years previous to his admission into Charity Hospital, where the speaker saw him. About three years ago wart-like bodies showed themselves on the prepuce, which eventually developed into typical fungous epithelioma of a trumpet-shaped appearance, the glans penis, also affected, nestling a little in retreat of the flaring edges of the prepuce. After operation (excision of the epithelial mass) the wound was treated antiseptically, and healed within three weeks with a perfect meatus (admitting a No. 30 Fr. sound). The inguinal ganglia on the right side were much enlarged, those on the left in a lesser degree. Just as the stump healed, the ganglia on the

right side grew larger and the man became cachectic. Ulceration then began over the lower part of the ganglionic tumor, and a month or two later there were several threatening hæmorrhages from it. The growth grew to the size of one's fist. Its middle was seated just over Poupart's ligament. The cachexia deepened and the man died three months after the operation. At the autopsy the liver was found in a state of passive congestion and of fatty infiltration; the kidneys were normal. The new growth was found to extend down to the femoral vessels.

The second case was that of a German cigar maker, aged forty-eight, who had no history of cancer in his family. The cancerous disease began about four years ago by the development of warty growths upon the prepuce. Three years ago the penis was amputated at the pubic arch for epithelioma. A year later the patient felt a hard lump in the right groin, which soon softened and ulcerated and malignant disease developed in the borders of the ulcer. To-day it consisted of a raw, red fungous mass nearly six inches long, parallel to Poupart's ligament, and emitting a nauseous odor. The man was cachectic, worried, and hopeless. His death, which was inevitable, would perhaps be due to the deepening of the cachexia or to one or more visceral new growths.

One point of interest in these cases was the origin of the disease in what seemed to be simple vegetations of the penis. Again, they showed the tendency, more marked beyond the fortieth year of life, for inflammatory and hyperplasic growths of the penis to become malignant. Involvement of the inguinal ganglia in cases of epithelioma of the penis was inevitably followed by death. It was impossible to remove all the diseased tissue.

Dr. Francis B. Greenough, of Boston, agreed with the president and others that condylomata acuminata, which easily degenerated into epitheliomata, should be promptly removed.

Cases of Suprapubic Cystotomy was the title of a paper by Dr. Bangs. (To be published.)

Dr. Watson preferred to cut directly through the so-called prevesical fat rather than to extirpate it. He regarded Petersen's rectal bag as a valuable aid in suprapubic cystotomy, in spite of the unfavorable criticisms of Trendelenburg and Thompson. If he expected bleeding from the section of the bladder, after that operation he would not sew up the wound entirely. He thought that the suprapubic operation should not be performed for calculus if the latter could be removed by perineal section.

Dr. John P. Bryson, of St. Louis, had been glad to hear Dr. Bangs speak about opening directly into the bladder in the median line. He regarded the dangers of the suprapubic operation as having been exaggerated. He did not advocate placing a drainage-tube in the so-called prevesical space, as some authors advised, and he preferred operating as high on the abdominal wall as possible, instead of nearer the pubes.

Dr. Keyes had come to consider the suprapubic operation as the best by all means. He deplored great distension of the rectum, and said that ten or eleven ounces of liquid were enough to inject into it. He insisted upon the advantage of making a clean, straight cut down to the bladder. He thought well of the method of rolling up the prevesical fat, and thought that the higher the bladder was opened the better. He advised avoiding the prevesical space, and never inserting the finger there. When hæmorrhage occurred in considerable quantity at the base of the bladder he used the snap-forceps for seizing the bleeding vessels. If this failed to arrest the hæmorrhage, a suture should be passed under the bleeding vessel and the ends tied. The walls of the bladder were strong, and would always hold. If much hæmorrhage persisted after the operation, it was just as well to leave the bladder open.

Dr. Bryson asked what should be done to relieve the pain often felt after operations on the bladder.

Dr. Keyes recommended the use of opiates. Vesical tenesmus might exist when there was no retention of liquids in the viscus and no distension of its walls, which was contrary to the French aphorism, "*pas de distension, pas de ténesme.*"

Dr. Arthur T. Cabot, of Boston, said that, contrary to Dr. Bangs's experience, he had found that when granulations formed about the drainage-tube, holding it firmly, the siphoning of the urine was performed better.

Dr. Bangs had preferred the suprapubic operation in two cases of tumor because they *were* tumors and because, hæmorrhage having occurred before the operation, he had expected it during and after operating, and he wished to have a large open wound to work through; but in the case of a young man in good health with a moderate-sized stone in the bladder, he would not perform suprapubic cystotomy, but litholapaxy. He had observed very little injury to the rectum by the employment of the rectal balloon. In regard to the phraseology connected with suprapubic cystotomy, the speaker thought that the expressions "prevesical space" and "prevesical fat" ought to be changed to *supravesical space* and *supravesical fat*, because the latter agreed more nearly with the anatomical relations of the parts concerned.

Dr. Keyes strongly disapproved of a transverse incision in performing suprapubic cystotomy.

Scirrhus of the Bladder.—Dr. Cabot read a paper on this subject and presented a specimen. When he first examined the patient he found signs of calculus. He gave ether and tried the lithotrite, but without success. He then performed suprapubic cystotomy, but, on incising the skin and fat, he struck a hard mass behind the symphysis, which he thought to be the stone surrounded by the vesical walls. He cut down upon it, but opened the peritoneal cavity instead of the bladder. The mass was then seen to be a malignant tumor. The peritoneal wound was closed with a continuous suture and ultimately healed by first intention. The specimen showed that the supposed stone was really a calcareous deposit upon a portion of the tumor. The peritonæum was seen to be drawn down upon the pubes in a remarkable manner, which explained its perforation during the operation. The vesical cavity was greatly reduced in size.

Dr. Keyes said that epithelial cancers might form primarily on any portion of the inner surface of the viscus.

Dr. Stein remarked that primary scirrhus in the bladder was of the rarest occurrence, although other forms of malignant tumors were more frequent. The suprapubic method seemed to be best for tumors.

Dr. Bryson mentioned a case of vesical tumor which to all appearances, clinically and histologically, had originated in the seminal vesicles, although this origin was extremely rare. There were many soft tumors of the bladder which could not be recognized by the touch, and in these cases suprapubic cystotomy was very useful, but the speaker still regarded perineal section as one of the least dangerous of operations on the bladder.

Dr. Cabot said that the cystoscope sometimes led one to believe in the existence of tumors of the bladder which were not present. Operations had been performed for removal of tumors that could not be found upon opening the bladder.

Dr. Bangs confirmed the remarks of the previous speaker and said that the use of the cystoscope had not been satisfactory to him. It sometimes would also fail to show tumors which really existed.

Chronic Cystitis of the Neck with the Formation of Hard, Fibrous Rings at the Site of the Sphincter Vesicæ.—Dr. Bryson reported three cases as follows: *Case I.*—A Bohemian, aged thirty-six, complained of frequency of micturition

and constant pain or distress in the prostatic urethra. He was a druggist, and believed that sodium bicarbonate somewhat relieved his symptoms, while all potassium salts increased them. He had had gonorrhœa seven years before, which had got well slowly and been followed by prostatitis and by left-sided epididymitis. The prostate, felt through the rectum, showed perceptible thickening of its posterior border, which gradually faded away to the normal as the anterior half was reached. This was even, smooth, and symmetrical. A blunt sound caused such intense pain when in the prostatic sinus that it had to be withdrawn. A ten-per-cent. injection of cocaine gave such relief that the patient thought he was cured. The blunt (No. 32) sound would then enter the prostate but not the bladder. A Thompson's stone-searcher entered the bladder, but found nothing. No improvement followed hygienic treatment and the use of injections of argentic nitrate. An exploratory median perineal urethrotomy was done, but the little finger could not be passed into the bladder, because it was arrested at the sphincter by what felt like a hard, fibrous ring apparently about an eighth of an inch thick. The patient could not support a small drainage-tube on account of pain, although well narcotized, and the wound was allowed to heal. The patient rapidly became better, left for the South, and wrote afterward that he was married to the young lady who had waited for him during the seven years of his suffering.

Case II.—A man, aged twenty-five, had had severe protracted gonorrhœa four years previously. A feeling of dull pain in the deep urethra, which never left him, was increased by the use of malt liquors. He attributed his suffering to the use of an electrode in the prostatic part of the urethra. As in the first case, a blunt sound (No. 32 Fr.) could not be made to enter the prostate without the previous use of cocaine. A smaller Bigelow aspirating tube (No. 14 A.) would pass through with a jolt, but only to the shoulder. No stone was found in the bladder. Treatment had produced no effect; he had only got relief from cocaine.

Case III was that of a man of forty-seven years who had had gonorrhœa three years and a half before, which had not been severe, but persistent. Cystitis of the neck supervened. A small stone-searcher detected at least two calculi in the bladder, which were evidently secondary to the cystitis. The vesical neck would not permit of the passage of either the cystoscope or an average-sized evacuating-tube. Two phosphatic calculi were removed by median perineal cystotomy. On passing the finger through the prostatic sinus, it came upon a hard, unyielding ring about the region of the sphincter. Another surgeon present verified the density and resistance of the ring, which, when being cut, resembled stricture-tissue. The patient made a rapid recovery from the operation, but the coarctation soon returned, and narrowed to the same extent as before the operation. It was probable that lateral cystotomy would have given far better results in this case.

Dr. Keyes said that these rings were evident to every man who passed his finger into the organ. He believed that the lateral perineal operation was preferable in such cases so as to cut the rings.

Dr. Bangs had often wondered what the cause of these rings was. He thought they were largely due to prolonged and exaggerated functional contraction at the point of their occurrence.

Dr. Stein questioned the pathological character of coarctations in that region. He had often regarded them as normal.

Dr. Bryson thought that the objection to lateral perineal section on the ground that it would close the seminal ducts was groundless. He thought it difficult to close these ducts by this operation, because, although the duct might be cut across, yet the constantly flowing secretion which oozed from the orifice would keep it continually open. He believed that these rings were of the nature of stricturing bands.

NEW YORK CLINICAL SOCIETY.

Meeting of April 26, 1889.

The President, Dr. L. Bolton Bangs, in the Chair.

An Ordinary Case of Nasal Catarrh. — Dr. Beverley Robinson presented a patient who had recently come to his office for the relief of nasal catarrh, having been sent to him by a man living in Canada who had formerly been a patient of his. He had found that the trouble was due to hypertrophy of the pituitary membrane. The case presented nothing particularly interesting, and was in every way an ordinary case, and, so far as the nasal trouble was concerned, he had brought the patient before the meeting only because the paper of the evening was to be devoted to nasal catarrh. The case was also of interest on account of a peculiar nervous disorder which the patient had suffered from ten or twelve years before. This had been some sort of tetanic affection which had affected the lateral and anterior regions of the neck, drawing the head down and to one side. It had seemed to depend for its cause on long and close attention to business, by which he had become badly tired and run down. Dr. DaCosta, of Philadelphia, and others whom he had consulted, had told him to rest from his labors and avoid medicines. From that time to the present the tetanic condition had slowly improved, and was now nearly gone. For a number of years back he had been subject to nasal catarrhs which at first had yielded readily to ordinary treatment, sprays, etc., but eight weeks ago the usual treatment given by the physician residing in his town had failed to relieve, and instead had made the condition worse. Cocaine had been tried; it had given a temporary relief followed by a still more marked congestion, representing as it undoubtedly did a secondary paralysis of the vessels of the pituitary membrane covering the turbinated bodies. The nasal condition had at times become so much worse that the man had walked the floor at night, not knowing what to do to get relief. That there was an efficient means of treating such conditions by acids and the galvano-cautery was of course known to all. He had brought the patient to show what occurred in many of those cases of hypertrophic rhinitis where douches and sprays had been long kept up. Often there was a congenital narrowness in the nasal passages, and, after catarrh had become established, such cases were especially troublesome. The case also illustrated the positive harm done by cocaine. He would be glad to hear opinions as to the nature of the nervous malady from which the patient had formerly suffered so much and of which some traces still remained. At times the patient was compelled to breathe through his mouth, and this was apt to bring on an attack of the muscular spasms. In the last few weeks he had been at times unable to breathe through his nose, and the mouth-breathing had produced spasms of considerable violence. Finally he had lost many of his teeth and bitten into his cheeks owing to the intensity of these attacks. This condition had lasted for many years. There was no paralysis in the muscles about the face or neck.

Dr. W. B. James instanced the case of a girl who suffered from a curious paralysis of the right palato-pharyngeus muscle and of the right vocal cord, and marked hypertrophy of the right lower turbinated body. This condition had lasted for years, and had been accompanied by nasal catarrh and impairment of the voice. The speaker knew of no necessary connection between the nasal and vocal affections in this case, but thought their occurrence together significant.

Dr. Robinson replied that he did not think this case analogous to the one he had presented. He had not meant that the breathing through the mouth specifically produced the spasms; the latter were accessory symptoms of the general condition which the mouth-breathing made worse enough to bring into activity. He had become convinced that the trouble behind the spasmodic symptoms was a meningitis of the upper portion of the spinal cord, and had instructed the patient to apply dry cups over this region, and to take internally bromo-caffeine, hoping thus to relieve the congestion of the cord. He was aware that by freeing the nasal passages of obstructions we sometimes relieved patients of obscure disorders of different sorts, remote and near, especially cerebral and gastric disorders. Still he had no idea that the nose and its condition was the only factor in the case he had presented.

Dr. W. H. Katzenbach had been interested in the remarks in reference to the local use of cocaine. He could say from personal experience that constant applications of the drug resulted in a paretic condition of the parts, necessitating a more and more frequent use of the drug to get an equal effect.

Dr. D. B. Delavan thought the case presented by Dr. Robinson both interesting and unusual. He had tried in vain to recall a similar one. A case had recently been reported of choreic motions of the soft palate occurring in a girl of nervous temperament, in which the palate rose and fell with a clicking sound upward of a hundred and twenty times in a minute. These movements had entirely ceased after two hypertrophied turbinated bodies had been removed—one from each side. Although some time afterward the girl received a severe nervous shock, there had been no return of the palatal affection. There had evidently been some connection between the turbinated hypertrophy and the palatal spasm. As was well known, the reflexes of the nose, as it was convenient to call them, might be very severe and their manifestation either near or remote. Of cocaine he would say that he often heard from intelligent patients of distressing symptoms which had been added to their troubles by the use of this drug for the supposed relief of nasal irritations. He thought a supply of the drug should never, under ordinary circumstances, be given to a patient for him to use at his own discretion.

Dr. W. H. Flint said, in regard to the reflex phenomena due to nasal troubles, that he had recently met with the severest case of this sort which had ever come to his notice. The patient had had hypertrophy of the inferior turbinated bones. For a period of two weeks in two successive years, at two o'clock every night, this patient had had a violent spasmodic cough lasting for several hours. After the hypertrophied condition in the nose had been removed by the galvano-cautery there had been no return of the coughing.

The Treatment of Ordinary Nasal Catarrh.—Dr. Robinson read a paper with this title. (See p. 650.)

Dr. J. H. Emerson expressed his approval of Dr. Robinson's manner of using the galvano-cautery.

Dr. R. Abbe spoke in praise of the curative action of the preparation known as Carl Seiler's formula. He had had no experience with any agent by which an attack of rhinitis could be cut short so quickly as by this, and the irritation was at once replaced by a sense of comfort. In cases of painful acute coryza a mixture of two grains of cocaine and a drachm of boric acid seemed to have at once a soothing and an antiseptic effect, and was free from any danger connected with the formation of a cocaine habit, as where the pure drug was used.

Dr. G. A. Spalding asked whether, in Dr. Robinson's opinion, the snuffing up of powders or of fluids into the nose was likely to cause ear troubles.

Dr. Delavan thought the treatment of nasal catarrh a very important matter. He took issue with the statement that practically every one had it, and that it was not important, after all, to attempt to treat it specifically. While he would admit that some cases were not to be relieved by sprays, he thought that another class of patients having nasal catarrh were greatly relieved by them. It seemed improbable to him that all the statements made by different competent observers in regard to cures resulting from such local applications should have no basis in fact, although it might be admitted that they were fewer in number than was commonly supposed. Mild cases were commonly relieved without doubt.

He agreed with Dr. Robinson in his ideas about the means of making local applications and of doing other work in the nasal cavities. With regard to the use of oily substances, and particularly of vaseline, vaseline was very useful, but it was to be remembered that few drugs would dissolve in it. It was a bad excipient, and, moreover, it was not well absorbed. Its value was as an inert and protective substance, which would preserve the moisture of the mucous membrane and prevent it from being irritated by particles of dust, etc. But its value was limited to that of a protective. He had used with great satisfaction the petroleum preparation known as liquid albolene, sold by McKesson & Robbins.

With regard to acids he would say that, while he had a certain amount of respect for the value of chromic acid, he considered it inferior to the galvano-cautery. He had in some instances used each at different times on the same patient, where the patient was himself a physician or a person of intelligence, and the galvano-cautery had always been preferred. Chromic acid was followed by more reaction, gave more pain at the time, and had no advantages of any sort to compensate for these disadvantages. The argument that the action of chromic acid was chemically self-limited was absurd when we considered that limitation of the action of the galvano-cautery was under the absolute control of the operator. There was no doubt that of late operations had been very much overdone and improperly performed for pathological nasal conditions. Patients were constantly applying at clinics in this city for the repair of injuries and damages sustained as a result of operations attempted for the improvement of their nasal passages, and many of them had come under his own notice. He had recently seen a patient both of whose inferior turbinated bodies had become adherent to the wall of the nasal chamber through their whole extent—a condition due to the mistaken or careless use of the galvano-cautery by some unwise operator.

With regard to the complaints so often heard about the slow healing and tardy recovery following nasal operations, it was to be borne in mind that there was no local peculiarity of tissue or other necessary cause for such delay in the healing process, and that a neglect of surgical principles in the treatment of the wound, and especially in keeping it aseptic, was usually to blame. It was indispensable that, after a nasal operation, the patient should be kept under the same conditions recognized as essential to success after other serious operations in surgery.

In undertaking operations on the nasal septum the speaker thought it necessary that a physician should be a competent surgeon, and that no one instrument or appliance could be looked to for the cure of a given deformity in different patients. So, in patients coming for the relief of septal malformation, the deformity varied widely in position and extent, and no one instrument was made which was adapted to every exigency that might arise in operations of this sort. The saw did best as an all-around instrument, but, where the deformity was situated high up and far back, a resection would be the only means of

getting a satisfactory result; neither trephine nor gouge would do the work needed. The trephine he regarded as a beautiful little instrument, and had great respect for its value, but was compelled to recognize its disadvantages. It left behind a circular cut which lacked smoothness. Then, when starting to make an incision, it was always easy to penetrate the soft or cartilaginous tissues first met with, but behind these might be encountered bone as hard as ivory, which would give the operator much trouble. Ether was needed in a large number of these nasal operations. Neither saw nor trephine filled every indication, and he trusted we were on the eve of having some new instrument which should be even in action, efficient, rapid, and smooth, and also adapted to the hand of the non-expert operator. He had heard the disadvantages of the saw called attention to before. It was significant that, while this instrument had been so much used in France for years past, in Germany chisels and gouges were depended on almost exclusively.

As to the value of local treatment of catarrhal conditions, he did not take so hopeless a view of it as Dr. Robinson did. Operations within the nose were being overdone, as he had already said, and this, together with carelessness in after-treatment, was making them undeservedly feared. It must never be lost sight of that these were operations done very near the sensorium, done in bone too (and that supplied by the sensitive fifth nerve), and sometimes followed by severe shock. After such an operation the patient needed to be put to bed, given iron and tonics, and kept for a considerable time under the eye of the operator, instead of being left to carry out instructions himself with no one to enforce them.

Dr. W. H. Flint made some remarks in regard to the nasal douche. It was said in some quarters that it was never to be used; in others that it was always worthy of trial. He thought himself that a middle course was the true one in this matter, as it was in so many other things. He had had to do with many people troubled with nasal catarrh, and among them himself. These patients frequently asked their physician what they were to do in order to free themselves of the accumulations that formed in their nasal passages. He thought it safe and wise to tell them to use a douche occasionally for this purpose, employing a stream of salt water from a suspended bag or a syringe. The only danger was that in case the nostrils were occluded and a stream was forced in on one side some of the water might enter the Eustachian tube and give rise to irritation or inflammation in the middle ear. He had used the douche once each week for the past thirteen years to remove the accumulations from within and the dust of the streets, and had never experienced anything but relief. He knew many people who had used the douche for a long time without accident or drawback.

Dr. Robinson replied to Dr. Spaulding's question that he had frequently known painful sensations in the ears to follow the snuffing up of liquids, in some persons, but rarely suppurative otitis media. That which was most important among symptoms in those who had obstinate nasal catarrh was some trouble in the eyes or ears, loss of smell, and other possible extensions or reflex troubles, not the hawking and spitting. It was necessary that we should realize how large a class of people there was who were running every few days to the office of some specialist during periods covering weeks or months to have their nasal passages sprayed out, and who, if they were asked whether the treatment was doing them any good, would necessarily answer in the negative. These were commonly people who habitually over-ate, exposed themselves to draughts or wet, clothed themselves carelessly, and paid little attention to the regular action of their bowels. Quite commonly only twenty-four hours of a constipated habit was needed to bring on a nasal catarrh which would run for days. It was very significant how a blister applied over the liver to bring up the activity of the portal circulation relieved a catarrh in some persons, just as it was familiarly known to do in certain cases of epistaxis. We must regard the body differently from a mosaic table out of which one could pick up a single piece and do with it this way or that. He must still hold to the general truth of the statement that he had made, to the effect that, as a whole, people suffered more harm from specialists than they received benefit. Taking them as a multitude, they would be better off without the treatment so given them, directed to different or perhaps many successive regions of their bodies. This principle was the more in need of recognition when it was considered that the great majority of patients who were to receive advice must take it from the general practitioner, and that ordinary catarrh was the malady from which they wished to be relieved. Nasal operations were needed, of course, in certain cases, but, like amputation, and other capital operations, in proportion to the whole number of people to be treated they were rare.

Book Notices.

On the Preventive Treatment of Calculous Disease and the Use of Solvent Remedies. By Sir Henry Thompson, F. R. C. S., M. B. Lond., etc. Third Edition. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. 87. [Price, $1.]

Under this title the author gives in reality his method of treatment in what has been termed the "uric-acid diathesis," of which stone in the bladder is but one of the rarer accidents, and perhaps the one least to be dreaded when it does occur. No definite stand is taken as regards the pathology of this affection, and in consequence the method of treatment, however excellent in practice, is largely empirical, no attempt being made to distinguish between the various possible causes of lithæmia which scientific investigations have already demonstrated. In particular, the fact of the peculiar liability of tubercular and strumous subjects, not only to deposit uric acid and urates from the urine, but also to excrete it in excess, has been ignored, although the form of treatment laid down by the author would be detrimental rather than beneficial in this class of cases.

A brief history of the various methods attempted for the treatment of stone by solvents and of their non-success closes this little book, which has been enlarged and entirely rewritten since its first edition. Its popularity is vouched for by the facts that not only has it reached its third edition in its present form, but that it has been published many times in other works by this author.

Clinical Lectures on Diseases of the Urinary Organs. (Delivered at University College Hospital.) By Sir Henry Thompson, Surgeon Extraordinary to His Majesty the King of the Belgians, etc. Eighth Edition. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. xiv–470. [Price, $3.50.]

The author of this work is so well known as an authority in genito-urinary surgery, and various editions of his published clinical lectures have already been so favorably noticed in our columns, that there is little left for the reviewer of this eighth edition to say in commendation. The seventh edition appeared in England in 1883. The one now before us is much enlarged, and has been almost entirely rewritten. The surgery of the bladder is brought down to date. The matter of the book is contained in thirty-two lectures, and illustrated by a

hundred and twenty-one woodcuts. The last edition had, we believe, only twenty-six lectures and eighty four woodcuts. Of special interest will be found the eminent author's statement of his personal experience in nine hundred and eleven operations for stone as found on pages 195 *et seq.* This is an eminently practical book upon a very important branch of surgery, and to be commended to all who are interested in the subject.

The Operations of Surgery. A Systematic Hand-book for Practitioners, Students, and Hospital Surgeons. By W. H. A. Jacobson, F. R. C. S., Assistant Surgeon, Guy's Hospital, etc. With One Hundred and Ninety nine Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1889. Pp. 14–17 to 1006. [Price, $5.]

This work contrasts very favorably with most of those published under the same or some similar title. Sufficient space is devoted to every region of the body to make clear the principal operations which may be performed upon it, while at the same time the descriptions are narrowed down within practical limits. An attempt to compile a work which would contain every possible operation would result in a mass so great as to render it of little value; so it becomes a necessity for a writer on this subject to select those operations which, in his opinion, seem to be preferable. This Mr. Jacobson has done very judiciously. Beginning with the fingers, passing up to the head and neck, and thence in a similar manner to the other portions of the body, each region is considered separately, the important anatomical points are clearly set forth, the conditions indicating or contra-indicating operative interference are given, the details of the operations themselves are brought forward prominently, and frequently the after-treatment is considered. Herein is one of the best points of the book. Operative surgery is not merely operating; the conduct of the after-treatment often furnishes an opportunity for a surgeon to exhibit his skill, sometimes to a greater degree than the operation itself; hence a work designed as a guide to the surgeon in the performance of operations should not stop short until it has carried him through the special difficulties which may attend the after-treatment.

It is pleasant to note so large a number of references to the work of surgeons on this side of the Atlantic; they are quite prominent, and show that the labors of some of our American surgeons are not overlooked.

The book is well got up. The type is of good size and the paper good. The cuts are fair, many of them new, some excellent. It makes a very welcome addition to a physician's library.

Obstetric Aphorisms for the Use of Students commencing Midwifery Practice. By Joseph Griffiths Swayne, M. D., Consulting Physician to the Bristol General Hospital, etc. Ninth Edition. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. vii–159. [Price, $1.25.]

This might properly be considered a condensed treatise upon obstetrics, containing abundant references to the works of the best modern writers, especially the standard English writers of a generation ago. The author's comprehension of the mechanical portion of obstetrics and his advice concerning its management are in the main judicious, but much more might have been said by him with advantage concerning the treatment during the puerperium. The old notions in which the author was educated cling more or less tenaciously to him; in other words, judging from his book, we should say that he did not fully appreciate the importance of the antiseptic principle in its application to midwifery. Not that this subject has been ignored by him, but that it has not received the emphasis which, in our judgment, it merits. It is all-important in obstetrics, as in everything else, that one should start right, and students can not be taught too soon nor too earnestly that success will be gauged largely by the scrupulousness with which antisepsis, which is mainly cleanliness, is carried out in the lying-in room. Probably the mechanics of obstetrics is no better understood now than it was a generation ago, but the mortality statistics are everywhere more favorable.

The Skin Diseases of Infancy and Early Life. By C. M. Campbell, M. D., C. M., Edin., etc. London: Baillière, Tindall, and Cox, 1889. Pp. xii–202.

This book has given us a feeling of amazement that such flimsy and juvenile matter could be written in Great Britain in the present enlightened age of dermatology. The author shows no familiarity with the subject in his clinical descriptions, which are tame and vapid; he is even less happy in the matter of diagnosis; and, as to his therapeutics, the least said the better. If, as the author seems to hope, the book is bought by the general practitioner with the idea that it will aid him in diagnosticating and treating "off-hand some skin affections in the household," the trusting purchaser will certainly be the victim of misplaced confidence.

What to do in Cases of Accidents and Emergencies: describing the Symptoms in each Case and how to treat them on the Moment. With a List of the Principal Poisons, which, if taken, require Prompt Treatment; their Remedies and Antidotes. Designed for Family and General Use. By Joseph B. Lawrence, Medical and Surgical Nurse. New York: J. H. Vail & Co., 1888. Pp. 9–11 to 139.

> "A little learning is a dangerous thing,
> Drink deep, or taste not the Pierian spring."

It is not often that the adage is exemplified more truly than by this book. The disappointment experienced in reading it is intense. Instead of giving practical hints based upon the experience of a bright and intelligent nurse, much space is devoted to attempts to describe in language easily understood by the unlearned the pathology, symptomatology, and treatment of certain lesions. But the author has passed beyond the bounds of his knowledge and has recorded mistakes, some of them superbly ridiculous, on nearly every page. We hoped to be able to praise this work, but can not conscientiously avoid censuring it.

BOOKS AND PAMPHLETS RECEIVED.

Hand-book of the Diagnosis and Treatment of Skin Diseases. By Arthur Van Harlingen, M. D., Professor of Diseases of the Skin in the Philadelphia Polyclinic and College for Graduates in Medicine. Second Edition, enlarged and revised. With Eight Full-page Plates and other Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1889. Pp. xv–17 to 410. [Price, $2.50.]

Examination of Water for Sanitary and Technical Purposes. By Henry Leffmann, M. D., Ph. D., Professor of Chemistry in the Woman's Medical College of Pennsylvania, etc., and William Beam, M. A., Demonstrator of Chemistry in the Pennsylvania College of Dental Surgery. Philadelphia: P. Blakiston, Son, & Co., 1889. Pp. vi–9 to 106.

Hog Cholera: Its History, Nature, and Treatment, as determined by the Inquiries and Investigations of the Bureau of Animal Industry. Washington: Government Printing-office, 1889. [United States Department of Agriculture.]

Sixteenth Annual Report of the Secretary of the State Board of Health of the State of Michigan, for the Fiscal Year ending June 30, 1888.

Rest in the Treatment of Chronic Joint Disease. By John Ridlon, A. M., M. D. [Reprinted from the "Medical Record."]

The Efficacy of Filters and Other Means employed to purify Drinking-water. A Bacteriological Study. By Chartes G. Currier, M. D., of New York. [Reprinted from the "Medical News."]

New York Cancer Hospital. Fourth Annual Report. For the Year 1888.

Cornell University, College of Agriculture. Bulletin of the Agricultural Experiment Station. V. April, 1889. I. On the Production of Lean Meat in Mature Animals. II. Does heating Milk affect the Quality or Quantity of Butter?

Semi-centennial Anniversary of the Albany Medical College. March 21, 1889. Historical Address by David Murray, LL. D.

Sull' influenza del riscaldamento e raffreddamento del corpo in alcuni processi febbrili. Indagini sperimentali del Dott. Alberto Rovighi. [Estratto dalla "Rassegna di scienze mediche."]

Las ambulancías civiles, sistema existente en Nueva York y su posibile implantación en Santiago. Por el Dr. Luis Asta-Buruaga.

Su di un caso di embolia cerebrale. Per il dott. Umberto Dieci. [Estratto dalla "Rassegna di scienze mediche."]

La mortalità per tifo e pneumonite nell' ospedale di Modena, dal 1850 al 1889. Studio statistico del Dottor Alberto Rovighi.

Atlas of Venereal and Skin Diseases. Comprising Illustrations and Selections from the Plates of Professor M. Kaposi, of Vienna; Dr. J. Hutchinson, of London; Professor I. Neumann, of Vienna; Professors A. Fournier and A. Hardy, and Drs. Ricord, Cullerier, Besnier, and Vidal, of Paris; Professor Leloir, of Lille; Dr. P. A. Morrow, of New York; Dr. E. L. Keyes, of New York; Dr. Fessenden N. Otis, of New York; Dr. J. Nevins Hyde, of Chicago; Dr. Henry G. Piffard, of New York; and others. With Original Text by Prince A. Morrow, A. M., M. D., etc. Fasciculus XIII. New York: William Wood & Co., 1889.

Diphtheria: its Nature and Treatment. By C. E. Billington, M. D., and Intubation in Croup and other Acute and Chronic Forms of Stenosis of the Larynx. By Joseph O'Dwyer, M. D. New York: William Wood & Co., 1889. Pp. iv–326. [Price, $2.50.]

Immunity through Leucomaines. By Eusebio Güell Baciyalupi. Translated from the Second French Edition by R. F. Rafael, M. D. New York: J. H. Vail & Co., 1889. Pp. x–3 to 170.

A Treatise on Hernia. The Radical Cure by the Use of the Buried Antiseptic Animal Suture. By Henry O. Marcy, A. M., M. D., LL. D., etc. Detroit: George S. Davis, 1889. Pp. vii–251. ["The Physicians' Leisure Library."]

Extra-uterine Pregnancy. A Discussion. [Reprinted from the "Transactions of the American Association of Obstetricians and Gynæcologists."] With an Appendix reviewing Mr. Lawson Tait's Ectopic Gestation and Pelvic Hæmatocele. Philadelphia: W. J. Dornan, 1889.

Proceedings of the New York Pathological Society. For the Year 1888.

Typhoid Fever and Water Supply in Omaha. By W. F. Milroy, M. D. [Reprinted from the "Omaha Clinic."]

The Sixty-fifth Annual Report of the Officers of the Retreat for the Insane at Hartford, Conn. April, 1889.

Kocher's Method of Reducing Sub-coracoid Dislocations of the Humerus. By Charles A. Powers, M. D. [Reprinted from the "Medical Record."]

A Guide to Therapeutics and Materia Medica. By Robert Farquharson, M. P., M. D. Edin., F. R. C. P. Lond., LL.D. Aber., late Lecturer on Materia Medica at St. Mary's Hospital Medical School, etc. Fourth American from the Fourth English Edition. Enlarged so as to include all Preparations Officinal in the U. S. Pharmacopœia, by Frank Woodbury, A. M., M. D., Professor of Materia Medica, Therapeutics, and of Clinical Medicine in the Medico-chirurgical College of Philadelphia. Philadelphia: Lea Brothers & Co., 1889. Pp. vi–25 to 598. [Price, $2.50.]

Cyclopædia of the Diseases of Children, Medical and Surgical. The Articles written especially for the Work by American, British, and Canadian Authors. Edited by John M. Keating, M. D. Vol. I. Illustrated. Philadelphia: J. B. Lippincott Company, 1889. Pp. xiii–992. [Price, $5.]

Elements of Histology. By E. Klein, M. D., F. R. S., Lecturer on General Anatomy and Physiology in the Medical School of St. Bartholomew's Hospital, London. Illustrated with 194 Engravings. New and enlarged Edition. Philadelphia: Lea Brothers & Co., 1889. Pp. xii–368. [Price, $1.75.]

Electricity and the Methods of its Employment in removing Superfluous Hair and other Facial Blemishes. By Plym. S. Hayes, A. M., M. D., etc. Chicago: W. T. Keener, 1889. Pp. vi–128.

Clinical Observations on the Action of Sulfonal in Insanity. By W. Mabon, M. D., Utica, N. Y. [Reprinted from the "Journal of Insanity."]

The Essentials of Physical Diagnosis of the Chest and Abdomen. By J. Wallace Anderson, M. D., Physician to the Royal Infirmary, Glasgow, and Lecturer on Medicine, Royal Infirmary Medical School, etc. New York: Macmillan & Co., 1889. Pp. viii–156. [Price, 75 cents.]

Annual Address of the President of the Philadelphia Obstetrical Society. By Professor Theophilus Parvin, M. D. [Reprinted from the "Annals of Gynæcology."]

Crime: its Physiology and Pathogenesis. How far can Medical Men aid in its Prevention? By John Morris, M. D., of Baltimore. (President's Address delivered before the Medical and Chirurgical Faculty at its Ninety-first Annual Meeting, April 23, 1889.) [Reprinted from the "Maryland Medical Journal."]

Change in the Color of the Hair, from the White Hair of Old Age to Black, produced by Jaborandi. By D. W. Prentiss, A. M., M. D., Washington D. C. [Reprinted from the "Therapeutic Gazette."]

A Report of Five Hundred Consecutive Cases of Labor in Private Practice in the District of Columbia, between the Years 1864 and 1888. By D. W. Prentiss, A. M., M. D. [Reprinted from the "American Journal of Obstetrics and Diseases of Women and Children."]

Lectures on Bright's Disease. By Robert Saundby, M. D. Edin., Fellow of the Royal College of Physicians, London, etc. With Fifty Illustrations. New York: E. B. Treat, 1889. Pp. vi–290. [Price, $2.75.]

The Proceedings of the Sixth Annual Meeting of the Ohio State Sanitary Association, held at Canton, November 14 and 15, 1888. [Reprinted from the "Annals of Hygiene."]

Is More Conservatism Desirable in the Treatment of the Joint Diseases of Children? By A. B. Judson, M. D. [Reprinted from the "Medical Record."]

The Heating and Ventilation of the Mansfield Schools and Churches. By R. Harvey Reed, M. D., Mansfield, Ohio. [Reprinted from the "Journal of the American Medical Association."]

"Eye-strain." Its Bearings upon the Duration of Human Life. By Ambrose L. Ranney, A. M., M. D., etc. [Reprinted from the "Medical Examiner."]

Observations upon the Osteology of the North American Anseres. By Dr. R. W. Shufeldt, U. S. A. [Reprinted from the "Proceedings, United States National Museum."]

Du rôle de l'hérédité dans l'alcoolisme. Par Paul Sollier, Interne des Hôpitaux de Paris. Avec une préface de M. le Dr. Bourneville, Médecin de l'Hospice de Bicêtre. Paris: Lecrosnier et Babé, 1889. Pp. xiii–214. [Prix, 2 fr. 50.] [Publications du "Progrès médical."]

Un cas de laryngite tuberculeuse primitive pseudo-polypeuse.—Structure papillomateuse des tumeurs.—Examen bactériologique affirmatif des crachats.—Inoculation à un cobaye de fragments de tumeur intra-laryngienne.—Tuberculisation du cobaye. Par le Dr. Gouguenheim et P. Tissier. [Extrait à l' "Annales des maladies de l'oreille, du larynx, du nez et du pharynx."]

The Animal Suture in Intra-vaginal Plastic Surgery. By Thomas A. Ashby, M. D., Baltimore. [Reprinted from the "Maryland Medical Journal."]

A New Principle in the Surgery of the Bladder. By Otis K. Newell, M. D. [Reprinted from the "Boston Medical and Surgical Journal."]

The Diagnosis of Tumors of the Bladder and Stone with the Cystoscope. By Otis K. Newell, M. D. [Reprinted from the "Boston Medical and Surgical Journal."]

The Prevention and Treatment of Crural Adduction. By Henry Ling Taylor, M. D., of New York City. [Reprinted from the "Medical News."]

The Therapeutic Value of Systematic Passive Respiratory Movements. By Henry Ling Taylor, M. D. [Reprinted from the "Medical Record."]

Second Biennial Report of the North Carolina Board of Health to the General Assembly of North Carolina. Session of 1889.

Sulla pirocatechinuria. Annotazioni del dottor Cesare Magni, gia primo assistente di clinica medica a Pavia ed ora capo medico direttore dell' ospitale civico di Mantova. Milano: Fratelli Rechieder, 1889.

Tre individui di una stessa famiglia colpiti da pirocatechinuria, del professor Francesco Orsi. [Estratto della "Gazzetta Medica Lombarda."]

Miscellany.

Mortality in Cities in the United States.—The following table represents the mortality in the cities named, as reported to Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, and published in the abstract of sanitary reports received by him during the week ending June 1st:

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM — Cholera.	Yellow fever.	Small-pox.	Variola'd.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y.	June 1.	1,567,812	629	..	..	..	..	..	..	2	28	30	5	15
Brooklyn, N. Y.	June 1.	821,525	335	..	..	..	..	..	..	1	7	26	7	7
Baltimore, Md.	June 1.	500,343	136	..	..	..	..	..	..	2	..	3	..	1
Cincinnati, Ohio.	June 1.	325,000	106	..	..	..	..	..	..	1	..	5	2	1
New Orleans, La.	May 25.	254,000	169	..	..	..	..	..	..	2	..	..	2	..
Cleveland, Ohio	May 4.	235,000	67	..	..	..	..	..	..	5	3	..	..	..
Cleveland, Ohio	May 11.	235,000	75	..	..	..	..	..	..	1	..	3	..	..
Detroit, Mich.	May 25.	230,000	50	..	..	..	..	..	..	..	..	1	..	..
Washington, D. C.	June 1.	225,000	84	..	..	..	..	..	..	3	1	1	..	1
Milwaukee, Wis.	June 1.	210,500	50	..	..	..	..	..	..	..	3	1	..	..
Rochester, N. Y.	May 25.	130,000	34	..	..	..	..	..	..	..	..	1	..	2
Providence, R. I.	June 1.	127,000	41	..	..	..	..	..	..	..	..	..	1	..
Richmond, Va.	June 1.	100,000	24	..	..	..	..	..	..	..	..	..	..	..
Denver, Col.	May 31.	100,000	30	..	..	1	..	..	..	..	..	4	..	..
Toledo, Ohio	May 31.	83,500	12	..	..	..	..	..	..	..	..	..	..	..
Nashville, Tenn.	June 1.	65,153	14	..	..	..	..	..	..	..	1	..	..	..
Fall River, Mass.	June 1.	65,000	22	..	..	..	..	..	..	..	1	1	..	..
Lynn, Mass.	June 1.	50,000	14	..	..	..	..	..	..	..	1	1	..	..
Portland, Me	June 1.	42,000	12	..	..	..	..	..	..	..	..	..	..	..
Galveston, Texas	May 17.	40,000	12	..	..	..	..	..	..	..	..	..	..	..
Davenport, Iowa	June 1.	33,715	8	..	..	..	..	..	..	..	..	1	..	..
Binghamton, N. Y.	June 1.	30,000	7	..	..	..	..	..	..	..	1	..	..	..
Altoona, Pa.	May 25.	30,000	3	..	..	..	..	..	..	..	..	..	..	..
Auburn, N. Y.	June 1.	26,000	4	..	..	..	..	..	..	..	..	..	..	..
Haverhill, Mass.	June 1.	25,000	8	..	..	..	..	..	..	..	..	..	..	..
Newport, R. I.	May 23.	22,000	6	..	..	..	..	..	..	..	..	..	..	..
Newport, R. I.	May 30.	22,000	3	..	..	..	..	..	..	..	..	..	..	..
Newton, Mass.	June 1.	21,553	4	..	..	..	..	..	..	..	..	1	..	..
Keokuk, Iowa	June 1.	16,000	2	..	..	..	..	..	..	..	..	..	1	..
Pensacola, Fla.	May 25.	15,000	5	..	..	..	..	..	..	..	..	..	..	..

THERAPEUTICAL NOTES.

The Dose of Male Fern.—The "British Medical Journal" calls attention to the fact that the dose of liquid extract of male fern given in the British Pharmacopœia, ♏xv to ♏xxx, is much too small. Dr. Bristowe, in his "Theory and Practice of Medicine," gives the dose as ʒ ss. to ʒ ij; the dose in use at Guy's Hospital is said to be ʒ j to ʒ jss.; Professor Gerhardt recommends for *Tænia solium* ʒ ijss. to ʒ iij; for *Tænia mediocanellata*, ʒ iijss. to ʒ iv. In a list of twenty-seven cases treated by Dr. J. O. de Man with even more heroic doses, the largest dose recorded was somewhat above ℥ j, but about ʒ vj seems to be his usual dose for an adult, and from ʒ iij to ℥ ss. for a child of twelve. Although Dr. de Man says that he has observed no unpleasant symptoms follow these large doses, it is not clear that they are entirely free from danger. The "Pharmaceutical Journal and Transactions" for October 14, 1882, is cited as recording a fatal case that occurred in Ceylon: A man took a draught containing ℥ jss. of liquid extract of male fern in two doses of ʒ vj each, at an interval of three or four hours; violent vomiting and purging ensued, and the patient died in a few hours.

The Use of Rhus Aromaticus in Incontinence of Urine.—According to a recent number of the "Union médicale," quoting from the "Archives médicales belges," Dr. Burdenich, of Gand, has tried *Rhus aromaticus* in thirty-three cases. He obtained an excellent result in eleven, a satisfactory result in ten, and a result of little importance in the remaining twelve cases. The good effects of the medicine were not felt until the fifth or sixth day, and sometimes not even until the end of the third or fourth week. Dr. Burdenich considers *Rhus aromaticus* to be a powerful tonic analogous to nux vomica. Given in doses of about thirty-eight grains a day, it rendered urination easy and continuous in the case of a man, seventy-nine years old, who had partial paralysis of the bladder without contraction of the urethra or hypertrophy of the prostate. Dr. Numa, who thinks that the drug excites muscular action in the bladder, the uterus, and the lower part of the intestinal canal, gives ten drops of the tincture to children from two to six years old, and fifteen drops twice a day to older children. He thinks that the tonic effects do not persist. Dr. Hamon has succeeded in preventing children from urinating in bed by giving them a dose of from twenty to sixty drops of the tincture at bedtime.

ANSWERS TO CORRESPONDENTS.

No. 269.—We know of no other means of radical cure than by an operation. After that you would probably be accepted in the militia.

No. 270.—By means of resistance coils.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

FURTHER INVESTIGATIONS AS TO THE EXISTENCE OF A CORTICAL MOTOR CENTER FOR THE HUMAN LARYNX.*

BY D. BRYSON DELAVAN, M. D.,
PROFESSOR OF LARYNGOLOGY IN THE NEW YORK POLYCLINIC.

AT the Eighth International Medical Congress, held in Copenhagen in 1884, the writer presented a paper in which attention was called to the possibility of localizing in the brain the cortical motor center for the human larynx.

In support of the hypothesis that such a center existed, the histories of two cases, one of which was original, were related, and through them clinical evidence was for the first time brought to bear upon the question.

The study of these cases seemed to suggest the possibility of the following conclusions:

1. That there is a cortical center of motion for the human larynx.
2. That this center is in the course of the third branch of the middle cerebral artery.
3. That it is toward the proximal end of this vessel.
4. That it is in the vicinity of the convolution of Broca.

Although by no means sufficient evidence was furnished to prove the above, the subject was one of such unusual scientific interest that, with the intention of calling forth discussion and of inciting others to its more careful investigation, it was thought worthy of presentation. In this respect at least the effort has been successful, for since the appearance of the article several others upon the same topic have been published, and results of considerable value attained.

In the recent work of Gottstein ("Krankheiten des Kehlkopfes," Leipsic, 1888) there is given such an excellent synopsis of the literature of the subject that it appears unnecessary to reproduce it here.

In the case reported by the writer in 1884 it was impossible then to verify the diagnosis. The patient having since died and an autopsy having been made, another instance is now added to the small list of those in which a full history has been obtained, and among which that reported by Garel ("Rev. mens. de laryngologie," May, 1886) is the only one in which, corresponding with a paralysis of the larynx, a cortical lesion has been found. The complete record of the writer's case is as follows:

CASE I.—Male, aged sixty, retired merchant, family history excellent, except for rheumatic diathesis. Has always been very strong and healthy, of regular habits, and strictly temperate in the use of alcoholics, but an immoderate tobacco smoker. Since middle life has suffered much from rheumatism, and has rapidly accumulated fat, but gives no history of any other diathesis. Has also suffered from naso-pharyngeal catarrh. Is right-handed. In 1876 had a slight attack, attended with vertigo, partial insensibility, and numbness, but without any distinct paralysis. A year later was again attacked, this time with well-marked hemiplegia. Although complete insensibility was at no time present during the attack, there was intense pain in the back of the head and in the nose on the left side, numbness and impairment of motion of the left arm, side, and leg, almost total inability to swallow, and, finally, a remarkable change in the quality of the voice, which, from having been full, deep, and sonorous, was reduced to a cracked, piping, and uncertain tone, which rendered its use almost impossible. Articulation was also impaired, the patient for months afterward being obliged to pronounce each syllable separately, speaking slowly and with difficulty. There was at no time or to any degree aphasia.

There was distinct ptosis, with paralysis of the left side of the face and tongue. After continuing two or three days, the general symptoms began to subside, beginning with the leg, then the arm, and, last of all, the face, and slow but steady improvement continued for many months in all the above-mentioned conditions except the voice. In this there was little apparent change for some time, but by degrees it became more readily controlled and less discordant, although the high-pitched quality has continued up to the present time, together with the loss of power and inability to force it. In 1882 a laryngoscopical examination showed the existence of complete abductor paralysis of the left vocal band, the position of which was in the median line. The larynx was remarkably easy of demonstration, and the diagnosis was afterward confirmed by Dr. Clinton Wagner. Laryngoscopic examinations made at intervals since 1882—one on February 12, 1885, in consultation with Dr. George M. Lefferts, and the last one in January, 1888—have demonstrated no change in the position of the cord. There was, however, a slight attempt at rotation on the part of the left arytenoid, due evidently to the action of the inter-arytænoideus muscle. Efforts made to determine the electrical "reaction of degeneration" proved unsuccessful. To summarize, in a case of common left hemiplegia, in which pharyngeal and laryngeal paralysis were especially well marked, all of the symptoms disappeared in regular order, except those relating to one set of muscles—namely, the laryngeal abductors of the left side, and these continued paralyzed for a period of ten years.

Death, due to valvular lesion of the heart and pulmonary œdema, occurred April 12, 1888.

An autopsy was made, twenty-four hours after death, by my friend Dr. Frank Ferguson, of the New York Hospital. The brain was examined sixty-two hours after death by Dr. M. Allen Starr, with the following result:

Arteries.—Left vertebral artery distended to the diameter of one fourth of an inch and very tortuous, being deflected forward and outward so as to lie upon the outer side of the medulla oblongata behind the olivary body and upon the ninth, tenth, and eleventh nerves at their exit (Fig. 1).

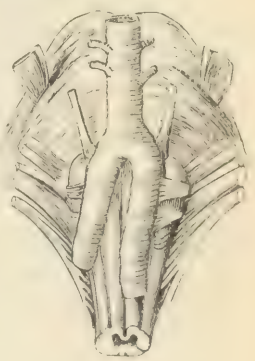


FIG. 1.

The right vertebral artery was less distended and thickened but very atheromatous, and occupied its normal position, being, however, constricted at its entrance to the basilar.

The basilar artery, also much wider than normal and intensely atheromatous, had become elongated so that it pursued a curved course, with the convexity toward the right upon the pons.

* Read before the American Laryngological Association at its tenth annual meeting, September 19, 1888.

In both vertebral and basilar firm, calcified plates could be felt, producing such a rigid condition of these vessels that they could not be compressed by the fingers. At no point in their course, however, could any embolus or thrombus be discovered. The posterior cerebral arteries were also atheromatous, as were all the smaller branches of these larger trunks. The posterior communicating arteries were unusually small and apparently unaffected by the atheroma. Both carotids were equally atheromatous with the basilar, calcified plates being easily felt in their walls. The middle cerebral artery and all its branches over the island of Reil were extremely atheromatous, and this atheroma extended to the finer branches throughout the cortex, and was especially marked in some of the smaller arteries of the anterior perforated space.

The anterior cerebral artery of the right side was normal, as was the anterior communicating. On the left side it was very atheromatous.

Right Hemisphere.—The appearance of the pia mater was that of moderate congestion. It was neither œdematous nor opaque excepting at one point, about an eighth by a sixteenth of an inch in extent, over the posterior extremity of the second frontal convolution near to its junction with the ascending frontal convolution, and even here the pia was not adherent.

Left Hemisphere.—Pia congested; vessels atheromatous; no opacities; no adhesions. Cortex of the island of Reil and of the convolutions apparently normal in all respects.

Sections made in the frontal direction through the hemispheres from before backward, at intervals of one quarter of an inch, showed a normal condition of the centrum ovale, corpus callosum, and optic thalamus.

In the left hemisphere, at the summit of the internal capsule, in its anterior half and in the corresponding portion of the caudate nucleus, and extending backward, outward, and downward through the entire middle body of the lenticular nucleus, was a cavity lined with connective tissue and containing a small amount of clear fluid, the remains of a very old area of softening. Below and a little outside of this cavity was a small space with smooth walls, in which one of the basilar branches of the middle cerebral artery had lain.



Fig. 3.—Section of the medulla near the upper level of the softened wedge. (The floor of the ventricle is from a higher level than the pyramids, and the right half of the section is higher than the left half.) δ, Decussation of the external arciform fibers at the ventral margin of the rhaphe; *py.*, partially degenerated right pyramid with some of the external arciform fibers running across it to the hilus of the olive; *x*, vagus strands; *rad. v asc.*, ascending trigeminal root; *c. r.*, corpus restiforme; *nuc. Deit.*, direct sensory cerebellar tract of Edinger (fascicular portion of Deiter's nucleus); *rad. x asc.*, ascending vagus root; *e*, common sensory nucleus of ix and x nerves; δ, vertical set of association fibers for the cells of the xii nucleus; *nuc. xii dor.*, dorsal group of cells of the xii nucleus; *nuc. xii vent.*, ventral group of cells of the xii nucleus; *x sin.*, vagus filaments of the left side passing through the softened area *a*; *nuc. x vent.*, site of the motor vagus nucleus; *xii*, hypoglossal filaments.

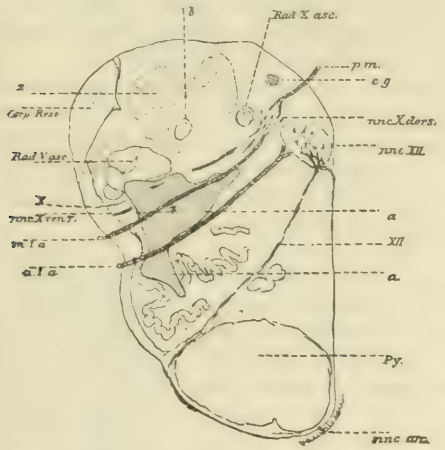


Fig. 2.—Section of the medulla near the lower level of the wedge of softening. *a*, triangular softened area; *nuc. arc.*, nucleus arciformis; *py.*, left pyramid; *xii*, hypoglossal nerve; *nuc. xii*, hypoglossal nucleus; *c. g.*, column of gelatinous substance of Rolando; *rad. x asc.*, ascending root of the vagus (respiratory fasciculus); *corp. rest.*, corpus restiforme; *rad. v asc.*, ascending trigeminus root; *x*, vagus strands; *nuc. x dor.*, sensory vagus nucleus; *nuc. x vent.*, site of the motor vagus nucleus (nucleus ambiguus) destroyed by the softening; *m. l. a.*, median lateral artery; *a. l. a.*, anterior lateral artery supplying the sensory vagus nucleus in conjunction with the posterior median artery, *p. m.*, entering the ventricular floor; * *z*, analogue of the posterior horn and posterior column nuclei.

* The vessels are represented schematically and are copied from the diagram in Ross's "Diseases of the Nervous System," vol. i, p. 761.

In the right hemisphere, at a point in the upper portion of the internal capsule in its middle third opposite to the anterior extremity of the optic thalamus, a small area of softening was found. This involved the upper limit of the internal capsule for about a quarter of an inch from before backward, and the upper portion of the outer body of the lenticular nucleus.

Sections through the crura, pons, medulla, and spinal cord presented nothing abnormal to the naked eye.

In the right choroid plexus a fatty tumor five eighths by three eighths by two eighths of an inch was found in the descending horn of the lateral ventricle. In the right crus cerebri, in its middle third, a slight constriction seemed to indicate a descending degeneration in the motor tract.

The following report of the microscopical appearances was made by Dr. Ira Van Giesen, in the Laboratory of the College of Physicians and Surgeons, New York:

Sections of the lower termination of the two central convolutions and posterior one third of the third frontal convolution from both hemispheres show no abnormity in the number or arrangement of the nerve fibers or ganglion cells. Many of the latter are heavily pigmented. A focus of softening about 7 mm. in diameter, in the posterior arm of the right internal capsule, just behind the knee, involving slightly the optic thalamus, has produced a partial degeneration of the right motor tract.

The left side of a segment of the medulla corresponding to the upper three quarters of the olivary bodies contains a wedge-shaped mass of softening (3 by 4 by 5 mm. in diameter) situated in the path of the intramedullary root strands of the vagus nerve. Near its lower level (Fig. 2) the softened mass is trian-

gular in transection. The apex of the triangle (corresponding to the thin edge of the wedge) points toward the dorsal vagus nucleus and is 1½ mm. distant from it. The base (5 mm.) extends from the ascending root of the trigeminus to the olive and is about 1½ mm. distant from the lateral surface of the medulla. The ventral angle passes through the convolutions of the olive into its hilum. The dorsal angle involves a small portion of the ascending root of the trigeminus.

The wedge of softening gradually tapers at the expense of its base as it passes upward, so that in a section at the entrance of the uppermost vagus root bundles (Fig. 3) the ventral angle has retreated from the olive. The dorsal angle lies against the ascending trigeminal root, and the apex, pointing toward the sensory vagus nucleus, is 2 mm. from it. Thus the upper portion of the focus of softening has in section an oval outline instead of the triangular outline which it presents below.

The softened mass is not of recent origin, because it is composed largely of hyperplastic neuroglia. Many of the vagus root strands, the internal arcuate fibers, and some of the vertical fibers of the formatio reticularis, pass through the softened region undamaged. A few of the thickened anterior and median lateral arteries * running parallel to the intramedullary vagus strands also pass through the softened mass. The ventral vagus nucleus—nucleus ambiguus of Clarke—and the recurrent vagus root strands are present on the right side, but are absent on the left side.

Many of the extra-medullary root fasciculi of the left vagus are degenerated. In some places the normal nerve fibers occupy less than one half of the volume of the fascicle (Fig. 4). The

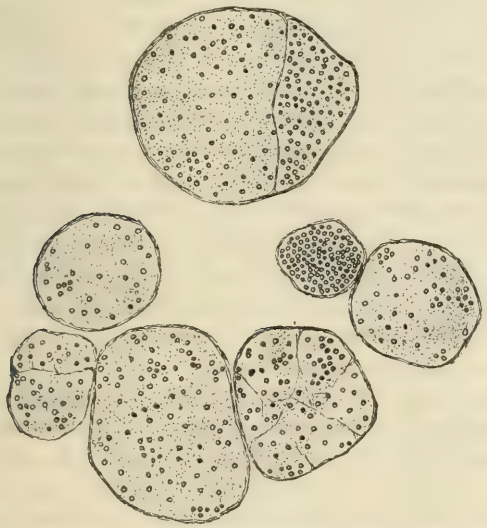


FIG. 4.—Transections of left vagus root-bundles, showing the degenerated areas.

right vagus root and the hypoglossal roots of both sides are normal. The spinal accessory nuclei and the first and second cervical segments of the spinal cord are normal.

The softening was probably produced by an obliterating endarteritis of the median or anterior lateral arteries (see Fig. 2), which are branches of the diseased left vertebral. No area of secondary degeneration was found in the left ascending trigeminus root above the softened region.

The focus of softening in the medulla, occurring simultaneously with the lesion in the internal capsule of the opposite side, was probably more instrumental in the production of the permanent laryngeal paralysis, by the complete destruction of the ventral or motor vagus nucleus, than by interference with the root strands. This I infer from the fact that so many of the root strands pass through the old softened focus intact. The degenerated areas in the extra-medullary root bundles of the left vagus represent the paths of the motor fibers in them. The left glossopharyngeal filaments, although not directly involved by the lesion, seem to have been in such close proximity to the small upper pointed extremity of the softening that a temporary impairment of their functions ensued when the softening occurred. The trunk of the vagus was not preserved for examination. The results of the microscopical examination prove that the laryngeal symptoms were not due to a cortical lesion. The case is interesting in confirming clinically the motor character of the ventral vagus nucleus.

Thus it would appear that the theory maintained by Gottstein — namely, that paralysis of the larynx of central origin is due to bulbar lesion and not to disease of the cortex—receives from this case direct confirmation, and that the localization of the cortical motor center for the human larynx still remains, so far as the above is concerned, an uncertainty.

[Since the presentation of this paper, the attention of the writer has been attracted to a case singularly parallel with the one herein described, reported by C. Eisenlohe, of Hamburg ("Archiv für Psychiatrie," Berlin, vol. xix, 1888, p. 314), in an elaborate article entitled "Zur Pathologie der centralen Kehlkopflähmungen." The patient was a laborer, aged thirty-three, in whom, attended with severe dysphagia and aphonia, there was found complete left recurrent paralysis, with loss of both motion and sensation. There was also paralysis of the left side of the velum palati. The post-mortem examination showed a condition of acute bulbar myelitis and thrombosis of the medulla, the location of which was apparently identical with that of the lesion described above by Dr. Van Giesen.]

On the other hand, collateral evidence to prove its existence continues to accumulate. Following the excellent experiments of Herman Krause upon the dog, Victor Horsley and Felix Semon, of London, have investigated the question in a series of carefully conducted experiments upon the monkey, with most interesting results. Through the kindness of Mr. Horsley the writer is permitted to publish the following *résumé* of facts as to "the representation of the vocal cord movements in the cerebral cortex":

1. "In the monkey there is a small area at the lower and anterior portion of the foot of the ascending frontal gyrus, excitation of which produces complete adduction of the vocal cords (bilateral action). We never, in this animal, observed anything but adduction.

2. "Around this area there is also represented adduction of the vocal cords, but only feebly and in association with other movements—*i. e.*, deglutition, etc.

3. "Unilateral extirpation of the whole region produced no appreciable paralysis of the glottis closers or openers.

4. "Krause's statements respecting the position of the center in the dog were confirmed by us.

5. "In the cat we found that, when the cortex was excited, adduction was observed very rarely, but abduction almost invariably."

The foregoing conclusions are extremely interesting, not only by reason of the additional proof which they give as to the actual existence of a cortical motor center for the lar-

* For a description of the blood-vessels of the medulla, Ross's "Diseases of the Nervous System," vol. i, p. 761, may be consulted.

ynx, but because of their support of, and correspondence with, the recently accepted theories of cortical motor activity for voluntary movement, namely:

1. That unilateral irritation of a given cortical center excites the corresponding bulbar center and causes bilateral movement.

2. That unilateral destruction of a given cortical center gives no result, as the influence of the opposite cortical center is sufficient to excite the corresponding bulbar center and thus to cause bilateral movement.

3. That bilateral destruction of a given cortical center causes paralysis.

These very discoveries, however, increase rather than diminish the difficulties in the way of solving the problem; for, admitting the foregoing, it is difficult to understand how any unilateral lesion of the cortex could cause a corresponding unilateral paralysis of the larynx. The hypothesis, therefore, upon which all the hitherto reported clinical observations relating to this subject have been made would seem to be wrong. In other words, paralysis of the larynx of central origin must, as a rule, depend upon bulbar lesion and not upon cortical injury.

In short, combining with the arguments of Gottstein, founded upon clinical and pathological evidence, the strong testimony of Mr. Horsley's physiological experiments, it can not be denied that, with the methods hitherto employed in the human subject, the results have been unsatisfactory, and to a certain extent misleading, and that the question is not likely to be settled until more successful means for its solution have been discovered. That in the human brain such a center does exist is made more certain with every succeeding group of experiments made upon the lower animals, and, well established in the dog and the monkey, it can be but a matter of time for it to be unquestionably located in man.

OBSERVATIONS ON COUGH AND COUGH REMEDIES.*

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It is not proposed in the following brief remarks to discuss all of the many conditions and diseases in which cough enters as a symptom, but rather some of the more prominent of that numerous class of "walking cases" in which this phenomenon is the most conspicuous, and oftentimes the only, evidence of a variation from the standard of health. It is these cases that are so frequently abused and prejudiced by the unscientific administration of cough medicines.

When we are called upon to prescribe for a cough there are several questions of importance to be considered: First, the point of origin; second, the stage of the affection, and, if it be a bronchial cough, the nature of the secretions; third, the function of the cough: is it a useless cough, that requires to be checked, or is it a conservative act of nature, which should be encouraged or let alone? Some coughs, we should remember, are useless because ineffective, as in the early stage of bronchitis and in chronic bronchitis and phthisis with a tenacious, viscid secretion. Other coughs are useless from every point of view, as in uncomplicated pleurisy and in early phthisis, and require sedative remedies; and it is the province of the physician to decide which is least harmful, the cough or the sedative. After deciding that a cough remedy is indicated, we should bear in mind that many cough remedies are not only therapeutically unreliable, but are most inelegant pharmaceutically, and extremely unpalatable and even nauseating. Not a few of these agents lead very speedily to anorexia, constipation, and even confirmed dyspepsia, if continued beyond a proper period. These are important considerations when applied to remedies which have to be taken so often as those for the relief or cure of cough. We should not fail to assure our patient in the beginning that the cough is not a disease, but only a symptom, and sometimes a salutary symptom and conducive to his welfare.

The vast majority of these "walking cases" owe their origin to a congestion or inflammation of some portion of the respiratory mucous membrane. If there is much clearing of the throat and the cough is husky or stridulous, and accompanied by hoarseness of the voice, more or less pain in the throat, and the absence of physical signs of bronchitis or chest trouble, it is in all probability laryngeal in its origin. An examination of this portion of the respiratory tract will settle the diagnosis in most instances. Internal medication will hardly avail in these cases. The author has seen such cases treated for months with squill, senega, ammonia, and other expectorants, with the effect in many instances of complicating an attack of simple laryngeal irritation by the addition of severe digestive disturbance. If there be much pain and irritation in connection with the cough, a small quantity of a sedative preparation, as the tincture of aconite, chloral hydrate, or hydrocyanic acid, taken with a little sweetened water warmed to about 90° F., is very grateful and soothing.

If the cough is very dry, the secretion being deficient, the administration of one fiftieth to one thirtieth of a grain of hydrochloride of apomorphine, dissolved in water, or four or five grains of chloride of ammonium, will usually procure sufficient secretion to soothe and moisten the irritated membrane. Ten or fifteen minims of the oleo-resin of cubebs on crushed sugar, three or four times a day, will answer the same purpose. Curative measures, however, are to consist in the topical use of sprays, inhalations, etc. A discussion of these agents would far exceed the limits of this paper, but I can not dismiss the subject without warmly recommending a spray consisting of ten grains of borate of sodium in an ounce of tar water.

If the cough has its origin in the trachea or bronchi of the first magnitude, we have few or no physical signs by which to determine its origin, but we can usually do this by the history of the case and by the exclusion of other causes. If it is due to trouble in the lesser bronchi we have in most cases the presence of râles to aid us. If we can see a patient with bronchitis early enough, which is not often the

* Read before the Clinical Society of the New York Post-graduate Medical School and Hospital, April 20, 1889.

case, we will find him suffering from a dry, teasing, useless cough, due to a swollen and congested mucous membrane. Under these circumstances, our object is to secure secretion as soon as possible. The time-honored Dover's powder and foot-bath at bed-time, with vigorous counter-irritation over the front of the chest, will sometimes abort these cases, but in many instances they are inefficient. It is then proper to resort to mild stimulating expectorants, and the author is acquainted with none more efficient and more palatable than a combination consisting of syrup of ipecac and chloride of ammonium, with syrup of wild cherry as a vehicle; and here it should be stated that syrups furnish us with the most valuable medium for the administration of cough medicines, not only in disguising the taste of drugs, but from their intrinsic soothing and sedative value. In some cases, however, they fail to agree with the patient, sometimes inducing nausea. It is then advisable to make the vehicle consist of equal parts of syrup and water, or else to omit the syrup entirely, substituting glycerin, mucilage, or gum tragacanth in its stead.

If the cough is barking, hoarse, and rasping in character, and interferes with rest at night, as is frequently the case with children, a small quantity of vinegar and sugar, with the addition of a teaspoonful or two of burnt brandy, taken hot at bed-time, will often produce a happy result. This dry stage of bronchitis, however, usually lasts but a few days at furthest, when we have the stage of secretion established. This betokens the advent of recovery in many cases, and requires very little special attention for the cough, which speedily disappears under the use of an occasional dose of a stimulating expectorant. But if convalescence is not soon established, the affection passes into chronic bronchitis, and may become exceedingly difficult to manage. The cough of chronic bronchitis embraces almost every variety known, from the short irritative hack to violent, prolonged, spasmodic efforts, which sometimes lead to vomiting. Oftentimes a single case will present all these varieties of cough during its course, and we must vary our management accordingly.

If the cough is easy and painless, and accompanied by free expectoration, it derives its principal importance from the fears of the patient, and requires no special treatment beyond a small dose of squill, wine of antimony, or chloride of ammonium at long intervals, to keep it in this condition. Many patients having just such a cough as this are given sedatives, with a view of arresting the cough. This course is manifestly wrong, as a little reflection ought to show. If we attend to the patient's general health, advise him to wear warm clothing, to avoid exposure (and sedative cough drops), he will in all probability make a prompt recovery.

If the cough is dry, hacking, and irritating, with little tendency to expectoration, as is often the case in tracheitis, the sedative remedies mentioned in referring to laryngeal coughs are indicated. A drop of dilute hydrocyanic acid and a little syrup of tolu or wild cherry may be taken three or four times a day. If this does not allay the irritation, a few drops of the camphorated tincture of opium, or one thirty-second of a grain of morphine, or twenty minims of the tincture of hyoscyamus, may be added to each dose. In some cases a Soden mineral salt pastille, held in the mouth and allowed to dissolve slowly, will effect relief. Very often, in advanced stages of chronic bronchitis, we shall find the patient suffering from a distressing, violent, paroxysmal cough which sometimes ends in complete regurgitation or vomiting of the contents of the stomach. The exudation in these cases may be abundant, but it is very difficult to raise, owing to its viscidity. The paroxysms are most severe on rising in the morning, for the reason that the change of position from the recumbent posture causes the exudation which has accumulated during the night to occupy a new and more sensitive surface of the bronchial mucous membrane. The object of treatment in this class of cases is to promote the liquefaction of the exuded products, thus facilitating their easy expulsion with slight coughing efforts. Stimulating expectorants are especially indicated, and the familiar formula known as Stokes's expectorant, each dose of which contains one grain of carbonate of ammonium and two minims each of fluid extracts of squill and senega and tincture of tolu, is of undoubted value. I have prescribed this formula in hundreds of instances, and have never known it to fail of good results in properly selected cases. A little hot tea or coffee on rising, or, better still, a cup of hot bouillon, will also serve to mitigate the severity of the inevitable morning coughing spell. Sedative cough remedies and respiratory depressants should be sedulously avoided. They obtund the sensibility of the bronchial mucous membrane, and thus allow the exudation to accumulate in such quantities as to seriously embarrass or even to compromise respiration.

According to Fothergill, a patient may be educated to materially aid the usefulness of his cough by an effort of the will. He should always be instructed to take a long and deep inspiration before giving way to the expiratory coughing act. This is a point of some importance, as there can be no doubt that long and violent coughing spells form one of the prime factors in the development of collapse of the pulmonary alveoli and consequent emphysema. In case the latter complication should be ingrafted upon a bronchitis, it is advisable to add a few grains of iodide of potassium to the cough mixture, and if there is much dyspnœa, a few drops of Hoffman's anodyne is a valuable adjunct. It is doubtful if strychnine has any further advantage than that to be derived from its tonic properties.

In cases of bronchorrhœa in chronic bronchitis, it has always been a question in my mind whether we can permanently diminish the excessive secretion by other means than those directed to the general health. Opiates and astringents do temporarily lessen the exudation, but in doing so they often increase the suffering from dyspnœa, and are very apt to produce constipation and loss of appetite.

In cases of recurring bronchitis or winter cough, I have used terebene, as recommended by Murrell, with considerable advantage. The beginning dose is four or five drops, which may be increased to twenty or twenty-five if required. It may be continued a long time without harm to the patient's digestive functions. Murrell also highly recom-

mends syrup of tar with apomorphine for the same variety of cough.

This symptom is always one of prominence and importance in phthisis, being present, as a rule, from the inception of the disease. It often presents the same characteristics as those mentioned in the cough of bronchitis, and under those circumstances requires the same measures for its relief, the two cardinal points being to soothe and relieve painful and irritative coughs, and to facilitate the liquefaction and expulsion of exuded material in the bronchi and pulmonary cavities. Some special features in connection with phthisical coughs, however, deserve separate mention. The cough at the beginning, and in some cases for a long time afterward, amounts only to an occasional dry hack. Expectorants do no good here, and we can not arrest the cough by means of sedatives. The quieting effect to be obtained from the compound syrup of the hypophosphites, which is usually indicated for its tonic and reconstructive properties, is often sufficient to allay the cough. Indeed, it has been my practice to employ this syrup as a vehicle generally in the coughs of phthisis instead of other syrups. In some cases where cough medicines are not well borne, a useful expedient consists in placing an ounce or two of glycerin on a flat dish, heating it, and allowing the patient to inhale the vapor as it rises, as recommended by Trastour. If there is a tendency to hæmoptysis, a little ergot and gallic acid should be incorporated with the cough remedy, and stimulating expectorants avoided.

If fœtor is present, as is often the case when phthisical and bronchiectatic cavities exist, a small quantity of creasote, carbolic acid, or Listerine is advisable. In weak and debilitated subjects the cough formula of Dr. I. N. Love, of St. Louis, consisting of a combination of extract of malt, whisky, glycerin, lemon-juice, and crushed sugar, is of great value, both as a remedy for the cough and as a stimulant and reconstructive.

I have occasionally met with a cough that seemed to me to be entirely unwarrantable to attribute to any of the foregoing causes. Some of these cases are extremely severe, the cough being almost incessant. Paroxysms are brought on by changes from a warm to a cold room, by dust and strong smells, etc. Sneezing is a very frequent concomitant. Cases of this kind are probably due to an abnormal reflex action of the fifth pair of cranial nerves, and the affection has been termed by Schade trigeminal cough. In accordance with the starting point, these cases may be subdivided into nasal, pharyngeal, and auricular. They are diagnosticated by the foregoing symptoms, and by the exclusion of all diseases of the larynx, bronchi, or lungs. Expectorants are often prescribed for months at a time to these cases, but are entirely without value. Occasional passage of the nasal sound somewhat roughly, so as to draw blood, has been recommended. Weak currents of electricity are also useful, but frequent insufflation of weak carbolized solutions, with the internal administration of equal parts of iodide and bromide of potassium in considerable doses, has proved most successful, at my hands.

The cough of pleurisy is usually painful, and is avoided when possible, especially before the period of effusion. If the pleurisy is uncomplicated by bronchial trouble, the cough is dry and not specially troublesome. It requires no treatment beyond an occasional sedative. A profuse purulent expectoration in the course of a suppurative pleurisy is a grave symptom, as it indicates the presence of either broken-down tubercular areas in the lung, or the formation of circumscribed spots of necrosis in the pleura, which have allowed the pus to filter through into the lung tissue. When this occurs, we should at once evacuate the pleural cavity, and promote expectoration by carefully selected stimulating expectorants.

Disease of the mitral valve, either obstructive or regurgitant, is generally attended by a cough, if there be loss of compensation. It is usually a hacking, teasing, irritative cough, which, as the affection progresses, is apt to be accompanied by a profuse watery expectoration, amounting even to bronchorrhœa. Sometimes the expectoration is blood-stained. It is a serious symptom, as it indicates extensive pulmonary congestion or œdema. Hæmoptysis is likely to occur at any time. Cardiac tonics are clearly indicated in this condition. I have seen such patients do remarkably well under the use of citrate of caffeine, two to five grains, four times daily, with a little carbonate of ammonium as an expectorant and general stimulant. Active exercise or exertion should always be prohibited.

A loud, barking, clanging, metallic cough, painful to the patient and distressing to the hearer, and accompanied by a small quantity of glairy mucus, should always excite suspicion, and lead to a careful physical examination. It is of great significance, and if with it there is the high-pitched, shrill, sibilant vox anserina, it is almost pathognomonic of thoracic aneurysm. As the disease extends, the expectoration becomes more abundant, owing to the establishment of a consecutive bronchitis. It may become sanguineous or muco-purulent in character. Strict quietude and sedative cough remedies are indicated.

The foregoing varieties of cough are those most commonly met with in daily practice. There are, to be sure, many other causes of cough, as, for example, the cough linked with gastric irritation, the cough of pregnancy, and the cough connected in some way with ovarian and spinal irritation. It is beyond the scope of my paper, however, to discuss these coughs. It is sufficient to say that intelligent treatment is dependent entirely upon a correct diagnosis, as the remedies indicated in ordinary coughs are of no avail.

CASES OF SUPRAPUBIC CYSTOTOMY.*

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My object in presenting the following cases for your consideraion is simply to place them upon record, with the hope that, perhaps, something in their management may add to the experience of others.

My own experience has been limited to six cases—two

* Read before the American Association of Genito-urinary Surgeons at its third annual meeting.

for the removal of tumors from the wall of the bladder, three for vesicular calculi, and one for the removal of a calculus, together with the excision of three small tumors (probably prostatic) from the internal urethral orifice.

Case I. *Calculi.*—Patient aged seventy-three, native of the United States, mechanic. This old man gave no renal, pulmonary or specific history. He has had some pain over the heart, "spots before his eyes," and attacks of dizziness. His arteries are notably atheromatous. For some years he has had frequent urination, but no pain till about a year before this history was taken, when he experienced a burning sensation in his urethra and pain at the end of the penis. At that time he was searched, but no stone was found. Since then he has been gradually getting worse. He has had attacks of hæmaturia, especially after walking or any muscular effort, and he is compelled to urinate about every two hours. On searching him with a lithotrite, one stone was grasped and another could be felt in the bladder. Suprapubic cystotomy being decided upon, the operation was done with the aid of Petersen's rectal bag.

The bladder was reached easily, and, on being opened, considerable hypertrophy of the prostate was found. Behind the prostate was a deep pouch in which were four stones, one large one and three smaller. The latter accurately fitted each other by facets, forming a tesselated stony floor to the pouch, upon which the large stone rested.

Inasmuch as the patient had considerable cystitis, the bladder was not sutured. Two rubber drainage-tubes were introduced to the base of the bladder, the wound was packed with iodoform gauze, and over this the usual antiseptic and absorbent dressings, consisting of layers of iodoform and bichloride-of-mercury gauze and absorbent cotton, were applied. The wound was irrigated frequently with a solution of mercuric bichloride (1 to 5,000), but the bladder was irrigated with a boro-salicylic solution. One of the tubes was removed on the fourth, and the remaining tube on the seventh day. From that time the catheter was passed twice daily, and the bladder irrigated with the customary boro-salicylic solution. The wound granulated rapidly. On the eleventh day the patient was out of bed, passing the greater portion of his urine by the natural channel, but still continued to wear over the sinus leading to the bladder a pad of absorbent cotton, which, when properly attended to—*i. e.*, when changed frequently enough—kept his clothing dry.

Two weeks after, it is noted that he still had a sinus, through which a little urine escaped, but most of it passed *per urethram.* Ten days later the wound was entirely closed, and, in spite of the enlargement of the prostate, he was able to evacuate his bladder spontaneously. During the whole course of the healing process this patient had no pain. On the day of the operation he was comfortable, and on the second day after was lying on his side reading the newspaper. The drainage may be considered to have been efficient so far as the bladder was concerned, but his bed and clothing were always somewhat wet until he was permitted out of bed, and even then his clothing would be wet unless the absorbent cotton was frequently changed.

Case II. *Papilloma of the Bladder.*—This patient was kindly referred to me for operation in St. Luke's Hospital by Dr. Otis, and has already been reported by him * in illustration of the advantage of the cystoscope. I mention it briefly only to give some details of the operation and of the after-treatment. Petersen's method was attempted, but, for some reason or other which was not discovered till after the operation, the rectal bag did not lift the bladder. The patient's abdomen being very fat, and its muscles rigid from imperfect etherization (he did not take ether well), a sound was passed into the bladder through the urethra, and the incision guided by this. The recti muscles contracted so firmly that at first I experienced difficulty in examining the interior of the bladder, but by deepening the ether narcosis and using vaginal specula as retractors, the tumor was fully exposed and easily removed by scissors, the curette, and Paquelin's cautery. One large drainage-tube was inserted to the bottom of the bladder, and the incision in the latter was brought together by a continuous catgut suture, as likewire were the different layers of the abdominal wall, leaving only an opening for the tube. The abdomen was dusted with iodoform, and over all a thick antiseptic dressing of bichloride gauze and absorbent cotton was placed. The free end of the drainage-tube was placed in the dressings. After the operation the patient had violent vesical tenesmus for three days, controlled only by hypodermatic injections of morphine.

For the first week, besides the urine, there was a discharge of pus and mucus stained with blood, and the bladder was washed out through the abdominal wound three times daily with a boro-salicylic solution. This discharge gradually disappeared, and on the eighth day the tube was removed. The wound had united by first intention, but in the first week about two thirds of it broke down and slowly healed by granulation. Even by frequent changing of the dressing it was impossible to keep the patient dry. He could not endure the use of the catheter, and was excessively hyperæsthetic and "nervous," but he steadily regained the power of evacuating his bladder by the natural channel, and by the twenty-fifth day did so entirely. It was not till the thirty-fifth day that the wound in the abdominal parietes was entirely healed.

Case III. *Papilloma of the Bladder.*—This patient was also referred to my service in St. Luke's Hospital by Dr. Otis. Two years before coming under observation he noticed, while passing water, that a large amount of blood came with it. He had no further trouble until several months later, when he had a second hæmorrhage. For some months past he has had at different times hæmorrhages while urinating, none of which were very large, but he had them repeated to an extent sufficient to cause anæmia and great deterioration of his health. By means of the cystoscope, Dr. Otis diagnosticated a tumor, probably papillomatous, on the right side of the bladder. His hæmorrhages had now become so frequent and so abundant that his urine always contained a large amount of blood, and his condition was such that operative interference was imperative. At the time of the operation I repeated the examination with the cystoscope and located the tumor, but it was covered with clots of blood and I could not definitely describe it. The rectal bag was inserted and distended with twelve ounces of water. Nine ounces of a warm and weak boro-salicylic solution were injected into the bladder before the latter was made prominent above the pubes. The abdomen was very thick and contained a large amount of fat. After dividing the transversalis fascia and the layer of fascia covering the supravesicular fat, the latter was easily and rapidly stripped up, carrying with it the peritonæum. Silk sutures, one on either side of the median line, were then passed through the bladder, which was thus held up into the wound and incised with a pair of scissors. As the fluid escaped from the bladder, a suspicious-looking fat (which proved to be omentum) appeared in the upper part of the wound. A careful examination being made, it was found that one of the sutures had caught the peritonæum where it was lower on one side of the surface of the bladder and was thus drawn into the line of the incision. The wound in the peritonæum was sutured immediately by catgut and the bladder opened freely toward the pubes. The bladder was held open by a vaginal speculum, and the tumor seen on the right side of the bladder was removed

* See "Medical Record," May 5, 1888.

by scissors. A good sized artery supplied the center of the tumor and free hæmorrhage occurred, but it was controlled with a silk ligature, the ends of which were brought out of the wound. There was also considerable parenchymatous hæmorrhage from the base of the tumor, which persisted in spite of the use of the actual cautery. Against this a strip of iodoform gauze was carefully packed, and the two drainage-tubes, placed in the bladder, made sufficient pressure against the gauze to stop all bleeding. A small drainage-tube was inserted in front of the bladder in the lower angle of the wound; the upper part of the abdominal wound was brought together by continuous catgut sutures and an antiseptic absorbent dressing applied. The patient had very little pain immediately after the operation, but for nearly ten days thereafter had paroxysms of pain, especially at night; but these gradually decreased in severity and finally ceased. The bladder was irrigated twice daily by a boro-salicylic solution. On the fourth day the iodoform gauze in the bladder and one tube were removed. The wound granulated well. From the second day after the operation the catheter was passed daily and the bladder irrigated also by means of this, but on the seventh day after the operation, the patient had some urethritis, and the use of the catheter was omitted. On the thirteenth day the patient was out of bed, passing some urine through the urethra. On the eighteenth day the wound was closed, so that when the patient was in a standing position and pressure made over the pubes, he could urinate normally. On the twenty-fourth day he went to his business, but there was a fine sinus leading downward and backward, through which a probe could be passed, and from which a few drops of urine escaped. I passed through the urethra as large a sound as the meatus would admit, and four days later he reported to me that some urine had escaped from the sinus the night of the operation (*i. e.*, the introduction of the sound), but none since. This patient had no temperature above 99° F. during the whole process of healing.

Case IV. *Calculus.*—This patient was a well-preserved man of forty-nine. For several years he had had symptoms of vesical irritability. Of late he had had hæmaturia, painful and frequent urination, and continued pain in the bladder with paroxysmal exacerbations, the pain especially increased by locomotion. The first searching revealed a stone of comparatively large size, but subsequent searchings failed to detect it. Being certain as to the first exploration, and finding that the bladder was very irritable, I decided upon suprapubic cystotomy, which was performed a few days later. This patient's abdomen was very fat and the muscular wall of the bladder was not easily exposed, but by two silk sutures inserted, one on either side of the median line, it was lifted and opened. A large, flat stone was found resting behind the pubes, which may account for its eluding the searcher, the latter being resisted and compressed by the irritable bladder. One small, straight rubber drainage-tube (about seven centimetres in diameter) was placed in the bladder, and the wound in the latter sutured with catgut, excepting the small part occupied by the tube. A fine drainage-tube was placed in front of the bladder in the lower angle of the wound, and the abdominal tissues were then sutured with catgut. The whole was covered by an antiseptic dressing, consisting first of layers of iodoform gauze, then of several thicknesses of bichloride gauze, and over all a thick layer of absorbent cotton. The end of the drainage-tube was carried through a layer of absorbent cotton packed in the mouth of a glass urinal (known in hospital parlance as a "duck"), which was placed on the bed beside the patient.

At first this promised well, and served to accumulate a large proportion of urine, but the patient soon began to suffer from vesical tenesmus. The paroxysmal contractions of the bladder forced a certain amount of urine by the side of the drainage-tube, sufficient to saturate the immediate dressings, and thence by imbibition to the bed-clothing.

For forty-eight hours it was necessary to relieve his pain by hypodermatic injections of morphine. After that he had no pain. On the evening of the operation his temperature was 101° F. For five days it was about 100°, and after that normal. On the tenth day he passed some urine normally, and from that time on the quantity passed by the urethra gradually increased. On the sixteenth day he was out of bed, wearing a pad of absorbent cotton, which took up a small amount of urine escaping from time to time from a suprapubic sinus. On the twenty-first day he returned to his business, but he still had a narrow sinus, which I probed and measured and found to be three inches long, curving downward and backward behind the pubes. From this a drachm or so of urine escaped, especially at night. As there was no prostatic obstruction in this case, I thought, as in the preceding case, that perhaps the urethra had lost tone from disuse, and therefore passed through the urethra, well into the bladder, a sound as large as the meatus would admit.

On the second day after this simple manœuvre there was no discharge whatever from the sinus, and on the fourth day it had entirely healed to the level of the skin.

Case V. *Calculus; Three Small Tumors.*—This patient was a professional man of fifty-nine—a man of temperate and regular habits, a total abstainer as regards alcohol and tobacco, and without any venereal history of any kind. About thirty-four years ago he had a retention of urine for several hours, without any known cause excepting "catching cold." This was relieved by the catheter, and he had no further trouble. For several years he had frequent urination, but never any pain or anything that called particular attention to himself until about two years ago. At that time he began to have cause to urinate every two hours, the amount of urine each time being scanty. The stream would stop suddenly and then come on again. He was examined by an electrician, and was told that he had one or two strictures. These were said to have been "cured" by electricity; but he was under treatment for eighteen months, and during the course of this treatment it was discovered that he had "*enlarged prostate*," and he was recommended to use the catheter. He had some relief from his sufferings both as to frequency and pain in the act of urination; but he soon (in the course of three months) began to have intense pain, and the calls to urinate increased again to once in two hours and oftener. Then the electrician made four applications of the galvano-cautery to the so-called "enlarged prostate." After that he was confined to his room; his urine became "foul" and bloody, and he was said to have had "fever" every night. For eighty-six days before I examined him he had been utterly unable to pass any urine except by the catheter. His sufferings were extreme—continuous pain in the bladder and penis, with paroxysmal exacerbations of extreme intensity. When I first examined him there was by the rectum no appreciative enlargement of the prostate. The ordinary Thompson searcher passed readily and easily into the bladder, without deflection or depression of its handle, and its beak immediately produced the characteristic click of a calculus. His urine was loaded with pus and mucus, and was horribly offensive in spite of an occasional washing of the bladder, which he resorted to unwillingly, as it seemed to aggravate his sufferings. This was his condition in spite of the daily use of electricity and of the homœopathic remedies which he was taking with religious fidelity every two hours, night and day. A few days after this examination the operation of suprapubic cystotomy was done in the usual manner. The bladder was easily reached, incised, and a very large spherical calculus, weighing 390 grains, easily removed. The

bladder seemed to have contracted around the stone in such a way as to form a shallow pocket (not like a diverticulum or sac with a narrow mouth), in which the stone moved or rolled, but which could be distinctly made out by the exploring finger. The small portion of the bladder between the anterior wall of this pocket and the mouth of the urethra seemed to be normal. By means of the vaginal specula, aided from time to time by the electric light, the interior of the bladder was easily inspected. The mucous membrane was greatly hypertrophied, bluish-red in color, bleeding easily, and near the base posteriorly were seen a few drops of clear pus oozing into the bladder. At first I thought it to be escaping from one of the ureters, but close examination revealed a little abscess in the bladder wall, probably near the site of the calculus. During the subsequent manipulations this was thoroughly evacuated and irrigated. Around the internal orifice of the urethra were three small sessile tumors, soft in consistence, and apparently of hypertrophied mucous membrane. They were of unequal size, but were about the dimensions of half a cherry. Their globular surfaces projected inward and toward each other in such a way that, when they folded together, they completely occluded the urethra. They were easily separated by the finger from within, or by an instrument (sound) passed through the urethra from without; but they immediately approximated themselves, and evidently acted during a contraction of the bladder as an obstructing valve to the exit of fluids. An attempt was made to excise these with a wire écraseur, but failed because they were too soft to be drawn into the loop of the wire. I then seized each one in turn by forceps, and removed it with scissors and a sharp spoon. They were so friable that the portion in the grasp of the forceps would tear off immediately, and it was by a process of nicking and scratching that they were finally removed, so that, both to the sense of sight and touch, there was no obstruction to the urethra. The bleeding surfaces were treated by Paquelin's cautery; but an artery of considerable size, supplying one of the tumors, was, after some difficulty, secured by a catgut ligature. The bladder was thoroughly irrigated; a drainage-tube, of about five centimetres in diameter, placed in the bladder, was held *in situ* by a silk ligature carried through the abdominal wall and through the tube. I deemed it unadvisable to suture the bladder or the layers of abdominal tissue, but packed the wound with iodoform gauze, and over this placed the usual antiseptic and absorbent dressings.

The free end of the drainage-tube was placed in a larger one, three or four feet long, the other end of this second tube being weighted and led beneath the level of a solution of (1 to 40) carbolic acid in a glass jar. The latter was placed on the floor near the bed, and a perfect siphon process established. The patient for the first night had repeated attacks of vesical tenesmus relieved by the use of morphine. After that he had no pain. For three days the drainage-tube worked perfectly, and the patient's dressings were kept dry. After that it ceased to be efficient, and, although it siphoned over the greater amount of urine, some escaped by the side of the tube upon the dressings. The tube was removed on the fifth day, and after this, in order to keep the patient's dressings dry, it was necessary to remove the pads of absorbent cotton every few hours. The patient's nocturnal temperature had been 102° F. before the operation, but after this it daily decreased, and on the fourth day was normal. In every respect his improvement was rapid. The offensive odor disappeared immediately, but the bladder was irrigated every time that the dressings were changed till the ninth day, when the mucus and pus had decreased so greatly that after that the bladder was irrigated but once a day. On the eleventh day the patient passed some urine by the urethra, and on the thirteenth day he was out of bed for a few hours only. The wound granulated freely, and on the ninth day it is recorded that only the narrow point of the irrigating tube could be insinuated into the bladder. This patient is still under observation. He has not yet regained normal urination, but passes a few drachms spontaneously.

Case VI. *Calculus.*—The patient, aged sixty-nine, native of the United States, was a temperate man of good general history. For a number of years he has had paroxysms of dyspnœa lasting a few moments and occurring especially at night. No gastric or other symptoms. For a month or six weeks he has had some swelling of the right foot and leg, with an ulcer on the leg and pain in the heel. For some months he has had frequent micturition, more marked at night, some hesitation and straining at commencement of the act, and occasional stoppage of the flow of urine. The stream is small, the last few drops passing always without control, and the quantity passed at a time is small. Sometimes his urination is precipitate, and at times he has pain at the end of the penis on urinating. Driving or jolting increases his micturition. He has had one attack of hæmaturia. About two months ago he underwent an operation for hæmorrhoids, which were supposed to be the source of his troubles. He makes from twenty-seven to thirty-seven ounces of urine in the twenty-four hours, which contains a large amount of leucocytes and about one per cent. of albumin. There is felt *per rectum* considerable hypertrophy of the prostate. With great difficulty and after some persistency the searcher is introduced into the bladder and a calculus detected. The operation was done in the usual way. Seven ounces of warm boro-salicylic solution were injected into the bladder, and into the rectal bag nine ounces. Although the patient was very obese, the bladder was brought prominently in view, and was reached without difficulty. The layer of fascia, containing a mass of fat, was easily rolled up, carrying with it the peritonæum. The bladder was opened, and two stones of very unusual shape were removed. One consisted of a spherical central portion, with seven secondary crystalline deposits radiating from it like the spokes of a wheel. The radii were about half an inch in length, were bifid at their extremity, and the whole stone had the appearance of an ordinary iron "jack-stone" used by the children. The second stone was cone-shaped, the apex of the cone being very sharp. A single drainage-tube was placed in the bladder, secured by a silk ligature to the abdominal wall and to the lower end of the wound. The wound in the bladder was carefully brought together by continuous catgut suture down to the drainage-tube, and the wound in the abdomen treated in the same way.

The usual antiseptic dressings were applied, and the siphon drainage as described in the preceding case was established. The siphonage was perfect for three days. Then urine began to escape by the side of the tube and also *per urethram*. From twelve to fifteen ounces were passed each day in the natural way. The patient had no pain from the time of the operation. His temperature did not rise above 100, and then only for a day. After that it was normal. The tube was removed on the third day and the proportion of urine which escaped through the abdominal wound was received by the usual absorbent cotton, and by frequent changing the patient was kept comfortable and comparatively dry. On the sixteenth day he was out of bed, urinating entirely by the urethra, and with the wound in the bladder and abdomen closed.

Permit me a few remarks upon the technique of these operations and upon their after-management. In making the incisions through the abdomen, I have observed that the line between the pyramidales muscles may be readily found by first ascertaining the notch made by the junction

of the two pubic bones. The pigmented line of the rhaphe curves laterally in some individuals at the lower part of the abdomen, and is not always a good guide to the separation between these two muscles, but by deep pressure above the mons Veneris this notch can always be felt, and the lower end of the incision should be directed to this point without regard to the course of the rhaphe. The consecutive incisions following the line of the first one easily and rapidly proceed to the transversalis fascia, which, being divided (sometimes also another thin film of fascia), the supravesicular fat, carrying with it the veins and the peritonæum, may generally be quickly and easily stripped up with the finger. These may be small matters, but under some circumstances rapidity of execution in the operation may be a necessity, as in the case of the patient aged sixty-nine, whose cardiac and nephritic conditions were such as to require most careful watching.

In one case I was obliged to find the bladder by means of a sound passed through the urethra. Why the rectal bag had failed was not ascertained till after the operation, when it was found fully distended (with ℥ xvj of water) in the douche pan upon which the patient was lying. During the early administration of the anæsthetic and before my first incision was made he had evidently forced the bag out of his rectum. I had taken it for granted that the rectal bag had burst, and, not wishing to delay the operation, went on with the aid which I have described. It was gratifying to learn later on that such a distension of the man's anus had had no ill effect. Lange reports a laceration of the rectal wall by the rectal tampon.

From Eigenbrodt's report from Trendelenburg's clinic, in the "Deutsche Zeitschrift für Chirurgie," Bd. xxviii, 1888, I learn that he thinks it unnecessary to resort to the rectal bag; nor does he dilate the bladder forcibly, but just enough to produce a dull percussion sound above the pubes. The preparatory treatment advocated by Petersen and Perier in cases of contracted bladder or cystitis when present—namely, repeated injections—I have not considered necessary, but have operated at once in order to remove as soon as possible the cause of the bladder symptoms.

In none of my cases have I found it necessary to resort either to the transverse incisions or to the elevation of the pelvis, both of which are advocated by Trendelenburg. The interior of the bladder was always easily exposed by the use of uterine or rectal specula, which not only reflected a strong light upon the field of operation, but did not interfere with the manipulations. A wider experience may lead me to adopt one or both of these procedures.

I have made no attempt to secure primary union of the *whole* wound in the bladder, but in cases where the latter seemed to be in good condition have sutured it, excepting the small portion for the drainage tube. In others, the wounds have been left open, together with the overlying tissues, in order that the whole might be healed by the process of granulation. Dr. Lange has lately recommended securing primary union of the walls of the bladder by means of a retention catheter, and reports some excellent results. I doubt if any of my patients could have endured the presence of a catheter for a number of consecutive hours, nor do I think it advisable, in order to secure an insensitive urethra, to narcotize or semi-narcotize the patient by the administration of opium. It seems to me that the patient's well-being and his healing forces should be preserved by avoiding narcotics, and using them only for the relief of violent paroxysmal pains from which some of these patients suffer for a short time after the operation. For the same reason I have not restricted the patients to any particular posture after the operation. I leave them to choose their own posture, and, as you will remember, the old man, in the first case reported, lay upon his side reading the newspaper on the second day after the operation. The abdominal decubitus which Trendelenburg recommended, I am glad to see, he no longer considers essential. I have tried different methods of drainage, and do not find any special advantage in the Trendelenburg T-tube. One or two straight fenestrated rubber tubes, kept thoroughly cleaned by an antiseptic solution, serve the purpose admirably. The siphoning system, as I have described it in reporting the cases, seems to be the most advantageous, but all methods seem to fail after three or four days. By this time granulations have generally covered the wounds, and then I resort to pads of absorbent cotton which, if changed with sufficient frequency, will keep the patient's clothing and bed dry. I doubt if any system of drainage will prevent the sudden and violent expulsion by the side of the tube of a certain amount of urine, which soon by capillary attraction finds its way to the surrounding clothing. Later on, say after the first ten days, I have found that the patients are able to attend to the changing of the absorbent cotton themselves. A roll of cotton within easy reach and a basin placed by the side of the bed for the reception of the soiled cotton, enable them to keep themselves comfortable with comparative trifling expense and trouble, for they soon learn when to change the cotton.

It seems to me to be a good plan to get these patients out of bed long before the healing process is completed, for, in my judgment, the function of the urethra is more quickly restored and the openings in the bladder and abdomen are more quickly healed perhaps by the pressure which the abdominal contents exert when in the upright position. In each of two cases there was a fistula which may have been slowly healing, but which seemed, in spite of the otherwise good condition of the patients, to be inclined to persist. Reasoning that this might be due to the loss of tone of the urethra, I did the very simple thing of passing a sound, and, as you no doubt have noticed from the history, the largest and deepest fistula was healed in two days and the smaller one within a day after the use of the instrument. This seems a very simple method, but it may be scientific. At all events, one of these patients informed me that after the passage of the sound he made a stream larger and with greater force than he had done before. While I do not attach much importance to such statements from patients, unless I have had the means of verifying them, I think this was true, and it leads me to suggest to my colleagues that even slight obstructions in the urethra may prevent the rapid healing of these troublesome fistulæ. Hence in such cases the meatus and urethra should be carefully examined.

127 East Thirty-fourth Street.

A SELF-REGISTERING ASEPTIC DILATING URETHROTOME.

By ARPAD G. GERSTER, M. D.,
SURGEON TO MOUNT SINAI AND THE GERMAN HOSPITALS.

With a grateful appreciation due to Professor Otis for the new departure instituted by him in establishing a rational treatment of the chronic complaints of the male urethra, and especially with a just estimation of the effectiveness of his celebrated dilating urethrotome, it can not be denied that one drawback—the only serious one—is inherent to its plan of construction. The instrument can not be taken apart for cleansing, and consequently its aseptic condition must be secured by boiling before and after each operation. The numerous grooves found in the instrument are not easily accessible, the joints are practically inaccessible to the cleansing influence of brush and pin, and, last but not least, moisture is easily retained in the joints, whereby the delicate pins forming the fulcra become rusted and untrustworthy. It is fair to state that with a long-continued and frequent use of Professor Otis's instrument during the performance of internal urethrotomy, no mishap has ever occurred to me that could be charged to any defects of the construction of the instrument. But this safety has been purchased at the cost of great care in cleaning and drying, and especially in testing the instrument before each operation. Thus it was found that rusty pins broke under moderate finger pressure exercised upon the blades of the distended instrument, and once or twice some of these pins were found broken even before the application of pressure.

Another drawback, of lesser import, however, is to be found in the necessity of limiting the extent of the urethral incision by previous careful measurement. And the question whether the depth of the incision is adequate or not has to be settled, and can not be settled otherwise than by subsequent measurement with a bulbous sound of some kind or another. In short, we can not ascertain by the aid of Otis's urethrotome alone whether our incision is long and deep enough to meet the purposes of the required operation.

For a number of years I felt the want of a urethrotome that could be taken apart easily for cleansing, and that would combine the virtues of Otis's urethrometer with those of his urethrotome. I have abundantly demonstrated ("Rules of Aseptic and Antiseptic Surgery") the feasibility of completely and safely dividing a urethral stricture of the pendulous portion by means of an Otis's urethrometer and a long-shanked, blunt-pointed tenotomy knife, and the idea embodied in this experiment served me to evolve the plan of the new instrument hereby presented to the profession.

The new urethrotome is composed of five easily detachable parts: three steel rods and two screws. One of the rods is provided with a laterally grooved bulb of small size (Fig. 2), acting as a wedge, which, by the aid of a stout thumb-screw, serves to spring apart a pair of congruent steel blades (Fig. 3). The amount of separation of these steel blades (somewhat resembling a pair of old-fashioned draper's shears), reduced to millimetres, corresponding to the urethral caliber, is indicated by a dial placed above the ring that serves for the fixation of the instrument. The correct adjustment of the thumb-screw is secured by a small check-screw which represents the proximal end of the urethrotome. The third rod, a small knife, hidden in the slightly curved beak of the instrument, can be withdrawn so as to correspond to the place of widest separation of the shear-blades. The caliber of the closed instrument is exactly 15 millimetres. It permits of a distension to 45 millimetres, and in these particulars coincides with the minimal and maximal dimensions of Otis's urethrotome. It can be taken apart in fifteen seconds, and can be put together in about double that time.

The *modus operandi* is as follows: The urethra being properly prepared, the closed instrument is lubricated with glycerin, and passed in well beyond the stricture or strictures. After this the shear-blades are separated by means of the thumb-screw to the desired caliber, and the instrument is drawn forward until it becomes arrested by the resistance of the stricture. Now the hidden knife is drawn into position, and the whole instrument, being firmly grasped, is steadily pulled forward. Thus the stricture is gradually dilated so as to offer a favorable degree of tension for the effective use of the knife, which will readily cut all the resistant tissues composing the stricture. The moment that the stricture is cut along its entire linear extent, and to the proper depth, the distended part of the instrument, which serves the purpose of a bulb, will slide through the site of the stricture, thus indicating that an adequate amount of division has been accomplished. A series of strictures can thus be divided one after the other without the necessity of removing the instrument from the urethra.

I have tested the practical utility of this urethrotome in thirty-four cases of stricture, and have to add only one piece of advice, the importance of which has become manifest with widening experience. It is advisable in cases of comparatively tight and very dense stricture, where a great disproportion exists between the normal caliber of the urethra and the caliber of the undistended stricture, not to attempt a complete division of the stricturing bands at one stroke, as the great amount of traction required to accomplish a full distension of the stricture would threaten a circular rupture of the urethra

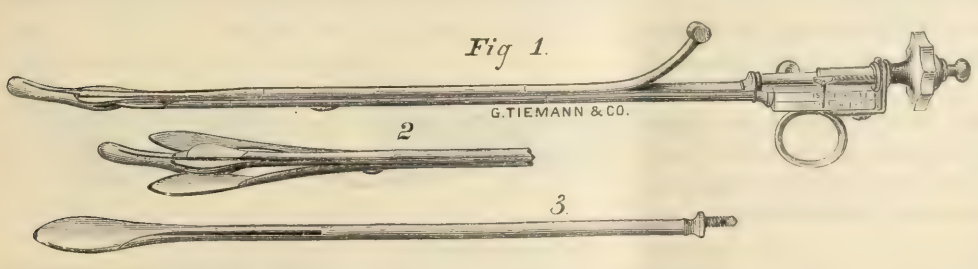


Fig 1.

on a line just beyond the proximal limit of the stricture. It has been found much safer and also easier to cut such strictures *gradatim*. What I mean is this: That, the instrument being introduced, the first cut is to be made at a moderate degree of dilatation. The knife being slipped back, and the instrument somewhat closed, it is again passed behind the stricture, when a second cut is made, the dial indicating this time five or ten millimetres more of dilatation than was accomplished by the first cut. And this should be repeated until thus gradually full division is accomplished.

My thanks are due to Mr. Stohlmann (of George Tiemann & Co., surgical cutlers), who by his courtesy and technical advice has greatly aided me in devising the new instrument.

THE MECHANISM AND ANATOMICAL FEATURES OF THE INJURY KNOWN AS SUBLUXATION OF THE HEAD OF THE RADIUS.

By ROBERT T. MORRIS, M. D.,
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An exhaustive paper on the subject of the literature and the clinical features of the injury commonly known as subluxation of the head of the radius was read by Dr. W. W. Van Arsdale at the New York Academy of Medicine on March 11, 1889, and the conclusions reached by that author were practically as follows:

"1st. The injury occurs rather frequently in children under nine years of age, and rarely in adults, making, according to statistics, more than one per cent. of all surgical injuries among the children who are taken to the dispensaries here for treatment.

"2d. Its most common exciting cause is a sudden traction upon the hand and arm, but it sometimes follows falls upon the elbow.

"3d. Its symptoms are absence of any marked deformity, temporary loss of function of the muscles of the arm, local pain on pressure near the head of the radius, pronation of the hand, slight flexion at the elbow, and clicking sounds at the elbow on making passive motion at that articulation.

"4th. It is a well-defined surgical injury with well-marked symptoms and due to the same anatomical lesion in each case, but the anatomical character of the injury has not as yet been satisfactorily described."

In order to examine into the latter question, I procured, on April 17th, through the kindness of Dr. W. P. Northrup, four fresh arms. Two of these were from a child four months of age, and the others from a child fourteen months of age. These arms, with the skin and the hands removed, were placed in weak acidulated bichloride-of-mercury solution, and the following experiments were made during the next twenty-four hours:

Experiment No. 1.—Left arm of four-months-old child. All muscles dissected apart from each other, and ligaments of elbow freely exposed. Traction upon radius and humerus simultaneously, and with varying degrees of force.

Observation.—Separation of head of radius from capitellum, and of head of ulna from trochlea. Depression of ligaments into the joint space as a result of atmospheric pressure. Spontaneous restoration of all parts to their normal places immediately upon being relieved from traction force. Subluxation not produced.

Experiment No. 2.—Same arm. All muscles cleanly removed. Repeated traction upon radius and humerus with bones of arm in various positions.

Observation.—Same as in Experiment No. 1.

Experiment No. 3.—Right arm of fourteen-months-old child. All muscles of arm removed with exception of biceps. Simultaneous traction upon radius and humerus.

Observation.—Separation of articular surfaces of radius and ulna from capitellum and trochlea. Depression of ligaments into joint space. Sudden slipping of loop of orbicular ligament over head of radius and into joint space between radial head and capitellum. Orbicular loop remains interposed between radial head and capitellum when traction force is discontinued. Articular surfaces of ulnar head and trochlea remain slightly separated, because of the ligamentous wedge made by the orbicular loop between radial head and capitellum. Subluxation produced. Slight apparent deformity. Clicking sound produced by rocking articular surfaces of ulna and humerus together. Joint movements almost perfect. Flexion limited slightly but decidedly in the last few degrees of range. Reduction difficult, but finally accomplished by rotating radius into pronation position and pressing joint surfaces together at the same time. Sudden reduction with an audible snap. Restoration of all parts involved to their normal positions. Orbicular ligament appears to be more loosely attached to surroundings than before, and undoubtedly because of minute rupture of its loose connective-tissue attachments.

Experiment No. 4.—Same arm. Radius and ulna held in my left hand, and humerus in my right hand. Extended or partially flexed position of elbow of specimen. Pressure with my thumb on outer surface of head of radius, forcing it slightly away from capitellum and inward toward ulna.

Observation.—Subluxation of radial head in the same anatomical way as when traction force was applied in long axis of radius.

Experiment No. 5.—Same arm. Subluxation reduced. Biceps muscle put upon the stretch in its normal axis of traction. Efforts then made to produce subluxation by traction upon radius and humerus with my hands, and by pressure upon outer surface of head of radius with my thumbs.

Observation.—It is at once apparent that subluxation of the head of the radius can not be produced by any mechanism while the biceps muscle is at work.

Experiment No. 6.—Left arm of four-months-old child again taken up, and the subluxation successfully produced after more violent movements of traction, and of outer side pressure, than I had at first applied.

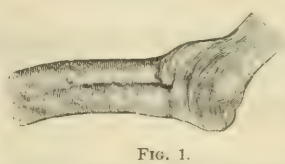


Fig. 1.

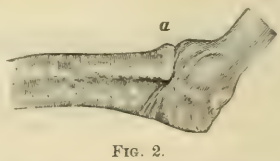


Fig. 2.

Fig. 1. Left elbow of four-months-old child. All ligaments in normal position. (Photograph by Bostwick.)

Fig. 2. Left elbow of four-months-old child. Orbicular ligament slipped over head of radius and into joint space, *a*, as a result of longitudinal traction upon radius and humerus simultaneously. No ligament ruptured. (Photograph by Bostwick.)

Experiment No. 7.—Right arm of four-months-old child. All muscles removed except brachialis anticus and supinator

brevis. Simultaneous traction upon radius and humerus produced subluxation of head of radius, and a few fibers of both of the muscles were drawn down into the joint space between radial head and capitellum along with the orbicular ligament and a part of the anterior ligament. Subluxation reduced most easily by strong pronation of radius, very slight flexion of elbow, and upward pressure in long axis of radius.

As reduction of subluxation of the head of the radius is supposed to occur spontaneously after a few days in most cases, it seemed to me that such reduction could take place only as a result of synovitis with increase of synovial fluid and a consequent forcing of the orbicular ligament out of the joint space. To prove this theory I made the following trial:

Experiment No. 8.—Right arm of four-months-old child. Subluxation produced. Injection into the joint cavity of about forty minims of water through a hypodermic needle.

Observation.—Tension of capsule. Quick and strong flexion of forearm upon arm and pronation of forearm. Orbicular ligament hopelessly locked within the joint space between radial head and capitellum—"and that's what became of my theory."

Experiment No. 9.—Left arm of fourteen-months-old child. Muscles dissected away from each other, but not removed. Attempts at producing subluxation by pressure with the thumbs upon outer surface of head of radius resulted in ordinary luxation of head of radius forward. Head of radius tore through anterior ligament above orbicular ligament.

Conclusions.

1. Subluxation of the head of the radius consists in a separation of the head of the radius from the capitellum by the interposition between them of the loop of the orbicular ligament, accompanied in some cases by a small portion of the anterior ligament of the elbow, and some fibers of the brachialis anticus and supinator brevis muscles.

The articular surfaces of the head of the ulna and of the trochlea remain slightly separated at the same time because of the wedge of orbicular ligament between the head of the radius and the capitellum. Passive movements of the joint give rise to clicking sounds caused by the rocking together of the separated ulnar and humeral articular surfaces.

There is no appreciable deformity on inspection or palpation, but the range of flexion of the forearm upon the arm is slightly limited.

2. The accident occurs at an instant when the biceps muscle is relaxed and as a result of direct traction force upon the radius while the forearm is in a position of partial or complete supination. It also occurs under the same anatomical conditions when force is applied directly to the outer side of the elbow, forcing the head of the radius inward and a little downward from the humerus.

The former mechanism is brought into play when a child led by the hand stumbles and falls, its hand remaining grasped in the hand of the nurse. The latter mechanism is brought into play when in a violent fall the outer side of the elbow strikes the curb-stone.

3. The mechanism of spontaneous reduction has not been determined, but it may, perhaps, occur as a result of swelling of the pinched ligaments and muscular fibers and a consequent pulling of the pinched tissues up and out.

4. Reduction may be accomplished by the surgeon as a result of various movements which tend to work the head of the radius back under the loop of orbicular ligament, and the most frequently successful movement seems to be pronation and pressure upward along the long axis of the radius, the arm being at the time completely extended. A quick snap gives evidence of reduction.

5. In treating cases in which reduction can not be accomplished by the surgeon, the arm should be fixed in a position of nearly complete extension, as this gives the loop of orbicular ligament the best opportunity for escape according to the testimony of my small number of specimens.

I suspect that there are about the country a great many cases in which reduction has never taken place, the surgeon's efforts having been unsuccessful and spontaneous reduction having been impossible.

6. The muscular disability of the arm during the early days of the injury is apparent rather than real, as I have demonstrated upon a patient—a young lady—since Dr. Van Arsdale's paper was read. Because of the pain consequent upon any movements at the elbow joint, the patient could with difficulty be persuaded to move the arm at all, but movement once begun, she could carry the forearm through almost its complete range of motion.

A REMARK ON THE OPERATIVE TREATMENT OF HÆMORRHOIDS.

By S. S. TURNER, M. D.,
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Any one who has taken a deep interest in the recent literature upon the subject of the operative treatment of hæmorrhoids, and has at the same time elicited, as far as practicable, the current views of general practitioners upon the subject, must be convinced that the vexed question is by no means settled for the profession at large.

My attention is drawn to the subject at this time by the article of Surgeon Brown, U. S. A. (retired), in the Journal of May 18, 1889, but it is not my purpose to take part in the controversy between Dr. Kelsey and Mr. Whitehead which is therein discussed, further than to make two statements, preliminary to some remarks upon a mode of treatment which Dr. Kelsey has practically abandoned, for reasons which I will concede to be sufficient from the standpoint of a busy specialist. These statements are:

1. That Mr. Whitehead's operation is so self-evidently "bloody, tedious, and difficult" that no general practitioner and few specialists will care to undertake it. No amount of assertion by Mr. Whitehead in favor of its simplicity will deceive any one who has studied anatomy.

2. It did not require the recent writings of Dr. Kelsey, nor the article of Surgeon Brown, to convince the writer that the clamp and cautery was the simplest and best of all operations for the busy specialist, and by implication the best for his patients. I concede it to be the quickest, simplest, least painful, and most efficacious of the operations for removal.

But back of all this there is a great practical question which concerns the great body of practitioners. No fact is

better known to the profession than that nearly all men, doctors not excepted, will suffer from hæmorrhoids more than the pain and inconvenience of a thousand operations, rather than undergo an operation for removal by any of the methods in vogue. The fame of some specialist who is distant enough to "lend enchantment to the view" will generally induce people of large means, when life has become something of a burden, to place themselves under his care and take what he offers. But, unfortunately, piles are by no means limited to people of large means. The greatest number of sufferers must take what the general practitioner can give, and will not take the cutting or crushing operations until compelled by dire necessity, and are only too glad of a less heroic alternative which offers them hope of relief.

For this great body of sufferers the operation by carbolic-acid injection offers a means of relief to which they will readily submit, which is reasonably certain of success with proper care, and which every qualified practitioner should be able to apply.

It is my belief that the method deserves all that Dr. Kelsey said in its favor before the conditions of his practice rendered the clamp and cautery so much more fascinating. In severe cases it requires patience and perseverance, but, if practiced with due care, I can not see why the liability to subsequent attacks should be any greater than if the tumors were removed. The destruction of a tumor by either process offers no absolute guarantee that a tumor will not form in some other part of the hæmorrhoidal region.

I can not claim the experience with carbolic acid which it is evident that Dr. Kelsey enjoyed. But in a trial of the remedy in a sufficient number and variety of cases to justify me in having an opinion upon the question of its merits, I have never met with anything which I regretted. My practice has been to inject ten minims of a four-grain solution of cocaine before injecting the acid, and in no case has severe pain been complained of at the time or subsequently. In one exceptionally bad case, in a gentleman rendered very nervous by suffering, I used opium suppositories as a precaution, and can not say what the result would have been without that precaution. In his case one large mass was removed with the écraseur and the remaining tumors were injected, and all did well.

The strongest solution I have used is one part of acid to two of glycerin, and this has often caused the part reached by the acid to slough, a circumstance which I have thought rather favorable than otherwise. The cavity heals readily by granulation, and there has been no hæmorrhage in any case beyond a slight oozing for a brief period. A solution of one to five has not caused a slough, in my experience. I have not met with any cystic trouble in any case.

My conclusion is this: That while, from a strictly surgical standpoint, the clamp-and-cautery operation is the mode *par excellence* of removal, there is a wider field for the carbolic-acid method than for any other among general practitioners, and that its merits, which are beyond question in my mind, entitle it to a more general application than it has thus far received.

THE

NEW YORK MEDICAL JOURNAL,

A Weekly Review of Medicine.

Published by D. Appleton & Co. Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, JUNE 22, 1889.

THE COLONIZATION OF THE INSANE.

For several weeks past the Chicago newspapers have contained accounts of the grossest mismanagement in the Cook County, Illinois, asylum for the insane. The papers describe the asylum as having been in a most filthy condition, and the inmates as having been grossly maltreated, one patient having died apparently of injuries received from brutal attendants appointed by political influence, not on account of fitness for their positions. The asylum in question is under the management of the Cook County Board of Commissioners, who are politicians first and last. In the investigation of the asylum mismanagement before the county judge it has been recommended that the present asylum be abandoned and a new one built. This would be but a short and false step in the right direction. The superintendent has been summarily dismissed. The board of politicians that placed him in power has displaced him, and is now looking for "a competent scientific man" who will take the political job, at the risk of being turned out in a few months, at $3,500 a year.

Chicago and Cook County need, or soon will need, adequate provision for two thousand insane persons. If provision is to be made now, as it should be, why not set about the work in the proper manner? And does the civilized world know of any better method of providing for the insane than by placing them in colonies. Careful reading of Mr. William P. Letchworth's book on "The Insane in Foreign Countries" seems to show that colonization of the insane fulfills all the requirements better than any other method of caring for them. The reader will probably think of the colony of Gheel in this connection. But one must conclude from Mr. Letchworth's book that this colony is of but little practical value to Americans except as showing the amount of freedom that is possible in an asylum for the insane. The faults and disadvantages of the Gheel system are many, great, and obvious. As compared with the systems of Fitz-James and Alt-Scherbitz, Gheel, according to Mr. Letchworth, may be counted almost as a failure as a place for caring for the insane. We have heard a great deal of the colony of Gheel and very little of the colonies of Fitz-James (and Villers) and Alt-Scherbitz. Having no colonies for the insane in America, our notions of such colonies are somewhat confused. In thinking of the agricultural part of such colonies we are likely to overlook many important matters concerning the central asylums and the labor other than agricultural. Naturally, the central asylum of a colony is a most important part of such an institution. The central asylum of the colonies of Fitz-James and Villers is defective in some re-

spects, and is inferior to the central asylum at Alt-Scherbitz, which provides for part of the insane of Saxony.

A county or State having to provide accommodation for the insane could not do better than to send special commissioners abroad to study the systems in successful operation at Fitz-James and Alt-Scherbitz. There may be found free and natural conditions of life and good judgment and delicate tact displayed in adjusting the employments to the experience, tastes, aptitudes, physical capacity, and mental condition of the insane. Restraint on the part of attendants and violence on the part of either attendants or patients are practically unknown at these places. The more natural the life of the insane, without the exciting influences of home and business, the more hope is there of cure. Without occupation even a sane person can not be expected to remain sane for any length of time. Even for the chronic insane outdoor employment is of great value, as is attested by Dr. Francis, of St. Andrew's Asylum at Northampton. He says that "a chronic lunatic of the worst type—turbulent, noisy, destructive, treacherous, violent, faulty in habits, an inveterate nuisance—shows marked improvement after a few months of steady work. Sleeplessness which drugs have failed to influence yields to healthy fatigue." The English Commissioners of Lunacy have for some years laid special stress on the importance of occupation. As a violent male lunatic becomes calmer while digging in the earth, the violent female is rendered calmer by the exertion of hand washing; washing machines should be left to the more quiet. Occupation, labor, is more beneficial than amusement, and is suitable for a larger number of patients. One would scarcely volunteer as umpire in a game of base-ball played by lunatics, since the position is unsafe even when the game is played by the (apparently) sane. An acute maniac may expend his energy to advantage on a stone-pile, but in a game of foot-ball it might be misdirected.

The colony system offers a greater variety of employment than the asylum system, and it gives more fresh air and more sunshine. In the long run it is as cheap, if not cheaper; and there are more chances for the patients' recovery. To shut insane people up in a huge building, without adequate or sufficiently diversified labor, is not only cruel and unreasonable, but bad therapeutics. A garden or a farm of a few acres can not furnish employment for several hundred insane people. The colony of Fitz-James has about two thousand acres of farming land; Alt-Scherbitz has more than seven hundred acres. As a general rule, it may be said that there should be about an acre to each patient to be accommodated. With the number of acres tilled at Fitz-James, agriculture is by no means the only industry, but in the colony there are two flouring-mills, a forge, a machine-shop, a bakery, a dairy, and other means of employment.

The English and Scotch systems of caring for the insane are good; but the reader of Mr. Letchworth's book is forced to the conclusion that they would be better if combined with the whole system of Alt-Scherbitz and the colony system of Fitz-James.

MINOR PARAGRAPHS.

THE OUTLOOK AS TO YELLOW FEVER.

A TELEGRAM from Montgomery, Ala., announces the return of Dr. Jerome Cochran, the State Health Officer, from a visit to Cuba and Florida, to which places he went in order to study the yellow-fever situation. He reports that he found the fever to be only moderately developed at Havana, and that in Florida there had been no cases since the April case at Sanford. There seems to be a good prospect that Florida will escape an epidemic this year, provided there has been no systematic concealment of the disease, and no fresh importation of it takes place along the Tampa Bay route. Dr. Cochran's high standing as an authority in public-health matters is well known throughout the South, and his favorable views of the situation in Florida can not fail to inspire confidence, or hopefulness, at least. The feeling among sanitarians generally has been that there would be a return of the fever, or a re-importation of it at some Southern port, during the coming summer, and some have named June as the month of its reappearance. This feeling has been chiefly based upon the knowledge that in Florida there has been, until very lately, a loose and defective sanitary administration for the State at large, and that there has been a great deal of labor imposed upon the newly organized State board, to be done in a very short time. We have the knowledge, also, that the fever has not been absent from its old fields in Cuba, and has been especially prevalent and virulent in Brazil. Rio and Santos, in the latter country, have had the most serious epidemic of fever that they have seen for years, and their close commercial relations with this country have been, and are still, a possible source of the renewal of epidemic trouble here. At Vera Cruz, also, the fever has been unusually prevalent. What with our own infected soil, due to last year's pestilence, and with two or more dangerous neighbors to the south of us, we shall have unmistakable cause for congratulation if the fever passes us by unscathed during the summer on which we have entered.

BROMOMANIA.

THE "Lancet" for May 25th points out some of the evil effects that follow the excessive use of the bromides by epileptics. In many cases the patients become wild and maniacal from the prolonged use of the drug, and in the asylums this condition is well recognized under the title of bromomania. In former times the same class of persons continued along about the same from year to year and did not require to be sent away to the asylums. This was before the bromides became the routine means of treatment in epilepsy at all the various dispensaries and out-patient departments. It is at those institutions, the "Lancet" fears, that much damage is done "by the drenching of the epileptics with the bromides." Then too many of these patients will go from one dispensary to another, and thus get loaded with an amount of bromide preparations that is far in excess of the intent, knowledge, or conjecture of the respective prescribers. When, therefore, a practitioner finds that any of his epileptic clients give indications of an increase of excitability and violence, it will be well to investigate into the amount of their drug-consumption; it may be the invasion of bromomania.

AN ACCESSORY THYREOID GLAND IN THE TONGUE.

SUCH a formation is said to have constituted a tumor that Dr. Wolf, of Hamburg, lately found it necessary to remove from the tongue of a young woman who was otherwise healthy, but had been annoyed with the tumor for six years. An account of the case was given by Dr. Wolf at the eighteenth congress of

the German Society of Surgery, held at Berlin in April, and reported in the "Deutsche Medizinal Zeitung." The mass occupied the left half of the base of the tongue, extending well into the pharynx, and being of a different color from the rest of the tongue. At first it seemed to yield to local and general treatment with iodine, but it afterward increased in size to such a degree as to call for excision. The girl made a satisfactory recovery.

THE MEDICAL SITUATION AT JOHNSTOWN.

The progress of recuperation in the localities visited by the June flood has been slow, but on the whole satisfactory. A paralysis of every form of business and activity might well have succeeded to the terrible shock of the disaster, but it has been only temporary. The condition of the weather has, in general, been favorable to outdoor work, and the people have been spared the shocking sights and conditions which a higher temperature and more rapid decomposition would have occasioned. The sick and wounded are now chiefly those who have been employed as laborers; the citizens do not form a large proportion of those who apply to the relief organizations about Johnstown. Surgeon-General John B. Hamilton, of the Marine-Hospital Service, reports to the President that there is no lack of medical assistance. He says: "There are some twenty physicians surviving, ten of whom are able to work, but no more are needed; it would be a relief if many of those who have come from a distance would go away." He is reported to have said that ten days more of systematic work would clear up the surface of the greater part of the town. Infectious disease does not exist, beyond a few cases of measles of a mild type. A hospital for infectious cases, however, has been established, lest it may be needed. In regard to the losses sustained by members of the medical profession, it is stated that twenty lost all their property, but that aid is now at hand sufficient to provide against all pressing needs. The College of Physicians of Philadelphia and the Philadelphia County Medical Society united in sending representatives with $2,000 for the immediate relief of the families of medical men; and more money is to follow as it may be required. The State Medical Society has also appropriated $1,000 to go in the same direction.

THE TRANSACTIONS OF THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

From the "Albany Medical Annals" for May we learn that the "Transactions" for 1889 will soon appear. The "Annals" further states that the volume has been got up by a Philadelphia printer, and that the typography of the book will be superior to that of any of its predecessors. The recent issues of the "Transactions" have had a cheap appearance, not only in typography but in regard to their paper, illustrations, and binding—in fact, they have been inferior to nearly all the yearly volumes of the great State organizations.

HONORS TO DR. JOHN S. BILLINGS.

Dr. Billings, of the army, sailed for Europe on Wednesday, June 12th, in company with a number of physicians, some of whom are delegates to the Leeds meeting of the British Medical Association, to be held in August. It has been announced that Oxford University will confer on Major Billings an honorary doctorate in consideration of his many labors on behalf of the Johns Hopkins University, the Army Museum, and the "Index-Catalogue." The general orders of the Surgeon-General of May 13th, which contemplated the attendance of Dr. Billings, as the representative of the medical department of the army, at the American Medical Association's meeting at Newport, have probably been recalled to enable him to receive his new distinction in person. It is only a short time ago that the telegraph informed us of the bestowal upon Dr. Billings of an honorary doctorate in medicine by the University of Munich, conferred upon him in recognition of his work as a sanitarian. In the last issue of this journal was published the Surgeon-General's authorization to Major Billings to participate actively in the work of the forthcoming Federal census. This assignment to special duty with the Census Bureau is without doubt a high honor, but it is also an onerous addition to a career that knows few idle hours.

ITEMS, ETC.

The American Climatological Association.—The programme for the sixth annual meeting, to be held in Boston on Monday and Tuesday of next week, includes an address on "Comparative Results in Ninety Cases of Pleurisy, with special reference to the Development of Phthisis Pulmonalis," by the president, Dr. V. Y. Bowditch, of Boston; "A Study of the Summer Climate of the Massachusetts Coast," by D. W. D. Hodges, of Boston; "Reports of Cases of Acute Miliary Tuberculosis," by Dr. J. C. Munro, of Boston; "The Mortality of Acute Lobar Pneumonia," by Dr. C. W. Townshend and Dr. A. Coolidge, Jr., of Boston; "Consumption as I have known it," by Dr. E. P. Hurd, of Newburyport, Mass.; "The Influence of Climate and Season upon Normal and Abnormal Manifestations of Nervous Activity," by Dr. Walter Platt, of Baltimore; "The Basis of Rational Climatotherapy," by Dr. G. E. Abbott, of Bryn Mawr, Pa.; "Ocean Therapy," by Dr. A. L. Gihon, of the navy; "The Vital Statistics of Two Thousand Persons in an Ocean Atmosphere," by Dr. A. N. Bell, of New York; "The Psychological Factor in selecting a Climate for Invalids," by Dr. E. O. Otis, of Boston; "The Wakefulness of Neurasthenia as affected by a Residence at the Seaside," by Dr. W. H. Daly, of Pittsburgh, Pa.; "The Relations of Sandy Soil and Pine Forests to Pulmonary Phthisis, with special reference to the Pine Belt of New Jersey," by Dr. I. H. Platt, of Lakewood, N. J.; "Open-air Travel as a Cure and Preventive of Consumption, as illustrated in the History of a New England Family," by Dr. H. I. Bowditch, of Boston; "Rest and Exercise in Diseases of the Heart," by Dr. A. L. Loomis, of New York; a discussion on "Hæmoptysis from Chronic Pulmonary Disease," by Dr. G. M. Garland, of Boston, Dr. J. T. Whittaker, of Cincinnati, and Dr. R. G. Curtin and Dr. J. B. Walker, of Philadelphia; "Remarks on the Treatment of Pulmonary Phthisis," by Dr. J. C. Wilson, of Philadelphia; "Some Observations on the Causation and Treatment of Asthma," by Dr. Beverley Robinson, of New York; "The Climatic Treatment of Bronchial Asthma," by Dr. F. I. Knight, of Boston; "Institutions for the Treatment of Pulmonary Consumption," by Dr. P. H. Kretzschmar, of Brooklyn; "The Mineral Springs of Colorado," by Dr. C. Dennison, of Colorado; "The Climate of New Mexico," by Dr. R. M. Longwell, of Santa Fé; "Notes on the Prevalence of Diphtheria at High Altitudes," by Dr. S. H. Chapman, of New Haven; and "An Unusual Type of Pulmonary Disease occurring in the Central Mississippi Valley," by Dr. W. C. Glasgow, of St. Louis.

Recent Deaths.—Dr. John Eckert Shaffer died at Elizabeth, Pa., on May 31st, in his sixty-ninth year. He was born at Washington, Pa., and graduated in arts at the college in that town in 1840. He was admitted to the bar in Virginia in 1842, but very soon abandoned law for medicine, taking his medical degree at the University of Pennsylvania in 1845. He settled in Elizabeth and lived there for over forty years. He was appointed postmaster of the town by President Lincoln, and was

prominent in every public improvement in his community. He was the local historian, keeping a daily record of meteorology and of the important events and conditions observed by him.

Dr. A. B. Ashworth, of Atlanta, Ga., died suddenly on May 18th, at the age of twenty-four years. He was a graduate of the Atlanta Medical College, in the class of 1886. In 1887 he was made the secretary of the Medical Association of Georgia and managing editor of the "Medical and Surgical Journal," succeeding the late Dr. James A. Gray in both those positions, and, like Dr. Gray, living only a year or two in the incumbency of them.

Dr. J. O. Owen, of Pendleton, S. C., met with death by violence on June 3d, having been shot, as is alleged, by his stepson, a youth of about eighteen years. Dr. Owen was a graduate of the Atlanta College of Medicine and Surgery, and had been a practitioner in Anderson County for five years.

Dr. Edward Mortimer Deey, formerly of New York, died at Limpley Stoke, near Bath, England, on January 3d. He was an alumnus of the New York Medical College, of the class of 1856.

The New York Hospital Library.—At the last meeting of the board of governors of the hospital a fine portrait of the esteemed librarian, Dr. John L. Vandervoort, was presented to the board by Dr. George L. Peabody, who originated the movement among the friends of the institution to procure the portrait. It is a life-sized oil painting by Rhees, and as a likeness it is striking. It occupies a conspicuous place in the rooms of the library. In his remarks on the occasion of presenting the portrait Dr. Peabody spoke highly of the services of Dr. Vandervoort, who began his duties as librarian over fifty years ago. At the same meeting Mr. J. H. Vandervoort was appointed assistant librarian.

A Medical Course at Worcester, Mass.—The Clark University, at Worcester, has recently issued a prospectus of medical studies, other than clinical, to be taught at that institution. It offers "special facilities in those fundamental disciplines upon which the study of medicine, in all its departments, now rests," such as chemistry, biology, anatomy, physiology, and neurology. The character of the diploma which will be granted to students who successfully follow this course is not stated, since the prospectus admits that "the purely scientific part of a medical education" is what is offered, clinical demonstrations being absent. A certificate of proficiency in the "fundamental disciplines" will be the best diploma that can issue under the existing facilities.

The Marine-Hospital Service.—At the recent session of the examining board, held in Washington, twenty-seven candidates were examined, of whom four were successful: Dr. Groenevald, of Louisiana; Dr. Young, of Virginia; Dr. Stemson, of Maryland; and Dr. Brown, of Virginia. There is now only one vacancy.

The Yale Medical Society, of New Haven.—On Tuesday of next week Dr. Horatio C. Wood, of Philadelphia, will give the annual address in medicine, and in the evening a reception in Dr. Wood's honor will be held at Dr. C. A. Lindsley's house.

The State Board of Health of North Carolina.—The Governor of North Carolina has made the following appointments in the State Board of Health: Dr. J. H. Tucker, of Henderson, the Hon. J. L. Ludlow, of Winston (both reappointed), and Professor F. P. Venable, of the University; term of office, two years. By the State Medical Society's choice, two physicians become members of the board for a term of six years, namely: Dr. J. A. Hodges, of Fayetteville, and Dr. Julian M. Baker, of Tarboro. The honored secretary, Dr. Thomas F. Wood, of Wilmington, editor of the "North Carolina Medical Journal," is continued in that position, held by him since the organization in 1885.

Epidemic Disease in Brazil.—The cities of Rio and Santos are afflicted with both small-pox and yellow fever. The fever has extended from Rio back into the country, along the avenues of traffic, for two hundred miles, and the type of the epidemic is said to be unusually virulent. At Santos the mortality has been appalling; some unofficial figures have been given which would correspond to an annual death-rate of over 600 in a 1,000; and that, too, in a city whose normal population has been greatly reduced by the flight of hundreds who have had the means to get away.

The Sanitary Institute of Great Britain.—The Hon. G. W. Hastings, Member of Parliament for Worcestershire, has recently been elected to the presidency of the Sanitary Institute of Great Britain, which will hold its next annual congress at Worcester on September 24th.

A Female Pathologist.—The oldest of the universities, says "Harper's Weekly," has made one of the newest of the new departures, for at the University of Bologna there has arisen a young lady, Dr. Giuseppina Cattani, lecturer on pathology, who has made a decided sensation as being both beautiful and profound.

The Mexican Academy of Medicine.—Dr. Prince A. Morrow, of New York, has been elected a corresponding member of the Academy.

The Cartwright Prize for 1889 has been awarded to Dr. Hobart A. Hare and Dr. Edward Martin, of Philadelphia, for an essay entitled "Practical Studies on the Nervous and Mechanical Government of Respiration."

Change of Address.—Dr. William C. Jarvis, to No. 142 Madison Avenue.

A Boarding-House for Medical Students in Vienna.—Frau Müller von Wandau, who keeps a boarding-house in Vienna, at ix, Türkenstrasse, 4, states in her circular that the house is situated near the principal Poliklinik and hospital, that it affords great facilities for conversation in German, and that it furnishes the greatest comforts at the most reasonable rates. A correspondent well known to the profession writes to us in corroboration of these statements and recommending the house very highly.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from June 9 to June 15, 1889:*

By direction of the Acting Secretary of War, the following changes in the stations of officers of the Medical Department are ordered: Hartsuff, Albert, Major and Surgeon is relieved from duty at Fort Hamilton, N. Y., and ordered to Fort Omaha, Neb.; Brown, J. M., Major and Surgeon, relieved from duty at Fort Omaha, Neb., and ordered to Fort Meade, Dakota; Shannon, W. C., Captain and Assistant Surgeon, relieved from Fort Meade, Dakota, and ordered to Fort Yates, Dakota; Ives, Francis J., First Lieutenant and Assistant Surgeon, relieved from duty at Fort D. A. Russell, Wyoming, and ordered to Fort Lyons, Colorado; Philips, J. L., Captain and Assistant Surgeon, relieved from duty at Fort Lyon, Colorado, and ordered to Fort Crawford, Colorado: McCaw, Walter D., First Lieutenant and Assistant Surgeon, relieved from duty at Fort Crawford, Colorado, and ordered to Fort McPherson, Atlanta, Ga. Par. 9, S. O. 136, A. G. O., Washington, D. C., June 13, 1889.

Gibson, Robert J., Captain and Assistant Surgeon (Fort Trumbull, Conn.), is designated as medical officer for the encampment at Fisher's Island, N. Y., and he will proceed to Fisher's Island, N. Y., August 1, 1889, and report to the commanding officer for duty at that post. Par. 5, S. O. 133, Headquarters Division of the Atlantic, June 13, 1889.

Gandy, Charles M., Captain and Assistant Surgeon, upon the abandonment of the post of Fort Concho, Texas, will report in person to the commanding officer, Fort Clark, Texas, for duty at that station, to relieve First Lieutenant Ogden Rafferty, Assistant Surgeon, reporting also by letter to the commanding general, Department of Texas.

Rafferty, Ogden, First Lieutenant and Assistant Surgeon, on being relieved by Captain Gandy, will report for duty to the commanding officer, San Antonio, Texas, reporting also by letter to the commanding general, Department of Texas. Par. 7, S. O. 133, A. G. O., Washington, June 10, 1889.

Wales, Philip G., First Lieutenant and Assistant Surgeon (recently appointed), will, by direction of the Acting Secretary of War, proceed from this city to the Presidio of San Francisco, Cal., and report for duty to the commanding officer of that post, reporting also by letter to the commanding general, Division of the Pacific and Department of California. Par. 3, S. O. 132, A. G. O., June 8, 1889.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending June 15, 1889:*

Norton, O. D., Assistant Surgeon. Ordered to the Naval Hospital, Chelsea, Mass.

Hall, J. H., Passed Assistant Surgeon. Detached from the Naval Hospital, Washington, D. C., and granted six months' leave to go abroad.

Lewis, D. O., Passed Assistant Surgeon. Detached from the Naval Academy and ordered to the Naval Hospital, Washington, D. C.

Bright, George A., Surgeon. Detached from the Navy Yard, Norfolk, Va., to wait orders.

Marmion, R. A., Surgeon. Detached from the Receiving Ship Franklin and ordered to the Navy Yard, Norfolk.

Bertolette, D. N., Surgeon. Ordered to the Receiving Ship Franklin.

Kidder, B. H., Medical Inspector. Ordered to the Naval Academy, Annapolis, Md.

Walton, T. C., Medical Inspector. Detached from the Naval Academy and ordered to the U. S. Steamer Chicago.

Beyer, H. G., Passed Assistant Surgeon. Ordered to the Training Ship Portsmouth.

Society Meetings for the Coming Week:

Monday, *June 24th:* American Climatological Association (first day—Boston); Medical Society of the County of New York; Boston Society for Medical Improvement; Cambridge, Mass., Society for Medical Improvement; Baltimore Medical Association.

Tuesday, *June 25th:* American Medical Association (first day—Newport); American Climatological Association (second day); Buffalo Obstetrical Society (private); Medical Societies of the Counties of Essex (annual—Elizabethtown) and Lewis (annual), N. Y.; Yale Medical Society, New Haven.

Wednesday, *June 26th:* American Medical Association (second day); Medical Society of the County of Albany, N. Y.; Auburn, N. Y., City Medical Association; Berkshire, Mass., District Medical Society (Pittsfield).

Thursday, *June 27th:* Vermont State Medical Society (Brattleboro'); American Medical Association (third day); New York Orthopædic Society; Cumberland, Me., County Medical Society (Portland).

Friday, *June 28th:* American Medical Association (fourth day); New York Society of German Physicians; Philadelphia Clinical Society; Philadelphia Laryngological Society.

Letters to the Editor.

SUSPENSION IN THE TREATMENT OF LOCOMOTOR ATAXIA

Cincinnati, *May 29, 1889.*

To the Editor of the New York Medical Journal:

Sir: Dr. Hammond, in concluding his article in your Journal, speaks of having more recently modified the original method by dispensing altogether with the arm supports, applying the force to the head and neck. I began this same method of treatment on the 10th of March last. Whether or no this antedates the doctor's treatment I can not say. After suspending my first patient three or four times by the arms at Max Wocher's, one of the leading instrument-makers in the city, it occurred to me that very much more benefit might be derived by applying the force higher up. I thereupon directed them to remove the arm supports and with every care and precaution to suspend the body by the occiput and chin. This treatment has been continued ever since with an occasional return to the arm supports. There can, I think, be no question as to the utility of this method over the old. If the benefits to be derived from this treatment are purely mechanical, that of stretching the cord and breaking up old adhesions, then it must be conceded that the higher up the force is applied the greater the traction on the parts below. Care, of course, should be exercised in every case in adjusting the chin-rest and the strap to the occiput; the pressure should be distributed as uniformly as possible.

W. H. DeWitt, M. D.,
Late Physician to the Cincinnati Hospital and to Longview Asylum for the Insane.

Proceedings of Societies.

NEW YORK SURGICAL SOCIETY.

Meeting of March 27, 1889.

Dr. Charles K. Briddon in the Chair.

Operation for Epispadias.—Dr. Willy Meyer presented a boy, aged thirteen, on whom he had operated for epispadias In the beginning of April, 1888, the patient had been admitted into the German Hospital in a deplorable condition. There was an ulcerative eczema, which covered the scrotum, hips, and buttocks, and the urine was constantly dribbling from him, as the vesical sphincter was insufficient. Another surgeon had tried before to cover the urethral groove by a plastic operation, a flap being taken from the lower portion of the abdomen, and to establish an artificial urethral fistula leading straight into the bladder, just below the malformation of the prepuce, hoping thus to effect an easier withdrawal of the urine into the urinal which the boy had been compelled to wear. The latter result had been accomplished, but the urine had continued to pass as before.

By a number of plastic operations the speaker had succeeded in forming an artificial urethral canal, the material or tissue

used being taken partially from the prepuce, which had been first transplanted to the upper surface of the penis, above the glans, by Dr. Lange, then attending. Dr. Lange had also performed median section for permanent drainage of the bladder. The vesical fistula mentioned above was also closed by a plastic operation, a very good result having been attained by the use of the continuous buried catgut suture, supported by plate sutures. To-day the boy was able to hold his urine for an hour longer. The capacity of the bladder was nearly three ounces. If the bladder was overdistended, there was leakage on account of the congenital insufficiency of the sphincter. During the night the patient got up two or three times, and the penis remained dry. At the point of the so-called infundibulum and at the vesical fistula small diverticula had developed. They had to be pressed out at the end of each micturition, as they always retained some urine. To their presence was also due the obstinacy of the slight catarrh of the bladder, which was still under treatment. The speaker was now stretching the bladder by frequent injections to increase its capacity, and hoped to obtain perfect continence by the application of a truss-like apparatus.

Gastro-enterostomy for Cancer of the Stomach.—Dr. MEYER also presented a specimen showing the stomach and a portion of the jejunum from a patient, fifty-two years of age, on whom he had performed gastro-enterostomy for cancer of the stomach, on December 31, 1888. The artificial anastomosis had been perfected by a continuous catgut suture, Senn's plates or Abbe's rings not being on hand. The parts having been replaced, the abdominal wound had been closed by separate continuous catgut sutures of the peritonæum and skin, and silk-worm plate sutures passed through the abdominal wall, including the peritonæum.

The patient had done very well during the first four days, there being a shallow, painless abdomen, no vomiting, a good strong pulse, and a temperature not exceeding 101·5° F. He had been given small doses of laudanum, and fed by nutritive enemata. On the fifth day ileus had set in, as was the rule after this operation if a portion of the small intestine somewhat distant from the pylorus happened to be attached to the stomach. (In this case the nearest coil had been raised from the true pelvis and attached, according to Luecke's advice.) At the same time the patient had become delirious and had jumped out of bed, his pulse being accelerated, but the temperature normal, and no tympanites present. During the following night, although both hands had been tied to the side of the bed, the patient had managed to get one hand under the dressing and had torn the wound open. The wound had probably been slightly separated before. The house surgeon, when summoned, immediately closed the abdominal wound again, but the patient died twelve hours afterward, with a temperature of 104° F. The speaker thought that the cause of the delirium had been iodoform poisoning, a very small amount of the powder having been sprinkled around the sutured wound of the intestinal tract.

The post-mortem examination had shown the existence of adhesions between the different coils of intestine which had been handled, but not a drop of pus. The stomach and jejunum had been found in firm union. The opening in the small intestine was situated ten inches above the middle point between the pylorus and the ileo-cæcal valve. The speaker believed that we should never rely on the separate sutures, even with the support of silk-worm plate sutures, in closing an abdominal incision above the umbilicus, and especially not in male subjects. The thread should pass through all the tissues at once, peritonæum included. Separate stitches might still be used to unite the peritonæum, fascia, and skin.

Multiple Lipomata.—Dr. FRED KAMMERER presented a patient having a number of small tumors in the subcutaneous tissue scattered over his body in somewhat symmetrical situations on the two sides. One, situated on the outer aspect of the right upper extremity, he had excised or rather shelled out, and, subjecting it to microscopical examination, had found it to be a lipoma which was undergoing sarcomatous degeneration. The appearance of these growths seemed to be dependent on a neurotic condition comparable to multiple fibromata. Whether they began as mixed tumors, or as multiple lipomata which afterward degenerated, he could not say, as he had only examined one of them, which had been growing more rapidly of late and had given the patient discomfort, and had therefore been excised.

Dr. J. A. WYETH spoke of recently having had a case in which there were twenty-nine tumors, scattered over the arms and legs and trunk, which were evidently lipomata.

The CHAIRMAN asked whether there had been any researches in regard to the tendency of such tumors to undergo malignant degeneration.

Dr. KAMMERER replied that his attention had been called to one instance of this kind, published in a recent number of Virchow's "Archiv." A neuro-fibroma—one of many similar tumors on the body of the patient in question—situated in the popliteal space, had developed into a large sarcoma. But he knew of no other such instance.

Dr. A. G. GERSTER wished to put upon record a case which had come under his hands a number of years before. The patient was a man of about fifty years, and a brewer by occupation. An increase of adipose tissue had taken place more or less over the whole posterior aspect of his body, and anteriorly on the thighs, and the masses of fat had been so distributed as to produce an appearance which gave one an impression that the patient had a number of large, symmetrical fatty tumors. One particularly large mass had been situated between the shoulder blades, and two others on either side of the neck behind, reaching to the middle part of the occiput. These three tumors had required operation on account of the discomfort which they gave the man when lying down. The central tumor proved to be as large as a grown child's head. It lacked the encapsulation usually seen in a lipoma, and its tissue blended imperceptibly with that surrounding it. In constitution also it differed markedly from a lipoma. In this tumor the fat occurred in small and dense masses between thick and dense planes of connective tissue regularly arranged. As the latter tissue was very vascular, the operation was a bloody one, and this, together with the strictly symmetrical structure of the tumor, made the case remarkable.

Strangulated Umbilical Hernia; Operation for Relief of Strangulation and Radical Cure; Death. (Reported by Dr. D. M. MARVIN.)—The CHAIRMAN read the history of a case of this sort. The patient, Henry E., aged fifty-two, married, a German by birth and a cigarmaker by trade, entered the Presbyterian Hospital on March 10, 1889. He gave no rheumatic or specific history, and had used alcohol moderately. For the preceding seven years he had had an irreducible ventral hernia, which he had supported with a bandage. On March 10th, while sitting on a sofa, he had felt a sudden increase in the size of the tumor, attended with very severe and "sickening" pain. Two physicians were called in, who administered morphine hypodermatically, and attempted for twenty minutes to reduce the tumor by taxis, but without success. Warm applications were made, and nine hours afterward the ambulance was summoned, which brought the patient to the hospital.

On admission, he was found to be well nourished, with an excess of fat and no anæmia. Temperature 97·8° F., pulse 96,

respiration 24. The urine showed no abnormity, and pain and other symptoms had been masked by the opium which the patient had received. Examination showed immediately to the left of the umbilicus a tumor four inches in diameter, which was tense, painful, dull on percussion, with the skin over it somewhat reddened and no impulse perceptible in it on coughing. A diagnosis of strangulated umbilical hernia was made, and Dr. Briddon, the attending surgeon, sent for. The patient's abdomen was shaved and lightly scrubbed with soap and water, then washed with a solution of bichloride of mercury (1 to 2,000), and with a solution of iodoform in ether.

Chloroform having been administered, an incision five inches long was made in the median line over the tumor. The sac was opened and found to contain a large quantity of omentum and a loop of intestine six inches in length and deeply congested. On dividing the constriction, the color of the intestine improved, and it was returned to the abdominal cavity. The omentum was quite firmly adherent to the sac, and the sac in places to the abdominal parietes. Ligatures of stout silk were placed around the omentum close to the transverse colon, and the omentum was cut away. The sac was then liberated from the surrounding tissues, ligated, and cut off. The ring, about an inch and a half in diameter, was closed with four silk sutures. Deep sutures were passed through the abdominal walls, including the peritonæum, with a Martin's needle, and followed by superficial sutures uniting the integument alone. The adipose tissue over the abdomen was two inches thick. A large antiseptic dressing was then applied and the patient put to bed. The omentum removed weighed eighteen ounces. The patient recovered from the anæsthetic without unpleasant symptoms, and suffered only moderately from shock. A third of a grain of morphine was administered hypodermatically and free stimulation with whisky employed. The patient then rested comfortably for the rest of the night.

On March 11th the temperature was 98·4° F., the pulse 104, small but with fairly good tension, the respiration 28, and the pupils somewhat contracted. In this condition the patient passed a comfortable day, but at 6 P. M. the temperature had risen to 101·4° F., the pulse had fallen to 102, while the respiration remained at 28. At the same time the patient complained of labored breathing and of pain in the right lumbar region, also of excessive thirst, which was somewhat relieved by cracked ice. The urine was free, and was normal on examination.

On March 12th the temperature was 101·2° F., the pulse 114, and the respiration 30 and entirely thoracic. The abdomen was tympanitic; the patient complained of dyspnœa and was bolstered up in bed; he was also very restless, with contracted pupils, anæmia, and clammy sweat covering the skin. Powdered opium, a fourth of a grain every two hours, was ordered for its stimulating effect on the heart. The patient was very restless all day, desired his pillows constantly changed, and complained much of pain in the right lumbar region. Tympanites grew more marked, and the pulse small and wiry. At 4 P. M. the temperature was 99·5° F., the pulse 110, and the respiration 30. At 6 P. M. the temperature had risen to 102° F. and the pulse to 114, while the respirations had fallen to 28.

On March 13th, after the continuance of this condition through the night, abdominal pain and tympanites became more and more pronounced, and the dyspnœa continued, the respirations ranging from 28 to 34, and the pulse from 108 to 120, being still wiry in character. In the twenty-four hours forty-eight ounces of urine had been passed, and it was normal on examination. At noon the temperature had been 101° F., the respiration was 30, and the pulse 120. At 4 P. M. the patient had begun to fail more rapidly, and a wandering delirium had set in, the respiration being 34, the pulse 88 and very feeble. Free stimulation with whisky was resorted to, and occasional doses of digitalis to relieve pulmonary œdema. The tympanites had become very marked. The patient continued to fail, and died at 7.20 P. M. An autopsy was not allowed.

The speaker added that this case illustrated the condition in which such patients were when they first came under the care of surgeons in our hospitals as a usual thing. The treatment which they had undergone previous to being brought to a hospital was usually the worst possible—heroic treatment by cathartics, persistent and forcible attempts at reduction by taxis, large doses of morphine, and, worst of all, delay. A large majority of his own operations had been followed by death where he had had such patients to treat.

Rupture of the Intestine; Hæmorrhage; Laparotomy; Death. (Reported by Dr. D. M. Marvin.)—The Chairman also read the history of a case of this sort. Ernest S., aged thirty-nine years, a native of Germany, married, and a laborer by occupation, was admitted into the Presbyterian Hospital on March 12, 1889, and gave no history of syphilis or of rheumatic taint; he had used alcohol moderately. On the morning of that day he had been leading a team of horses hitched to a Fifth Avenue stage to a trough, when the pole struck him in the abdomen, about the umbilical region. He was immediately seized with great pain, and, as he was quite unable to walk, the park ambulance had brought him to the hospital.

On admission, he was found to be a well-nourished man, without anæmia or the symptoms of alcoholism (although looking like one addicted to drink), but in a condition of profound shock. The pulse was 70 and exceedingly small, the temperature 96° F., the respiration accelerated and thoracic, and the body cold. Examination revealed no contusion of the abdominal wall, but the muscles over the abdomen were very rigid. In the lower umbilical region there were slight distension, dullness on percussion, and great tenderness, the rest of the abdomen being tympanitic. Over the liver the resonance was tympanitic on light, but flat on deep percussion. Six ounces of normal urine were withdrawn with a catheter. A movement of the bowels occurred during the morning. There was a constant desire to urinate, so that a bed-pan was kept constantly under him. A rupture of the bowel was suspected, and Dr. Briddon sent for.

Powdered opium, a fourth of a grain every two hours, and alcohol in small quantities, were ordered. Hot bottles and warmed blankets were placed about the body. The pulse fell to 56, continuing very small. The patient was not restless, but complained much of thirst and abdominal pain. Dr. Briddon decided that operative measures were contra-indicated in the existing condition of shock.

During the night the condition improved, the pulse reaching 84 and becoming slightly stronger, and the temperature 97·5° F. The tympanites, however, had become more marked, and the abdominal pain had not abated. An ice coil was placed over the abdomen, and opium in quarter-grain doses given every hour. The entire abdomen was tympanitic on light percussion, and on deep percussion dullness was found in the lower umbilical and upper hypogastric regions. In these sites also the distension was most marked. The urine was normal and had been voided voluntarily during the night.

A consultation was held at 2.30 P. M., and immediate exploratory laparotomy decided on. Chloroform was administered, the abdomen was shaved and prepared in the ordinary antiseptic manner, and, the pulse being very poor, an enema containing three ounces each of whisky and warm water was given before the operation. An incision four inches long was made in the median line, beginning at the umbilicus, the peri-

toneal cavity was opened, and about three pints of semi-clotted blood were let out. The left rectus muscle was found ruptured transversely in its lower part, and the small intestines were firmly matted together by old adhesions. Accordingly, the incision was enlarged upward and the intestines were turned out *en masse* and protected between hot antiseptic towels. Their surface was carefully explored for bleeding points, and likewise the bladder, the spleen, and the lower surface of the liver. The peritoneal cavity having been thoroughly washed out with hot water (at 105° F.), an attempt was made to restore the intestines to the abdominal cavity. Then for the first time a fæcal odor was detected. The intestines were again lifted up and the mesentery was gently separated, and in it a rent was found leading up to a small rupture in the ileum. On separating the parts, a gush of blood came from the depths of the cavity, but only momentarily. After diligent search, a bleeding point in the mesentery was found and ligated, when the hæmorrhage ceased. The opening in the intestine was then closed with Lembert sutures, and the peritoneal cavity again thoroughly irrigated with hot water. On attempting to return the intestines to the abdominal cavity, it was found that this was impracticable because of the tympanites and the firm adhesions. Three small longitudinal incisions were then made into the gut, through which much gas escaped, and immediately closed with Lembert sutures. The intestines were then returned to the abdominal cavity, a glass drainage-tube was fastened in the lower angle of the wound, and deep silk sutures were passed through the entire abdominal wall, including the peritonæum.

The poor condition of the patient had demanded that haste be used in the performance of the operation. Three times enemata of whisky and warm water had been given, as at times the pulse had been hardly perceptible. An antiseptic dressing was applied and the patient put to bed and given warm applications and cardiac stimulants. No unpleasant symptoms followed the anæsthesia; the pulse improved, but continued very rapid. Whisky, digitalis, and opium were given alternately in small doses. The temperature at 8 P. M. was 100° F. During the night the patient slept about four hours; he was restless and thirsty, and had two watery, blood-stained movements.

On the following morning the temperature was 104·4° F., the pulse very rapid and feeble, the respiration 40 and thoracic, the abdomen tympanitic, and the dressing somewhat blood-stained. At 9 A. M. the temperature was 105° F.; the patient rapidly grew weaker, and died at 9.20.

At the post-mortem examination there was about a pint of semi-clotted blood in the peritoneal cavity. The openings in the intestine were found firmly healed. On lifting up the mass of intestines and separating the mesentery, a vessel, one of the vasa intestini tenuis, was discovered on which no ligature had been placed, the distal portion only of this severed artery having been tied. The intestines, especially the ileum, were markedly congested.

Dr. GERSTER asked for the experience of the meeting as to the results obtained from washing out the stomach as a preliminary to operations for intestinal obstruction. The proposition had originated in Germany, and had been strongly upheld at the German Congress of Surgery held at Berlin in 1887. He had once had a case of obstruction of the bowel, with persistent vomiting, which had reduced the patient to a very low point, and had siphoned out the stomach. Nearly a gallon of very offensive fluid fæces had been removed in this way, the amount and fœtor of which had been to him astonishing. The difficulties experienced in restoring the intestines after opening the abdomen were, in his opinion, due to their being distended with fluid fæces, not gas. By washing out that portion of these matters which had regurgitated into the stomach, not only the danger of inspiration of the vomited fæcal matters was eliminated, but also more space was made in the abdominal cavity for the intestines to occupy.

The CHAIRMAN said that he remembered making an autopsy in a case of intestinal obstruction some years before, in which during life the persistent vomiting of a greenish fluid had been a prominent feature, and in which he found enormous dilatation of the stomach, which was filled with the same kind of fluid as that vomited during life. He also referred to a case under his charge at the time in the Presbyterian Hospital, in which there was a localized peritonitis caused by the kick of a horse, and also moderate symptoms of obstruction and vomiting of greenish fluid. The last had been relieved by siphoning out the stomach.

Dr. F. E. LANGE thought the most important question to be decided in connection with doing laparotomy for intestinal obstruction was as to what operation the patient would be able to stand; practically a choice had to be made between laparotomy with attempts to remove the obstruction, and enterostomy. No doubt it was always desirable to ascertain the nature of the condition leading to obstruction and relieve it where practicable, and to know whether or not the obstruction was of such a nature that through its persistence death must occur. No doubt it was always preferable to operate as early as possible if at all, and therefore a correct diagnosis, though extremely difficult, was of the greatest importance. But at the same time it was not a good rule to open the abdomen in the radical way described by Dr. Gerster in all cases, especially where the patient was very much reduced. If we made operation by such a laparotomy a fixed rule, a number of patients in the later stages of intestinal obstruction would die from the effects of the prolonged or extensive operation who might have been saved by enterostomy. In other words, there was a point beyond which the immediate dangers of a radical operation were too great, and we must draw the line inside of what the patient could endure. Only larger experience would teach us just where this ine should run. Another point to be decided was as to what operation was best after the diagnosis had been made, for we ought not to forget the experiments of Senn and others, made with a view to shortening the duration of the operation as much as possible, nor yet the idea of leaving the obstruction alone and making an anastomosis of the intestinal tube leading around it. He had once operated on a child for intussusception, before Senn's ideas had been published, by doing ileo-colotomy, there having been no possibility of disengaging the gut. Death had followed from shock. He would remark that in this case—where it was impossible to reduce the invaginated part—this had been due not to the presence of adhesions, as had been supposed, but to the engorgement of the intussusceptum beyond the point of infolding. Even after death it was quite impossible to pull back the swollen intussusceptum through the narrow ring through which it had entered. Now, in a similar case, he would not make any prolonged attempts at reduction, but would use either the Senn plates or the catgut rings as made by Dr. Abbe, and effect anastomosis.

The speaker had operated repeatedly for intestinal obstruction, the causes of the obstruction having been quite varying; thus, intussusception, a nodular mass of mucus and epithelium collecting just after birth, an impacted gall-stone, strangulation by a band of adhesion resulting from tubercular peritonitis, intra-abdominal abscess and perforation following an operation for strangulated hernia, and an acute attack of obstruction supervening in a chronic form of the disease (four cases). Almost all of these patients had come under observation late, and only four had recovered—one having strangulation by a band, one adhesion and perforation of the gut after kelotomy done five

weeks before, and two cancer of the large intestine treated by enterostomy. The stage at which the operation had been performed, and other elements complicating the situation in these various instances, had led to an unfavorable or a favorable result. He would mention one instance particularly, which went to prove how long a time ileus might last and yet come to a spontaneous cure. A woman had undergone laparotomy for the removal of an intra-abdominal tumor with broad insertion in the pelvis, and a second time for the removal of the other ovary. After the second operation, ileus was developed and, as its form was not a very acute one, he waited till the eighth day before the symptoms seemed to call for operative interference, when he performed a third laparotomy and attached the beginning of the sigmoid flexure to the parietal peritonæum. He had intended to incise the gut on the following day, but during the night an ample movement occurred. The woman recovered health, although at intervals thereafter there were slight recurring attacks.

Dr. Gerster thought a point of very great importance in abdominal operations of every sort was to finish them as rapidly as possible, and for this purpose he would advise that in operating for the relief of internal obstruction the incision made should be relatively of ample length. He always made a large incision so as to find the cause of the obstruction at once. He had once been present at an operation where the usual small incision for exploration had been made, and an hour spent in vain searching for the condition present. The patient afterward died and the cause of the trouble was first discovered at the autopsy. If the condition of a patient was such that an operation was still feasible, he would make this comparatively long incision, note the landmarks, and proceed with a better promise of success. At least he believed the good results to be thus obtained would overbalance the losses chargeable to the size of the wound, and would easily offset the many cases where, after making a small incision, nothing could be found, and the operation had to be abandoned or an artificial anus made and the patient left to his chances, the condition remaining in the portion of bowel below the artificial outlet being unknown. Where intussusception, for instance, could be made out prior to operation the artificial anus was the proper means of treatment, but where the mischief was caused by a strangulation or volvulus leading to gangrene, the patient would die in spite of the artificial anus. Rather he would push on to a diagnosis, get his hand inside the abdomen, and reach a diagnosis as quickly as possible. There were a number of conditions which only a large incision could enable one to recognize and deal with intelligently.

Dr. Lange repeated that the surgeon would meet with cases where the patient's vitality would not endure the shock of an extensive operation, however cautiously done, where, nevertheless, he might recover after the making of a small incision, or a temporary enterostomy. Some patients must always be sacrificed if enterostomy was laid down as the only operative rule, and the difficulty lay in deciding in which direction was the greater danger.

The Chairman agreed with Dr. Lange that in the earlier stages of intestinal obstruction, in which shock was not a pronounced feature, and the general condition would warrant such a procedure, an incision long enough for thorough exploration and the institution of such proceedings as were necessary for radical cure were in order; but that in the later stages, where the nature and seat of the obstruction were unknown, and the abdomen was tympanitic—in fact, in cases in which the patient was *in extremis*—the more prudent course to pursue would be to make an incision only long enough for temporary relief, by the formation of an anus præternaturalis.

Dr. R. Abbe remarked that in a case recently reported by him the wisdom of this course had been made quite clear. The patient was nearly moribund at the time, when a small incision was made which enabled him to introduce two fingers and discover an enormous distension of the colon. Its hepatic flexure was drawn to the mouth of this small opening and there emptied. Six weeks later the patient was operated on with Senn's plates and an anastomosis made around the constricted portion of intestine, and he entirely recovered.

Dr. Wyeth held that in cases where symptoms of obstruction had existed for several days, and where the patient's abdomen was greatly distended and collapse was imminent, a small incision should be made, and the first loop of distended gut which presented at the incision opened. He had recently operated in just such a case, and the patient had been saved. A large abscess had formed in the pelvis and had occluded the intestine. He evacuated the former *per vaginam*, and the obstruction ceased. If collapse was not imminent, a search for the point of occlusion was justifiable, and just above this point, when found, the enterostomy should be done. Neither exsection nor any other very extensive curative procedure should be undertaken until the patient's condition was improved.

Removal of a Thyreoid Cyst.—Dr. Charles McBurney presented a cyst of the thyreoid of large size, of four years' growth, removed through a median incision three inches in length made through its capsule and a thin layer of normal gland tissue. The handle of the knife had been used to effect enucleation, and the hæmorrhage had been insignificant. The operation wound had healed primarily under one dressing.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN OBSTETRICS AND GYNÆCOLOGY.

Meeting of April 25, 1889.

Dr. J. E. Janvrin in the Chair.

The Manual Treatment of Diseases of the Pelvic Organs according to Brandt's Method.—Dr. H. J. Boldt read a paper with this title, first making a practical demonstration of some of the manipulations employed on a patient suffering from partial procidentia. He concluded that the treatment required much time and patience, and so its use was limited in practice to patients whose means allowed them to pay for long-continued professional services. The method required the whole time and attention of the operator who would use it successfully. It was quite important that he should learn it from seeing it done by Brandt himself or some of his most experienced followers, and not from reading. Success required very exact and highly trained faculties for making a physical diagnosis of gynæcological diseases, else more harm than good would be apt to result. Brandt had attained a success in the use of his method superior to that of any of his pupils, not only on account of his judgment in the selection of cases and his technical skill, but owing also to the system of voluntary movements which he used in conjunction with the massage. The method was not applicable in the case of very fat patients. The conditions which contra-indicated the use of the Brandt method were: 1. All acute inflammatory processes, except some which might arise during treatment. 2. Dilated tubes. 3. The presence, or the suspected presence, of pus. Those in which it was indicated were: 1. Chronic and subacute parametritis and perimetritis. 2. All non-acute uterine inflammations. 3. Chronic and subacute oophoritis. 4. Catarrhal salpingitis. 5. All displacements of the uterus, with or without adhesions (provided no dilated tubes were present). 6. Proctocele and cystocele. 7. Uterine hæmorrhages not dependent upon neoplasms in the substance or cavity of the uterus, or upon endometritis. 8. In-

continence of urine dependent upon relaxation of the vesical sphincter. 9. Hæmatocele. 10. Floating kidney. 11. Prolapsus recti.

In the last three conditions named the speaker had no experience, but, from personal statements made by Brandt, Nissen, and Professor Schauta, he was particularly confident of the successes obtained by them in the treatment of hæmatocele. He thought hæmorrhages or catarrhal discharges due to a diseased endometrium could be treated in a more radical and rapid manner by the use of the curette and alteratives. While great gentleness in the employment of massage was necessary, some pain must usually result from the manipulations needed. Before beginning the direct manipulation of the diseased organ, a preliminary massage, consisting of small circulatory stroking movements over the promontory of the sacrum, was to be employed. The lymphatic glands so numerous here were to be thus stimulated. The parts surrounding the seat of the disorder were also to receive massage till the sensibility became lessened. After the specific treatment, of whatever sort, the séance was to be closed by light massage, and finally vibratory pressure with the open hand on the lower part of the abdomen to produce a certain soothing effect. If by a mistaken use of the method a more acute inflammation or a hæmatoma was caused, very gentle and brief but often-repeated treatments were to be continued, the patient being in bed and ice-bags applied in the intervals of the massage, until the previous treatment could be resumed.

The length of a séance might vary from three to forty-five minutes, according to the nature of the case. The speaker gave accounts of several cases in his own practice, especially of incontinence of urine, cystocele, and procidentia, where the happiest results had followed massage by Brandt's methods. He did not think this method of treatment would avail in anterior flexions with loss of muscular substance, or that it would be as efficient as Alexander's operation for long-standing or very obstinate backward displacements of the uterus. He strongly recommended it for removing pelvic exudations. In the case of a number of the manipulations made for special conditions, which the speaker described, exercise of the abductor and adductor muscles of the thighs was an important adjuvant. He believed the Brandt methods destined to render more important services in gynæcological practice when greater skill and wider experience in the selection of cases were attained.

Dr. W. M. Polk, after discussing the details of the Brandt method in displacements of the uterus with adhesions, or with inflamed ovaries and tubes, agreed with Dr. Boldt that the whole system was an elaborate one, demanding the entire time of one who would use it effectually. He would gladly see it introduced into some institution where it could be carried to that point of perfection necessary to its not doing more harm than good.

Dr. H. C. Coe agreed that special training and the tactus eruditus were needed for the selection of cases to be treated by Brandt's method, and especially in determining the position, nature, and amount of adhesions. He had recently performed an autopsy on the body of a woman who had once undergone an Alexander's operation which had failed to produce the slightest improvement of her condition. He had found intestinal adhesions due to local peritonitis. In this case the patient had suffered during life from colicky pains, but the uterus had been freely movable and the adhesions slight in amount and distensible. He thought little could be expected from massage where the ovaries were much hypertrophied or cirrhotic, or where fibroids had been developed. The whole method seemed to him to demand more skill and more knowledge of pelvic anatomy and diagnosis than gynæcologists now had.

Dr. A. P. Dudley thought the Brandt method had but a narrow field of usefulness, judging from the numerous admitted contra-indications. Laparotomies were constantly showing such unsuspected and previously undiscoverable conditions in the pelvis, even where the best men had attempted a diagnosis, that such manipulations as were used in the Brandt method seemed to him fraught with serious danger. The time could scarcely come when small suppurative deposits in different parts of the pelvic viscera, or small exudations of blood, would be certainly determined without an incision.

Dr. A. H. Buckmaster remarked that he had been using manipulations of his own devising to stretch adhesions for a year or more and had got very good results. There was always some danger connected with any such plan of treatment, and a full knowledge of pelvic anatomy was required. But he thought it possible to exaggerate the difficulties connected with the method, and especially the frequency of conditions hard to detect which contra-indicated its use.

Dr. Boldt repeated that the fact should be clearly defined that, in order to use Brandt's method, an operator needed more skill and more ability in diagnosis than the ordinary gynæcologist possessed, else more harm than good would result. He would exclude from treatment by this method cases of oophoritis where there was much hypertrophy, peritoneal thickening, or cystic change, as a cure, if attainable, would demand a very long course of treatment. Nevertheless, in the milder inflammations of both ovaries and tubes very good results could be secured. Adhesions were never to be parted forcibly; their stretching was to be a slow and gentle process, continuing week after week. He had failed in certain cases where the uterus was bound down by thick veils of adhesions or plastic exudations of very great density, he would admit. It was to be remembered that Brandt, in treating thousands of cases, had never had an accident. After all that had been said, the method was not so limited in applicability as some imagined. Even so, if it were employed only for the cure of procidentia, mild cases of oophoritis, and some of the posterior displacements, it would deserve an important place in gynæcology.

The After-history of Incomplete Ovariotomies.—Dr. Coe read a paper with this title. The class of cases to which he referred was that in which the cyst was so firmly adherent that the operator judged it better to drain rather than remove it. He did not refer to exploratory incisions. He wished to invite discussion as to whether the after-history of many cases of incomplete ovariotomy did not show that the subsequent condition of the patient, so far as subjective symptoms were concerned, was worse than before the operation. The following history would illustrate his meaning:

A lady, aged thirty, had received treatment for three years for a left latero-flexion of the uterus, complicated by prolapse and cystic degeneration of both ovaries. The patient had had peritonitis, but was fairly comfortable. When a cyst of the size of an orange had developed, he had decided upon laparotomy. The operation had proved quite difficult. The cyst on the right side he had been able to separate from its adhesions, but that on the left had been so firmly attached to the uterus and to a loop of the small intestine that he had not considered it possible to effect separation, and had accordingly emptied the cyst, stitched it into the abdominal wound, and left a drainage-tube inside the sac and another passing to the bottom of Douglas's pouch. The patient had recovered excellent general health after this operation, but he could state positively that her local condition was worse than before it. In addition to the former pains she had constant vesical irritation and severe tenesmus with each act of micturition, also frequent intestinal colic, a more profuse menstruation, the same amount of dysmenorrhœa, and a drawing up of both uterus and

bladder. The last named condition and the resulting vesical irritation were present in another patient of his, who had had a too successful Alexander's operation performed. He was convinced that where a small, deeply seated, adherent cyst was forcibly drawn up and stitched into the abdominal wound, the uterus and bladder, being dragged up with the sac, were fixed in an abnormal position, from which distressing symptoms must result which it was difficult or impossible to relieve. He thought drainage through the vagina could in many cases replace stitching of the sac into the abdominal wound. The risks of sepsis and of an exhausting suppuration following the latter procedure were also to be remembered.

Dr. R. A. Murray said that in his dispensary work he met with many patients whom various operators here, in other cities, and abroad had subjected to various radical surgical operations. He had been astonished to see how many had not been benefited. Most of all had he observed this where attempts had been made to drain cysts that could not be removed.

Dr. Polk fully agreed with Dr. Coe that the removal of a firmly adherent cyst should be attempted only by those of great experience. The question of tapping and draining then arose. He would consider the position of the sac, and whether the adhesions best allowed of its being lifted into the abdominal wound or sunk so as to be drained through the vagina. In the latter event he would add abdominal drainage. In the case of large cysts, he would, before opening them, set up adhesions holding them in the desired position, as was done with displaced pancreatic cysts, so that afterward they could shrink down to their natural place.

Dr. J. R. Goffe, while he admitted that many adherent cysts must be left untouched, thought there was too much timidity shown about removing them complete, when the abdomen was once opened. Our present means of controlling hæmorrhage by hot water, etc., should make us readier to get out tumors, even where great difficulties had to be encountered. The speaker related the history of two such cases in which he had operated with entire success.

Dr. Polk thought the question limited to cases in which the best operators would not venture on removal; Dr. Dudley expressed his appreciation of the point made by Dr. Coe; and Dr. Coe closed by saying that he had spoken from the standpoint of an operator of limited experience, and was in sympathy with Dr. Polk's views as to the management of the sac when drainage was decided on.

CLINICAL SOCIETY OF THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.

Meeting of April 20, 1889.

Dr. Andrew H. Smith in the Chair.

Observations on Cough and Cough Remedies.—Dr. James K. Crook read a paper with this title. (See page 676.)

Dr. T. E. Satterthwaite said that one was very apt to treat a cough as a symptom, whereas he thought it really should be treated by itself. He had very little to say, however, upon the subject, as Dr. Crook had covered the ground very well, and brought out the points he would have brought out himself. It seemed to him that a cough might be developed from any disease in any of the principal cavities of the body, from the larynx, as stated by Dr. Crook, down to the abdominal cavity and the pelvic cavity, and the cough itself might be caused through some unnatural change in these parts of the system. It seemed to him that we should look at a cough in that way; try and trace it back to the point whence it rose, and then treat the disease rather than the cough, which was but a symptom. He believed that if we treated coughs in that way we should usually meet with success.

Dr. S. S. Burt considered that many of the coughs that patients had were necessary parts of their disease, and they were inclined to treat them and ignore the origin, which they did not understand. In cases of bronchitis they had their dry stage and then their moist stage, which gradually increased and then gradually decreased. He thought that in the majority of coughs if the patients did not take any medicine they would be just as well off. There were some medicines which hastened the facility of expectoration and relief of a cold. Ipecac was one of those that had been used the most. Chloride of ammonium had also been used considerably. In cases of bronchitis, however, it would be better if people did not put anything into their stomachs. In chronic cases he had used some of these expectorants, but he did not remember any chronic cases where patients had been cured by them. They went on coughing, though they might be somewhat benefited or relieved. In chronic bronchitis one obtained more benefit by going to a warmer climate. In such cases he had sent persons South, and their cough had left them before they had got farther than Virginia, so remarkable was the effect of change of climate. In cases where morphine and other harmful drugs were usually prescribed, a change of climate would prove more beneficial, but it could not always be said whether it was best to send them into the country North or South until it had been tried. If patients were filled up with cough medicines, their stomach and bowels were upset, and perhaps no end of injury was done to the nervous system.

Now, in phthisis and in all those troubles of the lungs which produced a cough, we could usually relieve it. Of course it might become aggravated, and create a reflex trouble in the throat. He had found it a good plan in these cases, chronic or acute, to wash the throat with a solution of morphine in glycerin. He often gave a troche containing a little opium rather than a prescription in the form of a liquid. The troche, by slowly dissolving in the mouth, imparted its full strength where it was most needed, while it was necessary to take a great deal of a liquid to have the proper effect on the throat. He had found in actual experience at Bellevue that there were but few cases cured by giving medicines. He had not much faith in them, and did not advocate them or prescribe them very much.

It was very important, as Dr. Crook had said, to trace the source of a cough. We knew that by putting our finger in our ear it would make us cough at times, and the speaker thought there were many other nervous affections of the body that caused cough.

As Dr. Crook had already said, proper clothing would sometimes relieve a cough, while with many, very simple things would check it, such as a dose of castor-oil, or a piece of flannel wrapped around the body. These simple remedies were much better than filling up with drugs, where it could possibly be avoided.

Dr. R. W. Wilcox said that there were some points that he had been led to consider upon looking over the subject of cough remedies. Of course, we all agreed with Dr. Crook as to finding out the cause of the cough. Supposing this done, there were some certain definite things in regard to cough remedies that we could state. It was probably well to give a mild expectorant, which would please the patient by the decrease of the irritation, and humor him by producing a secretion from the bronchial membrane. He had come to this conclusion from the large number of cases for which he had prescribed. Where there was much secretion, he believed that atropine would do more good than any other remedy. In the most careful inves-

tigations as to the sources of coughs, after the throat, lungs, and heart had been explored, there were numerous cases for which we could find no satisfactory anatomical basis. With nervous coughs he had succeeded better with the bromides than with anything else. One other point in which his practice had differed from that of others was the absence of opium or morphine in cough prescriptions. He had failed to find any cough in which morphine was advisable, except to ease the pain of a dying patient. We could get from the bromides all we wanted in the way of cough medicines. He presumed that out of the thousands of prescriptions that went from his clinic every year there were but two or three in which morphine appeared.

Dr. H. D. Chapin said that he agreed with what had been said in regard to the stomach. He thought there was a very close connection between the stomach and the bronchial tubes, and the objection that he had to a great many cough mixtures was that they had a tendency to upset the stomach. For this reason he thought they did more harm than good; but we had to give people something, as had been stated; hence, it seemed to him that we should give them something that would do as much good and as little harm as possible. He had had no experience with apomorphine. He thought that codeine was a valuable remedy, and he gave it in almost every instance. He believed that codeine, in the correct dose, would not upset the stomach much, and would ease the cough. He also gave chloride of ammonium a great deal, but the objection to that was, it upset the stomach in some cases. If we took these mixtures ourselves occasionally, it would, perhaps, open our eyes to the way they acted. He remembered, several years ago, the idea struck him to taste some of the drugs he gave, and the consequence was he cut off a great many of them. Take, for instance, compound tincture of cinchona, which was said to be an excellent tonic, good vehicle, etc. He had found that it almost made him vomit, and he did not give it any more in practice. He had found, too, that chloride of ammonium was very nauseous.

With reference to unknown causes of cough, there was one case he would like to report. It was a case of enlarged bronchial glands in a child, and it had been exceedingly difficult to find what the trouble was, as repeated careful examinations of the chest had always proved negative. But the child kept on coughing, in spite of all he could do, and finally a death certificate came in, with the statement that one evening she had been playing with her mother, had had a violent paroxysm of coughing, and had fallen dead. He had been fortunate enough to obtain a post-mortem examination, and had found there had been a very large gland, forming an abscess pressing upon a nerve. The death of the child had been caused by irritation of the abscess upon the nerve, which had broken down, probably, with the exertion. She had been having a little romp with her mother, and the exercise had caused the sudden death.

Dr. G. E. Abbott thought, with Dr. Burt, that it was best to try the simple remedies; and, with Dr. Chapin, that it was best to prescribe those things we had tried ourselves. He knew some time ago his father had had bronchial trouble, and he had used the ordinary spirits of camphor, which he had kept tied in his handkerchief, and frequently inhaled it. Lately he had tried it with patients. It was very handy, as it could easily be carried in a small pocket, and was always at hand when wanted. It was one of the best remedies he knew of.

Dr. W. A. Shufelt said that he would like to say a word in regard to the habit of coughing which he thought had been lost sight of. He believed that a cough was in every case a reflex paroxysm, and that the more one coughed the more likely it was to be repeated. After the patient had had a cough for several days it required much less irritation to bring on this paroxysm than at first. He thought many patients got this habit, and by exciting the nerves irritated the cough. He had seen many cases in which the patients, having been directed to refrain from coughing as much as possible, had improved rapidly. It was a subject worthy of a great deal of investigation. It was well known that whisky or brandy or a similar stimulant would relieve a cough, and the speaker thought that could only be explained on the theory that the stimulant excited the nerve-centers in the brain, and in that way the paroxysm was reduced. He had seen some cases where a blister applied just behind the angle of the ear would do a great deal of good in relieving a cough. He had seen other cases in which a galvanic battery, using the positive pole below the angle of the jaw, would also relieve a cough. The theory of counter-irritants accorded with this view; that was, he stated, that counter-irritants, blisters upon the chest, acted more upon the central nervous system than by relieving the arterial pressure by drawing blood to the surface.

In regard to the treatment of cough, of recent years he had given up cough medicines of all kinds. He believed we could do more with such remedies as creasote and alum and turpentine. Turpentine and iodoform combined were excellent. Two drachms of creasote, two drachms of terebene, and two drachms of tincture of iodine in an ounce of refined spirits; fifteen drops of this, to be inhaled whenever the paroxysm came on, he considered far superior to the nauseous mixtures that were often given. In acute bronchitis, instead of using medicines he was in the habit of using a tablespoonful of terebene in a pint of boiling water, and directing the patient to inhale this three or four times during the day.

The Chairman said that there were some points that had occurred to him in the course of Dr. Crook's paper and subsequent discussion which he would like to bring up. In spraying the throat he had found iron, or a solution of tannin in glycerin, or, what he had used a great deal lately, camphoric acid in two-per-cent. solution, very good for this purpose. The camphoric acid was difficult to get in a greater strength than two per cent., but it could be made in two per cent. readily by rubbing up in glycerin and diluting with water. This agent, which had been quite recently introduced into practice, appeared to have a peculiar influence also in diminishing the amount of excretion from the mucous surface, and the experience he had had with it, which had not been very great, but still enough to enable him to come to some conclusion in regard to it, was that it justified the expectations in regard to it in Germany, both as an external and as an internal remedy. In chronic bronchitis he had found it of much use, as also in the way he had spoken of, using it by means of spraying.

The mechanical result of coughing must, of course, be irritating. It could not be otherwise. The rapid passage of air over an irritated surface, as in the act of coughing, produced a mechanical irritation which created a bad condition of things, and it was desired on that account that it should be mitigated as far as possible, but he was fully in accord with what had been said in regard to the use of opiates in these cases. The case must be a very exceptional one in which he would be willing to employ morphine or other forms of opium. The greatest sedative, greatest in its effect on cough, especially when there was an excess of mucous secretion—as, for instance, in the case of advanced phthisis—was cerium oxalate. A number of years ago a very extensive trial had been made of this drug at the St. Louis Hospital. A good many cases of phthisis had been at that time in the hospital, and each patient had been provided with a small quantity of the drug, with instructions to take it dry upon the tongue and wash it down with water, doing this immediately upon awakening. The results had been very satis-

factory, and he had since used it considerably. In some way or other it relieved the irritation of the bronchial mucous membrane, especially in phthisical cases.

He thought many cases of cough, in females especially, were attributable in a large degree to the hysterical element, and their mental impression went a good way. Something had been said already of the power which a patient could acquire of restraining a cough by voluntary effort. The Germans, he believed, employed that method to a considerable extent. For such cases a thrashing might be as good as anything. One high authority had some time since recommended a switch as the best cure for whooping-cough. If you had one of these hysterical girls who kept up an everlasting dry cough, touch her between the shoulders with a cautery, and if she did not get better in a little while, the application might be renewed. He thought in many cases that the cough would be lessened. Perhaps any other treatment that might be equally impressive would prove equally satisfactory. While upon the subject of irritation, he might mention—what everybody knew—how much the digestive canal had to do with it, and how successful the old women were in carrying off a cold with a dose of medicine, such as castor-oil, which had already been mentioned.

In treating a cough in the early stage of pleurisy he had been in the habit of strapping, binding the patient as tightly as possible, but in a manner that would leave him comfortable. As to chloride of ammonium, he had prescribed it a good deal, but he must say that up to the present time he had had no evidence that it had been of any special value. The taste of it was not very good, especially if combined with anything sweet. Now, in giving chloride of ammonium, he generally gave it in a little mineral water—Vichy, for instance. In that way it could be taken more comfortably. The vehicle to be used puzzled us a little at times. It would be found that a great many patients who said in advance, "Please don't give me anything sweet—I can stand anything bitter or sour, but don't give me anything sweet," would cut one off at once from the whole list of syrups. Lately he had been using chloroform water as a vehicle for many prescriptions, not only cough medicines but some others. Water at an ordinary temperature would dissolve about one per cent. of chloroform. It was sweetish, but not of that kind of sweetness that people objected to. There was, perhaps, a little sedative effect derived from it, but he was getting to like it more and more every day. It was one of those things he could taste himself without feeling remorse at the punishment he was inflicting upon his patients. Another point was overheated rooms. Many patients, as soon as they had a cold, would be shut up in a room heated up to 75° or 80°, and it would be thought that the patient was being done a great service. He had often broken up a long, troublesome cough by sending the patient out of doors when the air was crisp and cold.

Dr. Crook stated that he did not wish to be understood as professing that he had cured cases of chronic bronchitis with the formula known as "Stokes's expectorant." He simply regarded it as a useful combination of stimulating expectorants in cases where a stimulating expectorant was indicated, and had prescribed it with happy results in many hundreds of cases at the chest clinics of Bellevue and the Post-graduate School. He thought it was absolutely necessary to give a little morphine in some cases. Several years ago he had abandoned it in favor of codeine, but the latter drug had disappointed him and he had been obliged to return to his old practice of prescribing occasional minute doses of morphine. He had recently employed strapping in a case of painful pleuritic cough, but after a few days the patient had informed him that he preferred the cough. He did not regard this as a practicable therapeutic measure in the treatment of cough, as even in cases of fractured ribs patients would often grumble at the strapping. He admitted that the taste of carbonate of ammonium was something to be remembered, but personally he did not dislike the chloride, nor did his patients find any fault with it. He had been much disappointed in the bromides. Theoretically, they should be of great value in allaying irritative coughs, but repeated observations had taught him that this expectation was fallacious, and he had abandoned them except in the cases of reflex cough, as mentioned in the paper.

Book Notices.

Lehrbuch der praktischen Ohrenheilkunde. Von Dr. D. B. St. John Roosa, Professor der Ohren- und Augenheilkunde an der medicinischen Facultät der New Yorker Universität. Nach der 6. Auflage des Originals. Bearbeitet von Dr. Ludwig Weiss, in New York. Mit 77 Holzschnitten. Berlin: August Hirschwald, 1889. Pp. xii–396.

This is a translation of Dr. Roosa's well-known treatise on diseases of the ear, which has already reached a sixth edition in the United States, and occupies a foremost place among the standard works on aural diseases.

The first chapter includes a description of the different methods of examining aural patients, the tests with the watch, tuning-fork, etc., and the use of the Eustachian catheters and Politzer's method. Then follows a chapter on malformations and diseases of the auricle. In the treatment of diffuse inflammation of the auditory canal the author says that leeches applied on the tragus may often cut short the disease. He does not believe in Loewenberg's theory of the parasitic origin of furuncles, and is extremely skeptical as to the value of thymic and boric acids, as antiseptics, from experience in their use. He does not consider inspissation of cerumen a disease *per se*, but simply a consequence of inflammation. As regards the removal of foreign bodies from the ear, he thinks that syringing with warm water will generally remove an inanimate object if the case be seen before it has been meddled with.

The author is a firm believer in the antiphlogistic treatment of acute catarrhal and purulent inflammation of the middle ear. He advocates the use of leeches and the warm-water douche. The membrana tympani should be punctured when it is bulging and about to burst. He has as yet found no means of internal treatment that will supersede these active antiphlogistic measures. By means of the tuning-fork, he thinks, we can discriminate between middle-ear disease and disease of the labyrinth. He lays great stress on the proper treatment of the nasal passages, pharynx, naso-pharynx, and Eustachian tubes, and considers constitutional and hygienic measures of the utmost importance, especially in the treatment of chronic proliferous inflammation of the middle ear. He calls attention to the dangers of the nasal douche, especially when improperly used. He does not believe in the so-called "dry treatment" of suppurative middle-ear diseases, and says: "I still think that instillations of fluids hold the first rank, and that the use of powders is of secondary importance."

In the chapter on mastoid diseases an historical sketch of the operation of trephining the mastoid is given, from its earliest performance down to the present day, and due credit has been given to American surgeons for what they have done in regard to this operation. This chapter is particularly well written, and states the author's views clearly. He uses leeches and poultices, and, when these do not control the inflammation,

he makes a Wilde's incision. When the indications point to caries or a collection of pus in the mastoid cells, he does not hesitate to cut down to the bone and open the cells, as "it is, after all, a plain surgical operation which no man with any considerable experience in general surgery need hesitate about, when it is indicated." In order to keep the wound open, after operating, he prefers a long tent made of old and thin cotton cloth to silver or rubber drainage-tubes. He is not an advocate of the antiseptic treatment.

The succeeding chapters are devoted to a consideration of caries and necrosis of the temporal bone, cerebral abscess, pyæmia, paralysis, and the diagnostic value of the ophthalmoscope in diseases of the brain resulting from aural diseases. The effects of quinine on the ear, and boiler-makers' deafness, are included in diseases of the internal ear.

Certain portions of the American edition have been omitted in the translation—viz., Chapter I, "A Sketch of the Progress of Otology, with a Bibliography"; Chapter III, "Anatomy of the Auricle and the External Auditory Canal"; Chapter IX, "Anatomy of the Middle Ear"; and Chapter XX, "Anatomy and Physiology of the Internal Ear." The chromo-lithographs and the index of authors the translator has also omitted, as well as numerous reports of cases and several tables of statistics.

A chapter entitled "Presbyakousis" has been added to the German edition, which is not included in the American edition. This name is given to a disease of the nerve, found usually in persons over fifty years of age, due to senile rather than pathological changes.

While we can not agree to the author's views of the "dry treatment" and the antiseptic treatment of wounds, there is little but praise that can be said of this standard treatise. The work has been most faithfully translated, and, although there are certain omissions above mentioned, the distinctive character of the book has been retained, and it is sure to meet with a warm reception abroad and to reflect great credit upon the author.

BOOKS AND PAMPHLETS RECEIVED.

General Orthopædics, including Surgical Operations. By August Schreiber, M. D., Surgeon-in-Chief to the Surgical Division of the Augsburg Hospital. Index for Vol. II. [Wood's "Medical and Surgical Monographs."]

Report of Amputations performed at the Hospital of the University of Pennsylvania from September 30, 1874, to December 31, 1888. By Lewis H. Adler, Jr., M. D. [Reprinted from the "Medical and Surgical Reporter."]

Twenty-first Annual Report of the New York Orthopædic Dispensary and Hospital (for Children with Spine and Hip Diseases and other Deformities) for the Year ending September 30, 1888.

The Prevention of Summer Diarrhœa among Infants, viewed in the Light of the Lesions. By L. Emmett Holt, M. D., of New York. [Reprinted from the "Medical News."]

Hygiene *versus* Gynæcology. By Julia W. Carpenter, M. D., Cincinnati, O. [Reprinted from the "American Journal of Obstetrics and Diseases of Women and Children."]

Report of St. Mary's Hospital, Brooklyn, N. Y. Under the Charge of the Sisters of Charity. 1888.

Ueber electrolytische Operationen in den oberen Luftwegen. Vortrag gehalten in dem Verein für wissenschaftliche Heilkunde zu Königsberg am 15. April, 1889. Von Dr. Med. R. Kafemann. Wiesbaden: J. F. Bergmann, 1889. Pp. 16.

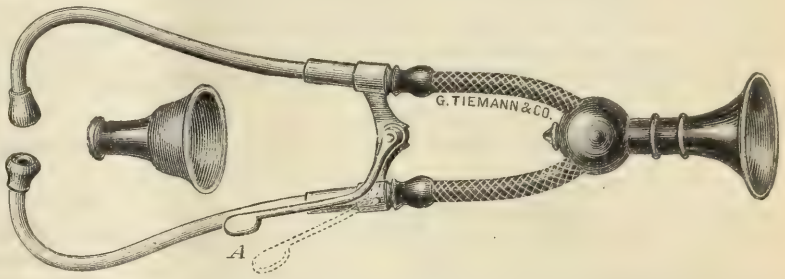
Der Catarrh des Recessus pharyngeus medius (Bursa pharyngea)—Tornwaldt'sche Krankheit—seine Bedeutung und vereinfachte chirurgische Behandlung. Von Dr. R. Kafemann, Königsberg i. Pr. Wiesbaden: J. F. Bergmann, 1889. Pp. 60.

New Inventions, etc.

A MODIFICATION OF CAMMANN'S STETHOSCOPE.

By Alfred L. Carroll, M. D.

Most of those who have had frequent occasion to use Cammann's stethoscope or any of the numerous imitations thereof—whether fitted with springs or with elastic bands—are unpleasantly familiar with the painful sensation caused by the ever-increasing wedging of the small, hard ear-piece into the meatus; indeed, in some notable instances serious aural lesions have been thus produced. To obviate this source of discomfort, if not of danger, Messrs. Tiemann & Co. have made for me an instrument which possesses several advantages, and which I have employed for some time past with perfect satisfaction.



Instead of an elastic compression, a simple binding-screw, attached to the hinge and moved by a lever, fixes the arms of the stethoscope at any degree of approximation. The ear-pieces are made of soft rubber, large enough to rest in the concha without entering the meatus. These being adjusted by the forefingers to the ears as closely as may suit the auscultator, the lever may be closed against the tube with the thumb and middle finger of the right hand. An incidental consequence of the lessening of pressure on the ear is a marked diminution of the "roaring" noise which embarrasses the beginner with the binaural stethoscope. The second or auditory curve of the tubes is abolished, for the reason that it is an actual impediment unless the instrument is carefully maintained at the correct anatomical angle to the plane of the face—a precaution seldom observed in clinical practice—while if sound is conducted to the meatus, the auditory canal is quite competent to convey it to the tympanum.

The alterations above described can be easily made in an instrument of the older pattern.

30 West Fifty-ninth Street, New York.

A UTERINE ELECTRODE.

By Eliza M. Mosher, M. D.,
brooklyn.

The electrode, a cut of which is here presented, I devised more than a year ago for use in a case of retroversion of the uterus with an hypertrophied posterior wall. It proved so serviceable, not only in this, but in many other cases, that it seems worth while to publish a description of it. It consists of a thin metallic blade and insulated stem. The former is leaf-shaped, and measures an inch in length by three fourths of an inch in breadth, and has a thickness of two or three lines. The stem, ten inches long, is of rather coarse but flexible copper wire, insulated in the ordinary way. When this is bent to fit the curve of the sacrum, the blade (covered with wet absorbent cotton and smeared with vaseline) rests firmly against the posterior uterine wall high up in Douglas's *cul-de-sac*.



With a plate upon the abdomen in the suprapubic region, a current of electricity can thus be carried directly through the uterine body, and

forward through the anterior uterine ligaments. I had no thought of using this electrode as a uterine repositor, but I soon observed that the uterus receded more or less during the application of the negative pole of the galvanic battery, and in some cases, by following it, at the same time dropping the stem backward toward the anus, I was able not only to replace the uterus, but to antevert it. I could not at first understand the mechanism of this movement, but now I believe it to be due:

1st. To contraction of uterine muscular fiber and the distension of uterine vessels.

2d. To contraction of muscular fiber in the round ligaments.

3d. To mechanical pressure upon the uterine body, forward and upward.

The permanent effect of galvanism thus applied two or three times weekly has been to lessen the weight of the uterus, to tone up its muscular fiber, to strengthen weakened ligaments, and in the end to cure some cases of retroversion and improve the condition of many. I have employed a current strength of fifteen or twenty milliampères in these cases; more than this is not needed and is liable to cauterize the surface, even though the electrode is well protected by absorbent cotton.

(The instrument was made for me by Fred. Haslam & Co., of Brooklyn.)

Miscellany.

Mortality in Cities in the United States.—The following table represents the mortality in the cities named, as reported to Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, and published in the abstract of sanitary reports received by him during the week ending June 14th:

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—									
				Cholera.	Yellow fever.	Small-pox.	Variboid.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y.	June 8.	1,568,684	688	..	..	..	..	..	..	4	26	41	10	11
Philadelphia, Pa.	June 8.	1,046,245	386	..	..	..	..	..	..	14	2	6	5	7
Chicago, Ill.	June 8.	830,000	229	..	..	..	..	..	..	3	2	27	3	1
Brooklyn, N. Y.	June 8.	821,525	322	..	..	..	..	..	..	1	8	16	2	4
Baltimore, Md.	June 8.	500,343	134	..	..	..	..	..	..	3	6	2	..	1
San Francisco, Cal.	May 31.	330,000	97	..	..	..	..	..	..	4	..	1	..	....
Cincinnati, Ohio.	June 8.	325,000	117	..	..	..	..	..	..	2	..	12	4	....
Detroit, Mich.	June 1.	230,000	57	..	..	..	..	..	..	..	..	2	..	....
Washington, D. C.	June 8.	225,000	94	..	..	..	..	..	..	2	2	3	..	....
Milwaukee, Wis.	June 8.	210,000	65	..	..	..	..	..	..	1	2	3	..	....
Minneapolis, Minn.	June 1.	200,000	34	..	..	..	..	..	..	1	2	3	..	1
Minneapolis, Minn.	June 8.	200,000	43	..	..	..	..	..	..	2	1	2	..	....
Newark, N. J.	June 4.	183,563	87	..	..	..	..	..	..	1	2	7	1	2
Kansas City, Mo.	June 1.	180,000	40	..	..	..	..	..	..	..	..	..	..	..
Rochester, N. Y.	June 8.	130,000	22	..	..	..	..	..	..	..	..	1	..	..
Providence, R. I.	June 8.	127,000	42	..	..	..	..	..	..	..	..	2	1	2
Denver, Col.	June 7.	100,000	32	..	..	1	..	..	..	..	..	2	..	....
Richmond, Va.	June 8.	100,000	31	..	..	..	..	..	..	1	..	..	..	....
Toledo, Ohio	June 7.	83,500	17	..	..	..	..	..	..	..	..	..	..	....
Nashville, Tenn.	June 8.	65,153	20	..	..	..	..	..	..	1	..	..	..	....
Fall River, Mass.	June 8.	65,000	18	..	..	..	..	..	..	..	..	1	..	....
Charleston, S. C.	June 1.	60,145	43	..	..	..	..	..	..	..	..	1	..	....
Charleston, S. C.	June 8.	60,145	41	..	..	..	..	..	..	2	..	..	2	..
Lynn, Mass.	June 8.	50,000	11	..	..	..	..	..	..	..	..	..	..	....
Manchester, N. H.	June 8.	42,000	12	..	..	..	..	..	..	..	..	..	..	....
Portland, Me.	June 8.	42,000	13	..	..	..	..	..	..	..	..	..	..	....
Galveston, Texas.	May 24.	40,000	10	..	..	..	..	..	..	..	..	..	..	....
Council Bluffs, Ia.	June 1.	35,000	4	..	..	..	..	..	..	..	1	..	..	....
Council Bluffs, Ia.	June 8.	35,000	5	..	..	..	..	..	..	..	1	..	..	....
Davenport, Iowa.	June 8.	33,715	9	..	..	..	..	..	..	..	..	1	..	....
Altoona, Pa.	June 1.	30,000	6	..	..	..	..	..	..	..	..	..	..	....
Altoona, Pa.	June 8.	30,000	5	..	..	..	..	..	..	..	..	..	..	....
Binghamton, N. Y.	June 8.	30,000	6	..	..	..	..	..	..	..	..	..	..	....
Auburn, N. Y.	June 8.	26,000	4	..	..	..	..	..	..	..	..	..	..	....
Haverhill, Mass.	June 8.	25,000	7	..	..	..	..	..	..	..	..	..	..	....
Newport, R. I.	June 6.	22,000	2	..	..	..	..	..	..	..	..	..	..	....
Keokuk, Iowa.	June 8.	16,000	3	..	..	..	..	..	..	..	..	..	..	....
Pensacola, Fla.	June 1.	15,600	8	..	..	..	..	..	..	2	..	..	..	....
Pensacola, Fla.	June 8.	15,000	2	..	..	..	..	..	..	..	..	..	..	....

The Treatment of Hiccough.—In answer to Dr. Sillin's inquiry, published in our issue for June 8th, Dr. J. A. Shirley, of Winchester, Ky., writes as follows: "Drinking water, as slowly as it can possibly be swallowed, for ten or fifteen minutes continuously, seldom fails to relieve the paroxysm in an otherwise healthy person. In a recent severe case of pneumonia in an adult alarming symptoms of prostration, with a feeble, irregular pulse and almost constant hiccough, on the seventh day, yielded to two subcutaneous injections of ¼ grain of morphine and $\frac{1}{150}$ grain of atropine, at an interval of twelve hours, after ammonia, whisky, and digitalis had been faithfully given for forty-eight hours without avail."

Dr. Amos Sawyer, of Hillsborough, Ill., writes: "In two cases where every other remedy had been tried, including the continuous electrical current, without avail, the administration of a fresh infusion of pæonia root (I presume that the fluid extract would answer the same purpose), given every two hours, afforded relief in eight and twelve hours respectively. That this remedy possesses antispasmodic properties the above-named cases seem to indicate, but from one or two instances we can not safely infer the whole, and further trial will be necessary before its value in this complication can be established."

Presidential Addresses.—At the recent meeting of the Ohio Medical Society, the president, Dr. P. S. Connor, of Cincinnati, opened his address by comparing such discourses to the vermiform appendix, the remains of a once important organ. Nevertheless, he went on to give an interesting sketch of the present drift of work in medicine and of the achievements of the body that he was addressing.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Lectures and Addresses.

THE NATURAL HISTORY OF THE HOSPITAL INTERNE.*

By JOHN S. HAWLEY, M. D.,

ATTENDING GYNÆCOLOGIST TO THE NEW YORK HOSPITAL, OUT-PATIENT DEPARTMENT; ASSISTANT SURGEON TO THE NEW YORK CANCER HOSPITAL AND TO THE WOMAN'S HOSPITAL.

It was Mr. Emerson, if I mistake not, who said that the most interesting dissertations are those embodying ideas which have long been familiar to the reader, but which he has never before read or expressed. If such is the case, I need make no apology for this platitudinous account of the habits and characteristics of a certain suborder of the genus physician, for we have all been there both as observers and observed. It is most earnestly hoped that such a compilation of well-known facts will be tolerated for the sake of old memories, even though the cavernous yawn evoked by the twice-told tale, and the solemn peal of the passing bell as it tolls for moribund or even mummied japes, be obtrusively apparent to the careful and attentive observer. By a fortunate circumstance I am able to present, in addition to existent data, some curious historical facts which give strong support to the doctrine that even at an early stage of its evolution the class of beings just mentioned was endued with many of the congenital brands and earmarks which now form its distinctive characteristics. This proof of ancient strain and thorough breeding leads one to infer that some system of educational or moral stirpiculture would be of the greatest utility in the further development of the race, but the conditions under which its growth and even existence obtain are such as to render the practical employment of such a system utterly impossible. The same fatal objection meets the proposition that the undesirable traits of the breed be eliminated by prophylactic inoculation with the attenuated virus obtained by a series of cultivations of the microbe of the cognate species freshman, which has its habitat in all of our collegiate institutions. However interesting speculation as to such matters may be, it is not germane to the subject in hand, and can not be given more than a passing mention.

The genus hospital interne, the traits and habits of which I shall attempt to describe, was first discovered by that order of mediæval warriors known as the Knights of St. John of Jerusalem.† That is, those pious and worthy gentlemen first captured or brought into public notice the progenitors of the race, following, doubtless, the same plan which was proposed at a meeting of the selectmen of a certain village, and which, if I may be allowed to digress for a moment that I may rob an ancient sepulchre of its dry and moldy bones, is embodied in the following paraphrase of some old memoranda in my possession, entitled "Ye Merrie Jeste ye wh ye Keeper of ye Museum did find Inscribed on a Papyrus Rolle ye wh was contained in ye Case of an Egyptian Mummie, and eke did do into ye English Tongue, and did Relate for ye Diversion of ye Companie ye wh did Attend ye Inauguration Banquet, in ye Yeare MDCCLXXXIX."

I seem to have a lingering and somewhat old-gold-colored impression that I have heard something quite similar at a meeting which I once attended at the rooms of the Society for the Prevention of the Loss of Ancient and Modern Anecdotes, but on that occasion I met so many of my great-grandfather's old friends that I am uncertain. At all events, as I saw the ghouls who compose the membership of the society violate the sanctity of tomb after tomb; as I saw them shovel from their urns the ashes of the bitter gibe of Thersites and the bull of Ajax by means of the bones on which were graven the jokes of the cave-dwellers; as I perceived the pun of Aristophanes lying cheek by jowl with the epigram of Rochester and the phonetic pleasantry of Petroleum V. Nasby; as I wonderingly gazed upon the Gordian knot formed by the interweaving of the queue appertaining to the conundrum of Confucius with the whiskers of a last year's masterpiece of Bill Nye; as I scented the aroma of many others as they were haled from their sarcophagi and aired—I grew so absent-minded that my testimony as to the facts in the case is of little value. Yet I will repeat it, as it affords an admirable illustration of the probable genesis of the interne, in the hope that such fact may justify me, as well as in the fond dream that the rich, green mold with which it is incrusted may be such an efficient disguise to its familiar lineaments that it may be made to masquerade as a tale of the present decade by virtue of a revamping or electro-plating process.

The said meeting was held for the purpose of deciding upon the best method of utilizing the sinuous windings of a babbling brook and the placid bosom of a glassy mere which embellished the tract of land that had been appropriated for a park by the commonwealth. The resolution introduced by the only traveled man in the council, upon whose soul the picturesque dampness of the boulevards of the Bride of the Adriatic had produced a lasting effect, that as close an imitation to a Venetian plaza be made as was consistent with the knowledge of Venetian topography and architecture possessed by local maestros of landscape gardening and masonry, had been adopted. But when the same member, flushed with victory—or, in the allegorical idiom of local philologists, "being too blamed fresh"—stated that the plan required the importation of ten or fifteen gondolas to enhance the resemblance to the model, the beards of the elders wagged ominously. But one member discussed the question, and his remarks were considered most apposite. He had recently been elected, and was fully aware of the great responsibility which on the shoulders of a father of the hamlet rest. He had reached his present high station from a lowly origin, and had laid the foundation of his fortunes simultaneously with those of a sewer by striking a rich deposit of pay dirt, which accident gained for him much lucre and renown, not to mention "inflooence." It was his maiden speech, and forever settled all

* The anniversary address delivered at the fourth annual dinner of the Hospital Graduates' Club.

† Spitzbube, "Die Entwickelungsgeschichte des jungen dickköpfigen Hospital-Internen"; "Gewesen Versammlung Jahrbücher," Band, 'steenth, Heft, too great for use.

doubts which may have been entertained by his constituency as to his forensic abilities. He alluded in graceful words to the high regard he possessed for the honorable member who had preceded him; but public office was a public trust, and the surplus should be reduced by tariff reform, not by reckless expenditures. He considered that twelve gondolas were more than could be needed while the park was yet in an undeveloped state, and therefore proposed as an amendment that "wan pair of thim gondolas be procured, and thin to let Nature take its coorse."

That such was the method adopted by the Knights Hospitallers seems most probable. Having devised the hospital, they recognized the necessity for the interne; and, shrewdly surmising that somewhere in the great cosmic economy there existed the requisite raw material, by tentative experimentation they produced the primordial interne or internes, and then let Nature take its course. I say Nature, for the question may well be raised as to the possibility of an act of Providence having had anything to do with the matter. In the first place, to those enjoying at one and the same time an extensive acquaintance with internes and more or less reverence for and belief in the wisdom of Providence, the postulate that by divine command was formed from the common clay of the ordinary atypical medical student the pristine rudely fashioned interne savors of rank infidelity. Furthermore, even at that remote date the English sparrow was as aggressively prolific as at the present time, blizzards were not uncommon, and, as all classes of society clothed their nether limbs in tights, the demand for lamb's-wool was excessive; so that we may unhesitatingly accept the *a priori* hypothesis that, on account of the excessive labor required by the condition of things just mentioned, the matter of internes was relegated, with power, to Nature. The hospital existed, and the interne was generated exactly as new bugs and worms are produced whenever the ingenuity of man has devised some means of destroying or blockading the existing varieties which devour his potato vines and ruin his fruit trees. It is quite certain, when some means shall be devised by which a hospital may be run without the aid of any but a mechanical or automatic house staff —and experiments are from time to time being made by the authorities who administer the affairs of some of our hospitals which seem to foreshadow the adoption of some such system—that Nature will immediately produce some substitute for the deposed interne, and the progressive governors will find themselves no better off than before. But, hypothetical reasoning aside, the solemn fact remains that where the hospital is, there are the internes gathered together, and have been since hospitals were.

Hidden, even from the searching eye of the scientist and the anthropologist, within the shell of the ordinary medical student of the schools lies *perdu* the germ or spore of the future interne; and, as from the cocoon-imprisoned pupa springs the gorgeous-winged butterfly, so does the interne cast his dull slough at the beck of the examiner and emerge from his heterogeneous envelope in the radiant panoply of his new existence. And then, as did the mediæval squire, who had a moment before louted down on bended knee a humble and obscure varlet before his sovereign, spring to his feet a belted knight at the accolade of the royal sword, leap nimbly twice or thrice from the ground, deftly crack his heels together in mid-air, and start on his first knightly search for catiff knaves and pyrenetous dragons while the fibers of pink jeweler's cotton were yet clinging to the rowels of his new golden spurs, so does the nascent interne fondle his stethoscope and strop his maiden bistoury, smiling a grim smile as his mind's eye sees, between flashes, the struggling, contorted form of the hydra Disease as it impotently writhes under his firmly planted foot. That is, he does in a subjective—I had almost said a Pickwickian—sense, for we have yet to do with the objective side of the question, which may be said to comprise the physical signs, stigmata, or markings presented by the interne. But as these depend on the vividness with which the subjective impressions are produced in his sensorium, both may be considered at the same time in the attempt to describe him.

Not long since, I was struck by the opening sentence in a newspaper article on some of the ethical and sociological institutions of the Windy City. The writer stated that all gall was known to have been divided into three parts, and of these Chicago held two and a half. He was but a poor sojourner in the pent-up Ithaca of daily journalism and knew not the interne. Had his scope of observation and range of acquaintance with all classes and conditions of men been more comprehensive, he would have drawn a different conclusion from his premises. He would have written in place of his last phrase the words: "and these are possessed by hospital internes." This fundamental truth, or axiom, is not to be taken in the sense that the three parts are equally divided among the three members which usually compose a single herd or band of internes. The sum total of that held by any one band is constant—100 per cent. of all gall extant—but the individual blocks of stock are continually changing in size, now one, now another member holding the lion's share. The leader may corner the market and severely squeeze his "short" subordinates, but the band, as a whole, is neither richer nor poorer, for the watering of stock is unknown, and the pristine strength of the first issue is never diminished. These sudden transitions from sinfully great wealth to equally abject poverty are most puzzling to the naturalist if he once loses sight of the primary axiom that the individual may gain or lose, but the commonwealth never be thereby enriched or impoverished. A fiscal stability, then, is the innate, immutable trait of the race.

The interne should be properly classed among the gregarious animals, though he often flourishes alone, but the amount of gall is the same in each community, be it mono-, diplo-, or poly-internal in variety. Delusions of power and grandeur are commonly prominent in the case of the leader of each band of three, whether this be a single community or one of a confederation composed of several bands united under the sway of a foreign oligarchy. In the latter case, each band has a distinct range of territory, and a pseudo-autonomy which, however, is subject to the jurisdiction of the supreme government, which assumes an autocratic protectorate over each local power. There is never more than the most trifling friction—and that is evanescent—between the different bands which compose a single confederation,

but intestine strife, ranging from strained diplomatic relations to internecine warfare, is not uncommon in the polity of the individual bands; and there is ordinarily present in the community a feeling of enmity to, and of restlessness under, the yoke of the established government. This, as is the case with other nihilistic movements, requires no other pabulum than simple wind, nor ever crystallizes into dynamite, or laves its fevered lips with the rich, hot, red blood of tyrannical oppressors. The interne loves to inflame the passions of his fellows by incendiary oratory; he loves to launch the winged philippic at the unimpressionable despot; he loves to grind his teeth and to wipe the hæmorrhagic perspiration from the brow of his proud but enslaved spirit as it mutely frets under the imposition of unrepresented taxation; but he is no fool in his degree. He well knows how plentiful and inexpensive are the protoblasts of his race, and how readily these are developed into full-fledged individuals by the action of reagents. He well remembers the sterilized platinum wire with which he was taken from the medical school and placed on the agar-agar of examination by the Examining Board, and how quickly he became stained with the eosine of appointment. He knows that revolt is annihilation, and that his life is but a span. Why should he shorten it?

"'Tis but a tent where takes his one day's rest
The sultan to the realm of Death addrest;
The sultan rises, and the dark Ferrash
Strikes, and prepares it for another guest."

The genus interne comprises two suborders—the medical and the surgical—differing only in the character of their stamping grounds. The individual, when gregarious, is always one of three species, technically called house, senior, and junior. Each of these has traits so distinctive as to create the impression that three separate species actually exist; but, as in the case of the soft- and hard-shelled crab, these are but successive stages in the development of the same individual. The junior, after a definite period of existence, buds into a senior; and then, after vegetating for yet another eon, blooms as house. Then comes the cheerless autumn of ejectment into a cold and unsympathetic world, and the withered rose is cast into the basket, to succumb to the dry rot which is said to affect deposed monarchs and retired presidents, or to live again as fragrant *pot-pourri* enshrined in a *cloisonné* jar, regaling the nostrils of the *élite*, and selling for many piasters a carat—if, indeed, it yield not the priceless attar of roses, which leaves its delicate scent for all time, break or shatter its containing vase as you will.

There is also a fourth species, which is not subject to evolution, and which should properly be classed among the *Ephemeridæ*. An animal of this family is sometimes observed in company with a typical surgical band in the capacity of parasite; or, more correctly, as a stunted member of the litter—a shote—existing only by virtue of the numerical integrity of the band, and known as a dresser. He lives but the life of one junior, and is possessed of only the infinitesimal amount of gall which may elude the grasp of the other members of the band through evaporation or inadvertence; but even then the full amount allotted to the band is conserved. This function is believed to be the true *raison d'être* of the dresser, though his services are sometimes required as substitute when death or temporary disability may reduce the active membership of the band. In his normal capacity he is a Canaanite—a hewer of plaster splints and a drawer of water—but he is blessed after a fashion. Expecting nothing, he is never disappointed. He has no burdensome dignity to support, as has the junior; no grievances or snubs to nurse and brood over, as has the senior; no reputation at stake or responsibility to bear, as has the house. With never a carking care to acidulate his nature, he has hosts of good friends if he be of only average good humor, and his short life is a merry one. If an amalgam of the mercurial dresser and the metallic or basic "house" is ever produced, there will be molded from it the millennial infant who will lead the recumbent lion and his concomitant lamb, and at whose intimated desire the leopard will hypothecate his spots, and the Ethiopian will become as snow. Utopia is but a dreamer's fantasy, but if its unsubstantial denizens could materialize, they would prove to be of the dresser-house composition.

In a few instances the interne has given a practical demonstration of the Buddhistic doctrine of transmigration of souls. That is, in lieu of annihilation or return to ordinary existence after the completion of his internity, he may choose the other alternative—occupation of the body of a junior, or even of a dresser, appertaining to a band in the same, or in another confederation. Thus the renaissance of a medical "house" may be the spontaneous generation of a surgical junior, or the homeless soul may animate the body of a gynæcological, an orthopædic, or an ophthalmological junior. In rare cases it may—after threading the labyrinthine mazes of the necessary examination and demonstrating its ability to write the equation of the asymptote of a rising "in-shoot," and to calculate the parallax of the orbital path pursued by a given political organization in its homeward march from a barbecue just prior to election day—attain to the Nirvana of the army or navy service, and retire from the vanities and vexations of private practice. Under such circumstances, the interne becomes a different creature. To-day he is here, to-morrow he may be hence. But he becomes an adept in occult lore, through much study of the Vedas, as edited by the Brahman Schenck, so that he fills his triply-curtailed flush, or acquires a quartet of monarchs when he had retained a lonely ace, by virtue of an unerring, theosophical power, which both mystifies and impoverishes his old comrades when he subsequently mingles with them.

Whatever the religious faith, if it may be so designated, of the band of which he was formerly a member may have been, the soul of the ex-interne may transmigrate into the body of a house surgeon of a private sanitarium, there to wallow in the *otium sine dignitate* of a salaried position. In such case he is more or less incombinable, and has no associate senior or junior. He is in no wise divorced from his social instinct, nor is he deprived of his mild and easily domesticated nature, but a curious change is wrought in his character by his altered environment; and as the tiger becomes more ferocious and particular as to the *menu* of his

daily meal after he has once tasted human flesh, so does the interne, who has once felt the joy of pouching a regular monthly stipend, even if the same be of but nominal dimensions, chafe and fret under the yoke of unrequited labor. Thus, if by some anomalous combination of circumstances, some fortuitous paradox, an interne who had first opened his eyes in the fragrant clover-field of a salaried position should transmigrate into the body of an every-day junior, he is prone to sundry kickings and buckings whenever the surcingle of his pack-saddle is drawn a thought too tight; and often he cavorts or balks until he experiences the mechanical efficiency of a closely drawn lariat around his neck, or the persuasive effect of a small bonfire which has been kindled under his abdomen by the minions of the established government. But after an involuntary resort to hydrotherapeutics, such as repeated draughts of the waters of Marah, he becomes more tractable. The water is astringent, as well as hydragogue and diuretic, and under its influence the anasarca which always affects his estimation of his own importance rapidly disappears; it corrects astigmatism and all errors of accommodation, thus enabling him to accurately see what is his true position in the hospital; the concavity of his dressing-case mirror is corrected at the same time, so that he puts less "side" on his *coiffure* when he makes his morning toilet; it allays gastric irritability so that the patient acquires an ostrich-like ability to digest the most leathery of humble pies, the gamiest of crows, or the earthiest of dirt with the calm *insouciance* displayed by a Harlem goat as he battens on chromo-lithographic circus posters and succulent scrap iron.

The condition superinduced by a previous exposure to the deleterious influence exerted by the habitual receipt of a salary is spontaneously removed by the change of climate afforded by a journey to the frigid zone of incipient private practice. The ex-interne toils with extreme intensity of purpose, accepts an infinitesimal fraction of a righteous compensation, and not only accepts it, but thanks God for it. If corks are found near his habitation, they are no longer bulbous at the top and innocent of the fistulous track of the cork-screw, but are cylindrical and perforated. His shoes are delivered on the same day on which they were ordered, and he sometimes is seen arrayed in garments which were but a few short hours before draped upon an impossible manikin and decorated with a conspicuous numerical label, displayed upon their anterior aspect, in front of the temple in which is unity of price and continual sacrifice of chemically pure wool.

On festive occasions, such as natal anniversaries or the Mardi Gras of the collection of a bill which he had long before classed among the lost tribes in his ledger, he does not, as of yore, don his wedding garment, go in solitary state to Delmonico's, and there insufflate bank-notes blazoned with one or two saltires in cold and uncongenial corners. No; seeking the friends of his native Bohemia, he repaireth to the unconventional Italian *table d'hôte*, where the coat can be removed if desired. And the flavor of the vermicular, convoluted *spaghetti*, and the indefinite bouquet of the *ordinaire*, are more precious to his soul, when one "plunk" a head represents the extent of his retrusion, than the most elaborate and unpronounceable creations of a *Cordon Bleu*, and the delicate perfume emanating from the basket-supported, cobweb-festooned flask of ancient Chambertin of his former affluence. Truly the meal bought with the dollar wrung from the denizen of Mulberry Bend, even though it be but a "slaughter in the pan" or "one brass band without a leader" in the *salle à manger de* Beefsteak John, is more to be desired than the state banquet of many courses and ghastly formality when unearned by honest toil.

Thus it will be seen that the interne has made a discovery after his hospital life has been finished. He had thought to go out into the world a jeweled-winged butterfly, and when he had seen but the reflection of a small, neutral-tinted miller in his new office mirror, he had been inclined to impugn the honesty of its reflective actions. But only for a season; for after one or two rent days have, *æquo pede*, called upon him, and the fœtid breath of the wolf has been wafted to his nostrils through the key-hole of his office door, he "puts his hands on his mouth, and his mouth in the dust, and cries Unclean! Unclean!" But he does not send an account of his discovery to the daily papers of Gath, nor does he decorate the bill-boards of Askelon with lurid posters, setting forth the statement that, by act of Legislature, his name has been changed to Dennis. He usually keeps up appearances by means of cunningly devised fables as to his geometrically progressive practice, and as to the severely strained condition of his coffers resulting from the large number of princely fees which are forced upon him. He says but little of the work he does for other men; of the givings of ether; of the sittings up o' nights with old Blank's patients; of the chemical and microscopical examinations he makes for his elders; of any of the various pot-boilers which are so welcome to the young practitioner with a phantom practice. He may invite one of his former helots to dine with him at a fashionable restaurant, even though each pop which marks the piercing of an amphora means to him a Barmecide dinner for three successive days. To do him justice, he soon accepts the lesson with all humility, and gracefully endures the transition from his late existence as a proud eagle which gazed upon the blazing sun with never a quiver of his nictitating membranes, and of which the talons were never polluted by aught but newly slain quarry, to his present station of a carrion-eating *attaché* of the Board of Health—a cacostomatic buzzard. He will often visit the scenes of his former greatness, and will good-humoredly rail at his successor, doing his best to enlighten him in regard to that he will experience in the future.

So much for the general race characteristics of the interne. But each of the three stages of his development is marked by distinctive features, which must be mentioned if our description is to be of any value. The fact that historical data had been acquired was mentioned at the beginning of this paper, and I will state that these were accidentally discovered by myself while looking at an old vellum-covered tome in one of our hospital libraries, between the leaves of which had been placed some sheets of parchment, yellow with age, and which proved to be dis-

jointed fragments of a diary. Certain initials, and the title of Junior Walker of the New York Hospital, with the date 1789, are appended to these entries; and, though little save the impressions which the author acquired as junior are found, the general tenor of what he did record seems to justify the view that I have taken as to the absolute identity of the characters presented by the interne from ancient even unto modern time. If, now, we describe the interne as we see him in his progress from the cradle to the grave, and then examine the recorded opinions of his prototype, this identity will be most evident.

The irony of fate is manifest at the very beginning of the junior's career, for, until very recent times, he was officially born on the first day of April in fifty per cent. of recorded cases. Notwithstanding this ominous fact, he is enveloped in a rose-colored cloud, which emanates from the consciousness that he has done himself great credit, that he is the cynosure of the envious eyes of his fellows, and that he is regarded by his elders as an infant phenomenon. He casts side glances as he walks through the halls and wards of the hospital, that he may not fail to catch the admiring looks which are directed at one so distinguished but yet so young. He is greeted with cordial politeness on the first day. The "house" explains *in minutia* all the interesting features of the various cases. The senior kindly shows him how to take histories and the technique of dressings, as well as instructs him as to the routine duties which he has to perform. The office makes much of him, and everything he sees is in chromatic accord with his rosy cloud. He never dreams that the "house" and the senior are testing his capacity for doing their work, sizing up the probable amount of the same which they may be able to foist upon him; but he toils on with no feeling save that of gratitude to them for the opportunity they have given him, and his heart is as hydrogen. The second day finds him weary but enthusiastic, and groping in a faded pink cloud. He has met with a few evidences of the actual state of affairs; and when at last he is hailed by the ignominious name of "scrub," the cloud—now only a rusty mist—lifts, and by the aid of the light thus afforded he eviscerates his doll, only to be cruelly undeceived as to the character of its works, and to find that its *embonpoint* is due to sawdust alone, while the iron penetrates his soul to the depth of many cubits. But, by the time he has recovered from this shock, there may have arisen a cold wave in the circumambient atmosphere, due to the thermal inequality of "house" and senior, which often chases the mercury so rapidly into the bulb that, ere one moon has through much waning consumed its stock of wax, he has, through the kind patronage of the house, grown so sleek and fat on the crumbs which fall from that plutocrat's table that he is well able to dispense with the kindly but septic offices of his ministering dogs, and to relegate them to the service of some of the ward patients.

But, in case no cloud arise between his masters, he, nevertheless, reacts well from the shock of his rude awakening. Even the discovery that he needs more than can be acquired by laboriously memorizing wire-drawn distinctions as exhibited in that apple of his student eye—the "deadly parallel"—when he must decide the question as to the existence of a fracture or of a sprain in a given case, or as to whether the wrestler's "bridge" formed by the slender form of a rigid and uncommunicative lady be a resultant of the concentrated energy of tetanus or strychnine, or of the airy, pranksome frivolity of hystero-epilepsy, does not necessarily drive him into the dreary, trackless wilderness of cynical skepticism. On the contrary, he becomes of a more chastened and fusible character, so that, sooner or later, he discovers the fact that he can learn something which he has not already forgotten, thus ultimately becoming a thing of practical utility. But, although he may give up the idea that the key which will interpret the cabalistic symbols presented by the mystic cryptogram of disease is in his possession in the form of sundry mnemonic phrases—such as "Pat hands require subtlety of intellect," as an easy reminder of pain, heat, redness, and swelling of inflammation—he clings with the desperate grip of a drowning man to the belief that no physician who has never enjoyed a hospital service can be other than an ignoramus and a poor dabbler in his art. Therefore the junior magnanimously patronizes all such unfortunates, shows them all the hospital, and talks of "his service" as "fairly good"; sends them cards of invitation to operations, often absent-mindedly signing his own name instead of that of the "house," and in divers ways instructs, awes, and amuses them.

The junior, however, has the power to air his glory in a more indirect manner than the peacock-like proceedings just described. He assumes an air of infinite weariness and a this-is-such-an-old-story-to-me indifference under the most startling and unprecedented circumstances, thereby pulverizing the populace. Had an ambulance been summoned at the time of the horrible tragedy in the mystic cavern where roared and flamed the Pillar of Life, the junior would have fearlessly leaped the chasm, penetrated to the scene of the awful catastrophe, and, after a hasty examination of the shriveled, sickening, hideous thing at his feet, would have taken out his watch to note the instant of arrival. With a careless glance at the roaring, whirling column of fire, as it crashed through the narrow crevice in the rock, he would have asked of the trembling Holly the pedigree of the deceased and if she had any friends, filling out his ambulance blank as follows: Name, "She." Nativity, unknown; age, 2,000 years; civil condition, grass widow; occupation, queen. Diagnosis: General senile atrophy; burns. Arrival, 6.10; departure, 6.14. Remarks: No case; patient dead on arrival.

Turning to go, he would in perfect unconcern have said: "Rare case. Have only seen two like it and I have been on duty for three months. Good afternoon, gentlemen. I must be off, as there must be several calls waiting for me," and have hurried to the open air. Pausing for a moment to light a cigarette at the flame of a blazing mummy, on which he had bestowed one look of weary *ennui*, followed by a listless wink at a pretty girl in a leopard-skin dolman, and declining, on the plea of pressing duty, the cordial invitation of the leaders of the Amahagger Four Hundred to attend a select hot-potting *soirée* in a neighboring cavern, he would have called out to the driver: "Let her go, Larry!" and, as the ambulance gathered headway, he

would have seized the strap, placed one foot on the back step, and swung himself into his seat, casting a languid, far-away look at the crowd; and, by the way, the junior would no more dream of mounting to his seat before the ambulance had started than the conscientious "tiger" would forego his scientific climb into the rumble of a flying dog-cart. He regards the agile vault in the light of a point of professional honor, and the junior who deliberately ignores its observance can be nothing but an inexperienced and loathsome substitute, or a menial, self-despising dresser who has no ambition to lift himself from the mire of his degraded station.

During the first two fleeting months of his life the junior experiences a taste of unalloyed happiness. He is prone to indulge in complex methods of administration of electricity, noting the cathodal and anodal reactions minutely; in the invention of sundry intricately constructed surgical apparatus; in the seeking for obscure and uncommon physical signs in cases of the simplest character, like the habitual infrathoral observations, relative to the detection of the man who never materializes, which the maiden many-summered, unprotected, takes just prior to unloosing the snood from her hair and offering her vespertine orisons. The "house" is his god, whose slightest word is to him as is the ukase of the great white Czar to the Russian serf. He feels deeply every slight put upon his idol. Indeed, it may be said that when the "house" is struck the junior detonates. He regards the senior as a lesser light, but withal a very superior person; and, whether or no chlorotic envy or cyanotic wrath has created red war between his colleagues, he is friendly to both, and is well beloved of them.

But the time cometh when the quantitative analysis of urea and of glucose palls upon him, and the sound of the faradaic vibrator is a weariness unto his spirit; when the pen groweth heavy in the copying of the histories, and the vesical irrigations and the giving of ether are sorrow; when the midnight binding up of the scalp wounds which come for succor when the pitcher is broken at the fontanelle, and the wheel is broken at the cistern that its spokes may be utilized as weapons, is bitterness; when the grinds upon him cease not from their grinding, because they are many, and when the blindness falls from his eyes as it were scales. The junior has solved the problem of his being. He is the scrub, and he knows it. He has reported the case of ultra-"civilation" as one of opium narcosis when he brought it in on the ambulance. He has wonderingly gazed upon the weird, eerie, mazy evolutions of that "charm of woven paces and of waving hands," which for years has been good for a free ride and a night's lodging, when wrought on a new junior by that experienced and rum-epileptic Vivien, whom intimate friends call "Green Point Blanche," and has been sadly mocked when he awoke the house to breathlessly announce his acquisition of a case of Ménière's disease complicated by uræmic convulsions, after that official saw and recognized the patient. He becomes of a non-committal habit, nor lifts he up his voice in the synagogue. The "house" and the senior may victimize him by means of the joke practical: he turns the other cheek to the smiter. They may lead him to stultify himself in various ways: he sayeth no word of wrath. Meek and lowly, humble and mild, inoffensive and obedient Job that he is, he only curses his own folly and lives—lives to cleanse his teeth of the dust into which they were driven when he bit so greedily into the rosy-cheeked apple of Sodom after which he had lusted, and which he had gained at the cost of his own self-esteem.

The junior appertaining to a band which is infested by a dresser is not, however, so quickly disillusioned, if, indeed, he ever become fully cognizant of his true value in the economy. He has an equally unsophisticated companion, synchronous with but subordinate to him, on whom he is able to foist many of the distasteful tasks he otherwise would be obliged to perform. Again, the epithet of "scrub," when propelled at such a junior, merely grazes him, and then, with the graceful curve of a *massé* shot, impinges upon the dresser at the mathematically exact center of his official personality. Now this is a great boon to the junior, and is of but the most trifling moment to the dresser; for the latter is born with a precocious knowledge of his own insignificance. He knows that he has been placed where he is to serve just such a purpose, and he is therefore most careless of his dignity.

There is one brand of junior—fortunately not often seen—which is possessed of an anomalous gastric pride as well as a disinclination to sublet to its fellow-creatures enough of the universe to permit of an even moderately comfortable existence. Such a freak has a gruesome juniorhood; and, if he be not completely filed away by the rasping, gritty grindstone to which his nose has been forcibly applied throughout the dark days of his seniority, he has a tempestuous voyage when he stands at the helm as "house." He usually acquires a large, angular, saw-toothed grievance, which he takes away with his other possessions when he shakes from his feet the dust of the hospital door-step—to the unspeakable relief of all with whom he has been associated. He sneers at the "attending"; reprimands with crushing severity the nurse who has unwittingly committed a trifling error; changes the treatment of all the patients when deputed to make rounds for his "house"; feels himself unwarrantably insulted when he is reminded that his authority is only a faint reflection of that of a temporarily absent superior, who himself has, at best, but a mere fictitious echo of a voice in the management of the hospital; wins the sincere, whole-souled ill-will of all, from the Dan of the servants' quarters to the Beersheba of the superintendent's office. Theoretically, a proper regard for professional dignity is laudable; but when one imagines that persistent kicking against strong, thick-set, spring-tempered, copper-fastened, triangular Damascus steel pricks can result in aught else than destruction of shoe-leather and injury to toes, he acquires the reputation of possessing an intellectual capacity nearly equal to that which is enjoyed by the dodo or the pursued ostrich. Sooner or later he receives what he sorely needs, and, moreover, it is presented to him in the cervical region, where it can exert its beneficial influence to the greatest possible advantage. This makes or breaks him; and he either becomes a sadder and a wiser man, or reaches that mental condition which the Deity is said to regard as

a fitting preparation for dissolution in the cases of those whose decease He ardently desires.

The senior is of an ascetic habit. He has his tub, not only for sleeping purposes, but also for use as a cloister or padded cell, to which he may habitually retire in seasons of great mental depression, and indulge in bilious reverie or active delirium without fear of interruption or bodily injury. The senior is a misunderstood, aggrieved, and persecuted genius. Endowed with brilliant talents, profundity of intellect, rare abilities, and infallibility of judgment, he possesses in addition a breadth of knowledge and a plenitude of attainment which none save another senior can hope to rival. But, despite all this, his soaring spirit is chained by the leg in a contracted, iron-fenced inclosure, and is only held up to ridicule or touched up in sensitive spots with a red-hot poker if it shows a tendency to disregard the limitations which have been placed upon the extent of its flights. He usually digs a deep and many-angled hole in the most remote corner of this corral, at the further extremity of which burrow he places his tub. He retires to this subterranean recess whenever he is overwhelmed with mental anguish, pulling in after him the aperture of entrance, and there broods over the "sorry state of things" under the administration of the "house"; of how much better he could himself manage; of the great disappointment he feels that he was so mistaken as to the man who had been so promising a senior; of his own degradation in recording absurd diagnoses and countenancing preposterous malpractice with never a protest; of how he could show certain lurid idiots how to run a hospital had he but one opportunity—he not insisting on the said opportunity being golden—oroide would suffice.

Here also he sets up a loom and weaves a fabric of rare beauty, deftly broidering into its warp and woof a pictured scene of future events as he glances at the polished surface of the magic mirror he has made, and sees the reflection of the towered castles and stately palaces of the distant city. He sings a charmed song as he works, and, intoxicated with the words and melody, as the woven figures grow under his skillful manipulation of the flying shuttle, he lives in fantasy until he well-nigh believes those variegated shapes before him to be real and animate. But in the midst of this ideal existence the house may gird up his loins and evaporate for a season in order to recuperate and recover from the brain-fag acquired from the labor of running the hospital. Then it is that the senior sees the image of the doughty knight in his mirror, starts up, and looks down toward Camelot. But his faith in the absolute accuracy of mathematical propositions is sadly shaken, for the angle formed by the incident rays proceeding from that city by no means equals that of those of reflection which he has for so long a time admired, and of which he has builded many an Andalusian castle, as he wrought at the loom. For, as he makes the rounds on the first morning of his vice-regency, he fancies that the junior wears a suspiciously smug and waggish expression of countenance indicative of an underlying ironical *facies* which would be manifest were its enamel scratched by some pointed occurrence; and then he remembers how he felt when he had officiated as acting senior. He distrusts the marked deference and reverential homage displayed by the nurses—*timet Danaos et dona ferentes*—and starts as at the sting of a viper when the words "Methinks the lady doth protest too much" are hissed into his ear by some malevolent imp of Satan. Somehow he does not find it necessary to make many changes in the treatment instituted by the absent "house," and he actually finds himself, from force of bad habit doubtless, treating new cases after the plan usually pursued by the same functionary. His opinion of the "attending" is suddenly elevated, and he can hear the dull, nauseating thud with which the pigment from his hair strikes the floor when a queue of nurses forms at his door, each one bearing a blank diet sheet, which she wishes him to fill in according to his own ideas on dietetics. This unchristian behavior soon cows him, for he has but the faint umbra of a supporting leg after the first resigned prophecy that poor Casey would need little nursing or anything but a shroud, now that his full diet had been cut down one half; and the second mournful hope that grave complications might not be the result of depriving Gilhooley of his matutinal eggnog renders him plastic as putty.

But he may, animated with a desire to test the balance and swing of his new scepter, arrogantly invade the office with tail in air, rampant, lashing, and issue a command or two, demand an explanation, or explode a few denunciatory bombs. Subsequently a thin, ribbon-like plane surface of but two dimensions oozes out through the crack under the door, as it gathers itself together, takes on itself the form and face—but not the same spirit—of the brevet "house," who had just before entered on carnage bent. Then does he mechanically saunter into his hole, see the cracked mirror, trip up as he catches his feet in the tangled, unraveled web, take in the situation, and cry out in his great agony, "The curse has come upon me!"

But he sings no swan song, takes no boat ride, yields up no ghost; and by the time the "house" has returned he has patched up with cement the shattered mirror, and has commenced to weave a fabric of more intricate and ornate design than the first, singing meanwhile a more weirdly modulated measure than before. And, further, when again the glistening sheen of the golden greaves of bold Sir Launcelot is flashed in complicated glamourous sheaves of yellow light by the seamed mirror, he sits still, crooning out an "Ah there! stay there!" to the distorted image, murmuring under his breath, "I'm onto *your* curves, Peter," and bestows not himself on anything without an adequate compensation.

But with all his uncharitable and rebellious feeling toward the "house," the senior is openly submissive. He rebels against the individual, not the office. Loyal to the principle, he in no wise fails to pay due homage to that "divinity which doth hedge about a sovereign," and on bended knee he respectfully kisses the hand of his anointed king, even though he is forced to rush into his padded cell at the next moment. With all his nomadic tendency to jump the claim legally held by the "house," he is comparatively amenable to inhibitory influences. Thus, if he is subjected to the same plan of treatment by which Ed'ard Cuttle, Mariner, was wont to develop the latent excellencies

of his cherished chronometer—"put him back about half an hour in the morning and another quarter toward afternoon"—he, even as that standard instrument of precision, will be "ekalled by few and excelled by none."

Thus does the senior spend his "spangle of existence," and bide his time. So, when the change comes, and nurse and patient cry "*Le Roi est mort; Vive le Roi!*" he has so remodeled the design and modified the rainbow tints of the embroidery of his woven fabric that it serves quite well the purpose for which it was manufactured. True, it becomes threadbare and faded in spots, and here and there unsightly darns are visible; but none of these blemishes are seen save where the pattern had been fantastic of design and gaudy of color. It will make a very serviceable gabardine to protect him from the cold, sleety rain in the early spring of private practice, if he is wise and uses all the damaged and faded portions for linings and pockets; and often it may last for years, remaining a very presentable garment even then, if it is occasionally sponged and rebound.

Mr. Martin Farquhar Tupper has sung, "One star differeth from another in glory, but the soul is immortal." This insinuation was unaccompanied by any map, plan, or specifications which would at all aid his subscribers in their efforts to compass that postulate. With the confidence inspired by such an illustrious precedent, I will venture to state that one "house" differeth from another in his service, but his experience is a liberal education, and will not demonstrate the truth of the statement in a long-winded corollary or bird's-eye view of the subject. Suffice it to say that, with the exception of his thorn in the flesh, the senior, his traits are analogous to those of the junior, but naturally of a more advanced and chastened character. He has the conventional senior of refractory and unsympathetic composition, the idolatrous junior, and the cold, indurated, iconoclastic experience. Three hats—large, small, and medium in size—are usually purchased by him in the order named, and are worn in turn *pro re nata*. The second size of these, the small one, is worn during the second or third week of his life, and is often made yet smaller by the tucking of paper under the sweat-band just before he leaves the hospital, at which time the stern fact that his time of departure is at hand dawns upon him. He is somewhat *blasé*, not with the fictitious indifference, born of the desire to appear experienced, with which the junior paralyses *ὁι πολλοί*, but from a genuine weariness resulting from a hard year and a half of work. But he needs the small hat, for to this feeling is added the vague dread of a start in life without the prestige of a great institution at his back; without the feeling that the king may do no wrong; without the autocratic power to say "Do this, or go elsewhere"; with nothing but a square foot of standing-room and a greased pole to climb, and with only the sand he may acquire by his own labor to rub on his hands that he may not lose his hold and slip down. But large, small, or medium as his hat may be, he must go, and he at last, whether in joy or in sorrow, folds his tent and is not.

Such is the generalized life history of the interne as we see him to-day. His atavism will be clearly demonstrated by the following extracts from the manuscript of which I have made mention. Ah! how familiar some of these century-old remarks seem!

P. D. Q.

Ye Junior Walker *of ye* Hospital
in ye Citie *of* Newe Yorke.
His Diarie.

Aprile ye Firste, 1789.

Being nowe a Junior Walker in ye Hospital I am nigh unto Consumed with Awe of Myselfe, and am hard Pressed for ye Meanes by ye wh I maye shew ye Homage due to my Station.

Conceiving in mine Understanding that Manie will be of ye Desire to Knowe of my Careere, I have made ye Resolve that I shalle Keepe a Journalle or Diarie in ye wh maye be in truthfulle Wise set downe a Recorde of ye Deedes and Thoughtes of my Life: for in soothe I am of ye Intente to become ye Leading Chirurgeon of mine Age, and so, at ye Beginning of my Course, I will make Shifte to explain in Briefe ye Manner in ye wh I have gained mine Exalted Position.

Having after vaste Consumption of ye Midnighte Oile and eke divers Packetts of ye Herbe Tobaccoe made Bolde to come before ye Examiners, I did appeare to Them (by ye Grace of God and ye furtive Use of ye Inscriptions ye wh I had been Subtile enow to make upon ye inner Sides of mine Wristbands) to be One of huge Learning, and ye Examiners did saye ye one to ye other: "*Bene, bene, bene respondere. Doctus, dignus et entrare,*" or, at ye Leaste, what did sound like unto those Wordes. They did then give unto me a Scrolle of faire Parchmente, bearing a red Seal and eke a Blue Ribbande, and on It was ywrit a manie of Wordes in ye Latine Tongue, ye wh I have often made Shifte to Reade, but It dothe alwaye let me Out. By ye Virtue thereof I was made a cunning Man of Science, and was e'en Licensed to Slaye without Stinte; but natheless I did Caste about me to Learne how I shoulde Discerne between ye Jaile Fever and a Sun Stroke or e'en ye Differences ye wh do be between a Linch Pinne and a Hickie. So I did take Counsel with Myselfe and arraying Myselfe in a Pinke Shirte and a White Collar, I did go unto a Quizze Man, who did so Cramme or Loade me for Beare (as ye Saying hath it) with divers Questions and ye Answers thereto, that I did with such Judgement and so Artificiallie replye unto those ye wh were Propounded to me by ye Physitians and ye Chirurgeons of ye Hospital, that they did Appointe me to be ye Junior Walker, Lord of ye Elaboratorie and ye Engrosser of ye Archives above a great Manie of other Men who did come before Them. From this lofty Ranke I shall ascende yet Higher, and then shall go out into ye Worlde, ye Shekelles whereof I shalle, in soothe, gaylie Rake in.

Aprile ye Fourthe.—Mine Honourable Ranke doth not seeme of ye Dignitie I had at ye firste Opined, for ye Howse and ye Senior Walker do addresse me as "Scrubbe," and do seeke to Balle me Uppe by luring me to make a Diagnosis of ye Distempers and ye Hurts ye wh do affect ye Patients. And but ye Nighte before ye Laste ye Howse did cause me to be Arowsed from my Sleepe that I mighte catch a large blue Ptomaine ye wh was said to have Entered ye upper-

moste Warde and eke to be Sorelie Vexing ye Patients therein. I did putte forthe alle mine Agilitie and did hie me nimblie unto ye fifthe Floore, but I did finde no Beaste save onlie One, ye wh was upon mine owne Necke and wh was of a Graye, rather than of a Blue Colour. But when I did heare ye Howse and ye Senior making Merrie ye one with ye other, I did graspe ye Situation, and did perceive that I had been Beguiled. So I did seeke againe my Bedde with a heavie Hearte.

Aprile ye Tenthe.—Yesterdaye I did go out for ye firste Time, and did come back with a Jagge upon me. Being oppressed with Weariness of Bodie and ye grieviousnesse of ye Jagge, I did falle to sleeping on my Bedde before that I had Undressed. And when I did Awake after a Season I did perceive upon my Pillowe, and eke hanging downe to ye Floore, an Exceedinglie monstrous and loathesome Tape Worme, ye large Ende whereof did lie near unto my Mouthe even as if I had Caste it forth in my Slumber.

What with ye Head I did have in lieu of ye Jagge and ye unsavorie Fashion of ye Appearance of y Worme (ye wh was above three Fathoms' Length), I was exceeding harde put to It lest I should Incontinentlie lose my Grippe and e'en faile to Keepe mine immortalle Soule from Coming forth from me, and I was eke sorelie Discomfitted that I shoulde have had ye Worme and that I should have in such Wise been Ridde of Him. But I straightwaye did remember that I did that Morning aide ye Howse in ye Taske of giving unto a Patient who had a Worme an exceeding nauseante Potion, and by thus taking Thoughte I was in a Measure comforted, for I did take Hearte at ye Thoughte that ye Worme had strayed from ye Warde and was not of mine owne Raising. Eftsoones I did remove Him, and did straightwaye falle Asleepe. But on ye Roundes ye next Morning ye Howse did aske of ye Patient, whereof I did Speake, if peradventure Anything had been lost bye Him during ye Nighte, and did looke at me in a coverte Manner. Wherefore I am of ye Belief that ye Worme had been Observed at ye Time he had entered my Roome, or haplie he had been laide upon my Pillowe by ye Howse or ye Senior. And I did become so Shamefaced at ye Thoughte that all but ye two Wagges did Marvelle at ye Blushes to ye wh I was Putte.

Aprile ye Twenty-fifthe.—I have been sore Distressed by ye recente Gettinge of an Engine, by ye Use of wh alle Woundes and ye Like are to be straightwaye Healed, and ye Chirurgeon who dothe Employe ye Thing shall have no Feare that any Eville can be caused by his Operations. Ye unholie Machine dothe cause a ranklie stinking Miste, or Spraye, to be spreade about, and ye same dothe grievouslie Benumbe ye Fingers, and dothe sorelie vexe ye Eyes and ye Nostrilles of all Them wh do be nighe. And then ye Chief Chirurgeons do Mounte upon ye Necke (and eke stamp thereon with ye bothe of their Feete) of ye unhappie Wretch who dothe Suffer ye Spraye to be Diverted from ye Wounde even for ye Space of a Momente. It hath been made ye Taske of ye Junior Walker to prepare and to furbish up this Foole Thing, and I can beare Witnesse to ye Sorrowes ye wh do come unto him Therebye—for ye accursed Thing dothe alwaye acte in Perversenesse, and will not do that ye wh it was Designed to do, but will ofte incontinentlie vomit forthe Seething, Boiling Water in lieu of ye Miste, thus causing ye Fingers and ye Face of ye Junior to be alwaye in a scalded Condition. Albeit I be thus perforce ye Bond Slave of ye Lampe (for ye hellishe Contrivance is made to Worke by ye Heate of a Spirit-Lampe), I can do with It but That ye wh I desire not to do.

Maye ye Firste.—Yesterdaye one George Washington was Inaugurated ye Presidente of ye Countrie, and ye Towne was plenteouslie Bedizened with ye garish Hue of Scarlett. Ye Howse and ye Senior were harde Putte to it to binde uppe ye Woundes of alle Them ye wh I did bring in on ye Ambulance. I did gette one Loade of VI Blacks of whom Each by Himselfe did saye that he was ye originalle and ye Onlie genuine Bodie Servante of ye Presidente. They had discussed this Theme among Themselves with Razors, and did Seeke to continue ye Debate in ye Ambulance, but I made Shifte to Close ye Argumente with ye Stretcher Iron, and did Fetch them Alle in Alive. In ye Evening ye Howse did go to ye Inauguration Banquet and did come Backe presentlie in what ye Senior did saye was a State of "Razzelle-Dazzelle" (whereof I knew not ye Meaning before that ye Howse did violentlie protest that He woulde Trepan a Patient who did loudlie Snore, saying that ye Man did languishe under a Compression of ye Braine). We did make greate Haste to let Him above XII ownces of Bloode, and did presentlie gette Him to Bedde with an Ice Cap on his Head, notwithstanding that He did bitterlie Revile us.

Maye ye Tenthe.—Ye Howse and ye Senior do seeme to be of some Coldnesse ye one to ye other, and ye Howse dothe give to me Toes and Fingers to Take off. I do heare that there is to be Appointed for a Season another Man on ye Staffe, for ye Worke at ye presente Time do be exceedinglie grievious for onlie III Men.

June ye Thirde.—Ye Howse and ye Senior have Spake not ye one to ye other for ye space of above II Weekes. Ye newe Man hath Come, and I do gleefullie Girde at Him, and do saye "Scrubbe" unto Him. In soothe I do cause him to attende to ye devillishe Engine wh dothe make ye Miste, and divers other Things ye wh I do Loathe. I am of ye Minde that there do be yborn a Sucker at everie Minute, for trulie he dothe Smell aboute him and dothe digge up a Baite if haplie there do be none in Sighte. I did work offe ye olde Ptomaine Fleere upon him and when I did send him to ye Dead Howse that he should take a Temperature, he did come to me and did saye Indignantlie that ye Orderlie had not given ye Patient any Bedde Clothes save a Sheete, and that ye Thermometer was out of Order and woulde not Register at alle. I was Faine to Spring upon him ye Tape Worme Pleasantrie, but when I did make Shifte to fille him Uppe, I did myselfe Falle downe by ye Wayside, so that ye Scrubbe did even put me to Bedde.

Auguste ye Sixthe.—Ye Howse hath gone awaye for his Vacation, and ye Senior is playing ye Devill and Thomas Walker with ye Service. Ye Scrubbe dothe Improve in manie Wayes, and I do begin to think that he assuredlie is a Daisie.

September ye Seconde.—Thanks be unto Heaven, ye Howse hath Returned, and ye Senior hath been putte in his

proper Place. Albeit I am againe doing Menialle Worke, I am prodigiouslie rejoiced in that ye Howse is here.

January ye Seventhe, 1720.—For above ye space of III Monthes have I been ye Senior Walker, and I have been yfilled with Amaze that I shoulde ever have deemed ye presente Howse to be Aughte better than a Chumppe. Y^e^ Idiott did cause to be fed on Welshe Rarebittes a Patiente who had Swallowed some broken Glasse in a Museum, and despite ye Facte that I did give to him Crotonne Oile when ye Howse did go out ye firste Time, he did Die of a Peritonitis ye w^h^ was Engendered by ye beastlie Diet ye w^h^ he had been forced to Take. Y^e^ Howse did saye that ye Crotonne Oile did Kill him, as if any Foole did not knowe that Cheese is Heating to ye Bloode, while ye Truthe was that I had been too Late to save his Life. We do not Speake to eache other nowe. Y^e^ Chiefe Chirurgeon dothe strangelie Upholde him, and if much of this Fashion of doing Thinges dothe Happen I shall Resigne, for I can learne Nothing from them.

June ye Eighthe.—Y^e^ Life of ye Howse is not that ye w^h^ it has been Cracked up to be, but is of muche Wearinesse. I have fallen against ye Office, and am in eville Case therebye, for I did Hurte myselfe, and mine olde Howse did come in and did Raile at me, saying "Go to, woulde you Bucke against a Stone Walle?" Y^e^ Senior is too Freshe, and I am in Soothe a Cursed Thing.

September ye Twentie Ninthe.—I am sorelie Distressed and Lowe in my Minde, for in II Dayes I must go Forthe and Grubbe for my dailie Breade. I woulde Faine become more Learned than I nowe am, for when I did aske ye Chiefe Chirurgeon for his Counsel in ye Matter he did Advise me to studie in Paris; and when I did Saye that I coulde not do Thus for Wante of ye essential Lucre, he did saye that he did think me to be of greate Promise, and that it was a Pitie that I coulde not take ye Position ye w^h^ I shoulde in ye Profession for Lacke of an Education. I did then go to See mine olde Howse, and did finde him boiling ye Egges on ye w^h^ he was to Dine. He did sportivelie saye that his Practice had just Died of a Phthisick, and that he was starting Anewe. When I did Telle him of That ye w^h^ ye Chirurgeon did Saye, he did Crie: "Rattes! ye Olde Man is at it Againe. Come nowe, Offe with your Position in ye Profession, and Skirmishe for your Breade and Butter!" In soothe I did finde ye Walking soe Goode that I wente Backe to ye Hospital on Foote, and did not Hire a Chaire, as I had Thoughte to do. Y^e^ Prospect is not of a pleasant Fashion, and I do begin to be Assured that I have been Diligentlie chasing after Rainebowes duringe alle ye Time I have been here. I do even be Envious of ye Dresser, and do perceive that ye Colde Daye on ye w^h^ I shall gete Lefte is at Hande. I do be afeared that ye Situation will be yet more Gloomie to mine Understanding when I shalle be made to Viewe it in y^e^ "Colde Graye Lighte of ye Morninge" of that Daye ye w^h^ shalle be ye Laste of mine Life in ye Hospital.

The foregoing excerpts comprise all of the diary which is of any value as an evidence of the author's internity. I have omitted many entries, as they deal only with daily occurrences and do not reflect the opinions or character of the author. Some person had seen this manuscript within a short time, for I found upon the spaces which had been left blank by the author of the diary some annotations in a different and more modern style of language and chirography which I will quote in full:

Erudite in physiology and advanced bacteriology, the interne talks pathology 'till you're deafened by the din,
And of differences essential between high and low potential, and of diagnosis differential of diseases of the skin.
All the signs auscultatory, cardiac, respiratory, are arranged in category his active mind within,
From pyosalpinx gonococcic he gestation that's ectopic tells by murmurs metroscopic, and he knows when it is twin.
He knows pelvic cellulitis from acute oophoritis, and from hernia, adenitis, be the patient fat or thin,
Or a pachymeningitis from a poliomyelitis, and a typhloenteritis at its very origin.
And he knows an epileptic from a seizure cataleptic, and a coma apoplectic from one caused by drinking gin.
Also knows tuberculosis from actinomycosis, and how cnemoscoliosis doth distort the youthful shin.
He describes the diabolic agony of renal colic; how aphasia embolic rests the weary, jaded chin;
How luxated hip reduction you achieve by circumduction after ad- and then abduction, if with flexion you begin;
And of kolpoecpetasis, dysmorphosteodiaclasis, and of teleangeiectasis many startling yarns he'll spin.
Of nephritic amaurosis, also of symblepharosis, and of intermittent ptosis, which to winking is akin;
Of his skill in pædiatrics, and in modern psychiatrics; of *vis Naturæ medicatrix*, which the palm will always win
In the strife with mind revealers, and with Christian science healers, or with long-haired faith-cure kneelers, who say cancer is but sin;
With interviewers theosophical of Indian ghosts apocryphal, who from climates hypertropical come to practice medicine;
With those with eyeballs staphylomal, who in trances hippodromal voice the accents catacombal of some sainted mandarin,
Who prescribes, for use internal, roots you dig with rites infernal at the moment mid-nocturnal with a piece of rusty tin.
He detects each spinal lesion, every visceral concretion, from that ammoniaco-magnesian to that of pure cholesterin;
Describes the splint of his invention by which he keeps up firm extension, attaching rubber bands in tension to a stationary pin.
Armed with weapons stethoscopic, sphygmographic, microscopic, like a very philosophic, scientific palladin,
Seeks he ulcers duodenal; rends he pectorals trichinal; spears the abscess circumrenal with hypodermic javelin.
He's no Dædalus with wings rheumatic, who, as in the soup his son erratic learns a lesson aerostatic, flies low down with rueful grin,
But, like Icarus, he's sophomoric; his flight at first is meteoric, 'till solar beams so thermophoric melt from his wings their paraffin,

For the interne, ill-supported by his knowledge well assorted, actually as sprains reported the first three fractures he brought in.

Thus far only the foibles, the little failings, and the shortcomings of the interne have been mentioned, but I am loath to leave the subject with never a word as to the meritorious traits which are his redeeming qualities, and which serve as a cloak of charity to cover his nakedness, and as a damper to the sounding of his brass and to the tinkling of his cymbal. Living a life of practical beneficence, he sacrifices time, comfort, aye, and sometimes his health or even his life, to the service of his suffering fellow-man. Granted that he is actuated by a desire for self-improvement, and that he does but cast his bread upon the waters that he may receive his reward in the future; granted that an absorbing love for his kind is not an element in his charity; granted that he is callous and indifferent to the sentimental aspect presented by human suffering—his motives, or lack of motives, do not affect the practical results of his work. Moreover, he is sturdily honest in his bargain, giving his time and labor for his experience, and never asking for anything more—no, not even for the reputation of being a philanthropist. Is his unsympathetic ministration less beneficial to the pain-racked or mangled patient than the visit of the tailor-made, fastidious *dilettante* in charitable work, who amuses herself, satisfies her longing for excitement, and conforms to the latest fashionable "fad" by visiting the hospitals and by bestowing the faded flowers left from the night-before-the-last's cotillon upon "the poor unfortunates on whom the young doctors practice," or than the business-like, stand-and-deliver-your-soul-or-your-peace-of-mind consolation offered by a wooden-featured, saw-voiced church "capper"—the Dick Turpin of religion—who levels at his aching head a tract, loaded with cheering promises of future torments, and with such realistic descriptions of the flames and officials of Gehenna that it is a veritable literary *san-benito*, refusing all proposals of compromise? He works faithfully and to the best of his ability; sounds no annual trumpet of self-adulation, self-congratulation, self-appropriation of the credit and results belonging to the work of others; publishes no key-hole report of the achievements of the right hands of others for the sole information and benefit of his own left hand; makes no protest as he sees his own labor, his own good works accredited to the account of another; wears the collar of those who insult him with groundless suspicion, burden him with humiliating legislation, crucify him, after a star-chamber trial, on poor circumstantial evidence, or even no evidence at all, of misconduct on his part, and asks only to be left alone and to be treated with but negative courtesy.

Attending physicians and surgeons, ye who rule the interne, be just to him. Treat him as a younger professional brother, not as a bondsman. You have large flocks and herds; he has nothing, but is striving that he may obtain one poor little ewe-lamb, hoping to rear from that humble beginning a flock of his own in the future. A little consideration for his inexperience, a little pleasant instruction, a little friendly encouragement, are nothing for you to give, but are to him a priceless treasure. He errs not by design but through ignorance, and you should remember the notice posted in the Arizona church: "The congregation will please not shoot at the organist. He is doing the best he can."

And you, governors, who have for so long a time occupied a standing place on the neck of the medical profession that you overlook, save on one day of the year, the fact that you are dependent on your footstool for your position as public benefactors, why not be generous to the unrewarded laborer without whom yours would be but a phantom philanthropy? Ah, gentlemen, look well to it lest the evil day come when your pens shall be found empty, and your fields shall lie fallow because there are none to guide or to draw the plow! Some of you know what the lack of one poor junior means to your hospital. What if your whistle be not answered when you shall lack the entire staff? Worms have turned ere now when trodden upon too rudely, and there may be even now among the thralls who people your barracoons some modern Spartacus who shall incite a revolt that may put you to sore distress. Have a care, lest history repeat itself.

It was far from my design to treat this subject in a serious or a sentimental manner when I chose it, but I could not close my eyes to actual facts, nor ignore them. Laugh at the follies, sneer at the conceit, satirize the absurd pretensions of the interne as we may, still our hearts swell with an honest pride that we can truthfully say, "We have been hospital internes!" and I, for one, can add in the familiar, perhaps grotesque, but intensely human words of Colonel John Hay:

"He warn't no saint, but at Jedgement
I'd take my chance with Jim
Alongside of some pious gentlemen
Who wouldn't shook hands with him.
He seen his duty, a dead sure thing,
And went for it there and then,
And Christ ain't going to be too hard
On a man that died for men."

18 East Twenty-fourth Street.

Original Communications.

A SUCCESSFUL CASE OF SPINAL RESECTION.*

By ROBERT H. M. DAWBARN, M. D.,
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It gives me great pleasure to lay before this section of the Academy to-night, at the request of its chairman, Dr. Gray, the history of so rare and interesting a case as one in which excision of a portion of the spinal column was performed for the relief of paraplegia due to traumatism.

Trephining the spine, or resection by some other means, has been done so seldom that it can hardly be said to have

* Read before the Section in Neurology of the New York Academy of Medicine, May 10, 1889.

a literature. I refer, of course, to the operations done since the days of antisepsis, since these alone have any statistical value for us. Most of the recorded cases, too, have been for the relief of some condition other than fracture. For example, of Macewen's six cases, reported some months since in the "Lancet," five were for relief of paraplegia due to a tumor, generally areolar in its nature, situated between theca and bone, and apparently starting from Pott's disease as an irritating cause. It is the more necessary, therefore, that this case should be reported somewhat in detail.

The history is as follows:

Mr. Harry S., twenty-nine years of age, unmarried; occupation, superintendent at the new aqueduct works; fell from a height of twelve to fifteen feet, on the last day of August, 1888, striking upon his back. He may have struck a wagon-wheel in his descent. He is not sure regarding this. Was unconscious for a time, and on awaking found himself completely without sensation or power of motion in the parts below the ribs. He was delirious for fifteen days thereafter, having considerable fever during this time.

A plaster splint was applied at once by his physician, Dr. C. S. Collins, of Sing Sing, who first molded toward the median line two broken spinous processes which had been deflected toward the left; apparently these were the eleventh and twelfth dorsal. The latter spine, moreover, projected backward about two-thirds of an inch further than its fellows. This cast was left on for seven weeks. Then another was applied, and left on for two weeks. Thereafter the patient, now able to be lifted into a chair without much pain, wore a kind of corset, stiffened somewhat with corset-steels. During most of this period faradaic electricity was used from time to time.

Dr. Collins brought his patient to this city and put him in my hands on December 20th. His condition then was as follows: Complete paraplegia, beginning a few inches below the ribs. Involuntary passage of fæces; retention of urine with overflow. Apparently the lesion had involved the so-called lumbar enlargement. The back showed a kyphotic twelfth dorsal spinous process, as previously mentioned, and that of the eleventh was deflected to the left about one inch and somewhat flattened down. Otherwise the column seemed normal, save for some tenderness on light pressure over the fractured bones. A sacral bed-sore was present, also ammoniacal cystitis. The former was subsequently healed, although with difficulty. The latter yielded quite readily to dilute carbolic- and benzoic-acid irrigations, two or three times daily.

I advised an immediate consultation, and Professor Seguin was called in, January 6th. He thought the spinal bones were very probably pressing on the cord; but, there being no reaction of degeneration, he considered the prognosis moderately good, if no such compression actually existed. Advised galvanism applied daily, also massage and strychnine, and said that if no decided improvement was noted within a period of from six weeks to two months he would certainly advocate cutting down upon the spine to remove a possible compressing force.

The largest-sized chloride-of-silver battery—fifty cells—being insufficient to cause contraction in some regions, notably the muscles at the back of the thigh, I procured another galvanic battery of the same strength, connecting the two. The most obdurate muscles responded to eighty or ninety cells, with the cathode placed upon their nodal points. Reaction to the current was quite prompt when one of sufficient strength was used. The left leg and the right thigh required an especially large number of cells.

For nearly a month there was a steady though slow improvement in the electric response. The muscles felt harder. The patient regained voluntary control of one muscle on each side—the sartorius—but no more. Following this period of improvement was one in which for nearly a month the patient merely marked time, so to speak. In fact, it seemed that the muscles were gradually wasting; and this although the most thorough applications of electricity and massage were daily employed.

It was during this period that Professor Gray was called in consultation. After a most careful and painstaking examination of the case he made a diagnosis which agreed entirely with that previously pronounced by Professor Seguin.

Since the condition at this time was practically identical with that when Dr. Seguin saw the case, I shall refer you for certain details to Dr. Gray's report. He urged immediate interference, believing that the patient's only hope lay in surgical exploration without further delay.

Examination of Mr. S., made February 8, 1889, by Dr. L. C. Gray.—"Facial muscles are normal, as are also all the cranial nerves. Optic nerves and the fundi normal. In the upper extremities tact, pain, muscular and temperature sensations were normally appreciated. The grasp of the right hand, tested by the dynamometer, was forty-four kilogrammes, that of the left hand being forty. Upon the cutaneous surface of the trunk no definite area of hyperæsthesia was detected. The tests regarding this point were so contradictory that no value could be attributed to them. The area of anæsthesia upward ceased at a line drawn just above the umbilicus. The deep reflexes were present and active. In the lower extremities the sensations of pain, temperature, and muscular movements were absolutely and entirely abolished. There was, however, a very slight and imperfect appreciation of tact over the toes and the front of the feet. The plantar and knee-jerk reflexes were lost. Cremasteric reflex was present, and especially active on the left side. In the right leg the only muscle that reacted to the strongest faradaic current was the sartorius, and this reaction was fibrillary; in the same muscle no contraction could be obtained by galvanic currents running up to twenty-five and thirty milliampères. There were no polar changes. The anterior tibial and peronei reacted feebly to moderate faradaic and galvanic currents, without polar change. In the left leg the strongest faradaic and galvanic currents failed to produce any reaction in the thigh and buttocks. In the anterior and posterior leg groups there was no faradaic reaction. Thirty milliampères of the galvanic current produced a feeble cathodal closing contraction in the anterior tibial, but only produced a slight flicker in the posterior tibial; even in these there were no polar changes. There was no anodal or cathodal contraction."

During the time subsequent to Dr. Seguin's visit I had, in anticipation of the probable necessity, practiced resection of the spine in my operative-surgery course at the Polyclinic upon six or seven cadavera.

It has happened that all of the few traumatic cases of spinal resection recorded hitherto, or at least those of which I have seen reports, were done at a point higher in the spine than the dorso-lumbar junction. I quickly found that the incision heretofore recommended—a single, vertical, and generally central stroke—while permitting easy separation and retraction of the muscles from the spines and laminæ in the cervical and upper dorsal region, where the muscles are comparatively thin, was not so satisfactory low down. The dorsal spinous processes near the lumbar vertebræ no longer dip sharply downward but project backward;

and the muscle filling the spaces here between these spines and the transverse processes is surprisingly thick to one who has not removed the lower part of the cord at autopsies.

Still, if we are to use the rongeur forceps, as is commonly done, gnawing away *piecemeal* the offending bones, the *central* incision must remain the best. If, however, we wish for any reason to *saw* through the laminæ, removing them *entire* with their spinous processes, then the *lateral* incision, about to be described, is decidedly the preferable one—easier for the surgeon and safer for the patient, because involving less muscular detachment.

In this instance I determined to make an attempt which I believe is new of application to the spinal bones. I refer to reimplanting the detached portions of the column should it be shown at the operation that these are not lying in contact with the cord.

This idea rendered the central incision running down the spines still further objectionable. If the bones were by this usual method entirely bared of muscular attachment at the back, such bones, when cut away, might as a possibility, if kept aseptic and warm, reunite and live when replaced, just as the button removed when trephining the skull will frequently do. But, considering their size, this would be unlikely. And if chipped into small fragments, as advocated by Macewen in skull trephining, the great difficulty of keeping such fragments absolutely quiet, even with the patient in a plaster jacket, will at once appear to every one Upon the skull such absolute immobility can of course easily be secured.

As the best means of attaining my object I determined upon an incision which I will call the "H" incision. This runs like a capital H down the back, with a vertical stroke on either side the spine, and a transverse stroke placed opposite to, above, or below the middle of the vertical, as may seem best. The vertical strokes are directed, as they are deepened, obliquely inward toward the median line of the body and strike the bones about the middle of the laminæ. This obliquity permits sawing the laminæ with Hey's saw with much less retraction of the muscles and consequent laceration than otherwise. The muscles are separated by blunt means a sufficient distance at the bone-level to permit of sawing without laceration. Retractors with an especially deep and flat traction surface are of course indispensable.

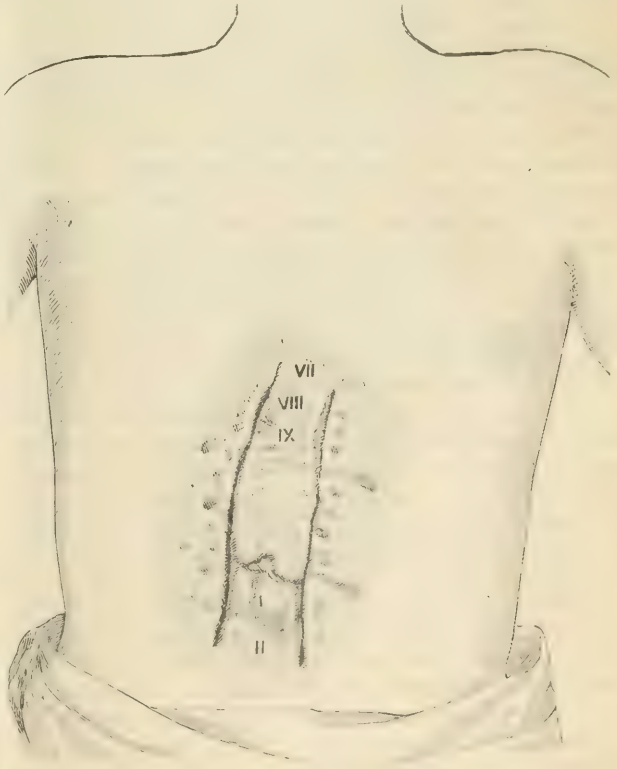
In sawing here one must direct the saw quite sharply inward. If the saw-cut is made at all parallel with the long axis of the spines, the canal will probably not be opened, but the teeth will advance into the body of the bone. This necessary obliquity of the saw-cut, too, prevents the reimplanted bone from sinking too far inward toward the cord, even under pressure. The saw-teeth should cut the narrowest possible groove. The laminæ being severed over a sufficient number of vertebræ, with due care not to wound the theca, the next step is to make the transverse cut of the "H" between two of the spinous processes. This stroke is deepened obliquely upward, and of course cuts the supraspinous and interspinous ligaments.

Assuming that our transverse stroke is made low down in the "H," we now have a long superior flap of spinous processes and their laminæ covered with their undisturbed muscular and cutaneous investments. Their vascular supply being so little interrupted, these bones are almost sure to live. This flap is now reflected, not *directly* upward nor (if the lower flap) *directly* downward—for the spinous processes coming mutually in contact will quickly prevent this—but *obliquely* upward, outward, and backward; or downward, outward, and backward, as the case may be. And in this way a perfectly free view of the theca and canal is easily obtained.

My intention was, in the case of my patient, to replace this bony flap should no part of it be found pressing on the cord, and by silver-wire or silkworm-gut sutures to fasten the laminæ at a few points to their severed bases for additional security against motion in the fragments.

The operation upon Mr. S. was performed on the 27th day of February, 1889. Dr. Gray was present, and the writer was assisted by Dr. F. A. Manning, Dr. H. J. Kelly, Dr. J. H. Brower Browning, and Dr. R. M. Cramer. To the careful attention of these gentlemen during the subsequent difficult and tedious work the ultimate success was largely due. Ether anæsthesia was used. The usual precautions were observed, which I need not detail here, to insure asepticism of the wound.

The patient lying in the left latero-prone position, the "H" incision was made. The vertical arms ran eight inches in length from the seventh dorsal to the second lumbar vertebra, slightly diverging as they descended. The transverse arm ran between the kyphotic spinous process of the twelfth dorsal and the first lumbar spine, which point was about two inches above the lower ends of the first incisions. (The accompanying figure, from a



photograph, taken about two months and a half after the operation, will make this clearer, perhaps.) There was very little hæmorrhage. For the smaller vessels I would compress with

sponges in one vertical arm for a time, meanwhile deepening the other; and *vice versa*. The sawing was made difficult because of the wide deviation of the eleventh spine toward the left. Of course I had to go still further to the left to saw its lamina on that side.

Extreme caution was necessary in order to avoid injury to the theca under the right lamina of this same vertebra. This right eleventh lamina was found crushed down much below the level of its fellows. Section of the arches of the eleventh and twelfth being finally completed, the twelfth was easily raised obliquely, together with its superjacent flap. It was now apparent that the depressed eleventh lamina was firmly adherent to the theca, and could not be moved. This fact, and a subsequent discovery as to the cord, compelled me to give up my original plan. In order to remove the depressed bone it became necessary to use the rongeur; and so firm was the thecal adhesion to the bone that, to separate it safely, it became necessary to saw and elevate the posterior arch of the tenth dorsal as well, thus stripping the adherent theca away partly from above and partly from below. The view of the cord now given caused any idea of reposition of the bones to be abandoned. About a finger's length of the cord was in sight. This formed a distinct knuckle, making an angle of perhaps 15°, its apex pointing backward and lying immediately below the depressed arch. Evidently there had been a fracture of the body of at least the twelfth dorsal, which had in part been thrown backward. The laminæ and spine of this, the kyphotic vertebra, remained unbroken. The cord, then, was compressed between two abnormal bony points—one in front, one behind—or at least these points lay firmly in contact with the theca. And opposite the tenth and eleventh spines, while not compressed, it lay so closely in apposition with the arches that I thought it would be unwise to attempt to save these, as the width of the saw-cut would cause them to fall slightly nearer still to the cord.

The posterior arches of the tenth, eleventh, and twelfth were therefore dissected clean away from their muscular investment, with as little laceration of the latter as possible. The first lumbar arch proved normal, and consequently no lower flap in the "H" was made. The theca did not pulsate at all, and seemed adherent to the cord. Just below the eleventh lamina was evidence of an old transverse rupture of this sheath which had reunited, but with slightly overlapping edges. No break in the cord proper could be appreciated by the sight or the finger, and a curved probe passed at intervals gently beneath the theca could not find any bony point on the anterior wall pressing it—save the one named, which was not acute.

The writer would much have liked to open the dura mater and examine the state of the cord by actual sight, and would certainly have done so if the patient's condition had justified a further prolongation of the operation. But the pulse was failing, and, as anæsthesia had lasted more than three hours already, it was considered wisest not to explore further. Accordingly, the wound was closed with sutures of retention and of coaptation—both of catgut—and drained at the middle of the transverse arm of the "H." An ample and smooth iodoform- and bichloride-gauze dressing was applied, then thick layers of cotton wadding about the body, and over all a stout plaster jacket going from the armpits to the trochanters. The patient reacted well. Unfortunately, the temperature of the hot bottles placed about him was not carefully noted, although the attendants were cautioned; and several small sloughs on his thighs and feet resulted. These have since healed, as have two very large ones on his soles caused by heat injudiciously used a few weeks previously.

For some days after the operation he suffered from great pain in the wound, only being able to lie on his face with any comfort at all. Although the temperature did not rise above 100°+ at any time, I made a trap-door in the splint the third day, and investigated. The wound was perfectly aseptic and well drained. Removal of the slight pressure upon it gave considerable relief. Briefly, the wound healed by primary union save at the point of drainage, and this closed quickly upon removal of the tube. The pain ceased with the healing of the wound.

It is now ten weeks since the operation, and it will be interesting, perhaps, to give a summary of the changes in the patient's state at the present time. These may be epitomized by saying that he is none the worse in any respect for his operation, but, on the contrary, is in many ways somewhat improved, so that he expresses himself as very glad that it was performed.

The following points may be particularly noted:

Motion remains lost, save that the sartorii are under control and stronger than at any time since the fracture.

Reflexes—testicle, knee, and ankle—absent as before, but pricking the limbs causes free contractions and of other groups in addition to those so irritated.

Muscular sense considerably improved.

Common sensation not much better in limbs. But patient can now feel a catheter the whole length of the urethra, can tell when the bladder is full or even nearly full, and can throw quite a vigorous stream. Before the operation the bladder showed no evidence of muscular power. This improvement has dated only from the past week.

Within three weeks after the operation rectal sensation and motion both became strikingly better. While he still can not retain fæces, unless rather hard, he can now feel intestinal distension, and the finger introduced is grasped. Formerly, the rectum was completely paralyzed regarding both sensation and motion.

The improvement from which he derives the greatest comfort is present ability to move in any direction without pain. Until the operation any free motion of the head caused pain at the seat of fracture, and this region was quite sensitive to pressure. Now tenderness no longer exists here; simply normal sensation.

Before the operation his muscles responded only to strong galvanic currents in the paralyzed area, and very poorly to faradaism. Now his muscles respond to electricity more easily and vigorously than ever before. Perhaps one third fewer galvanic cells are needed now; but where formerly he hardly reacted at all to faradaism, now he does so much more easily, much more vigorously, than to galvanism. This I believe is favorable.

His erections, although the penis has but little sensibility, are more frequent than formerly.

A striking improvement is in the temperature of his legs. They were often bluish, and frequently felt cold, but within a few hours after operation they became warm, and are now almost always so. The toes are no longer in a state of flexion, with the exception of the left great toe, the extensor of which is the only muscle that can not be made to respond to electricity.

From the time of fracture the toe-nails of the left foot ceased to grow, although those of the right foot had to be cut several times between September 1st and the date of the operation. Since the resection the left toe-nails have grown vigorously, having required cutting more than once.

Dating from the injury the left leg ceased to sweat, although the right one did so whenever the patient was in a sufficiently heated atmosphere. Since the operation, however, both lower extremities have perspired freely and frequently—more than would naturally be expected, in fact.

As to the probable final outcome of this most interesting case the gentlemen of this Section will all be able to speak

with greater authority than myself, and I shall hope to profit by their expression of opinion.

A few words now upon some general considerations.

There are so few recorded cases in which the operation under discussion has been done for traumatic paraplegia that each case almost stands alone in its own part of the spine, and there is very little with which to compare it, either in technique or result.

It is, of course, absurd to expect a brilliant outcome in these fracture cases—a result which, however, experience has shown to be abundantly possible where tumor is the cause of the paraplegia. In most cases of spinal fracture, with resulting paralysis below, the original injury to the cord has been so severe, the laceration of the cord by the broken bones so great, that even where pressure can be demonstrated and it is removed by surgical means at once, this relief only makes an ultimate recovery possible; it does not at all make it probable.

Still, when it is demonstrated that the cord can safely be exposed, that in a case of traumatic paraplegia the operation for relief of bony pressure becomes by care and asepsis even approximately as safe as one for a traumatic hemiplegia from depressed bone in the skull, then the surgeon will not be considered free from responsibility who withholds his hand.

Each new case, whether successful or otherwise, should be recorded at once, to stand as a guide-post or a warning on our path in these recent domains of surgery.

It seems to the writer that we may now advance the following statement as a rule of practice:

Whenever, following traumatism, even a slight abrupt irregularity of the spinal column is observed to coexist with paraplegia from this level, a cutting operation is indicated to determine whether the paralysis is not, by bony pressure, made incapable of spontaneous relief.

This operation should be deferred no longer than recovery from the original shock of the injury demands. If needed at all, it is needed early; and we make a mistake if, as in my case, we wait until electricity and time have alike proved futile before attempting what I may call exploratory resection. It will be the easier by far to the surgeon at this early stage, and the safer for the patient; at least when the obvious displacement is due to a broken posterior arch, as then comparatively little bony section would be needed, the fragments not having become consolidated by bony union in their false position.

Possibly it might be best to do this, too, even in cases (almost always cervical) in which a simple dislocation is present. Here we have the widest difference of opinion among able men. Most surgeons advocate attempts at reduction by pressure, with or without accompanying extension of the spinal column. Others, who have had one or more patients die suddenly during such manipulations, say "Hands off." May it not be true that in dislocation with paraplegia the removal of one or more arches here would, by relieving the cord, be our safest and therefore wisest expedient? When attempted, the "H" incision would seem best, permitting as it does the several laminæ to re-unite, in those cases where no pressure is discovered.

Nothing is more hopeless in medicine than paraplegia from bony pressure. If this condition were even deemed a strong possibility, operation seems to the writer indicated. This is really in the line of conservatism, since that is wise conservatism which, by whatever means, best conserves or prolongs the patient's life.

If in cases of this kind, although not curing the mangled cord, we shall relieve to a notable extent the patient's sufferings, making his life more endurable and prolonging it, our treatment is more than justified.

A DANGER TO BE AVOIDED IN THE TREATMENT OF NERVOUS AFFECTIONS BY SUSPENSION.

By WINSLOW W. SKINNER, M. D.

The prophetic warning given by Dr. Hammond in his communication to the Journal of May 11th in regard to the dangers incident to treatment by suspension, and the paragraph relative to a fatal accident with the suspensory apparatus which appeared in the same publication on May 18th, prompt me to signal a new source of danger in the employment of this method which might possibly cause the death of a patient during suspension, even though this were performed under the immediate supervision of a physician. I refer to the presence of catches, knots, or movable handles, which are fastened upon the ropes in some forms of the apparatus, in order to enable the operator to grasp the cord with less difficulty and with greater force when he raises the patient from the floor.

Now, it may happen—it has happened already, and will happen again—that the patient will lose consciousness while being suspended. In such a moment it is imperatively necessary to lower him immediately to the floor, where he may lie flat on his back while the operator applies the proper means to restore consciousness. But these knots or movable handles may and do prevent the cord from passing through the pulleys to a sufficient length to allow the patient to reach the floor with the apparatus still tightly clasping his head, and if the physician is alone in this predicament he will have well-nigh insuperable difficulty in extracting his patient from the straps unless he hastily cuts him down. These dangers and difficulties would be avoided either by the disuse of the handles, knots, and catches mentioned, or by the use of an apparatus similar in design to that of Dr. Hammond, in which the power is applied through a windlass, always provided, however, that there is enough extra length of cord wound around the barrel of the windlass to enable the operator to lower the unconscious patient completely to the floor.

These considerations were suggested by an accident, though not a fatal one, which occurred last month in Dr. M. A. Starr's department of the Vanderbilt Clinic.

An ataxic of about forty years of age, who had already undergone the treatment several times, was being suspended as usual, and while hanging in the air said, in answer to questions, that he was quite comfortable, when suddenly, without any warning whatever, he became pale and entirely motionless and

unconscious. The physician in charge, who was watching him constantly, at once endeavored to let him down to the floor, but a movable handle had been attached to the cord and was arrested at the pulley, so that the cord could not be dealt out sufficiently to allow the patient's weight to rest on the floor. Fortunately, aid was near and the patient was lifted a little, while the straps were unbuckled from his head and shoulders, and he was placed in a proper position, and consciousness soon returned. No permanent untoward effects of the suspension were observed, and the patient has since been treated in the same manner without accident. Three other patients at the clinic have complained of vertigo, but none to such an extent as this.

While this comparatively new method of treatment by suspension is being judged by the profession—while it is still on probation, as it were—every phase of its working should be examined, and all its dangers as well as its virtues should be made known if possible before a final decision on its value is reached.

170 West Sixty-fourth Street.

Correspondence.

LETTER FROM VIENNA.

A Complicated Case of Cerebral Disease.—Laparotomy for Extra-uterine Gestation.—The Transplantation of Bone.—Professor Billroth's Sixtieth Birthday.

Vienna, *May 22, 1889.*

At a recent meeting of the Imperial Royal Society of Physicians, of Vienna, Professor Nothnagel brought forward a case of cerebral disease which was very remarkable from a diagnostic point of view. The case was as follows: The patient, a turner, aged twenty-nine, had been taken ill, a year before, with nephritis, from which he recovered after a short time. In August of last year he began to suffer from cough, anorexia, and weakness, for which he was admitted into the hospital. During his sojourn in the hospital a disturbance of vision came on; everything appeared to him as if seen through a fog. Diplopia also was stated to have been present at the beginning, but to have disappeared subsequently. A painful sensation of burning came on in the right half of the face, the tongue could be moved only with difficulty, and the speech was impaired. On walking, he suffered from giddiness, but he never complained of headache. There was tinnitus in the right ear. When the patient was shown he had a number of symptoms referable to the most various cerebral nerves. The olfactory nerve was not affected. Vision was impaired, and there was bilateral chorioiditis; both pupils were contracted and sluggish; the mobility of the eyeball was much impaired in all directions; the levator palpebræ acted slowly.

The fifth nerve presented special disturbances. When the patient pressed the maxillæ together the right masseter muscle became very solid—a condition which did not exist on the left side. Hence the lesser division of the fifth nerve was inactive, and there was, perhaps, also a slight muscular atrophy. The greater portion of the fifth nerve was affected, though, strange to say, the affection was situated on the right side, but not on the left. The left facial nerve was partially paralyzed; the auditory nerve was uninjured. The patient's hearing was normal, though he was affected with bilateral suppurative otitis media and perforation of the membrana tympani.

As to the glossopharyngeus nerve, the patient had, indeed, no difficulty in swallowing, but he ate with extreme caution, since, if he did not do so, the food and fluids passed through the mouth and nose when he swallowed. Disturbance of this function was therefore present, though the paralysis of the muscles of the palate was incomplete. As to the vagus nerve, in the apyretic condition there was a permanent increase in the frequency of the cardiac pulsations, which varied from 100 to 120. The laryngoscopical examination revealed nothing; there was no paresis of the vocal cords. The hypoglossal nerve was sound. The patient spoke through the nose, probably owing to the paresis of the velum palati; he could, however, pronounce all the letters and the most difficult words distinctly. He could walk well, but he lifted his right leg with more difficulty than the left. The right hand was stronger than the left. The patellar-tendon reflex was distinctly increased in both knees. His gait became uncertain when he closed his eyes; it then closely resembled that of a tabetic patient. Examination with the galvanic current of the territory supplied by the facial nerve revealed, on the left side, the beginning of the so-called reaction of degeneration. There was a slight degree of hyperæsthesia on the right side. There was, then, an extraordinary complexity of symptoms, the explanation of which presented the greatest difficulties. Taking into account all these appearances, Professor Nothnagel pointed out that there was external ophthalmoplegia produced by nuclear lesion, but that the spinal symptoms also pointed to a lesion of the funiculi pyramidales. He had arrived at the probable diagnosis of a diffuse disease in the brain, and perhaps also in the spinal cord, in which the nuclei of the eye muscles, the nuclei in the medulla oblongata and the pons Varolii, and the fibers of the funiculi pyramidales were affected. On a subsequent occasion, Professor Nothnagel reported on the further course of the disease. The complex of symptoms had much changed; the mobility of the eyeball upward and downward had improved, and there was only paralysis of the recti interni and externi on both sides. Furthermore, there was a paralysis of the masseter muscles on the left side with complete left-sided paralysis of the facial nerve in all its branches. There were also distinct bulbar symptoms which had been overlooked at the time the patient was shown. The patient spoke with difficulty, and his food invariably took a wrong direction. The pulse was frequent. The hyperæsthesia of the right side of the face and of the right upper and lower extremities still persisted. There was, moreover, a distinct paresis of the right extremities, also an alternate paralysis, in which the facial nerve and the lesser division of the fifth nerve on the left side took part, as well as the extremities and the sensory portion of the fifth nerve on the right side. Such alternate paralyses, if an affection at the base of the brain and a double seat of the disease were excluded, pointed with certainty to an affection of the pons Varolii—namely, in the lower part of the pons, behind the decussation of the facial nerve, and in front of the decussation of the nerves for the extremities. An analogous case had been published by Wernicke. As the cause of the disease, Professor Nothnagel suggested tuberculosis, since the patient had already suffered from tuberculosis at the apex of the lungs. The supposition of tubercles seated over the dorsal surface of the pons Varolii (over the back of it), on the left side, would explain all the symptoms, since the nerves for the extremities had been affected much later than the facial nerve, the lesser division of the fifth nerve, and the common nucleus for the motor-oculi nerve and the abducens nerve. It was, moreover, suggested that the tumor, on its further growth, had enlarged downward and thus produced bulbar symptoms on the part of the organs and the glossopharyngeal nerve.

Death occurred a short time after the second communication

on the case, and the post-mortem examination confirmed the exact location and cause diagnosticated, namely, tubercle with its seat over the dorsal part of the pons Varolii toward the left side.

Professor Carl Braun von Fernwald recently showed a peculiar case to the Obstetrico-gynæcological Society of Vienna. The patient had already been confined twice. In May, 1888, she had the last menstruation. In September she began to complain of constant pains in the abdomen. On the 10th of February, 1889, she was admitted into Professor von Braun's clinic, where Dr. Braun's son made the diagnosis of extra-uterine pregnancy, with free effusion of liquid into the abdominal cavity. Laparotomy was performed on the following day. At the examination which had previously been made, the uterus had been found to be of the size of the head of a fœtus. It was lowered and removed toward the left side. The various parts of the fœtus could be felt through the flaccid abdominal walls, and a collection of free liquid in the abdominal cavity could be proved to be present. On opening the abdominal layers in the linea alba, and after the peritonæum had been divided, there escaped a large quantity of serous fluid in which flakes of fibrin were suspended.

The fœtus was removed, and the umbilical cord was ligated. The child, a girl, weighing 3,100 grammes, and being 51 centimetres in length, was imbedded in a mass of fibrinous clots, and was easily aroused from a slight asphyxia. She, nevertheless, succumbed after twelve hours, and the post-mortem revealed the presence of capillary bronchitis and bilateral lobular pneumonia, owing to the inspiration of amniotic fluid and fibrinous flakes. Nothing could be proved as to the presence of an amniotic sac, only in Douglas's pouch the peritonæum was covered by a thin membrane, which might be looked upon as a membrana ovi, and which stood in connection with the placenta, which covered the posterior surface of the uterus and that of both the broad ligaments. On the left side the placenta very closely adhered to the mesentery of the sigmoid flexure by means of very strong blood-vessels. After these had been ligated the adhesion was destroyed, and the placenta gradually removed. As, however, the hæmorrhage over the back of the uterus could with difficulty be stopped, the uterus was seized at the neck by means of an elastic ligature and sutured outside the peritonæum in such a way that, after the "toilette" had been made, the peritonæum was sutured to the upper part of the wound and to the rest of the amniotic sac. Owing to these manipulations, a large cavity resulted, in the middle of which lay the stump of the uterus, after the body of the same had been removed. This cavity was filled up with iodoform gauze, the stump was fixed in the usual way, and the abdominal layers were sutured. Recovery supervened slowly, and quite without fever.

Professor A. Adamkiewicz, of Cracow, recently made a communication to the Vienna Imperial Royal Academy of Sciences on experiments which he had carried out on the transplantation of bone. The author's well-known experiments on compression of the brain had led him to perform numerous trephinings on the animals on which the experiments had been made. For certain reasons, after having trephined, he replaced the round pieces of bone which had been removed, and sutured over them the periosteum and the skin. After the first experiments, he had perceived that the pieces of bone which had been introduced had healed into the skull. He had since paid great attention to this fact, and, as the result of a vast number of experiments, had arrived at the following conclusions, which, in the first place, had been deduced from experiments on the rabbit:

1. Round plates of bone of a diameter of from 0·6 to 0·9 centimetres, which had been removed from the skull of the rabbit and inserted again into the opening, united perfectly with the surrounding bone, if the usual precautionary antiseptic measures were taken at the operation.

2. The length of time which was necessary for this process to take place was between four and six weeks. At least, the author had observed, after from four to six weeks, a perfect synostosis between the implanted piece of bone and the other bones.

3. The piece of bone to be transplanted could be exposed to the air for a certain time (from five to ten minutes) or could lie in a solution of carbolic acid (two to three per cent.) without preventing the success of the experiment.

4. Still larger pieces of bone, more than a centimetre long, and correspondingly broad, whose edges were not even smooth, also united with the skull, when implanted with the same precautions.

5. In the same way pieces of bone could be transplanted from one animal to another with equal success.

6. The osseous intergrowth occurred on the borders of the bones which touched each other, for these ossified and became more and more indistinct, whereas the free surfaces of the bones preserved their usual form and smoothness. In cases in which the implanted piece of bone did not touch the border of the surrounding bone, the union took place by the formation of connective tissue, and not by ossification, so that it might therefore be concluded that for an osseous union to occur the direct contact of the bones was of great importance.

On the 26th of April, Professor Theodor Billroth completed his sixtieth year, but he was absent from Vienna at that time. The Vienna students, together with his known "disciples" and friends, prepared a splendid ovation for him on the 6th of May, when the distinguished master commenced his lectures for the summer semester. At half-past nine A. M., Professor Billroth, accompanied by his two assistants, appeared in his lecture-room, which was splendidly decorated with flowers. The students and numerous physicians present, who completely filled the auditorium, received him with repeated and enthusiastic exclamations of "*Hoch*" and "*Prosit.*" One of the students then addressed the distinguished surgeon in the name of the Vienna students, and he responded in a long and eloquent speech. Among other things, he referred to the imperfection of the healing art with respect to tuberculosis and the malignant neoplasms. Mechanics ("technics") could hardly help us any more; it was chemistry which had to invent new remedies able to kill the tubercle bacilli which had penetrated into the organism, and others which could check the further development of the neoplasms without damaging the whole organism. These were, according to the speaker, the most important tasks of the future.

Dr. Sjsrgerwitch, Minister of Public Instruction of Servia, presented Professor Billroth with the Grand Cross of the St. Sava Order, and the Vienna students presented him with a medal which bore on one side his portrait, with these words: *Theodorus Billroth, ætatis suæ lx;* on the other, *Medico artifici, viro optimo pietate conjuncti discipuli et sodales.* Professor Billroth was also the recipient of several other distinctions on this occasion.

The American Medical Association.—The meeting in progress at Newport as we go to press is largely attended, and the attendance seems to be fairly representative of the various parts of the country. The programme was an unusually long one, even for this association, and of satisfactory diversity. We shall publish an account of the general meeting in our next issue, being obliged to omit it this week on account of the pressure of other matter which necessarily calls for insertion in the closing number of the volume.

THE

NEW YORK MEDICAL JOURNAL,

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THE SANITATION OF JOHNSTOWN.

The sanitary situation at Johnstown is not so simple as at first appears. It is true now, as reported by the Surgeon-General to the President two weeks since, that the source of danger from a sanitary standpoint was the drift at the bridge. That drift proved a veritable *pons asinorum*, for the desultory efforts made at first only served to discourage the hope of ultimate success.

The State Board of Health of Pennsylvania, represented by Dr. Lee, Dr. Sibbett, and Dr. Groff, was early on the ground, but the most it could do was to reassure the people, and pay attention to such points as needed immediate action. The hospitals and the mortuaries required its constant surveillance, and its repeated denials of the probabilities of an epidemic were made necessary by sensational correspondence. The unfounded rumors of an impending epidemic had the effect of frightening the workmen from work in many instances, and deterring many laborers from going to Johnstown at a time when their labor was urgently needed. The presence of a working majority of the State Board of Health materially assisted in quieting excitement, and their cool, calm demeanor in the trying times of the first week was in strong contrast with that of the self-constituted dictator and his satellites.

But military system has at last brought order, the work of rebuilding Johnstown has begun, and the services of the State Board are again essentially necessary. The problem is a somewhat interesting one. Although the sanitary dangers are not from any specific germs, there is danger to the public health in the newly excavated cellars and basements, unless they are well managed, and it is precisely in such situations as this that the wisdom and prudence of the board of health have opportunity to show their best fruits.

While the work of clearing out the drift at the bridge has been properly left to the engineers, the board will do well to insist that Johnstown should now try to make itself entirely healthy for the future. The town is subject to overflow every year; why not now make use of the opportunity to raise the grade of its streets, put in a modern sewerage system, and thus place Johnstown in the list of cities absolutely healthy? Its mountain air and its pure water have given it great natural advantages, and the way is now clear to profit by this great calamity to make Johnstown a true city of Hygeia; thus from its now unsightly and melancholy wastes may arise a sanitary Mecca.

MINOR PARAGRAPHS.

FATHER DAMIEN.

The Prince of Wales has done an unexpectedly popular thing in taking the leadership of a movement which has for its end the honoring of the memory of the hero-priest of Molokai, the project including a memorial on the lazar-island which was the scene of Father Damien's consecrated life, sufferings, and death, and also a ward to be maintained at one of the London hospitals, to encourage the thorough study of leprosy. The "Lancet," expressing its feeling in regard to "the moral beauty of self-sacrifice" in men like Dr. Livingstone and Father Damien, "which shines with signal brilliancy by contrast with the material altar upon which it is laid," says: "To Father Damien belongs the honor of having given us the most striking and perhaps the most noble of the many new incarnations of self-sacrifice."

The magnitude of the changes wrought by his sixteen years of devotion adds to our satisfaction, for we are accustomed to see so much abnegation that goes for naught that the successes of the father of the lepers makes a doubly deep impression upon us. Under Damien's energy the island of degradation and misery which he found on his arrival has been transformed into a law-abiding and almost attractive community of over a thousand invalids; they are cleanly, cheerful, and measurably self supporting. Since the death of Father Damien in April last another Belgian priest, Father Wendolen, has been placed in charge of Molokai. But, meanwhile, a young priest, Father Conradi, also a Belgian, who had been an assistant of Father Damien's for a few years, has been taken sick, it is believed, with leprosy; he is only thirty-five years of age. Another European, an Irishman, who had been a soldier and afterward had assisted in the instruction of the lepers, is now himself a leper and his days of helpfulness are over. These are all heroic men who command our respect, but it is to Father Damien that the memorials are due, since it was he who marked the road—"he blazed the trail"—to a grand and fruitful self-consecration; for a time at least he trod the thorny path alone, while the later comers had the company of a hero from the first. The full name of the hero-priest is Joseph Damien de Veuster; this we learn from the "Illustrated London News," which journal contains a woodcut of large size representing the lamented priest in his canonicals. The face, as therein depicted, is indicative of intelligence, energy, and beneficence.

THE NEW YORK TENEMENT-HOUSE DEATH-RATE.

The recent statistics of Dr. Roger S. Tracy, as given in the newspapers, seem to be open to criticism. We refer to the low tenement-house death-rate, placed at 22·71 per mille. It is low because of the inordinately high estimated tenement population, perhaps; of course, the higher the error in an estimated population, the lower must the rate of mortality fall. Change the arrangement of the tables, and we have:

	Grand total population.	Tenement population.
1888	1,526,081	1,093,701
1869	894,419	468,493
Increase in twenty years	631,662	625,209

In other words, if Dr. Tracy's figures are correct, the increase has been almost wholly in the tenements; the private-house classes have grown only 6,453 in twenty years, or only 323 per annum. This is incredible; there have been thousands of houses put up in that time, to say nothing of the great number of be-

ings that fill them. The better, or well-to-do class, has not been stationary. Stated proportionally, according to Dr. Tracy's data, the rate of increase has been over 133 per cent. in the one class and less than 1·5 per cent. in the other. If our point is well taken, it must be seen that a good deal of what Dr. Tracy says goes for nothing.

A BOARD OF HEALTH WANTED.

Diphtheria has prevailed at Steinway village and Astoria, both places within the jurisdiction of Long Island City. That city is in an unfortunate sanitary condition by reason of a deadlock among its officials, which has prevented the organization of a board of health. While the politicians have been quarreling, epidemic disease has intrenched itself, and many valuable lives have been put in jeopardy.

OUTINGS FOR SICK CHILDREN.

The number of sea-side and inland retreats to which sick children can be taken from the city increases every year. Beginning with the Bartholdi Crèche, in the Harbor, and extending out along either shore of Long Island and around on the Jersey coast, there are not fewer than fourteen country refuges for those smitten by the summer's heat. They are, without exception, sustained by the contributions of private individuals, and must require not less than $12,000 annually. The great heart of charity is never still, but it is most easily moved in behalf of the very young who suffer. The circular of one of the sea-side homes, recently received, gives a timely caution in regard to sending out of the city children who have bronchial or pulmonary troubles, the experience at that resort being that such patients are injured rather than benefited.

THE UTILIZATION OF GARBAGE.

According to the "Bulletin of the Rhode Island State Board of Health" for May, the city of Milwaukee will soon abandon the cremation of garbage, which it was among the first of the Western cities to adopt and advocate. It is proposed to substitute a drying process in the place of combustion. A company is at work with a new method, which converts cities' refuse into articles more or less salable. The garbage is made to pass through a series of mechanical driers, and in the course of ten hours becomes a brown powder. The oil is pressed out or drawn off, and the residue can be sold as a fertilizer.

THE BROOKLYN THROAT HOSPITAL.

A new hospital for diseases of the throat, nose, and ear has been inaugurated on Bedford Avenue, Brooklyn, a public reception having been given on the evening of June 19th. The hospital has temporary quarters in the upper part of the building which contains the Eastern District post-office. It has ten rooms only at the present time, but all its appliances are of a modern and approved description. Dr. Reuben Jeffery is the chief of staff. Dr. W. A. Dayton, of New York, will be the aural surgeon, and Dr. W. O. Moore, of New York, the ophthalmic surgeon. Dr. F. E. West will have the pulmonary room, together with Dr. W. L. Cary. The New York Post-graduate Medical School will assist in the development of the clinical opportunities in this large new field.

THE NEW ORLEANS MEDICAL COLLEGE.

The "Medical News" announces the withdrawal of Professor T. G. Richardson from the faculty of the medical department of Tulane University, New Orleans, on account of ill health. He has had an exceptionally long term of service—thirty-one years—fourteen years in the chair of anatomy and seventeen in that of surgery. For twenty years he has been dean of the faculty. He has been made the emeritus professor of surgery and presented with a series of resolutions, by his former colleagues, expressing their estimation of his worth and their deep regret that they must part company with him. In that long period he had given instruction to nearly 6,000 students and had seen over 1,500 of them receive their medical degree.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending June 25, 1889:

DISEASES.	Week ending June 18.		Week ending June 25	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	19	6	7	0
Scarlet fever	109	10	81	8
Cerebro-spinal meningitis	4	3	1	0
Measles	109	6	89	7
Diphtheria	125	44	115	35
Small-pox	1	0	0	0

Recent Deaths.—Dr. Harrison Teller died at Mt. Kisco, N. Y., on the 17th inst., aged seventy-five years. He was a licentiate of the Westchester County medical society in 1838 and received an honorary degree in medicine from the State medical society in 1860. He spent the greater part of his professional life in Brooklyn, but about twenty years ago moved to the town above named, in the pursuit of a retired and country home-life. He was a man of high moral feeling and had the name of being very kind to the poor.

The Rev. William Arms, M. D., died at Duquoin, Illinois, on June 21st, in his eighty-eighth year. He was a native of Wilmington, Vermont; fitted for college at Fairfield Academy, New York; graduated in arts at Amherst in 1830, in theology at Andover in 1833; and went as a missionary, for a period of five years, to Patagonia, Batavia, and Singapore. Returning to this country, broken in health, he studied medicine at Dartmouth, taking his degree in 1839. He practiced medicine in Vermont, in Wisconsin, and at Vandalia, Illinois. He retired from practice about twenty years ago.

Dr. David Boyes Smith, late professor of military medicine at Netley, England, died recently. He was a graduate in medicine of the University of Edinburgh, and had been surgeon-major in the Bengal Army. He succeeded Professor Maclean at the Army Medical School three years ago. His death was caused by a tumor of the brain.

Dr. James F. Foulkes died at Oakland, Cal., on May 22d, of diabetes. He was a native of North Carolina, a graduate in arts from Princeton College in 1849 and in medicine from Jefferson College in 1852. He was a permanent member of the California Medical Society.

Change of Address.—Dr. George De Forest Smith, to No. 20 East Twenty-ninth Street.

The New Jersey Medical Society.—At the recent annual meeting, officers for the ensuing year were elected as follows: President, Dr. B. A. Watson, of Jersey City; vice-presidents, Dr. J. S. Green, of Elizabeth, Dr. E. J. Marsh, of Paterson, and Dr. G. T. Welch, of Keyport; corresponding secretary, Dr. William Elmer, Jr., of Trenton; recording secretary, Dr. William Pierson, of Orange; treasurer, Dr. W. W. L. Phillips, of Trenton.

The late Dr. Moses Gunn.—The faculty and alumni of Rush Medical College, Chicago, have taken steps toward the erection, at the college, of a memorial bronze in memory of their lamented professor of surgery, the late Dr. Moses Gunn. The subscription list will be closed this month, and an order for the entablature will be given out commensurate with the funds in hand and subscribed.

The Medical Department of Syracuse University.—At the commencement of this college, held June 13th, a class of four was graduated, the smallest in the last ten years. The alumni met, had a banquet, and elected Dr. B. L. Hovey, of Rochester, president.

The Leper-house at Jerusalem has been seventeen years in operation under the care of the Moravians. Their new asylum, built at a cost of $21,000, has 19 inmates, 13 males and 6 females, including 11 Moslems and 8 Christians. There were three deaths last year. The expenses for the year 1888 were $2,200, about $100 annually for each inmate.

The Medical Society of the County of Westchester held its ninety-first annual meeting at White Plains on June 18th. Dr. Samuel Swift, of Yonkers, was elected president; Dr. Charles Mason, vice-president; and W. F. Greene, of Mount Vernon, secretary.

The Presbyterian Hospital of Philadelphia.—Lady Mary Kortright, widow of Captain C. H. Kortright, C. M. G., formerly British consul at Philadelphia, has generously offered to build a convalescents' retreat for the Presbyterian Hospital of that city, and endow it to the extent of $100,000. She was a Miss Richardson, daughter of a banker of Philadelphia. Her home is in England, but her gifts have been frequent to the hospital above named and to other charities near her old home.

The International Medical Congress of 1890.—A "Lancet" Berlin letter states that Professor Virchow, Professor von Bergmann, and Professor Waldeyer, with some others who have had experience in such matters, held a committee meeting on May 27th for the arrangement of the preliminaries of the Berlin congress of 1890. They intend to continue their preparatory work in good earnest from this time out.

An Army Surgeon's Heroism.—The British forces have been conquering more territory in northern Burmah, and last January they met with hot opposition on the part of the hostile Karens. The gallantry of Surgeon J. Crimmin, of the Bombay medical service, is referred to in general orders, not only for his great coolness under heavy fire but for his soldierly aggressiveness. While caring for one of the wounded men he was cut off and surrounded by the enemy, whereupon he seized his arms and defended himself and his patient until relief came, killing some of the Karens.

The Long Island College Hospital Training School for Nurses.—A class of ten trained nurses was graduated at this school on June 20th, after a full course of two years. The address was given by Dr. J. A. McCorkle, who, in the name of the regents, presented a medal to each member of present and former classes.

The Asylum Superintendents' Association.—The forty-third annual meeting of the Association of Medical Superintendents of the Insane was held at Newport, R. I., beginning on June 18th.

A Medico-military Society.—Fifty members of the New Jersey State Medical Society, who hold commissions in the medical corps of the New Jersey National Guard, have organized a medico-military society, with Surgeon-General John Dale McGill, of Jersey City, as president, and Surgeon E. L. B. Godfrey, of Camden, as secretary. The name of the society will be the New Jersey Medico-military Society. The society will hold a meeting in July at the annual State encampment at Seagirt.

The Stormont Library.—Mrs. Jane Stormont, widow of the late Dr. D. W. Stormont, of Topeka, Kansas, has presented $10,000 to the medical society of that State, to found a library for medical men. She designs in this manner to perpetuate her husband's memory.

Society Meetings for the Coming Week:

Tuesday, *July 2d:* Medical Society of the County of Broome (quarterly), N. Y.; Union, N. J., County Medical Society (quarterly); Chittenden, Vt., County Medical Society.

Thursday, *July 4th:* Washington, Vt., County Medical Society.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN NEUROLOGY.

Meeting of April 12, 1889.

Dr. Landon Carter Gray in the Chair.

Nervous Symptoms arising from Ovarian Disease, and their Treatment.—Dr. C. L. Dana read a paper, opening a discussion on this subject, from the standpoint of the neurologist. The symptoms properly falling within this description embraced those which were produced at points remote from the ovaries by reflex influence, and not in the ovary. The term "irritating ovary" expressed to him this relation. The physiological basis of such a condition in the ovary might be purely nervous, that is, without anatomical change, and the general neuroses might be produced by such a condition. But most commonly chronic hyperæmia or oophoritis was present. The parenchymatous and cystic degenerations, or ovarian tumors, did not cause these symptoms, and so might be excluded. The mechanism by which reflex effects were obtained might be of two sorts—trophic and vascular. An irritation traveling through the vaso-motor nerves caused congestion of the pelvic organs which might become chronic; but if the trophic connections felt the irritation, various remote symptoms might be produced, and of these a large number were on record. Among those recorded were vaso-motor disturbances, cardiac irritability, hysteria, mania, melancholia, neuralgias in the hands or feet, spinal irritation, sciatica, migraine, dyspepsia, insomnia, and vesical and rectal pains. He questioned how large a part of these were direct effects of and really due to conditions in the ovary, and especially as the removal of the ovaries did not, to any great extent, relieve the severer constitutional nervous diseases, such as chorea; and, on the other hand, melancholia, epilepsy, bad neuralgias, etc., often occurred in persons having perfectly healthy ovaries, and severely diseased ovaries often were unaccompanied by any such disorders. Ovarian epilepsy was not mentioned by Gowers, and, although Battey had recorded ten cases, eight of which he had cured, one of these patients had had hysteria and catalepsy, another had afterward died of a brain disorder and another in convulsions, and a fourth had probably had convulsive hysteria rather than epilepsy. We knew that patients having the hysterical affections simulating

epilepsy were often cured by small things which made an impression on the mind, such as one dose of a nauseous drug, or the snipping of the conjunctiva. As for ovarian mania or insanity and amenorrhœal insanity, similar observations could usually be made as to the real nature of the malady present in the recorded cases sufficient to show that it lay outside the ovary to a very large extent. In women the thoughts tended to dwell on the organs of the pelvis, and it might easily happen that if the ovaries of a hysterical patient were removed she might fancy herself cured. He believed, then, that the ovarian function occupied a subordinate place among the things which determined the chronic neuroses. Sickness could be produced by ovarian irritation doubtless, but not in the specific ways which had been supposed by some to be usual, leading directly to epilepsy, chorea, insanity, etc. The brain, the stomach, and the pelvic organs constituted in all organisms what might be called the tripod of life; but as in man the brain tended to predominate over the two others in comparative development, so the functions of the stomach and pelvic organs tended to become automatic and of subordinate influence on the whole organism.

Dr. W. G. Wylie thought the influence of the ovary in producing nervous symptoms had been overrated; much depended really on the inherited nervous organization. Thus, a delicately organized woman might be made an invalid by the existence of ovarian hyperæmia or disease which in a strong and robust woman would have no secondary effects discoverable. The sexually undeveloped women from whom so large a proportion of gynæcological practice was derived were very apt to have also poorly developed nervous systems, at the same time that they were more likely to have ovarian disease. He would remark at this point that the rectum and colon had an intimate connection with the nervous system. Anal fissures, ulcerative patches in the lower bowel, collections of scybala, etc., were frequently the cause of nervous symptoms, for the relief of which the generative organs had been needlessly operated on. A common condition present, where he had found nervous disturbances really resulting from ovarian disorder, was the thickening and hardening of the ovarian tissue by increased fibroid elements. This caused intense pain locally, and general excitability and irritability before menstruation.

Before he considered doing oophorectomy he made it a rule to get the opinion of an alienist, and also to keep the patient for weeks under his own observation; to examine under ether and see if the ovary was enlarged or confined by adhesions, to try treatment locally and attention to the general health, and to determine that the patient's subjective symptoms were such as to warrant the operation. No well-established ovarian disease could be cured during menstrual life; attempts at ovulation must go on, and this of itself would interfere with any attempted reparative process. From this point of view the necessity of ovariotomy in certain cases was evident; but he believed that, if imperfect sexual development had been more generally recognized as a very common thing and more conscientious attempts made to improve the circulation, digestion, and muscular systems of these patients, better results would have been obtained than had followed castration in hundreds of instances. He had found also that the uterus had much to do with the reflex disturbances under consideration as well as the ovaries, although he had, after years of menstrual hysteria that had resisted all uterine and other treatment, cured it by removing the ovaries.

In brain diseases he had not seen good results from oophorectomy. He had done the operation five times for epilepsy. In three of these patients it had returned, and in the case of the two who had been cured he had not been convinced that epilepsy had been present at all.

Dr. B. Sachs instanced two cases in which epilepsy had returned after oophorectomy, and believed that, where cures were effected by it, hystero-epilepsy had been present and not epilepsy. The question then arose as to what effect the removal of the ovaries might be expected to have on hysteria of a bad sort, its progress, and its continuance. If in hysteria the ovary was found to be much enlarged or inflamed, its removal was justified, but in the majority of cases it was healthy, and the removal of such an ovary was to be decided on as of value or not. The speaker believed that a hyperæsthetic ovary represented only a portion of a general hyperæsthetic organization, and that we had no better reason for removing such an ovary than for excising an oversensitive stomach. The varieties in neuralgic disturbances were not easily numbered. If we removed a painful ovary, we might only be excising one of several foci and compelling the disorder to crop out in other directions. We needed statistics in regard to hysteria being cured in this way. He had seen instances where much amelioration of symptoms was obtained, but in time these symptoms had always returned, sometimes in six months or after a year.

Dr. Mary Putnam Jacobi agreed that larger statistics, based on more precise diagnosis, both of the neural and of the pelvic disorder, were needed before we could judge of the actual influence of oophorectomy over hysteria. In every case it was necessary to distinguish between pain really seated in the ovary and an hallucination of pain generated in an hysteric brain by the same mechanism as other sensory hallucinations were generated in insane brains.

In reading the voluminous report by Richet of Charcot's clinic, containing over a hundred cases of ovarian hysteria, she had not gathered the impression that Charcot attributed the hystero-epilepsy to disease of the ovary, either organic or functional, but that he regarded the sensitiveness of the ovarian region as one of the essential elements of the general symptom-complex. He indeed called "ovarian paræsthesia" one of the hysterical stigmata, and thus classed it with hysterical amblyopia or other symptoms. The influence over the paroxysms exercised by compression of the ovarian (or "hysterogenic") zone was comparable with the influence of the epileptogenic zone discovered in the neck of rabbits by Brown-Séquard. In the cases detailed by Richet no attempt had been made to ascertain the condition of the pelvic organs. The histories given included so many records of abortions and confinements (largely illegitimate or associated with desertion by the father), which had been the starting-point of the illness, that the probabilities were greatly in favor of there having been utero-ovarian disease, as well as moral suffering, in the causation of the hysteria. But the fact had not been made out, and therefore these cases, so valuable symptomatically, could not be of use in deciding the question at issue.

The speaker further remarked that the grave forms of constitutional hysteria were quite noticeably free from utero-ovarian disease. She had had occasion to observe several such cases (not indeed of hysterical mania, but of serious psychic deterioration) where the symptoms had developed spontaneously early in life, and where, in spite of the asseverations of the patient, there had been no objective sign of pelvic disease in either uterus, ovaries, or rectum.

The negation of any *necessary* connection between hysteria and uterine disease had, in fact, been the chief aim of the classical treatise of Briquet. His conclusions might now require to be modified to accord with our greater precision in pelvic diagnosis, but many of them must remain good. Undoubtedly constitutional hysteria was a disease of the brain, and when oophorectomy affected such cases it did so by the medium of the im-

pression made on the brain. But these cases were to be distinguished from those where hysteroid symptoms coincided with the appearance of the symptoms and objective signs of utero-ovarian disease.

It was noticeable that hysteroid disturbances were predominantly vaso-motor in character, being best explained by assuming the existence of a vaso-motor disorder in the nerve centers, or an analogous disorder of unstriped muscular fiber elsewhere. Correlated with this clinical fact was the anatomical one that all the nerve filaments of the ovary so far discovered had been found to terminate in blood vessels. It was probable, therefore, *a priori*, that, when ovarian hyperæmia or oophoritis existed, its distant effects should be produced in the sphere of the vaso-motor system, and so only indirectly in the cerebro-spinal nerve centers.

The identity was almost complete between the nervous symptoms of oophoritis and those of fundal endometritis, as the common distribution of the utero-ovarian nerve to both ovary and fundus would lead us to anticipate.

The speaker thought an exact analysis of clinical histories would show that oophoritis was always preceded by a fundal endometritis, which also often continued on with it. Primary oophoritis was not observed any more than primary adenitis. Permanent nausea and also tympanites were characteristic symptoms of a lesion of the utero-ovarian nerve.

The interesting researches of Anjel (published in the "Archiv für Psychiatrie") seemed to imply that a prolonged vaso-motor cramp of cerebral blood-vessels was habitually associated with neurasthenia. His experiments had been made with the plethysmograph applied to the arm. The afflux of blood from the arm to the brain during mental activity which this instrument registered in the case of healthy persons failed to occur in neurasthenics. Such a vaso-motor cramp might easily be initiated by the vaso-motor irritations of a diseased ovary. It might imitate and abnormally prolong the high vascular tension properly peculiar to the premenstrual period. English writers had emphasized the occurrence of a special form of dyspepsia in ovarian disease which they called "ovarian dyspepsia." This might very possibly be due to vaso-motor spasm of blood-vessels in the gastric mucosa, resulting in impaired secretion of gastric juice. It had been stated that in neurotic dyspepsias tests of the gastric contents showed an absence of hydrochloric acid.

The speaker had recently observed a case in which hyperæmia of the fundal endometrium, and apparently of the ovary also, had been caused by the growth of some small subperitoneal fibroids of the uterus, where one distressing symptom had been the frequent occurrence of violent paroxysms of gastric disturbance, consisting apparently of spasmodic contraction of the stomach, associated with intense nausea, prostration, and noisy belching of odorless gas. The stomach-pump would prove the stomach empty, and washing out had afforded it no relief. However, the paroxysm had been several times arrested by a strong, painful galvanic current passed from the lumbar spine through the ovarian region; and six electrical cauterizations of the fundal endometrium during a period of two months, together with some constitutional treatment of the anæmia, had sufficed to effect a complete cure.

Dr. W. R. Birdsall agreed with Dr. Wylie as to the rules for operative treatment. A variety of reflex disorders had been treated surgically, medicinally, and otherwise, and very various results had been obtained. He thought there had been a reason in each case for the result. One thing to be remembered was that the majority of those subject to neurasthenic disorders were people who were readily affected by any agent whatever which was brought to bear on them. But relief of one manifestation of irritation in such an unstable organization was very apt to be followed by another of some other sort. We saw such recurrences after relief temporarily gained by the operative or palliative treatment of nasal or ocular affections, as well as after the lifting of a prolapsed and sensitive ovary or appropriate treatment of the uterus, bladder, or rectum, where reflex disorders had arisen. The monster was hydra-headed and cropped out in other directions. This should not deter us from operating where well-marked local conditions were evidently giving rise to irritation. The relief so obtained might not be entirely due to suggestion. The irritation in question might be the straw breaking the camel's back. On the other hand, the local lesion might be the effect and not the primary cause. Still, everybody must have seen examples where the real relief of nervous disturbances was obtained by treatment of various forms of uterine associated with ovarian disease. This was illustrated in a case he had recently attended. A married woman had suffered from a peculiar nausea and faintness, as if about to lose consciousness, associated with pain, referred to the abdomen, which radiated down the thigh or up into the stomach. Examination had shown the existence of anterior flexion and prolapsed ovaries, pressure upon which had given the peculiar sensations referred to. The relief of this local condition by a suitable pessary had been followed by immediate and lasting recovery. But many cases belonging to this class could not be relieved, as where the ovaries were displaced and bound down by adhesions; here gynæcologists were apt to admit that they could do nothing, since it was not safe to attempt the removal of such ovaries. There was another class of cases in which, although on removal of the ovaries some disease was found to be present in them, the pain continued as severe after the operation as before. He had two or three such cases under his own observation.

Well-established neuralgias were not relieved by the amputation of parts in which they were seated; in other words, the neuritis once set up went on and manifested itself in parts not previously affected. He had heard it said that the pain sometimes subsided, but he had a case under observation now in which eight years after oophorectomy the pain for the relief of which that operation had been done continued as severe as ever. He believed then that there were two extremes in the nature of the conditions we had to deal with, and correspondingly in the results of oophorectomy.

Dr. H. T. Hanks spoke of the value of electricity in relieving the pain in ovaries bound down by adhesions. He gave an instance where an enlarged ovary had given rise to severe nervous disorders until local treatment by tampons and a pessary was used, and another in which nervous symptoms very much worse than those ordinarily suffered by a pregnant woman were found to have been entirely due to a large cystic degeneration of the ovary with adhesions binding it to the abdominal wall. He thought men of experience had come to know when an operation was advisable and when not. The pioneer work in this field had been done by Tait and others. He was satisfied that prolapsed hypertrophied ovaries should be removed. If much bound down by adhesions, electricity was the best means of relieving the irritation in them for ordinary practitioners to employ; only the most skillful operators should attempt their removal.

Dr. H. J. Boldt agreed with Dr. Wylie as to the tendency of established neuroses to return in time after oophorectomy, and gave the history of cases illustrative of this. In one the patient had suffered from marked attacks of hystero-epilepsy that increased in severity as age advanced in spite of all general treatment. Pressure on the ovaries had caused severe cataleptic seizures. Oophorectomy had been done, and the patient's condition had greatly improved; still attacks like those previous to the

operation had gradually returned, and the patient suffered now as badly as ever. He had come to the conclusion that where the ovaries were apparently normal, no matter what the nervous condition might be, the patient would not be cured by removing them. Where the ovaries were imbedded and held down in exudations, treatment of every local sort, including tamponage, massage, and electricity, was first to be tried, and then, in case of failure, the question of removal might be raised. It should be remembered that the nervous disorder might afterward return in a distinctly worse form. Insanity had in many cases been traced to removal of the ovaries. With regard to reflex vaso-motor disturbances arising from a prolapsed and sensitive ovary, he would say that in the only case he had met with (in which swelling and discoloration of the upper extremities had been present), tampons and electricity had produced a permanent cure.

Dr. A. H. GOELET thought the discussion had neither proved nor disproved the existence of a true causative relation between conditions in the uterus and ovaries, and disorders in the nervous system. Prolapsed inflamed ovaries often caused only intense pain and backache and no neuroses. It had been proved that the treatment of uterine conditions might cure nervous diseases. He had himself cured epilepsy by dilating the cervix, and a case of spinal irritation that eminent neurologists had pronounced a meningitis by the treatment of an endometritis complicated by salpingitis.

Dr. M. D. FIELD spoke of the large number of female patients in lunatic asylums who had lost their ovaries. Five such had come to the asylum on Blackwell's Island within the past year, in some instances being brought there directly from Bellevue Hospital (where they had been operated on). However, they belonged to a class of persons who needed only a straw to carry them past the line of sanity, and the shock of the operation or the ether itself might have furnished this. Altogether thirty or forty cases of insanity following gynæcological operations had come under his care at the asylum named.

The CHAIRMAN thought those following the specialties would necessarily always be seeing and recording remarkable instances of relief to the nervous system at large from treating local ailments. However, they were certain to get into vagaries if they were imperfectly acquainted with or did not recognize the workings of the nervous system, due to its own inherent laws. Thus, when epilepsy was relieved by some operation on the genital organs, it was needful to remember that epilepsy might be relieved by any treatment whatsoever, or no treatment at all. All cases relapsed in alternation with periods of relative freedom from the disease. He had seen a case of well-marked tubercular meningitis so improved for a little time by amputation of the prepuce as to cause him to doubt the correctness of his diagnosis until the autopsy was held.

Disorders of the involuntary nervous system, when they took upon themselves a local manifestation, gave very varied results. Disturbances which rose only partly into consciousness ramified widely. Thus, when asleep and suffering from some intestinal disorder, we appeared to be in every sort of pain and distress, yet on waking recognized that the real pain was local and not exceptionally severe. Now, remembering that the involuntary nervous system presided over all the functions of the body but mounted into the consciousness to but a slight extent, it was easier to understand how difficult it might be to correctly localize a pain due to a visceral disorder acting as the starting-point of a reflex, or *vice versa*, and how the most startling successes and failures might occur alternately in the treatment of such pains. Thus, a lady living in the West had been sent to New York for the treatment of severe neurasthenia of years' duration, supposed to be of malarial origin. On leaving home, every symptom of her trouble had disappeared, so that, nothing being found to treat when she arrived here, she had been advised to return to her home again. However, the old sufferings had at once returned and she had come back to New York. Gynæcologists had refused to take her case in hand, finding no clinical indications beyond the abdominal pain complained of. He had then tried a current of fifteen milliampères passed through the painful region from one large electrode placed over the ovary (on the abdomen) to the other on the dorsal spine. Her pain had at once subsided, she had returned home, and since had never had a return of the pain or of any other of the old nervous symptoms.

Dr. DANA thought the general opinions expressed decidedly different from those still current in medical literature, and in advance of them.

Reports on the Progress of Medicine.

OPHTHALMOLOGY.

BY CHARLES STEDMAN BULL, M. D.

A Case of Injury to the Eye from Lightning-stroke.—Buller ("Arch. of Ophth.," xvii, 2) reports an interesting case of this kind occurring in a young woman in whom there was nothing abnormal in the external appearance of the eyes, and no evidence of injury to the adjacent parts. The pupil of the left eye did not respond as quickly to light as that of the right eye. The refraction was hypermetropic: Right eye, V. normal; left eye, V. $= \frac{6}{18}$. Insufficiency of the external recti, possibly due to the injury. In the left eye there was an opacity at the posterior surface of the lens, but distinct from a polar cataract. The vitreous contained some floating opacities. Optic nerve very pale, with indistinct outlines. Retinal vessels diminished in caliber, and some of the fine vessels of the papilla invisible. Signs of circumvasculitis retinæ. At extreme external periphery of fundus there was a broad irregular patch of chorioidal pigmentation, at the center of which was a broad patch of a dull-orange color, resembling either a circumscribed rupture of the chorioid or an imperfectly absorbed effusion of blood, or perhaps both. The color sense was impaired.

A Case of Intra-ocular Sarcoma at the Central Region.—Griffith (*ibid.*, xvii, 2) reports a case of this kind occurring in a man, aged thirty-two, who complained of a gradually increasing loss of sight for eleven weeks. The ophthalmoscope showed a rounded opaque prominence, closely covered by the retina, growing from the center of the fundus near the outer side of the optic disc, rising steeply at the side near the disc, but gradually shelving down below and outward. The appearance of the disc was unchanged, and the refraction was emmetropic. The most prominent part of the tumor was hypermetropic, D. 10, and was of a light-yellow color. .The examination of the visual field showed a normal periphery, with a scotoma just above the center, about 15° in diameter. After enucleation, an examination of the tumor showed a smooth, rounded surface, covered by the hexagonal pigment layer. The attached surface was adherent to the sclera. The cut surface showed a light-yellow color, with a dark-chocolate color on the temporal side. The microscope showed the structure of a spindle-cell sarcoma.

Synchronous Movements of the Upper Lid and Maxilla.—O. Bull (*ibid.*, xviii, 2) reports the case of a young man, aged nineteen, who had always had a drooping of the right upper lid, and in whom the sight of the right eye had always been defective. As long as the patient could remember, the lid was raised whenever he opened his mouth. The patient was a pale, slender lad, one of eleven children, with healthy parents. The upper lid drooped so much that the palpebral fissure did not exceed 3 mm. When the patient opened his mouth, the lid was raised so much that the greater part of the pupil became visible. The movement of the eyeball remained free in all directions except upward, where it was limited. When the other eye was covered, and the patient

looked up, he could raise the lid to a degree equal to that produced by keeping the mouth wide open. The fundus was normal.

Unilateral Tonic Spasm of the Ciliary Muscle induced by Pressure on the Carotids.—O. Bull (*ibid.*, xvii, 2) reports a case of this rare nature in a woman, aged thirty-eight, who had suffered from metritis for several years, the treatment for which had consisted in massage on the perinæum and pressure over the carotid arteries. On the last occasion of massage of her neck she suddenly felt a tension in her right eye, and since then everything had appeared larger and of a reddish yellow color. The pupils of both eyes were equal in size, and reacted both to accommodation and light. Right anterior chamber shallow. In right eye, pronounced hyperæmia of the optic disc, ophthalmoscopic refraction — 5·50 D., vision normal with — D. 4·50. In left eye, refraction — D. 1, vision normal. Visual field normal. The near point and remote point of the right eye were at eight inches, and in the left eye at eight inches and a half. After a number of instillations of atropine in the course of several days, the refraction became hypermetropic about D. 0·50. At the end of nine months the eyes had returned to their normal condition.

A Varicose Tumor of the Lower Lid, not Visible with Head Erect, but forming a very large Tumor with Head Horizontal.—Chisolm (*ibid.*, xvii, 2) here reports the case of a man, aged fifty-nine, who eighteen years before noticed a discolored spot at times on the left lower lid after stooping. It was always painless. This spot slowly enlarged, but for the last four years had been stationary. When the head was erect, no trace of the swelling was visible. When he looked downward for a short time the lower lid of the left eye rapidly swelled until it attained the size of a fowl's egg, and temporarily closed the lids. When the head was lifted, the swelling rapidly disappeared. It was diagnosticated as a varicose vein of large size limited to the lower lid, and the following operation was done for its relief: When the sac was most distended, a heavy seton composed of several strands of silk thread was passed through the whole length of the sac. By the end of the fourth day the skin was much thickened. The seton was left *in situ*, and the opposing walls of the sac were clamped together by passing three double sutures from the inner face of the lid through the tumor, and securing them over a roll of sponge. Each of these sutures had two needles. By passing one needle through the upper part of the lid, and the other deep in the *cul-de-sac*, and tying the threads over the sponge, the clamp of thread on the conjunctiva within and the sponge without brought the whole opposing surfaces of the flattened tumor in contact. These sutures, with the seton, were removed on the third day. Six weeks after the operation the sac was entirely obliterated.

The Pathogenesis of Sympathetic Ophthalmia.—Randolph (*ibid.*, xvii, 2) has been carrying on some experiments directed toward the elucidation of the manner in which sympathetic inflammation is propagated. His results, so far as confirming the theory that sympathetic ophthalmia is propagated along the optic nerves and their sheaths was concerned, were entirely negative. He found the optic nerve of the infected eye at its intra-ocular end always infiltrated, but no noticeable progress of the inflammation for more than a very short distance from the eye was ever observed. Still he thinks that infection does play a rôle in the production of sympathetic inflammation. His experiments shed no positive light upon the mode of production of sympathetic inflammation of the eye, for in no instance was this affection a sequel of the operation.

A Contact-lens.—Fick (*ibid.*, xvii, 2) describes a contact-lens devised by himself for improving the vision in cases of abnormal curvature or opacity of the cornea. It consists of a thin glass shell, bounded by concentric and parallel spherical segments. It is placed upon the eye, and the interspace between it and the eyeball is filled with a liquid having the same refractive index as the cornea. Rays of light then undergo a certain amount of refraction upon entering the liquid, which may be considered as extending forward to the anterior surface of the glass shell; but they suffer no deviation in their course while passing from the liquid into the cornea, and thus the irregularities in the passage of rays of light from the air into the cornea must be lost. Fick's shells are segments of glass vesicles, 21, 20, and 19 mm. in diameter, the base being distant but a few millimetres from the equator of the sphere. The introduction of these glass shells beneath the lids is very easy. It was found that well-fitting glasses need not be held in place by the lids, as they adhered to the globe, accompanying the eyeball in all its movements, and not permitting a drop of the previously introduced liquid to escape. After six or eight hours the liquid becomes cloudy, and the ocular conjunctiva is slightly injected. The latter disappears with extraordinary rapidity after removal of the glass. After repeated experiments with many liquids, a two-per-cent. solution of grape-sugar was found to answer all requirements. Fick recommends the following formula for the construction of the contact-lens: A glass cornea having a radius of curvature of 8 mm. rests with a base of 7 mm. radius upon the glass sclera; the latter has a breadth of 3 mm. and corresponds to a sphere whose radius of curvature is 15 mm.; the glass cornea has parallel surfaces, both of which are ground and polished; in the same way the free edge of the glass sclera is ground and polished; the weight of a contact-lens is about 0·5 gramme.

Paralysis of the Oculomotor Nerve on the Right and the Abducens on the Left Side.—O. Bull (*ibid.*, xvii, 2) reports a case of this kind in a man, aged thirty, who had had a chancre three years before. He had first paralysis of the right oculomotorius, which was followed ten days later by paralysis of the left abducens. In the course of ten months the paralysis of the abducens had entirely disappeared, and there was nothing left of the oculomotor paralysis except a slight ptosis. The lesion was probably located in the nucleus of the right oculomotor, as Duval has shown that some fibers from the nucleus of the abducens pass to the oculomotor of the opposite side.

Pain following Evisceration modified by cauterizing the Interior of the Sclera with Carbolic Acid.—Prince ("Amer. Jour. of Ophth.," July, 1888) thinks that the severe pain following evisceration of the eyeball is caused by the inflammatory irritation and pressure on the ciliary nerves, lying in grooves on the inner surface of the sclera, and he recommends that they be anæsthetized by an application of pure carbolic acid (95 per cent.) applied to the inner surface of the sclera on a cotton-holder.

The Physiological and Pathological Conditions of the Pupil and Accommodation.—Jessop ("Ophth. Rev.," August, 1888) draws the following conclusions from his investigations: The intra-ocular muscles are two circularly disposed muscles, the pupillary and ciliary, and in mammals consist of unstriped muscular fiber. They are each supplied by two antagonistic sets of nerves, the short and long ciliary. The short ciliary nerves induce on stimulation extreme contraction of both muscles, and the long ciliary nerves produce the opposite effect—namely, relaxation of the muscles. The fibers of the short ciliary nerves can be traced to different collections of cells as centers, thus separating the action of the pupillary from ciliary muscle. In the same way the long ciliary nerves are connected with different centers; by the visceral fibers of the fifth nerve they are connected with a center in the medulla for the ciliary muscle, and by the cervical splanchnics and second dorsal nerve with the spinal cord and medulla for the pupillary muscle. Atropine, eserine, and cocaine act in the same manner on both muscles. The actions of the ciliary muscle are to contract on accommodation and to dilate on relaxation of accommodation. Thus the ciliary muscle acts normally in association with the pupillary, and the pupillary may either act by itself or in association with the ciliary, according to the stimulus provoking the action. The pupil may be affected as to its size by the condition of its blood-vessels irrespective of its muscular fiber, but there are no experiments showing that accommodation may be effected by vascular supply alone.

Embolism of the Retinal Artery cured by Massage.—Mules (*ibid.*) reports the case of a young woman, aged twenty-one, who suddenly perceived a blank over a portion of the upper segment of her right visual field. Within an hour she was examined, and her right visual field was contracted above. The fundus showed a blocked lower retinal artery, the colorless clot being visible and extending from the entrance at the disc to the first bifurcation. The retina was slightly œdematous. Massage was tried, and the clot disappeared, sight at once improved, and the vessel was seen well filled.

The Use of Mydriatics in determining Errors of Refraction, and the Correction of the whole Error so determined.—Bruns ("Am. Jour. of Ophth.," June, 1888) submits the following propositions: 1. Without the use of a mydriatic it is impossible to determine with perfect accu-

racy the total amount of refractive error in cases of H. or M., the action of the ciliary muscle causing the former to appear less and the latter greater than the degree present. 2. The presence of astigmatism can usually be determined without a mydriatic; the amount will be found to vary at each trial, and there is nothing to indicate which is the true result. 3. In regular mixed astigmatism the sources of error in both H. and M. coexist. 4. Hence the use of a mydriatic in the case of every patient under fifty or sixty should be a "hard and fast rule," only to be departed from when the circumstances of the patient absolutely forbid his submitting to the inconvenience entailed by the use of the drug. Bruns believes that the whole error of refraction revealed by the mydriatic should be corrected, and that the idea of "ciliary tension" or "tone" is a phantom of the imagination.

Fugitive Œdema of the Eyelids.—Schweinitz (*ibid.*) reports a case of this nature occurring in a woman who was subject to periodical headaches, which usually appeared once in every ten days or two weeks. Recently, after a severe headache, lasting for three days and located chiefly in the distribution of the right supra-orbital nerve, œdema of the right eyelids and the right half of the forehead appeared, accompanied by a throbbing sensation at the upper and inner angle of the eye. Under the local use of hot stupes and the internal administration of Basham's mixture, this œdema subsided in a few days. Three weeks later, after another headache, the œdema again appeared. Under the same treatment, with the addition of potassium iodide and sodium salicylate, the swelling and pain again subsided, to recur again ten days later. Since then there had been no reappearance of the œdema, though the headaches had continued.

A Case of Osteo-fibro-lipoma of the Conjunctiva.—Prout and Lennox (*ibid.*) report an interesting case of conjunctival tumor in a woman aged twenty-eight. When she was born there was a small tumor under the outer part of the upper lid, with a hair growing from it. It gradually became less conspicuous, but since her marriage, at the age of twenty, it had grown larger. With closed lids the growth can be felt as a flat, freely movable body under the lid, retreating on pressure beneath the margin of the orbit. When the lid was everted the tumor felt firm and elastic and measured 12 × 18 mm. The conjunctiva was thickened and injected over it, but not adherent to it. The growth was removed and under the microscope was seen to consist chiefly of fat in which were numerous bands of fibrillar connective tissue. One of its surfaces was smooth and covered by epithelium. Near the center of the tumor there was a hard mass of darker color, which was found to consist of fully formed bone-tissue surrounded by a fibrous capsule.

The Theory and Application of Skiascopy.—Chouet ("Rec. d'ophthal.," June, 1888) presents the following conclusions as to the theory and application of skiascopy: 1. The term skiascopy should be definitely adopted as the correct term for this method of examination. 2. The method should become one of common employment, particularly for all cases requiring rapid examination. 3. It admits of an immediate recognition of the refraction of an eye and of a sufficiently exact measurement of the degree of error.

Iridectomy; a New Operative Procedure.—Abadie ("Ann. d'oc.," June, 1888) thus describes his new operation: With two sharp lance-knives he makes simultaneously two incisions, 4 or 5 mm. in length, one above and the other below the corneal margin. He then introduces the scissors-forceps, one arm of which is pointed, through the center of the lower section and passes the pointed arm beneath the iris, and then cuts right and left, circumscribing the apex of a triangle. He then introduces the iris-forceps, seizes the portion of membrane detached by the two preceding cuts, draws it out of the wound, and then cuts it off at the base of the triangle. This leaves a large, triangular, gaping hole.

The Perfectibility of the Chromatic Sense in Man.—Deneffe (*ibid.*, June, 1888) gives the following *résumé* of the subject: 1. Education has given to the color-sense of woman a very great superiority over that of man. 2. The education of the color-sense in man improves and perfects this sense to a marked degree. 3. General education, which includes a voluntary or unconscious education of the color-sense, also perfects this sense. 4. The color-sense is improved in accordance with the development of the patient from childhood to adult life. 5. In school, education in a personal and hereditary sense makes a marked distinction between the children of the upper classes and those of the lower. The final conclusion is that the color-sense should be educated and perfected from the earliest years.

Sclero-corneal Ruptures and their Treatment.—Nuel (*ibid.*, June, 1888) describes an operation for the relief of this condition as follows: A broad sclerotomy is made, passing through the middle of the ectatic region, the edge of the knife being turned toward the equator of the eye. The conjunctiva is then to be sutured in such a manner as to close the opening in the sclera by drawing forward as much tissue as possible. The suture is passed in and out beneath the conjunctiva at the equator of the eye, parallel to the corneal margin. One end is brought toward the opposite end of the incision and passed in and out beneath the corneal flap of the conjunctiva to the point whence it is turned toward the equator, crossing its first direction, and it is then tied. This disposition of the suture pulls the conjunctiva from all sides toward the fistulous opening, like the cord of a purse. On the third day, the anterior chamber being re-established, a puncture is made at the lower portion of the cornea, and this is opened daily for a week, so as to give exit to the aqueous humor and prevent its filtering through the lips of the wound. The eye is to be kept bandaged for ten days or even longer, and for a week both eyes are closed.

Enucleation in Panophthalmitis.—Rolland ("Rec. d'ophthal.," July, 1888) recommends the following method of enucleation in cases of panophthalmitis: The conjunctiva is to be detached from the cornea, and the eyeball is then to be split open in the horizontal diameter with a cataract knife. The cavity of the sclera is then to be injected with some antiseptic solution by means of a syringe until all the contents of the sclera have been washed out clean. Then the collapsed eyeball is to be enucleated in the usual way, and the orbital cavity is then immediately washed out with some antiseptic solution. Finally, after all hæmorrhage has ceased, the clots are carefully removed and an antiseptic bandage applied.

Amblyopia due to Poisoning by Nitrobenzol.—Nieden ("Ctrlbl. f. prak. Aug.," July, 1888) reports a case of this kind occurring in a young man aged twenty-six. The patient was deeply cyanotic, including the conjunctival veins, and had the appearance of a person afflicted with heart disease or asthma. His breath had the odor of bitter almonds. Pupillary reaction and accommodation were normal. There was marked hyperæmia of the retinal veins. The discs were clearly defined, except for a small exudation on the lower margin of the right disc. There were no hæmorrhages in the fundus. Vision was reduced in both eyes to $\frac{1}{200}$. The vision at the periphery was diminished. There was concentric limitation of the field for all colors, that for blue being more limited than that for any of the other colors. The patch of retinal exudation was markedly a defect in the infero-nasal quadrant. The visual disturbance appeared fourteen days after the general symptoms of poisoning. At the end of the fourth week the vision began to improve, and at the end of the sixth week the patient was discharged from observation.

Corneal Curvature under Increased Intra-ocular Tension.—Eissen ("Arch. f. Ophthal.," xxxiv, 2) draws the following conclusions from his investigations: 1. The eye of the rabbit has a physiological tension of about 24 to 25 mm. A relatively slight increase of this physiological tension causes a change of form of the cornea. 2. Helmholtz's statement that the corneal curvature depends on the tension of the intra-ocular fluid, so that the radius of curvature of the cornea becomes greater the greater the tension, is proved true. 3. With an increase of the intra-ocular tension, the existing astigmatism, after a transient increase with relatively low degrees of tension, successively diminishes. 4. The normal astigmatism reverses itself with increased tension of the capsule of the eye and becomes a paradox, since the long axis turns away from the horizontal and toward the vertical. 5. Among forty-six rabbits' eyes the corneal curvature did not react twice in the same way to the gradual increase of the intra-ocular tension, not even in the same animal.

The Histogenesis of the Retina and Optic Nerve.—Falchi (*ibid.*, xxxiv, 2) makes the following *résumé* of his investigations: In the histogenesis of the retina the increase of its elements occurs by the process of caryocinesis, which in some of the *Mammalia* continues up to the seventh day. The process of mitosis is seen not only in the

cells of the external superficial layer of the distal lamella, but also in the other layers of this lamella. In the histogenesis of the optic nerve the increase in volume of the nerve is due to increase of the cells lying between the bundles of nerve-fibers by means of karyokinesis, and by the increase in volume of the bundles of these fibers. The frame-work of the optic nerve is formed mainly by the cells which represent the walls of its trunk, which, however, have undergone changes, but also in part by the elements of the mesoderma. The optic nerve of the *Mammalia* is to be regarded as a part of the brain. The walls of the pedicle of the secondary ocular vesicle are transformed into the frame-work of connective tissue by the help of the mesoderma.

Retinitis Hæmorrhagica following an Extensive Burn of the Skin.—Wagenmann (*ibid.*, xxxiv, 2) reports in detail a very interesting case of the above nature, from which he draws the following conclusions: The retinitis in this case is due to the same cause as the other serious organic changes met with in severe burns, especially the inflammation and ulceration of the intestines—that is, the change in the composition of the blood caused by the injury—and not to some reflex influence from the external surface, through the medium of pyæmia or septicæmia. It is, however, not possible to say whether the retinitis is the direct result of some embolic obstruction in the small blood-vessels or not.

Absolute Right Hemiachromatopsia; Partial Preservation of the Perception of Light and Shape; Old Hæmorrhagic Cyst of the Lower Part of the Left Occipital Lobe.—Verrey (*ibid.*, July–August, 1888) reports an interesting case of this rare affection occurring in a woman, aged sixty, who was hypermetropic and had a central acuity of vision of three fourths. The ophthalmoscope showed nothing abnormal. There was a slight concentric limitation of the field of vision in all directions, amounting to 15° or 20°. On testing for color, there was found a total right hemiachromatopsia. In the left half of the visual field the sense for color was present but somewhat limited. About fifteen months before, the patient had had a violent attack of vertigo, followed by vomiting and violent pain at the vertex, but no loss of consciousness. The vomiting continued for several days, and when the patient was better she found that she could not read as easily as before the attack, as long words puzzled her. The patient's condition remained about the same for six months, when she had an attack of apoplexy in which she died. Between these two attacks there occurred several slight ones of the same general character. The autopsy showed in the right cerebral hemisphere, at the level of the corpus callosum, a considerable hæmorrhage which lay in a cavity as large as a hen's egg and had destroyed the centrum ovale and the central ganglia, and had penetrated the right lateral ventricle. In the center of the corpus callosum was a thrombosis surrounded by a bright-red spot about two centimetres in length. In the left hemisphere were a number of small red spots at the point of union of the cuneiform lobe with the fusiform and lingual lobes—that is, at the posterior extremity of the median surface of the occipital lobe. The lesion of the corpus callosum was a recent laceration from rupture of a blood-vessel. The lesion in the occipital lobe was between the floor of the left lateral ventricle and the basilar surface of the occipital lobe, and occupied the white substance of the third occipital convolution. It had more or less completely destroyed the white substance of the occipital extremity of the lingual and fusiform convolutions, and of the postero-inferior end of the cuneiform fold. Verrey reasons from the results of this autopsy that the center for the color sense resides in the lowest part of the occipital lobe, probably in the posterior part of the lingual and fusiform folds.

Myopia and its Connection with Astigmatism.—Chauvel (*ibid.*, July–August, 1888) comes to the following conclusions: 1. The amplitude of accommodation is not modified in any special or regular manner by myopia, but it generally decreases slightly in high degrees of myopia. 2. Visual acuity for distance, without correction, diminishes rapidly as the myopia increases; visual acuity for distance, even with spherical correction, shows marked progressive diminution in excessive degrees of myopia. 3. The visual field is likewise modified in its extent in high degrees of myopia; it is progressively and regularly limited in its various diameters. 4. The posterior staphyloma follows in its development *pari passu* with the development of the myopia, and is a proof of the intimate connection which exists between the ametropia and the chorioidal lesion. 5. Regular astigmatism is much more frequently met with in high degrees of myopia than in low degrees, but there is no special connection between the two varieties of ametropia. They frequently coincide, but exert no influence on each other. 6. If in some cases the seat of the staphylomatous crescent seems to agree with the principal astigmatic meridians, still the facts show positively that the inclination of the latter exerts no influence upon the situation of the sclero-chorioidal ectasia.

Enucleation in Panophthalmitis.—Panas (*ibid.*, July–August, 1888) thinks that enucleation should be performed as soon as the efforts made to arrest the suppurative process in the eyeball have proved futile. Even when the panophthalmitis is in full blast, the operation should be done, provided that there are no lesions present which would indicate a generalization of the infection, and provided that the patient has no constitutional defect, such as albuminuria or diabetes. Of course rigid antisepsis is always to be employed.

An Operation for Symblepharon.—De Laperronne (*ibid.*, July–August, 1888) describes the following operation: If the symblepharon is triangular, with the apex at the cornea and the base toward the palpebral margin, the apex is to be carefully dissected from the cornea. The symblepharon is then divided into three portions by two incisions, extending from the cornea toward the margin of the lid. The middle portion is dissected freely as far as the edge of the lid. The lateral portions are detached, on the contrary, from the edge of the lid by curved incisions which remain always at the same distance from the cornea. Two quadrilateral flaps are marked out by following inward and outward the margin of the cornea, and these flaps should be very freely loosened, so that they may be brought together without too much stretching. Next, all the cicatricial bridles in the *cul-de-sac* must be freely divided. The two lateral parts are then brought together, so as to cover the raw surface of the globe, and a suture is inserted near the cornea. For the lower suture he uses a thread armed with two needles; the suture is passed through the flaps near their lower angles and is then crossed twice; the needles are then passed into the *cul-de-sac* as far as possible and are brought out on the cheek, two centimetres from each other and about two fingerbreadths below the edge of the lid, and tied over a roll of kid. Finally, the small middle flap is applied to the inner surface of the lid by a suture with two needles passed through the lid, and by several lateral sutures. The thermo-cautery is then passed over the surface of the cornea occupied by the apex of the symblepharon.

Indications for Hypodermatic Injections of Antipyrine in the Temple in Ophthalmic Practice.—Grandclément (*ibid.*, July–August, 1888) recommends subcutaneous injections of antipyrine in the temple as very efficacious in: 1, Ocular and periosteal neuralgia; 2, in muscular spasms; 3, in most of the inflammatory processes of the globe. Where the drug proves favorable, two or three injections suffice. The strength he recommends consists of twenty-five centigrammes of antipyrine and one centigramme of cocaine in ten drops of water. The injection provokes sharp pain for one or two minutes, and this is followed by a slight swelling, which lasts six or eight days.

Conjunctival Diphtheria.—Venneman (*ibid.*, July–August, 1888) admits two forms of inflammation of the conjunctiva—a superficial and a deep fibrinous inflammation. The first he calls croupous conjunctivitis, and the second diphtheritic conjunctivitis. General pathology does not absolutely confound these two inflammatory states, and even distinguishes a superficial and a deep diphtheritic inflammation. This superficial diphtheria in mucous membranes with stratified epithelium, while equivalent to croupous conjunctivitis, resembles clinically at first diphtheritic conjunctivitis. The later stage of suppuration, followed by visible cicatrices, is a late symptom of fibrinous conjunctivitis, which admits of confirming or of correcting the previous diagnosis of croup or diphtheria. Besides the infectious and contagious disease called diphtheria, there exist other general morbid conditions capable of impressing upon the inflammation of a mucous membrane the fibrinous form, such as measles, scarlet fever, variola, cholera, pneumonia, etc. If there exists a special microbe of diphtheria, which causes the habitually fibrinous form of inflammation of mucous membranes in this affection, in the other contagious maladies just cited it is to the debility of the organism consecutive to these disorders that must be attributed the tendency of mucous catarrhs to assume the fibrinous, croupous, or diphtheritic form. Every croupous or diphtheritic conjunctivitis is not a

manifestation of diphtheria. Real diphtheria of the conjunctiva is not frequent. Venneman, therefore, proposes to designate fibrinous inflammations of the conjunctiva by the names of croupous or diphtheritic conjunctivitis, according as the inflammation is superficial and benign or deep and serious. He restricts the name "diphtheria of the conjunctiva" to the croupous or diphtheritic conjunctivitis, the localization in the eye of the general infectious malady known under the name of diphtheria. These forms of conjunctivitis demand an energetic antimicrobe treatment, and Venneman recommends tannin and mucilage as a valuable method of treatment.

Hemianopsia of Central Origin, with Special Reference to Acquired Color-blindness.—Mackay ("Ophthalmic Review," September, 1888) begins by stating that the visual disturbance accompanying lateral homonymous hemianopsia may vary in two ways: 1. In the extent of the field affected. According to the extent the cerebral or nerve substance of the visual nerve apparatus is involved, there may be a small homonymous scotoma, a sector-like defect, or loss of the entire half-field. The hemianopsia is, accordingly, incomplete or complete. 2. In the degree of visual loss. If all three perceptions are lost at any part where they should normally be present, the hemianopsia is absolute. In many cases the loss is partial. In one case, which was at first regarded as a case of pure color-defect, a second investigation with more delicate test-objects than ordinarily employed showed also a decreased form-sense. Mackay thinks it a fallacy to regard the field for white as a measure of the light-sense. It is important to inquire into the patient's power of perceiving and distinguishing white and black peripherally before employing a test-object for the form-sense based on the contrast between them. A satisfactory test for the light-sense at the periphery is much needed.

Color-blindness.—Grossmann (*ibid.*, September, 1888) thinks it desirable that the laity should be convinced of the dangers resulting from the employment of color-blind people in the railway and marine service. He gives the name of "twin colors" to two different fundamental colors which appear identical to the color-blind eye. Such twin colors are green and yellow, dark-green and brown, brown and red, etc. To some of these twin colors a third fundamental color could be found identical for the color-blind, and for such, a set of three colors the name of "triplet colors" has been used. But while a certain green and brown is a twin color for all red-green blind individuals, the red is not equally identical to all; both for twin and triplet combination it often fails, appearing to some darker, to others lighter, than the corresponding green or yellow. The principal reason for this peculiarity is the difference which exists in different color-blind individuals in the perception of rays of various lengths.

A Peculiar Variety of Keratitis.—Sédan ("Rec. d'ophthal.," August, 1888) here refers particularly to certain intralamellar lesions of the cornea which affect certain variable directions like lines, and all of which profoundly disturb the visual acuity. They seem to result from an unequal traction in a sclero-corneal cicatrix. Whenever they have been observed there has been a wound ending in a cicatrix. They disappear without leaving any durable lesion, even of a circumscribed character. The treatment is still doubtful; dry heat and massage have succeeded.

Ophthalmoplegia Externa and Paralyses of the Bulbar Motor Nerves in their Relation to Exophthalmic Goitre and Hysteria.—Ballet (*ibid.*, August, 1888) draws the following conclusions from his investigations: 1. Ophthalmoplegia externa consists of paralysis of the motor muscles of the eyeball, with possible integrity of the functions of the levator palpebræ and constant preservation of the movements of the sphincter iridis and muscle of accommodation. 2. This concurrence may be observed in persons affected with both exophthalmic goître and hysteria, with hysteria alone, or with exophthalmic goître alone. 3. In these cases the ophthalmoplegia externa signifies that there is a paralysis of the motor ocular nerves, the cause of which, certainly central, lies at the level or above the real origin of these nerves. 4. The possible coincidence of ophthalmoplegia externa and exophthalmic goître constitutes, therefore, an argument in favor of the theory which connects Basedow's disease with a lesion of the central nervous system, particularly a bulbar lesion. 5. There may be, moreover, observed in persons affected with exophthalmic goître, paralysis of other motor nerves emerging from the medulla—such as the motor branch of the trifacial, the facial, and the great hypoglossal nerves. 6. The constant symptoms of Basedow's disease are themselves dependent on nuclear bulbar paralyses—nuclear paralysis of the pneumogastric, which causes tachycardia and sometimes dyspnœa and gastric symptoms; paralysis of the vaso-motor centers, which causes congestive attacks of the face and neck. The goître and the exophthalmus result from the coincidence of these two forms of trouble—vaso-motor paralysis and tachycardia. 7. These different paralyses do not depend on a material lesion. They are simple functional troubles susceptible of amelioration or aggravation, of cure, and of relapses. 8. From all that precedes, it is evident that Basedow's disease is primarily a bulbar neurosis. 9. These functional troubles, however, often extend beyond the sphere of action of the medulla; to disorders of bulbar origin are then added symptoms of medullary or cortical origin. 10. Graves's disease is frequently associated with other neuroses—hysteria, epilepsy, and mania.

Miscellany.

The Registration of Vital Statistics.—At a meeting of the New York County Medical Association, on June 17th, a committee, consisting of Dr. J. G. Truax, Dr. J. R. MacGregor, and Dr. Alfred L. Carroll, submitted the following report:

It has long been evident that the method hitherto employed for registering births fails to record a large percentage of the actual nativity, the official returns often showing an apparent preponderance of deaths over births, so great that, if real, it would portend rapid depopulation. The reason for this deficiency, in the opinion of your committee, is that the sole reliance of the sanitary authorities has been placed upon the medical profession and the few midwives whom it has been possible to register and keep under supervision. Not only do scores of unknown women surreptitiously officiate in lying-in rooms, but among the multiparæ of the poorer class many children are born without the ministration of either physician or a pretended midwife, some member of the family or obliging neighbor lending such assistance as may be needed. It is certain that, on an average, about a thousand births a week occur in the city of New York, of which, as a rule, scarcely sixty per cent. are reported.

To rectify a similar but even greater defect, which existed in smaller populations under the same faulty method of obtaining returns, the State Board of Health, in 1885, procured an amendment to the Public Health Act, specifically putting the onus of reporting a birth—where it is properly put in other countries aiming at a complete registration—upon the parents or custodian of the child born. The effect of this alteration was a speedy increase in the recorded birth-rate, and this increase, we are informed, has been steadily progressive. The clause in question, which applies to the whole State, with the exception of New York, Brooklyn, Yonkers, Albany, and Buffalo, whose health boards have special charters, reads thus:

"And to secure the completeness of the said registration it shall be the duty of the parents or custodian of every child, and the groom at every marriage, or the clergyman or magistrate performing the ceremony, to secure the return of the record of such birth or marriage to the board of health or person designated by them within thirty days from the date of such birth or marriage, and each record shall be duly attested by the physician or midwife (if any) in attendance at such birth, or the clergyman or magistrate officiating at such marriage. . . . And it shall be the duty of the undertaker, sexton, or other person having charge of the body of any dead person, to procure a record of the death and its probable cause duly certified by the physician in attendance on the deceased during his last illness or by the coroner where an inquest is required by law; and there shall be no burial or removal of the body of any dead person until said duly certified record shall have been presented to the Board of Health or person designated by them, and until thereupon a permit for burial or transit shall have been obtained."

It may be objected that the difficulty of practically enforcing such a rule in a densely populous community, containing a large proportion of ignorant or careless persons, seems almost insuperable; and it must be admitted that time would be needed to familiarize all classes with its requirements. But, even at first, the returns could not be more defective than they now are, and the public would ere long learn that the greater part of the machinery of registration is for their personal benefit. In the far vaster population of London this system operates with satisfactory results. For the mere object of vital statistics it suffices to know the number of births of each sex, and the number of deaths at different ages, with their direct and indirect causes. The names and other genealogical details serve only for purposes of forensic identification, and are often of essential importance in determining questions of inheritance. It is consequently but equitable that they should be furnished by the persons chiefly interested, instead of by the medical attendant, within whose province they do not legitimately fall.

In cases where an illegitimate birth imperils the character of an otherwise reputable woman and the happiness of a respectable family it is not often that any threatened penalty could induce a physician to violate his confidential relations with his patient by divulging her name and circumstances; nor should he be expected to do so. Indeed, it appears to your committee to be questionable whether his reticence is not protected and even commanded by the State law forbidding the breach of professional confidence. And we would parenthetically observe that the same argument seems pertinent to the reporting of infectious disease, which, by the ordinance of the Health Department, is exacted from the unfortunate physician, who is placed in the dilemma of being fined for not giving information or mulcted in damages for giving it. Moreover, the shifting of this obligation from the tenant of the infected household to the already overburdened shoulders of the doctor inevitably leads to the concealment of many cases of contagious disorder without medical care, and thus conduces to a positive increase in the mortality from such maladies.

As regards the registration of births, to which our attention has been principally directed, we would therefore recommend that the provisions of the general Public Health act be applied to this city as well as to the State at large, with the addition, perhaps, of a cumulative penalty for delay in reporting after a stated interval; and we would further suggest that in illegitimate births the record of the mother's name be not obligatory.

While no system can insure absolute perfection of birth-returns, especially under our form of popular government, until all the people are convinced of its advantages, it is believed that the method above advised will in time be found here, as it has been abroad, to be the only one promising an approach to completeness.

The late Dr. James B. Hunter.—At a recent meeting of the New York Obstetrical Society the following preamble and resolutions were adopted:

Whereas, It has pleased Almighty God in his infinite wisdom to remove from our midst our friend and colleague, James Bradbridge Hunter, in the prime of his life and in the morning of his usefulness; therefore be it

Resolved, That while we bow in submission before his supreme will, we recognize in his fiat the loss of one beloved and honored by us all for his gentle virtues and manly qualities; of one who will long be regretted; and whose place will forever remain unfilled amongst us.

Resolved, That in his removal the entire profession of medicine in America suffers a loss which can not fail to be appreciated by all connected with it.

Resolved, That the kind sympathy of this society, for which he has done so much, and its sincere condolence be tendered to his bereaved family; and that it cause a copy of these resolutions to be spread upon its minutes, published in several of the daily and medical journals of the city, and transmitted to his immediate relatives.

[Signed.] T. Gaillard Thomas, M. D., Clement Cleveland, M. D., Henry Clark Coe, M. D.

At a meeting of the faculty of the New York Polyclinic, held June 20, 1889, the following preamble and resolutions were adopted:

Whereas, This institution has been called upon to mourn the loss of its president, the late Dr. James B. Hunter; therefore be it

Resolved, That in the death of Dr. Hunter the faculty of the Polyclinic has lost an active, efficient, and conscientious leader, and the institution a teacher of rare experience, untiring devotion, and distinguished success.

Resolved, That we recognize that in the abrupt termination of his laborious, able, and worthy career the medical profession has lost one of its most accomplished and honored members, one whose death we profoundly deplore, whose memory we venerate.

Resolved, That we extend to his family our heartiest sympathy, assuring them that we too have lost a trusted companion and a loyal friend.

Resolved, That a copy of these resolutions be presented to the family of Dr. Hunter, and that they be published in the "New York Medical Journal," the New York "Medical Record," and the "American Journal of Obstetrics."

[Signed.] Paul F. Mundé, E. B. Bronson, D. B. Delavan, *Committee.*

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

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Original Communications.

PRIMARY MELANO-SARCOMA OF THE VULVA.*

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ALL forms of malignant new growths—epithelioma, carcinoma, and sarcoma—upon the external genitals of the female are of exceedingly rare occurrence. When found on these regions, they are usually primary lesions, and exceptionally they occur as secondary deposits, or, still more rarely, by extension downward from the internal genital tract. While epithelioma of the uterus is far from common, it has been noted that from thirty-five to forty cases of it occur to one of the same disease of the external parts, yet epithelioma takes first place in the order of frequency of malignant new growths of the vulva. In medical literature the histories of so many cases of epithelioma of the vulva are given that its history and course are tolerably well known, and it has ceased to be a clinical rarity. Carcinoma and sarcoma of the vulva are exceedingly rare, and an extended study of the meager statistics relating to them seems to warrant the conclusion that the former is more frequent than the latter in the proportion of two to one. An attentive study of the literature of these cases is exceedingly disappointing, since their history is given in a very fragmentary manner, and a sharp definition of the nature of the cases is not made. In truth, much has yet to be added to our stock of knowledge of primary carcinoma of the vulva, and the same may be said, in the main, of primary sarcoma of this region, of which there are less than six indifferently recorded cases. Coming now to melano-sarcoma, the occurrence of which primarily in the eye, upon the skin, and in the viscera, can hardly be called common, we find but six satisfactory cases on record (and very vague mention of the subject in a few text-books) in which this new growth began upon the vulva. Primary melano-sarcoma of the vulva, therefore, may be considered as among the rarest of all forms of malignant new growths of these parts.

In this connection it is necessary to emphasize the fact that a number of cases of melanosis of the vulva have been reported which are really instances of melanotic carcinoma. The result is that confusion exists in the minds of many who have not clear ideas of these two forms of malignant new growths. The word "melanosis" should, therefore, be discarded since it is so misleading. Melanotic carcinoma has its origin in the epithelial structures; melano-sarcoma, like simple sarcoma, is a disease of the connective tissue.

In this essay I shall give the history of a personal case of primary melano-sarcoma of the vulva, and a synopsis of the cases of Göth,† Terrillon,‡ Müller,# Haeckel,* Bailly,† and Fischer,‡ all thus far reported, with the hope of throwing light upon the subject.

Melano-sarcoma of mucous membranes should be studied with the aid of our knowledge of similar conditions in the skin, since between the course of the two there are many analogies, though the disease of the mucous membranes is lacking in the rich objective symptomatology of its dermal congeners. It is important in this study to remember the following primary modes of development of melano-sarcoma:

1. The primary melano-sarcoma of the skin, which begins as one nodule, or as several small ones, on a pigment, mole or freckle, a vascular nævus, or on any congenital abnormity of the skin, or cutaneous outgrowth, upon or in consequence of any chronic hyperplastic process of the skin or as a result of mild or severe injury to a part. In all of these instances irritation or traumatism seems to be an important and essential factor.

2. The primary local melano-sarcoma, which may or may not become disseminated, which, from a want of knowledge of the causes which produce it, may be called idiopathic, and is sometimes of congenital origin. This form is akin to the first type.

3. The simultaneous multiple idiopathic melano-sarcoma, which, as a rule, begins upon the hands and feet, and from these regions invades the body, which has been called "Kaposi's" type, and is regarded by that observer as a general morbid affection from the very outset. In exceptional cases the disease begins, in unique form, elsewhere than upon the extremities, particularly on the various parts of the face and the trunk.

4. Melano-sarcoma originating in the uveal tract (the chorioid and its duplicatures).

5. Melano-sarcoma beginning in any of the viscera or in lymphatic ganglia (unusual).

6. Melano-sarcoma of the mucous membranes, conjunctiva, mouth, vulva, and penis.# This type is most frequent-

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* Read before the American Association of Genito-urinary Surgeons at its third annual meeting, May 21, 1889.

† "Pigmentsarkom der äusseren Genitalien," "Centralblatt für Gynäkologie," October 1, 1881.

‡ "Mélanose généralisée ayant débuté par une petite lèvre de la vulve," "Annales de gynécologie," July, 1886.

"Zur Casuistik der Neubildungen an die äusseren weiblichen Genitalien," "Berliner klin. Wochenschrift," No. 31, 1881.

* "Ueber melanotische Geschwülste der weiblichen Genitalien," "Arch. f. Gynäk.," xxxii, 1888, pp. 400 *et seq.*

† "Tumeurs mélanotiques de la vulve," "Gaz. hebd. de méd. et de chir.," 1868, No. 47, pp. 740 *et seq.*

‡ "Ueber die Ursachen der Krebskrankheit und ihre Heilbarkeit durch das Messer," "Dtsch. Ztschr. f. Chir.," xiv, 1880–'81, pp. 548,550.

Primary sarcoma and melano-sarcoma of the penis are also very rare. After considerable search I have found the following cases: W. H. Battle describes ("Primary Sarcoma of Penis," "Trans. of the Path. Society of London," xxxvi, 1885, p. 271) a case of a man aged sixty. T. Holmes, in the same society's "Transactions," vol. xxiii, 1872, under the title "Melanosis of Penis," narrates the case of a man aged fifty-two. In Gross's "System of Surgery," sixth edition, p. 834, the case of a negro, aged forty-four, is given. In Guy's Hospital Museum a morbid specimen, removed by Golding Bird, is preserved.

My colleague, Dr. A. W. Stein ("Medical Record," May 21, 1887), has reported the case, with autopsy, of a man, aged thirty-three, with generalized melano-sarcoma, and with marked infiltration into the bladder, urethra, corpora spongiosa and cavernosa, testicles, and cord. No history of the primary development of the disease could be obtained.

The case of Démange ("Etude sur la lymphadénie," "Thèse de Paris," 1874) and Vidal has been quoted as an instance of primary melano-sarcoma of the glans penis, but its history shows that the disease began upon the extremities, and that in about three years the genital organ was attacked.

ly seen in the form of secondary deposits (using the word "frequently" with a due appreciation of the rarity of these growths). As a primary disease it is of great rarity, and as a type it should be classed with its kindred growths, outlined in subdivisions 1 and 2 (*vide supra*).

In a general way it may be stated that the conditions inherent in the tissues to the development of melano-sarcoma vary in progressive degrees, according to the amount of pigment which normally exists in them. For example, the uveal tract (the chorioid and its folds) is the seat of by far the largest number of these new growths; the skin is much less frequently affected, and the mucous membranes much more rarely than the skin, in all of which tissues there is a decreasing ratio of pigment.

Case I.—*Personal.*—Mrs. X., aged sixty-two, the wife of a well-to-do merchant, mother of five healthy daughters, came under my care June 1, 1887. She had always enjoyed good health, had never suffered any injury to her genitals, nor, to her knowledge, had there been any abnormal condition of them, even slight. Her family history was excellent, and cancer was unknown in her family. The history obtained was as follows: About two years previously (she being then sixty years old), she experienced a slight smarting sensation in the vulva, and several times saw a little bloody stain on her under-linen. She then noticed a bluish streak in the sulcus between the large and small labium of the left side. This was followed in a few months by a small, round tumor, which was seated on the same side near the meatus urinarius, and, in a short time after, by a small pea-sized tumor to the right of the meatus. At this time there was a painful lump in the right groin. The vulvar lesions were pronounced to be cancer by Dr. Trenholme, of Montreal, who removed them with the knife in the latter part of June, 1886. The wound healed promptly, showing no trace of the neoplasm. About two months later she noticed a little blue spot to the right of the urethra, which grew rapidly until October of the same year, when it was excised by Dr. Trenholme. About this time it was observed that a marked swelling existed in the left groin, and it was thought that the lump in the right groin had become smaller. About November of this same year another small blue, wart-like tumor was observed a little to the right of the meatus and extending to and along the upper right-hand margin of the introitus vaginæ. From that date until June 1, 1887, a period of about eight months, this new growth increased in size, and about April a smaller growth began to the right and just above it, on that portion of the labium minus which draped off from the clitoris. The appearance of the lesions as I first saw them are well shown in the colored plate. The large tumor was of a bluish-black color, perfectly smooth, homogeneous, and slightly shining on its surface. It looked like a ripe plum, except that it was conical on its upper end, near the clitoris. It was about an inch and a half long by an inch and a quarter wide. Its structure was firm, but compressible with moderate force. It was firmly adherent to the mucous membrane on the right of the vaginal orifice, and its base, which was about an inch in diameter, encroached up to but did not involve the meatus urinarius. Traction upon the tumor caused elevation of the subjacent tissues with it. The tumor, thus growing on the right side of the vagina, inclined inward and stopped up the vaginal orifice like a plug. The smaller tumor was evidently seated well under the mucous membrane, which, being mildly stretched, allowed it by its translucency to shine through as an oval mass which was quite firmly fixed to the subjacent tissues. The two tumors were continuous with each other. There were no inflammatory complications, nor was there a particle of abnormal discharge. In the right groin were a number of hyperplastic ganglia matted together in a tumor of the size of a walnut. The left groin showed marked salience in its middle portion. Here was seated a hard, slightly lobulated, conical tumor, the base of which seemed fully three inches in diameter, and its obtuse apex protruded fully an inch above the normal plane, being covered with healthy skin. Examination showed that the hyperplastic ganglia were quite firmly adherent to the deep fibrous tissues, and that the mass could be moved slightly by sliding it, but could not be pinched up.

The vulvar lesions caused the patient much mental anxiety. The presence of the large tumor caused local uneasiness, especially on lying down, and it was a slight impediment to urination. The recurrence and persistent growth of the tumors, the thought that they were incurable, and the fears of possible untoward complications, preyed on the patient's mind and kept her in a state of constant terror. This was shown, in a measure at least, in her great emaciation, her want of strength and of appetite, and her troubled look. Both she and her husband insisted that the vulvar tumors should be excised. To the latter I explained that such an operation could only be palliative, and that the leaven of the disease would still remain in the infiltrated ganglia, which could not be operated upon with any certainty of thorough extirpation, and which would necessitate an operation-wound of some size. The fact of the former relapses was also emphasized, and the possibility of a similar recurrence dwelt upon. On the other hand, the amenability and accessibility of the tumors to ablation and the possibility of perfect healing (as we so frequently observe after the removal of sarcoma and pigment sarcoma) were also brought forward, and it was decided that the operation should be performed. This was done June 16th in the presence of Dr. Morrow and Dr. Trenholme. Having made traction upon the tumor, I snared it with a galvano-cautery wire, heated to a dull-red color, as near its base as I could get. When the wire was well imbedded in the tumor, the battery (which had just come from the maker's hands in supposed perfect condition) gave out. I then cut off the tumor just above the normal level of the labium minus, and proceeded to get the base away piecemeal. This was a long, tedious task, and was best done with my thumb-nail by persistent but cautious gouging, scraping, and pinching manipulations. In this way I removed all of the morbid tissue and exposed the fascia, which looked as smooth as one's palm. Care was taken that no minute specks or filaments of the neoplasm were left in the contiguous territory. The hæmorrhage was very slight. The after-treatment consisted of scrupulous cleanliness and light dustings with iodoform, covered with simple gauze. Complete healing, which was accelerated toward the end by slight stimulation with nitrate of silver, took place in twenty-four days. Thereafter the site of the neoplasms showed a small, pinkish atrophic cicatrix.

The health of the patient improved in a marked manner. She regained her strength and spirits and became five pounds heavier than before the operation, one pound less than her maximum weight at any time. On her return from the country in October, I began the use of hypodermatic injections of Fowler's solution, which it had been my wish to commence in July. For a period of two months she received these injections in doses commencing at seven and ending at ten drops. She had one abscess during this time. The injections, made with great antiseptic care, were administered on the thigh and on parts as near as admissible to the large mass of ganglia in the left groin. By the patient's preference the arsenic was then given by the mouth for a month, and as it by this method also produced annoying symptoms, it was discontinued. The result of

the three months' course of arsenic was the perceptible subsidence of the tumor, which became distinctly more movable and decidedly more lobulated on its superior surface. In December, 1887, the patient complained of coldness in the left heel; in June, 1888, her appetite began to fail. Then she had numbness in the leg and the corresponding arm, which was followed by slight loss of muscular power. This sensory and motor disturbance kept on apace. In April the right pupil became persistently enlarged, and there was right hemianæsthesia of the face. The left-sided paralysis and the right-sided disturbances continued, marasmus supervened, and the patient died July 26, 1888, about thirteen months after the last operation, and three years from the date of invasion of the initial new growth. She was under the care of another physician in a distant city during the last six months of her life.

Case II—*Göth.*—The woman, age not stated, first seen in February, 1882, had been healthy all her life, and never had borne children. For two years previous to date she had noticed the development of a tumor on the vulva which caused neither inconvenience nor pain. Göth found a rounded tumor of the size of the fist, of a bluish-black color, not sensitive to pressure, but with a tendency to bleed, and upon it several small ulcers dependent on the loss of epithelium. Close examination showed that the tumor was composed of a large upper and a smaller under flap, which fell together and appeared like a single tumor when the patient was in the horizontal position. The upper portion developed from the superior portion of the left labium minus, extended over the præputium clitoridis and down the right labium minus for a short space. Its length was 7 ctm., width 5 ctm., and thickness 2·5 ctm. The small lower flap seemed to spring from the lower portion of the left labium minus. The growth reached backward to the posterior border of the vulva and ended in a number of digitate processes. The tumors were traversed by numerous superficial fissures, giving the under surface an uneven and the outer a lobular appearance. The presence of the tumor compressed and pushed the urethra out of its axis, and obstructed the vaginal orifice. The lymphatic ganglia were not enlarged, and the patient seemed in fair condition. Under chloroform narcosis, the upper flap was drawn firmly upward and forward, transfixed with a sharp-pointed scalpel, and removed. The hæmorrhage, though profuse, was, with some effort, controlled. The lower flap was removed by a deep incision, extending well into the posterior vaginal wall. Care was taken to clip away all suspicious filaments. Under careful antiseptic measures, perfect healing resulted in four weeks. Göth emphasizes the facts of (*a*) the relatively benign course of the new growth; (*b*) the absence of infiltration of lymphatic ganglia; (*c*) the non-recurrence of the disease five months after ablation.

I may add that it is a great pity that the report of the case was not delayed until five years after the operation.

Case III—*Terrillon.*—An hysterical woman, aged sixty-two years, was admitted to the hospital April 28, 1885, suffering from mental derangement and hemi-anæsthesia of the left side, and gave a confused history of moderate pain in the vulva, and of slight bloody discharge, both of recent date. Examination showed, on the right labium minus, a small tumor of the size of a large nut, firm, smooth on its surface, and absolutely black. It spread out by prolongations beyond its insertion, and was movable with the labium minus. Around the tumor the mucous membrane was of a uniform black color, studded with little patches of healthy tissue. This discoloration existed on the opposite labium, and was traced into the vagina as far as the os uteri. There was no tumor, however, except the one mentioned. There was no swelling in either groin, nor could any tumor be found on deep palpation in the iliac fossa.

The tumor gave rise to no pain, and it could be examined without discomfort to the patient. It was removed on June 28, 1885, by means of the galvano-cautery. The wound healed kindly by the 15th of July. Early in the following November the patient, who had become much emaciated, presented in the right groin (corresponding to the side of the ablated tumor) a distinct, uneven swelling of the ganglia. From this time on multiple tumors developed rapidly in various portions of the body. The woman's general condition became much worse. She walked with difficulty, lost her appetite, and presented every indication of a profoundly morbid state of the system. On the 17th of February, eight months after the operation, still more marked changes were observed. The discoloration had increased; the labia majora were swollen and œdematous; there were several small, prominent black nodules on the left labium minus, while the cicatrix of the operation was unaffected. The orifice of the urethra was invaded, and there was a blackish mass of the size of the little finger upon the posterior surface of the vagina. At this time the tumor in the right groin was of the size of the fist, uneven on its surface, and adherent to the deep tissues. The overlying skin was healthy, though somewhat thinned, and through it the ganglionic tumor presented a blackish color. In the left groin there were several small, hard, and isolated infiltrated ganglia. There was also a large indurated ganglion in the right subclavicular fossa, and a nut-sized black tumor upon the integument of the back. The patient's general condition continued to be very bad; emaciation was great; the face was swollen, and the abdomen and legs swollen and œdematous. She grew worse and died March 6th, suffering from violent dyspœna and severe abdominal pains. At the autopsy the inguinal, iliac, abdominal, and thoracic ganglia were found to be filled with a black substance, and some of them were of a pulpy consistence. The liver and spleen contained blackish nodules. Examination of the post-mortem specimens by Cornil showed generalized melanotic sarcoma.

Case IV—*Müller.*—This case, which is entirely wanting in the details of age and clinical history, was taken from the private journal of Martin, of Berlin, after his death, by his assistant, Müller.

A tumor of the size of a goose-egg involving the clitoris was removed by operation. The woman was too weak to undergo a second operation on the enlarged inguinal ganglia. She died twelve days after the operation. At the autopsy, melanotic sarcomata were found in the brain, lungs, pericardium, liver, spleen, kidneys, retro-uterine fossa, bladder, round ligaments, stomach, jejunum, and thyreoid, tracheal, bronchial, suprarenal, mesenteric, and inguinal ganglia.

It is not certain that the disease began upon the clitoris. The principle of "better late than never" seems to have guided the operator in this case.

Case V—*Haeckel.*—A woman, aged sixty-nine, well nourished and strong for her age, was first seen April 9, 1887. She had had six children and two miscarriages. Eleven months previous to examination she had noticed a small tumor on the external genitals which gradually grew larger. Five months later the left inguinal ganglia became swollen, and five months after that those of the right side became affected. Her only complaint was of a sense of fullness in the vagina. Haeckel found a tumor of the size of a child's fist, of a dark-blue color streaked with white, which was seated on the whole of the left labium minus, on the clitoris, and on the upper part of the right nympha, and resembled a horseshoe with unequal shanks. The bluish-black new formation, which contrasted strongly with the color of the surrounding tissue, jutted into the left labium majus and in a less degree into the right one. There was a small nodule at the orifice of the urethra and two others between the left la-

bium majus and minus. In the depth of the mons Veneris two hard cords were felt which were supposed to be the infiltrated crura of the clitoris. In the left groin there was a plum-sized mass of infiltrated ganglia and a smaller one on the right side. The left epitrochlear ganglion was enlarged. There were no abnormal pigmentations upon the body, and no pigmented nævi. An operation was performed by which all the vulvar mass and the fatty tissue of the mons Veneris and the infected ganglia were removed. The healing of the wound was rather slow. Ascites, icterus, œdema of the lower extremities, together with severe cachexia, developed, and the patient died five months after the operation.

Case VI—*Bailly.*—A woman, aged seventy-two, of nervous temperament, had suffered from rheumatism prior to her sixtieth year, after which she was well. Ten months before examination she felt an indolent tumor of the size of a lentil in the thickness of the right labium minus near the clitoris. After remaining quiescent for rather less than a year, this tumor grew with great rapidity and became superficially ulcerated. Later on a tumor identical in structure and course appeared on the left labium minus externally and toward the fourchette, which obstructed the vaginal orifice. Patches of black pigmentation also were present on the vulva and in the vagina, which, owing to tenderness, was not accessible to examination. The tumor was ablated.

The history of this case was written a month after the operation, at which time the wound had not healed and there was no apparent ganglionic involvement; but the ominous statement is made that the patient presented a pinched and care-worn look, that she was growing thinner day by day, and that she kept her bed.

Case VII—*Fischer.*—A woman, aged fifty-six, was first seen April 22, 1870. Five months before, a small swelling appeared upon the left labium majus, which grew to the size of a walnut, ulcerated, and bled. The corresponding inguinal ganglia became enlarged simultaneously with the appearance of the new growth. The tumor was ablated and the patient discharged, healed, in four weeks. A few weeks later a recurrent growth appeared upon the labium. Six months after the operation the inguinal ganglia became ulcerated, and the patient became weak and died. It was thought that the irritation of a chronic leucorrhœa was a possible factor in causation.

Clinical History.—The mode of development of these melano-sarcomatous tumors of the vulva is essentially the same as that of their congeners of dermal origin. In their course, however, the former present certain peculiarities and modifications which are ingrafted upon them by the highly vascular nature of the mucous membrane, and by the anatomical conformation of the parts. A knowledge of the clinical history of cutaneous sarcomata is of much aid in this study.*

Melano-sarcoma of the vulva begins as a minute red or purplish spot seated in the deeper portions of the mucous membrane. This spot soon becomes a papule and then a nodule, a good example of which is shown in the chromo-lithograph in the smaller oval lesion just within the margin of the right labium majus and above the tumor proper. This nodule on a flat surface is of round or oval shape, but in a cleft like that of the labial sulcus it may be of linear shape (as it was at the inception of the disease in my case). On an anfractuous surface (near urethra, vaginal orifice, and fourchette) the shape of the lesion would be indefinite. The nodule being, as we may say, the well-developed lesion of the morbid process, its subsequent progress is readily traced. If it enlarges in area it produces at first sessile tumors, but if, as in my case, the morbid growth is very exuberant in an outward direction, a true pedunculated tumor may be the result, as shown in the colored plate.

When a larger extent of surface is involved we find sessile tumors of various sizes, which may be as large as the fist or a goose-egg, as in Göth's and Müller's cases; or, not reaching this magnitude, they may merely jut up more or less from their bed, as they did in Terrillon's case. To the touch these tumors are firmer than sponge and less resistant than unvulcanized rubber; their density may be compared to that of a plum. Their surface may be smooth, or finely or coarsely lobulated. They appear to be composed of a homogeneous substance, and, in different shades of light, present black or blue tints, or a combination thereof. Though firmly adherent, motion or traction is readily produced. When very large, these tumors may become warty, or even fungous, upon their surface, and then from them exudes a bloody ichor (perhaps of offensive odor), and they may become more or less incrusted. Superficial ulceration from erosion may occur, and in this, as well as in the warty or fungating stage, hæmorrhage, mild or severe, may occur. Central softening of the tumors may also take place, and foul and destructive ulcers may result. We are unable to say whether in this form of melano-sarcoma spontaneous absorption takes place, as it sometimes does in kindred skin lesions. From the fact that the connective tissue is sparse on the vulvar sites of these tumors, it is not probable that we shall see anything analogous to the subcutaneous

* In this connection it may be interesting to present the brief notes of cases of juxtapudendal melano-sarcomatous tumors which are scattered throughout medical literature, and have passed current as vulvar tumors.

A tumor, in all probability of melano-sarcomatous nature, was reported by J. Fergusson ("Recurrence of a Melanotic Tumor; Removal," "Lancet," 1851, vol. i, p. 622). A woman, aged forty-five, had a solid, movable tumor, of the size of an orange, in the right groin, extending from the iliac spine half way down Poupart's ligament. Two years previously she had a small pedunculated, bluish-black tumor on the right side of the mons Veneris. The skin over it ulcerated, and a fungous growth remained, which bled profusely. This was ablated and healing followed. The inguinal tumor (undoubtedly lymphatic in origin) was secondary to that of the mons Veneris. No microscopic examination was made, but the tumor was pronounced melanotic.

Fischer (*op. cit.*) reports the following case: A woman had had since her thirty-fourth year a blackish growth on the perinæum. Prior to her fifty-fourth year, a tumor of the size of two fists, involving the left inguinal ganglia, appeared, which was extirpated. Eleven years after there was no recurrence.

Wagstaffe ("Pigmented Myxoma, Alveolated, removed from near the Labium Majus," "Trans. of the Path. Society of London," vol. xxiv, 1873, p. 167) reports the case of a woman, aged forty-two, having a conical tumor, of the size of a pigeon's egg, on the left labium majus, near the point of origin of the gracilis muscle, which began deeply in the connective tissue. It was pronounced to be of the type of myxomata and sarcomata.

It may be mentioned that melanotic growths of the uterus are very rare, and are usually of the form of melano-sarcoma. Neither melano-carcinoma nor melano-sarcoma has been found to originate primarily in the ovaries or vagina.

nodules of cutaneous melano-sarcoma. Ablation of these tumors may or may not be followed by perfect healing.

From our present knowledge it may be stated that the progress of these malignant growths is sometimes slow and again quite rapid, while it is decidedly exuberant. This being the case in old subjects, it will be interesting to watch the course of the disease in younger ones should they present themselves.

In Terrillon's case a diffuse black pigmentation of the whole vaginal membrane, without any other form of hyperplasia, is mentioned. This would seem to be analogous to the general bronzing of the skin which is sometimes seen in melano-sarcoma of the skin. It was also seen in Bailly's case.

The symptoms of melano-sarcoma of the vulva are decidedly mild. Early in their course they cause slight pruritus or smarting, and they may give rise to more or less hæmorrhage. Later on they cause inconvenience by reason of their size. If developed near the urethra, they may act as impediments to urination, and if near the vulva, they may be very objectionable mechanical obstacles. In the stage of degeneration of the tumors they may cause much suffering and worry.

Such are the uncertain mode and course of the generalization of melano-sarcoma, like those of all malignant growths, that it is impossible to give a description of it, since in no two cases is it similar. The dissemination of the disease in this form is through the lymphatics, which lead directly to the viscera; therefore it is in these organs that we should expect to see the gravamen of the secondary infections. In skin sarcomata the malignant dissemination is through the vessels and lymphatics, and by contiguous infection; therefore we so constantly see new crops of the disease upon the cutaneous envelope. It is probable that in melano-sarcoma of the female and male genitals the skin will not be involved so early and so frequently as the lymphatic system and the viscera. It is to be noted, however, that in Terrillon's case, in addition to great visceral infiltration, a melano-sarcoma nodule was found upon the back.

In my case it is probable that the metastatic malignant new growth was seated in the lower part of the pons. From the absence of symptoms it is probable that there was not metastasis to any other organ.

The date of the generalization or metastasis of melano-sarcoma of the vulva, like that of the whole family of sarcomata, is uncertain. In Terrillon's case it began in the groin, in about eleven months, and in my case the appearance of the morbid nervous phenomena, about thirty months after the onset of the disease, gives weight to the view that secondary changes began in the brain about that time. But it must be remembered that the ganglionic enlargement began between a year and eighteen months after the onset of the disease. Since death occurred in Haeckel's case five months after the operation, in Fischer's case in six months, and in Bailly's case in all probability in a few months, it is fair to assume either that marasmus set in or that metastatic growths were developed. The cases of Göth and Müller give us no information on this subject.

In my case and that of Terrillon the age at which the malignant growth began was sixty years, and, though Göth fails to state it, it is evident, from his description, that his patient was beyond the middle period of life. Haeckel's patient was sixty years old, Bailly's was seventy-two, and Fischer's was the youngest on record, being fifty-six. The statistics of other forms of sarcomata prove that they are more prone to appear late than early in life, but the foregoing figures would seem to indicate a more uniform evolution of melano-sarcoma of the vulva in late periods of life. Thus Kaposi, speaking of skin sarcomata, places the date of invasion between forty and sixty-eight; Tanturri, according to Perrin,* between forty-three and sixty; and De Amicis, between the thirty-ninth and seventy-fourth years of life. Exceptions to these averages are not common. Köbner's case was that of a girl nine years old; Billroth's patient was ten years, and Perrin's twenty-two years of age—all the growths were skin sarcomata. It is probable that further statistics will place the period of invasion of sarcomata of mucous membranes in middle and old age.

Microscopical Examination.—The anatomical diagnosis in my case is small- spindle-celled melanotic sarcoma. The mottled black and gray pigments of the tumor consist of clusters of closely aggregated, small, spindle-shaped cells, lying in a scanty stroma. The epithelial investment of the vulvar region was not present in any of the sections. Both the stroma and the tumor cells contained granules and larger and smaller masses of brownish pigment (see Fig. 2). In some places the sections are comparatively free of pigment. In other places hardly anything else but masses of pigment can be seen. The examination and microscopic drawing were made by Dr. Ira Van Gieson.

In Göth's case the anatomical diagnosis was melanotic alveolar sarcoma.

In the tumor in Terrillon's case the round cells of melano-sarcoma were found. Examination of the blood and urine showed the presence of minute blackish granules.

Microscopical examination of the tumor in Müller's, Haeckel's, and Bailly's cases showed melanotic sarcoma.

Ætiology.—There is nothing in the history of these cases which gives even a clew to the origin of this malignant new growth. From analogy with kindred skin lesions it may be inferred that any congenital lesion, particularly if pigmented, any structural defect of the parts, hereditary or acquired, or that irritation or traumatic causes, or simple hyperplasia, might serve as the starting point of it, but we have no positive knowledge.

Hildebrandt† speaks of the case of an old woman in which sarcoma of the vulva supervened upon the repeated cauterizations of some caruncles of the urethra with the actual cautery and acids. The lesson conveyed by it is that in old subjects these lesions should be excised rather than cauterized. Indeed, any irritated hyperplastic growth of the genitals of old women, or of those of middle age even, may take on a malignant nature; therefore they should be

* "De la sarcomatose cutanée," Paris, 1886.

† "Die Krankheiten der äusseren weiblichen Genitalien," Billroth's "Handbuch der Frauenkrankheiten," Stuttgart, 1877.

handled cautiously.* Leucorrhœa was looked upon as a possible causative factor in Fischer's case.

Taking an average of all the cases of sarcomata reported, it is found that they occur more frequently in males than in females.

Diagnosis.—So well marked are the features of melano-sarcoma of the vulva that their recognition is usually easy. A distinction may be necessary between it and melanotic carcinoma, which is prone to appear on cutaneous surfaces (the labia majora), or at their junction with mucous membranes; also on the skin of the extremities.

Melanotic carcinoma has the general appearance of epithelioma; is often accompanied by small or large pigment deposits, and the initial nodule is soon followed by new ones in its vicinity. In its course it is more rapid than pigmented sarcoma of these parts. In general, the carcinomatous growths tend to burrow rather deeply, while the sarcomatous luxuriate upward. Kaposi says that a moderate amount of swelling and diffuse infiltration of the surrounding tissues may occur early in the disease. It is important to remember that melano-sarcomatous tumors may later on become warty or fungous on their surface, and that this feature appears early in the course of melano-carcinoma. It is of vital importance that the diagnosis should be made at an early date in this, as in all forms of cancer, since upon it depends the future of the patient.

Prognosis.—It has been tritely remarked that the invasion of mucous membranes by sarcomatous growths is a sign of evil omen. This statement made regarding secondary deposits in cases of cutaneous and visceral sarcomata is particularly true concerning those of the primary invasion of mucous membranes. In these very vascular structures the morbid growth is exuberant and the disease seems to take an especially firm hold upon them. Then, again, those portions* of mucous membranes upon which sarcomata, simple and pigmented, show a tendency to develop (the face and genitals), are in closely contiguous relation with large groups of lymphatic ganglia, which seem to be more readily infected than when the new growths are seated in the skin. In my case, and in that of Terrillon, death was induced in about two and three years, and in both the new growth reappeared within a few months after the removal of the initial tumor. Göth's case of freedom from the disease five months after the removal of the pigment sarcoma stands for nothing. It should have been reported five years after operation, rather than five months. The significant fact appears in Terrillon's report at the date of his operation, that the inguinal ganglia corresponding to the seat of the vulvar tumor were not perceptibly enlarged, and that, although the new growth did not reappear on that side, eight months later a ganglionic tumor, of the size of the fist, was found there.

And it may be added that in the literature of malignant new growths in general, the fact is not infrequently noted that a patient discharged cured after extirpation of the tumor returns later on, in months and even years, with infiltrated ganglia which, upon dismissal, had been thought to be unaffected. In no case, therefore, where the tumor is removed and no enlargement of the ganglia is found, are we warranted in assuming that the patient will not have a recurrence in them or elsewhere.

In cases where the tumor is young, small, readily removable, and without ganglionic implication, a guarded and moderately hopeful prognosis may be given. When the new growth is old, large, and firmly fixed, and particularly when accompanied with lymphatic complication, the outlook is gloomy. Early enlargement of the ganglia is a serious symptom, and the late development of this condition inevitably brings death in its train. The death of my patient and of Terrillon's, at the end of about two years, together with that of Haeckel's and Fischer's within a few months, emphasizes its lesson.

Upon the fact that the sarcomata are more prone to form metastases through the medium of the vascular system than the carcinomata, which, as a rule, form metastases through the lymph channels, the greater malignity of the former depends.

Treatment.—It may, I think, be stated as an axiom that all sarcomatous growths of the vulva, simple or melanotic,

* Cases of melano-carcinoma of the vulva are also rare, and are sometimes classed as sarcomas. The following have been reported:

Prescott Hewitt's case ("Melanosis of the Labium and Glands of the Groin," "Lancet," vol. i, 1861, p. 264) was that of a woman, aged fifty-nine, who observed a tumor on the anterior surface of the labium eight months before the operation. It was thought that it began upon a brown spot which had been there for years. The tumor grew rapidly, ulcerated, and bled freely. Though only palliative, the operation was radical, and included the removal of two or three black spots seated deeply in the wound. Two months later the disease reappeared *in situ*, and cerebral symptoms supervened, which led to the woman's death six months after the operation.

Klob ("Pathologische Anatomie der weiblichen Sexualorgane," 1864, p. 467, quoted by Haeckel) briefly mentions the case of an old woman who had a melano-carcinomatous nodule on the labium, and who died of a disseminated metastasis of the disease.

Müller (*op. cit.*, p. 447) reports the case of a nulliparous woman, aged thirty-three, who had a dark-blue, elastic, painless tumor, of walnut size, on the inner surface of the right labium majus, near the clitoris, which had grown rapidly within a few months. This tumor was quite well circumscribed, and became lost in the depth of the tissues, as far down as the pubic bone. It had not been preceded by a nævus-like growth. It was removed by deep incisions, the wound healing satisfactorily. Just after the operation the right inguinal ganglia became enlarged, but they afterward became normal. Three years after the operation the patient was well. Microscopic examination showed the tumor to be of a melano-carcinomatous nature.

In Kaposi's "Atlas der Syphilis" (Heft i, Taf. xii) will be found an excellent colored drawing of a melano-carcinoma of the external portion of the left labium majus.

* Mr. Jonathan Hutchinson—"Clinical Lectures and Reports of London Hospital" ("Cancer of Female Genitals"), London, 1865—speaking of epithelioma of the vulva, says: "The average length of life is scarcely longer than it is in the cases of medullary cancer of bones and testis, and it is very much shorter than what occurs in cancer of the breast. The explanation of the rapidity of progress is to be sought in the vascular condition of these parts, their rich endowment with lymphatics, and the early age of the patients attacked. We very often meet with cancer of the female genitals in patients under thirty, and I have observed it as early as twenty-four. In the young the processes of growth and absorption are much more rapid than in the old. Hence all varieties of cancerous action tend to be acute if occurring in comparatively young persons." Since melano-sarcoma of other parts has been observed in the young, it is possible that it may appear at earlier dates than it did in the six cases detailed in this essay.

being of such extreme malignancy, should be removed as quickly as possible. The sight and presence of these growths tend to demoralize the patient in mind and body; consequently, if there is a reasonable chance of subsequent healing, ablation should be performed. Though there is in all cases a probability of relapse *in situ*, and almost inevitably subsequent deposit in some part of the economy, the patient's comfort is greatly conserved by operation. My experience with these and other malignant forms of new growths of the vulva has convinced me that the best proceeding in general is to first remove the greater portion of the mass down near the skin level, and then to finish the operation by patient clipping and picking, by gentle gouging with the nails or with the handle of the scalpel, until all suspicious portions are removed. Such a course is far preferable to the destructive cauterization, chemical and thermic, which is recommended by some. When in these cases the lumen of the urethra or vagina is invaded, the task of the surgeon is much more difficult and tiresome than when the tumors are seated on the labia alone. For some cases the galvano-cautery is applicable, for others the knife is required. The hæmorrhage may be profuse, but it is readily controlled. Such is usually the woe-begone condition of these patients at the time of operation that the simultaneous removal of infiltrated ganglia is hardly warranted. The propriety of their subsequent removal must be left to the good sense and experience of the surgeon. If the ganglia are movable, and the mass is not too old, they may be removed. In my case, where the mass was as large as a goose-egg and firmly adherent to the fascia, an operation would have been simply foolhardy.

In these cases, where the outlook is uniformly so gloomy, all measures which offer a chance of future immunity should be tried. With the experience of Shattuck,* in his probable cure of a case of melano-sarcoma, and of Köbner,† in his case of seemingly positive cure of a child similarly affected, in my mind, I began, at the first available opportunity, the use of hypodermatic injections of arsenic. This agent certainly did soften the mass and caused its partial absorption. Earlier in the history of the case it might possibly have been curative. The logical conclusion, therefore, to be derived from our present knowledge of the effect of arsenic on the sarcomata is that it should be administered hypodermatically, in full and increasing doses, as early and for as long a period as possible.

Though the outlook is inevitably fatal, there is a modicum of satisfaction in the assurance we can give the patient that, when perfect removal of the vulvar mass is practicable, she may thereafter be free from this hideous reminder of her doom.

The University of Vienna.—According to the "Lancet," Dr. Anton has qualified as Docent in nervous and mental diseases, and Dr. v. Metnitz as Docent in odontology; Dr. v. Wagner and Dr. Lihotzky will during the summer session deliver the professorial lectures on mental diseases and midwifery respectively; Dr. Czermak is acting for Professor Fuchs, one of the ophthalmological professors, who is absent on sick leave.

* "Journal of the American Medical Association," July 4, 1885.

† "Berliner klin. Wochenschr.," No. 2, 1882.

THREE REMARKABLE CASES OF COMPOUND DEPRESSED FRACTURE OF THE SKULL, WITH HERNIA CEREBRI.

OPERATION; RECOVERY.

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The subject of compound depressed fractures of the skull has recently been so thoroughly discussed in the various medical journals, and the proper methods of treatment have been so ably described, that but little remains for me to say on the subject. I will therefore briefly narrate the histories of three cases, each of which was followed by hernia cerebri, and all ending in recovery, which were recently under my care at the Manhattan General Hospital, in the hope that they will be of interest to the medical profession as still further showing the value of a thoroughly antiseptic treatment for wounds which were formerly almost uniformly fatal:

Case I.—Charles E., aged six; residence, Edgewater, N. J.

On the morning of August 27, 1887, he was playing near one of his father's horses, when suddenly the animal gave the lad a vicious kick, striking him just above the left temple and back of the left eye. This happened at ten o'clock in the morning. The boy was carried into the house, bleeding profusely from what seemed a simple scalp wound.

He soon began to grow drowsy, and ultimately to lose consciousness, and finally he was put into a wagon and brought across the river and conducted to the Manhattan Hospital, where he was received, by the surgeon in charge, in a terribly exhausted condition, having continued to bleed from 10 A. M. to the time at which he was received, 5.30 P. M., an interval of seven hours and a half. The patient at that time was almost bloodless, with a pulse slow and very feeble; pupils equal and nearly normal, with a tendency toward dilatation; extremities cold; and complete unconsciousness.

A hasty examination revealed an extensive compound comminuted depressed fracture of the left side of the skull. There was complete paralysis of the left side of the face. The patient was immediately carried to the operating-room of the hospital and quickly got ready for an operation. Owing to his unconscious condition, I operated upon him without employing any anæsthetic.

There was a scalp wound, somewhat ragged in character, extending from the temporal ridge on the left parietal bone at about a quarter of an inch behind the point of meeting of the temporal ridge and the coronal suture, downward and slightly forward, a distance of two inches, to a point about midway between the upper and lower point of articulation between the anterior border of the squamous portion of the temporal bone and the greater wing of the sphenoid bone. Externally the wound passed from the side of the head at about the middle of, and about an inch and a half above, a line of the outer canthus of the eye to the external auditory meatus, downward and forward to a point half an inch beyond the outer angle of the left orbital cavity.

The scalp around the wound and to a distance of about two inches therefrom was shaven; the wound and scalp were then washed with soap and warm water, then irrigated with a 1-to-2,000 solution of mercuric bichloride, and other preliminary antiseptic precautions were taken. Then the wound in the scalp was enlarged by an incision about an inch and a half long, made at right angles with the original wound. The flaps thus

made being laid back, the depressed portion of bone came into view.

The fracture was comminuted, but the general shape was that of a crescent, as though the hoof of the horse had struck the head in such a manner as to cause a fracture following the lines of the iron shoe, and a continuation of the lines of fracture would have formed a complete horseshoe-shaped figure. The



Fig. 1.

fracture extended from the point where the temporal ridge crossed the coronal suture, downward and forward, the convexity of the crescent being backward, to a point situated at the lower and anterior portion of the zygomatic fossa, behind the anterior part of the zygomatic process.

As it was unnecessary to trephine, the elevator was the only instrument needed. The depressed bone was imbedded at its anterior portion in the brain substance, and was partly concealed by it. The amount of depression varied from half to three quarters of an inch, the greatest amount of depression being near the lower part of the fracture. There were noticed three large pieces of bone and five or six small pieces. The large pieces were respectively parts of the temporal, parietal, and frontal bones, the force of the blow having not only caused the fracture, but also separated the bones at the temporo-parietal and coronal sutures. Attached to the inferior segment or temporal portion of fractured bone was found a small piece of the greater wing of the sphenoid bone about three quarters of an inch by one quarter wide.

The bones were raised by means of an elevator (the periosteum being lacerated and ground away by the blow) and extracted by means of a suitable forceps. When laid in their proper position with relation to each other, the bones formed the crescent-shaped figure before mentioned, the posterior or convex border of which was clean-cut and angular, the anterior border more irregular, and the apices rough and jagged. The bone itself was about three sixteenths of an inch thick at its thickest part, the inner table being very thin and of about one third the thickness of the outer table. This state of things was normal to the age of the patient. There were several cracks and fissures of the inner table which were absent in the outer. The whole amount of bone, when removed and placed in its normal anatomical relation, covered an area which was four inches and a half long by an inch and a quarter wide in its widest part, this being about the center of the crescent. The middle meningeal artery, though exposed in the upper part of the space left by the removal of the parietal fragment, was intact.

After the removal of the bones, the dura mater was seen to be uninjured except at the lower part of the opening, somewhat below the point of junction of the parietal and temporal fragments of bone. At this situation both the dura mater and pia mater were ruptured, and there was a hernia cerebri of about the size of a nickel which projected through the rupture, and from whose somewhat lacerated surface blood and a small amount of brain substance were oozing. There was also a small clot of coagulated blood beneath the dura mater just adjacent to the point where the hernia protruded, but it was small and was not interfered with. The opening was then cleansed with mercuric-bichloride solution (1 to 2,000) and packed with iodoform gauze, the edges of the scalp wound were confined at their outer extremities by single catgut sutures, and a dressing of bichloride gauze and absorbent cotton was applied with a tight bandage.

During the operation there was considerable hæmorrhage, which caused some delay, but was finally checked by compression. At two different periods during the operation work had to be suspended and the patient resuscitated, as evidences of heart failure and respiratory paralysis were present. Subcutaneous injections of whisky and digitalis (20 minims to 1 drachm of whisky) were twice given, and artificial respiration was also resorted to. The duration of the operation proper was twenty minutes.

After the operation the patient was put to bed; hot-water bottles were placed around the feet and lower extremities. The pulse was very weak. The patient recovered partial consciousness about 7.30 P. M. Complete hemiplegia of the right side was then noticed. At 9 P. M. the pulse was much better. There were some pain and restlessness. He was given by the mouth, bromide of potassium, gr. x; chloral hydrate, gr. v. An ice-bag was applied to the head. He passed a fair night.

The next day, August 28th, the outside dressings were removed and, as there was nothing but very slight discoloration of the gauze, the iodoform packing was not removed from the wound, but only a clean outer dressing applied. The patient at this time was semi-conscious, seemingly comfortable; temperature normal; pulse, 74; respiration, 28. In the afternoon, temperature, 99·2°; pulse, 102; respiration, 28. At night, the patient was given the bromide and chloral mixture as on the previous evening. He passed a quiet night.

August 29th.—Head not touched. Morning temperature, 9·98°; conscious.

30th.—Outer dressings only changed. No hæmorrhage or discharge of any account. Paralysis persistent; temperature, 98·4°; pulse, 78; respiration, 18. Afternoon, temperature, 100°; pulse, 82; respiration, 20. The usual sedative at night; passed a fair night.

31st.—Morning, temperature, 99°; pulse, 74; respiration, 20. Afternoon, temperature, 100°; pulse, 80; respiration, 18.

September 1st.—Packing removed from wound; no pus in wound; the hernia had enlarged somewhat, but had not degenerated. Paralysis persistent and of the same extent. Morning, temperature, 99°; pulse, 72; respiration, 18. Afternoon, temperature, 100°; pulse, 84; respiration, 24.

The head was redressed every other day until September 10th without any untoward symptoms. The scalp wound was beginning to granulate well; the hernia was commencing to granulate and to diminish in size, the dura mater encroaching and closing in on it from all sides. There was felt at this time some fluctuation just above the left ear. An aspirating needle

was introduced but no pus met with. This fluctuating point gradually disappeared under pressure. About this time, also, there appeared a slight amount of movement in the right leg. Patient comfortable.

The temperature between September 1st and 9th varied between normal and 99·6°, averaging 99·1°. On September 9th, however, the temperature fell to just 97°, the pulse went down to 60, and the respirations to 16. The patient soon rallied, however, and the temperature came up to about 98°; pulse, 78; respiration, 22.

On September 10th the temperature was normal; the pulse averaged 82; the respiration, 19. The wound was dressed every other day up to September 19th with iodoform; once or twice, as occasion required, fused nitrate of silver was applied. The hernia was growing smaller; there was no suppuration of the brain substance. Peruvian balsam used to-day. The movement in the right leg was getting much freer; slight movement in right arm and forearm was noticed to-day for the first time; facial paralysis much improved; less dribbling of saliva; speaks very distinctly; tongue getting nearer the median line. The mental faculties, however, seem to be impaired, evidenced by his laughing immoderately and exaggerating his play, unlike other children in the ward.

The head was redressed every other day between September 19th and November 8th, the dressings being varied as occasion required. By this time no dressing was required; the hernia was covered over and the parts were looking well.

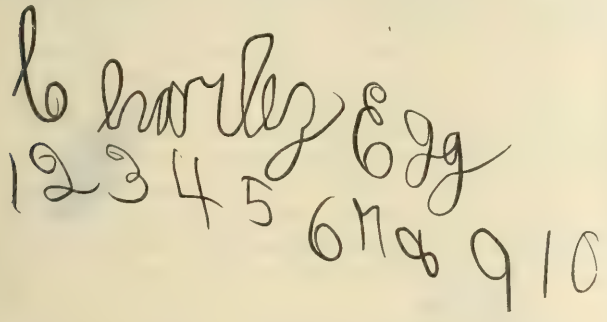


Fig. 2.—Fac-simile of the patient's handwriting before the injury.

The mental condition was about the same. The right leg could be moved with ease in all directions; the right arm moved quite easily; there was also movement in the hand, but it was slight.

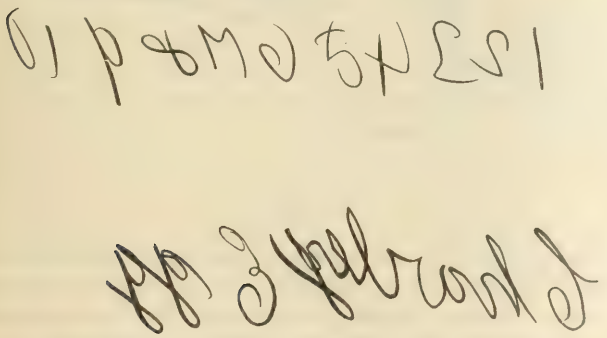


Fig. 3.—Fac-simile of the patient's handwriting after the injury.

November 8th.—The patient was dressed and sat in a chair. From this date on, the paralysis, both of leg and arm, rapidly improved, until by November 12th the patient was able to walk, assisted by a nurse, or by supporting part of his weight on the frames of the bed.

20th.—Patient could walk without aid, and even run a very little, but could not move the right side with so much ease as the left side of the body.

The mental condition began to improve, and there were indications that the impairment would ultimately disappear. During the preceding eighteen days the temperature had averaged 98·6°; pulse, 85; respiration, 24.

28th.—The patient was taken home in a carriage. His parents were asked to report with him in a short while, but he did not appear until one day in December, 1888, over a year after his discharge. At that time there was still a little mental impairment, and, while able to move his limbs perfectly in walking, he exhibited a very slight halt of right foot, causing a very minute amount of lameness.

The scar is firm, and the patient feels well in every respect.

Case II.—Antonio V., aged twenty-four, a native of Italy This patient was brought to the Manhattan Hospital in an ambulance, on the afternoon of October 11th, from Shaft 27 of the new Croton aqueduct. While he was working at the bottom of the shaft a long piece of iron pipe, falling from the top of the shaft, struck his skull about half an inch to the right of the sagittal suture and a little behind the coronal suture, the pipe falling a hundred and forty feet, striking end first, and producing a compound comminuted fracture of the skull. The dura mater was lacerated and the brain substance protruded through the scalp wound to a height of three fourths of an inch. The fracture was of the right parietal bone. The patient was conscious when brought in, but drowsy and stupid. The wound was cleansed with mercuric-bichloride (1 to 2,000) solution and bichloride gauze applied. There was no operation performed on him that night.

On the next day, contrary to expectation, the patient was alive, but the stupor had increased. On removing the dressings, the protruding part of brain was found to have receded greatly. A finger was then passed into the wound, which was a clean-cut punchedout one, and a piece of bone was found to have been driven directly inward for a distance of half an inch. This depressed portion of bone was raised up from the brain, and, on

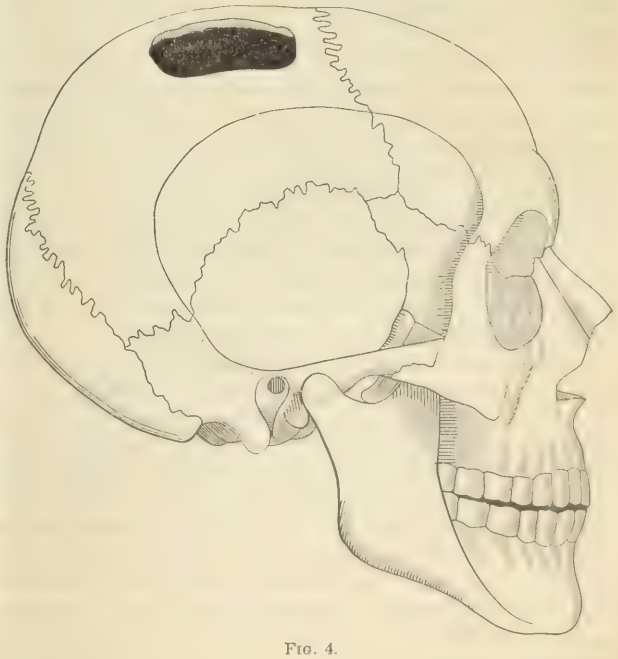


Fig. 4.

examination, was found to consist of two large fragments, making altogether a piece about an inch wide by two inches long. In addition, several small fragments of bone were removed.

There was some loss of brain substance caused by the sharp cutting edges of the fragments as they were driven in. The fracture of the skull seemed to be over an area having the ascending frontal and ascending parietal convolutions of the brain immediately beneath it. The symptoms manifested seemed to denote a lesion of the ascending frontal convolution of the brain. There was little hæmorrhage, however. The sharp edges of the skull around the hole were rounded off; the wound was cleansed with solution of mercuric bichloride and packed with iodoform gauze.

On the 13th of October the condition of the patient was unchanged, and, as the dressings were dry and no increase of temperature had appeared, they were allowed to remain until it was necessary to change them.

There was complete hemiplegia of the left side.

October 14th.—Patient lies in a stupid condition all the time, but when spoken to seems to be conscious.

15th.—To-day the dressings were removed and some clots and broken-down brain tissue washed away with an irrigator containing a 1-to-2,000 solution of mercuric bichloride. There was no foul odor from the wound. It was packed with iodoform gauze and a bandage applied as usual. The left eye is inflamed, and there is a yellow discharge from it. The general condition of the patient is unchanged.

18th.—Head redressed. Wound looked well, but the general condition of the patient seemed somewhat worse than previously.

20th.—Head redressed. Patient seemed much brighter to-day.

21st.—Patient looking in good condition to-day—perfectly conscious and pretty bright.

22d.—Dressing removed. Brain protrudes through the wound an inch or more. Wound irrigated and redressed.

24th.—Brain protrudes about an inch and a half and is slightly sloughy. Wound cleansed and dressed.

28th.—Condition about the same.

November 3d.—Patient has been improving slightly since last date; the protruding part of brain is granulating well. Temperature, 101°.

5th.—The temperature has remained at 101°. Over the anterior quarter of the hernia there is a slough, which is apparently superficial. At the lower part of the slough there is a small sinus, through which a probe can be passed a distance of at least half an inch, and probably farther, and from this opening there issues a serous or sero-purulent discharge.

10th.—The head has been dressed every day since the 5th inst. Serous fluid still escapes from the opening mentioned. The wound is granulating well around the edges.

12th.—To-day three skin grafts were applied to the surface of the hernia, and a vaseline dressing was applied.

14th.—Head redressed. The skin grafts look healthy and seem to have attached themselves to the brain tissue.

15th.—To-day two more skin grafts were applied.

20th.—Head redressed to-day. Only one out of the five skin grafts has taken root. The hernia has grown slightly larger since the last date, and presents a smooth, somewhat shiny appearance. It is almost perfectly elliptical in shape, and protrudes about an inch and a half above the level of the skull.

25th.—Last night the dressings were found to be soaked with a watery fluid, and on removing them the tumor was found to be considerably reduced in size. There is an opening in the upper and anterior part of the tumor into which a director can be passed downward and forward a distance of two or more inches without meeting with the least resistance. Through this opening an aqueous fluid escapes which is slightly turbid and of the specific gravity of 1·030. It contains an abundance of chlorides and traces of albumin and sugar. From the same opening a probe was passed into a superficial sinus situated in the posterior portion of the tumor, and this cavity contained a brownish fluid. A bichloride-of-mercury compress was applied.

December 8th.—To-day an incision was made in the protruding part of the brain. A probe was passed in about two inches and cut down on. A drainage-tube was inserted and a dressing of bichloride gauze applied.

15th.—There has been no movement in either arm or leg so far until to-day, when a very slight amount of movement appeared in the leg and the faintest suspicion of movement in the arm.

21st.—To-day he can lift his knee from the bed and can move the arm slightly.

February 10th.—Patient has been improving steadily since the last record; the hernia has been gradually disappearing and the skin closing over, till at present the hernia has gone, and there is a slight depression covered by normal skin. The patient now has power enough in his leg to permit him to walk about the ward daily. The power in his arm has partially returned.

Case III.—John W., aged nineteen, a salesman. This patient was brought from the thirty-fifth precinct, in the hospital ambulance, on Washington's birthday, February 22, 1889. He was struck by a locomotive near Woodlawn station, and, on his arrival at the hospital, was immediately carried to the operating-table. He was comatose. Examination disclosed a compound depressed fracture of the skull a little posterior to the parietal foramen on the left side, the fracture being a comminuted fract

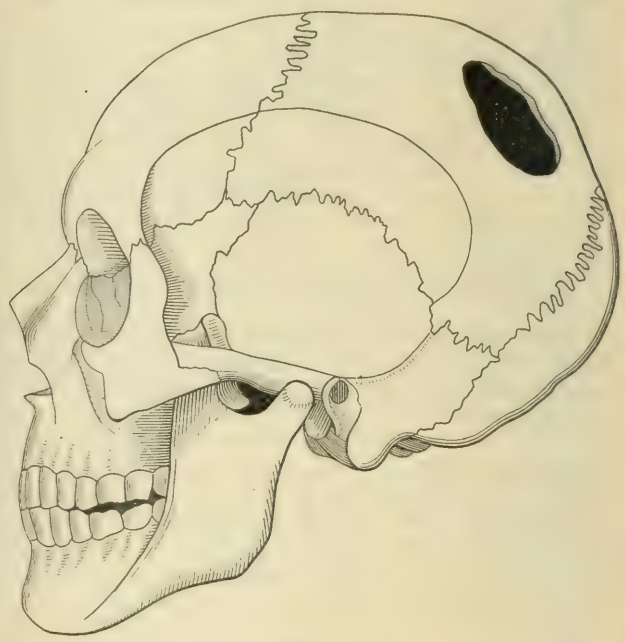


Fig. 5.

ure of the parietal bone. The dura mater was torn and fragments of the bone were driven into the brain substance for at least an inch. On account of the comatose condition of the patient, no anæsthetic was necessary. The several depressed fragments of bone were removed in the usual way, the use of the trephine being unnecessary. The wounded brain was cleansed, the dura mater laid over it as well as possible, the scalp wound sewed up except at the lower extremity, and the patient put to bed.

February 27th.—Since the accident the patient has remained comatose, with occasional intervals of delirium. He has retained a fair amount of nourishment. His urine has to be drawn with a catheter. The bowels are constipated and not

affected by enemata. This evening he had a slight rise of temperature, and the pulse was more frequent than before.

His neck is drawn backward and his muscles are very rigid.

March 2d.—The rigidity of his neck has slowly passed away. Two days ago he was given fifteen grains of calomel, with the result of free evacuation of the bowels. Yesterday he spoke rationally for the first time and recognized his friends. To-day his condition is the same as yesterday.

6th.—The patient is perfectly comfortable and conscious, also rational. The wound, which has been regularly attended to, looks well. There is a slight hernia cerebri. He suffers somewhat from vesical irritability, which has to be relieved. The urine is somewhat above normal in amount. Throughout the entire case there has been marked absence of paralysis of any kind.

8th.—Patient better to-day. The protruding part of the brain is suppurating freely and beginning to granulate. Wound dressed daily with wet creolin gauze.

14th.—A small abscess was to day noticed beneath the granulating surface of the brain. It was opened and a few drops of laudable pus were found. The cavity was packed with wet creolin gauze, and a large wet dressing applied over it.

17th.—The abscess cavity opened on the 14th has grown steadily larger. It is now three quarters of an inch in diameter and an inch and a half deep. It secretes a moderate amount of laudable pus. The floor and walls are formed of a soft white substance resembling the softened white matter of the brain. The cavity is packed daily with wet creolin gauze.

19th.—The walls and floor of the abscess cavity are granulating and discharging much less pus.

To-day the patient was seen and examined by Dr. Seguin. The lesion was said by him to correspond to one of the angular gyrus of the brain. The examination showed that the muscular sense on the right side was somewhat impaired. The patient is now sitting up. The abscess cavity is all closed in.

26th.—The patient goes out in the air. He is practically cured. The wound in the scalp is barely noticeable.

THE PREVENTION OF SUMMER DIARRHŒA.

By WILLIAM A. NORTHRIDGE, M. D.,

BROOKLYN,

PHYSICIAN FOR DISEASES OF CHILDREN TO THE OUT-PATIENT DEPARTMENT OF THE LONG ISLAND COLLEGE HOSPITAL; SURGEON TO THE CENTRAL DISPENSARY.

Three factors enter prominently into the ætiology of this disease—viz., heat, moisture, and improper food. Heat and moisture acting upon the food supply cause fermentation and rapid increase in bacterial development. The ingestion of this altered food is in many instances followed by dyspepsia and diarrhœa. A hot summer is always accompanied by a high mortality among infants living in large cities. This destruction of lives so valuable to the commonwealth may be mitigated by the instruction of parents:

1. As to the danger of heat and how to avoid it.

2. How they may prepare the food of the infant so that it will not do harm.

3. How to carry out the simpler rules of hygiene.

The heat it is very important to combat. Babies should be taken to the hill country or sea-shore as soon as the "heated term" commences. But, alas! few can leave their treadmill. It behooves us to do the very best we can for them in town. Parents should be instructed to avoid and combat heat. During the hot part of the day the baby should be kept in the coolest part of the house; the clothing should be lessened in amount and water given regularly. In the early morning and late evening the streets are cooler than the house. The child should then be kept out in the air. Children may be taken to public squares, parks, along the water front, in open cars, and on ferry-boats. Strict regard must be paid to the food supply. Breast-fed children are by no means so likely to get the disease, and when they do, are much more readily cured. But many are artificially fed. A perfect substitute for mother's milk has not yet been found. It is now very generally conceded that cows' milk modified by the addition of certain substances is the *best* substitute, approaching *most* nearly to the natural supply. The wise physician is he who avoids prescribing the manufactured foods, save in rare instances. With a little care, children do very well upon a milk diet until the hot weather. A day or two of this and the trouble begins. The milk undergoes certain changes. It rapidly absorbs atmospheric impurities. If kept in an open vessel in an ice-box along with tainted meat or decaying vegetables, it will quickly acquire a peculiar taste and odor. Milk is very apt to become sour and undergo fermentation during the night. Many children are given milk which has become altered since the mother went to bed. The child is hungry and crying. The mother has no fresh supply, so the infant gets a dangerous food. Many diarrhœas start in this way which would never occur if pure, unchanged milk was given. If we hinder fermentation and prevent impurities getting into milk, we shall prevent much disease. To avoid contamination by surrounding air impurities, milk at the dairy should be placed in tightly sealed vessels, instead of being kept in cans as it commonly is. The bottled-milk idea is a step in the right direction. The purchase of milk in bottles from a reputable dairy-man should be advised. If we can hinder the fermentation of milk so that the infant will just as surely get a sweet, clean supply by night as by day, we can prevent many cases of diarrhœa. If the nursling could be put directly to the udder of the cow, an aseptic, unchanged supply would be insured. This is impracticable, both from the inaccessibility of the cow and also because of the advisability of modifying cows' milk by the addition of certain substances, that it may more nearly approach the human. Milk should be sent to its destination as quickly as possible. When received it should be sterilized in a water bath, after the method advised by Dr. Soxhlet and Dr. Caillé, or some modification thereof. Fermentation being thus prevented, the milk should be kept in bottles, tightly corked, in a cool place until wanted.

On the morning of June 26, 1888, I obtained a quart of milk from a reliable source. I performed the following experiments:

Six new two-ounce bottles were very thoroughly washed in hot water. Three bottles were filled with milk and placed in a water bath. In twenty minutes they were removed, quickly corked, and when cool placed in an ice-box. Twenty-four hours afterward one bottle was opened. The milk was found to be perfectly sweet. On the evening of the

some day, thirty three hours having elapsed, another bottle was opened. Taste and smell could discover nothing amiss. On June 30th the third bottle was opened. The milk was tested by several persons and declared to be perfectly sweet and good. This after four days. The experiment represents what we wish to do: render innocuous any harmful element contained in milk, and keep it pure and unchanged. It demonstrates that milk may be kept wholesome for even a longer time than is necessary. The baby may have a proper food supply in hot weather and the food cause of diarrhœa be obviated.

The remaining three bottles were used as follows: One was filled with milk, placed in a water bath for twenty minutes, removed, and put on ice, *uncorked*. After twenty-four hours, the milk was slightly sour to the taste. This represents the common method of boiling milk to prevent souring. It is good as far as it goes, but is inefficient, because milk exposed to air absorbs new impurities and changes start up again. Another bottle was filled, corked, and put on ice without being exposed to the heat of the water bath. Twenty-four hours after, the milk was found sour to the taste. In this experiment the changes due to contained fermentative elements went on, although the milk was protected from the atmosphere. The sixth bottle was filled with milk and placed on ice, uncorked. Twenty-four hours afterward the milk was decidedly sour. In this the milk was neither sterilized nor protected. The result, the common one, was the worst possible. This plan for preventing milk changes I carried out among a considerable number of sick babies last summer. The sick with diarrhœa received great benefit by this method combined with antiseptic medication.

But it has seemed to me that often we might *prevent the disease* by a few minutes' instruction to the mother. The mother is directed to obtain two small soda-water bottles. They are strong and can be tightly corked. The rest of the apparatus will be found in every household. A saucepan is to be filled with water sufficient to reach to the neck of the bottle. The bottles are to be thoroughly washed, filled with milk, and placed in the saucepan, which is laid on the range. A cover excludes the air. In about twenty minutes, or as soon as the milk froths up, the bottles are to be tightly corked and laid in a cool place. Mothers readily understand this procedure and carry it out successfully. A few cents paid for bottles covers the cost of the apparatus. When the child is to be fed, one of the bottles is opened, and the amount required poured out. The bottle is to be corked and returned to a cool place. The second bottle is not to be opened until the contents of the first are exhausted. The infant's sanitary surroundings should be carefully inquired into. Mothers should be instructed to keep the child perfectly clean. Soiled linen should be immediately removed. The child should be frequently bathed and an abundance of fresh air and light afforded.

The Vermont State Medical Society.—The June meeting of this society was adjourned to July 9th and 10th, so as not to conflict with the Newport meeting of the American Medical Association. The place of meeting is Brattleboro'.

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THE INFLUENCE OF THE TESTICLES ON THE ORGANISM.

In a recent communication to the Paris *Société de biologie*, an abstract of which is given in the "Progrès médical" for June 8th, M. Brown-Séquard gave an account of certain odd experiments that he had undertaken in an endeavor to ascertain the effects produced upon the economy by the supposed action of the testicles on the blood circulating through them. It seems that he gave some attention to this question so long ago as in 1869. At that time he had concluded theoretically that the influence of the testicle was enormous. In 1875 he began experimenting by means of grafts containing testicular tissue; and, although all but one of these experiments failed, in that one an old and broken-down dog was endowed anew with the friskiness of comparative youth. More recently M. Brown-Séquard has pursued his inquiry by means of experiments on himself, employing subcutaneous injections of blood from the spermatic veins of a young animal, mixed with the juice obtained by crushing its testicles and with a little water. The distinguished author is by no means a young man—unless we are mistaken, he is verging on fourscore—but these injections seem to have rejuvenated him. He reports that his muscular strength has returned in great measure; that that torment of the aged, intestinal atony, has disappeared, so that defecation has become normal again; that the bladder has regained its contractility, as shown by an increase of force in the stream of urine; that he finds mental exertion very easy once more; and that there are other manifestations of his return to youthful vigor. The injections are said to be painful, and it is added that they are sometimes followed by redness of the skin, but that this is without serious consequences. It is not the seminal fluid to which M. Brown-Séquard attributes these wonderful results, but rather the venous blood that has passed through the testicles, for with semen, crude or filtered, he has been able to produce nothing but abscesses.

It is true that at the meeting some cold water was thrown on M. Brown-Séquard's new elixir of life; M. Dumontpallier remarked that the imagination probably played a certain part in such cases, and M. Féré suggested that a local inflammation of the lymphatic vessels, such as any subcutaneous injection might produce, was capable of giving rise to a subfebrile state that would have the effect noted. To this M. Brown-Séquard replied that it was precisely the punctures which had produced no local reaction that had been followed by the most decided dynamic effects, and that ordinary subcutaneous injections, such as those of morphine, gave rise to no gain of muscular power, notwithstanding the inflammatory nodules that they so commonly set up. Certainly, M. Brown-Séquard's inferences

need confirmation. If there should prove to be any truth in them, our views of the physiological importance of the testicle must be enlarged, and we may even be led to suppose that like properties reside in the ovary, and to question whether the "unsexing" of women is the only evil incurred by removal of the sexual glands.

THE OFFICE OF CORONER.

The coroners of Hudson County, New Jersey, are said to have almost unanimously expressed their regret that they accepted their offices. They complain that they are overworked, that they are poorly paid, and that they have not even the satisfaction of getting promptly the insufficient payments that come to them.

Perhaps this dissatisfaction may be the entering-wedge leading to the abolition of that relic of barbarism, the coroner's position in that State. With regard to New York State, no serious indications have been noticed which give promise of any such happy result. We are all well enough aware of the faulty workings of the system, and yet indifference in the profession, in our societies, and in medico-legal circles, permits these faults to continue year after year. A case has been reported from a city in New York State which, briefly told, amounts to this: An irregular and uneducated practitioner was expecting to be brought into court on a charge of criminal abortion when he took his own life. The coroner was summoned and held an inquest. Under his manipulation the testimony was so guided or suppressed that the public records will forever show that this doubly guilty man died by "heart-disease," or some other similar convenient covering of facts that should not have been suppressed. When coroners of the class to which the individual in question happens to belong put upon the records a truthful statement of the cause of death in their inquest cases, it must be largely accidental and because there is no occult reason why their reports should be falsified. The time must come, we are persuaded, when this sham judicial officer will be laid upon the shelf, as has been done in Massachusetts. That commonwealth was the first to establish a State board of health, and many other States have followed her example. The same will occur, without doubt, in regard to the example set by her in establishing a system of medical examiners. This did away with the antiquated coroner and substituted in his place a medical man having skill and training. Under this system thirteen thousand cases of violent and suspicious deaths have been investigated in a satisfactory manner since 1877. At a meeting lately held in New York, Theodore H. Tyndale, Esq., of the Boston bar, gave his views of the salutary effects of the new system. He said: "With the abolition of the composite functionary and of the jury, we gained a highly trained class of medical examiners—an office gladly accepted by the best physicians of the State—and we have opened the door to fields of detailed investigation in pathology previously unknown. We have laid the foundation of a valuable collection of observed facts as shown by the publication of our medico-legal transactions contributed entirely by the medical examiners. We have attained accuracy, and we have never, since the passage of the Act, failed in a single prosecution for want of or insufficient clearness of medical testimony."

MINOR PARAGRAPHS.

AN IRISH WOMAN, AN AUSTRALIAN GIRL, AND A CHIMPANZEE.

A paper written by D. J. Cunningham, M. D., professor of anatomy in the University of Dublin, recently communicated to the Royal Society, is entitled "The Spinal Curvature in an Aboriginal Australian." The object of the effort, which is mathematically severe and profoundly abstruse, is to demonstrate certain subtle points of similarity and difference assumed to exist in the antero-posterior curvature, in various regions of the spine, of the typical European, the aboriginal Australian, and the average chimpanzee. After apparently years of patient research in this important direction, and deploring the "absence of fresh spines of the lower races," the author finally succeeded in importing from Australia the intact spinal column, "packed with great skill and care," of an Australian girl aged sixteen. The other spines obtained for comparative analysis were those of an Irish woman aged thirty-five, and a young female chimpanzee. Careful examination of the sectional drawings illustrating the article leads the thoughtful and unbiased mind to conclude that this particular Irish woman and this particular Australian girl were as similar, so far as their spines were concerned, as could be expected, considering their respective ages and habits. The former had, it must be admitted, a by no means defective curve in the upper dorsal region, while the chimpanzee's spine bears just about such resemblance to the two others as the average man bears to the average monkey, which is saying a good deal; but, then, *cela va sans dire.* Speaking seriously, the progress of comparative anatomy may be impeded by lack of such data, but the author has been unfortunate in the selection of bases for his argument and deductions, and has neutralized the power of his equation by repeatedly admitting the use of imperfect factors. Surely *cacoethes scribendi* and chronic Darwinism are deplorable ailments.

A TROUBLESOME MEDICAL WOMAN.

On many occasions we have spoken in commendation of medical women, but we trust that their well-wishers will not often be hampered by such incidents as one that recently happened in Paris. According to the "Progrès médical," one Mlle. D., a Russian *étudiante*, was appointed a hospital externe and attached to the *hôpital Saint-Antoine*, where the interne soon found it necessary to remonstrate with her upon the irregular quality of the services that she rendered. This he is said to have done with all proper moderation, but the young woman became insolent and procured the assistance of a fellow-student, a male Russian, who sought to fasten a quarrel upon the interne, at whom, indeed, one Russian student aimed a blow with a cane, which luckily was parried. The outcome of the affair was that Mademoiselle's appointment was revoked, and her champion had to answer to a charge of assault before a police magistrate.

THE EXCITING CAUSES OF HYSTERIA.

In a recent work by Georges Guinon, "Les agents provocateurs de l'hystérie," which, the "Progrès médical" says, reflects equal honor upon its author and the Salpêtrière school, the following are given as the exciting causes of hysteria: Moral emotion; attempted hypnotism; nervous shock, as from

earthquakes, injuries, and peals of thunder; general infectious diseases, such as typhoid fever, pneumonia, scarlet fever, acute articular rheumatism, diabetes, malarial infection, and syphilis; morbid states characterized by considerable general exhaustion, such as hæmorrhages, mental or physical overwork, sexual excesses, anæmia, and chlorosis; poisoning, either in the chronic form, as with lead, alcohol, mercury, etc., or in the acute, particularly that produced by chloroform for surgical anæsthesia; and diseases of the nervous system, such as multiple sclerosis, locomotor ataxia, primary progressive myopathy, and gradual compression of the spinal cord in Pott's disease. The author does not ignore the fact that all these causes may produce other nervous troubles, notably neurasthenia, and recognizes as well the existence of a form of hysteria due to general malnutrition that includes a malnutrition of the nervous system.

THE PHYSICIANS OF JOHNSTOWN.

The "Maryland Medical Journal" has received and distributed funds for the physicians of Johnstown who lost their all, Dr. J. W. Hamer being its almoner. Other journals may have done the same thing, but the Baltimore weekly is the first one that has fallen under our notice. There are physicians in the afflicted valley who before the floods were accounted well off, who now have not a penny except what comes to them as a gift or as payment for services. And some of them now complain that the visiting volunteers of the Red and Yellow Cross are taking professional business away from them, so that the earnings and the occupation—both of which would be helpful to them—go to those who need neither. They have made representations of these conditions to the State authorities, but their complaints were not entertained. If any funds collected by medical men or societies remain unforwarded, we suggest that the journal above named, or Dr. J. W. Hamer, be the channel for their distribution.

THE STAPHYLOCOCCUS PYOSEPTICUS.

This is the name that Héricourt and Richet have given to a micro-organism which they accidentally discovered in an epithelial, non-ulcerated swelling on a freshly killed dog. This coccus very closely resembles the *Staphylococcus pyogenes albus*, except in the following characteristics: In peptonized bouillon it forms whitish masses on the surface, which have a tendency to divide into delicate threads, while the *Staphylococcus albus* becomes distributed more evenly and does not form masses on the surface. It is also more virulent, one or two drops of the cultivation fluid having killed rabbits in from twelve to twenty-four hours. An equal quantity injected under the skin caused a large, gelatinous, transparent œdema, while the *Staphylococcus albus* injected in the same manner produces suppuration almost without œdema. They have also successfully undertaken to produce a protective inoculation in rabbits, not only by Pasteur's method, but also by injecting the blood of dogs into the peritoneal cavity. If the blood was taken from the carotids of dogs which had previously been inoculated with the *Staphylococcus pyosepticus* and had recovered, and injected into the peritoneal cavities of rabbits, these rabbits were proof against infection with this micro-organism. If the blood of uninfected dogs was employed, the rabbits presented an increased power of resistance to infection with the *Staphylococcus pyosepticus*, as was shown by the mildness of the local symptoms after inoculation. From this they think it possible that by the transfusion of the blood of animals which are proof against certain micro-organisms one may be able to confer immunity, or at least increased resisting power, upon other classes of animals.

FEVER IN FILTERS.

The sixth annual report of Dr. C. V. Chapin, of Providence, deals with the outbreak of typhoid fever in the winter of 1888–'89. It contains an example of very painstaking work on the part of the health officials to discover the causation of the attack. Grave suspicions as to the pollution of the water-supply having arisen, the study was at first limited to the bacteriology of the Pawtuxet River water, but with negative results. The thought thereupon occurred to investigate the filters in use in houses where fever had existed. They were given to Dr. Prudden, of New York, and others skilled in bacteriological work. In three of these filters the typhoid organisms were found. Besides the typhoid bacilli, several organisms peculiar to fæces were associated with them. Dr. Prudden described the contents of one of the filters as a mixture of water, carbon, and human excrement. These three filters were not alike in their name and make. A diagnosis of the outbreak by exclusion gives a very strong presumption of river-water infection by typhoid excreta, and the laboratory investigations appear to give this view a significant confirmation. These inquiries also make it certain that the filters that are in ordinary use are sources of danger to the families using them, since they collect filth and micro-organisms from the water and serve as hatcheries to the latter.

CARE IN PRESCRIPTION-WRITING.

A death by poisoning, arising in part from a want of care (so it is alleged) in the writing of a prescription, has occurred in France. A physician gave to his own brother, who was suffering from migraine, an order for a dose of antipyrine. So he intended, at least, but the prescription fell into the hands of the apothecary's female assistant, and she interpreted it as calling for atropine instead of antipyrine, and dispensed the fatal dose. Care should be exercised not only in the ordering of potent drugs, but also of those not so powerful, lest the writing be misinterpreted and a poison be dispensed where none was intended. Let the writing always be distinctly legible.

"THE SWIFT, THE SWALLOW, AND THE MARTIN."

Dr. George Buchanan, a medical officer of the English Local Government Board, is often very happy in his way of putting things. Of this an instance has come to hand in his introduction to Dr. Klein's study of milk-scarlatina, wherein that writer contends that the disease in the cow is the same disease as the scarlet fever of man, and not cow-pox as is asserted by some; and that the *Streptococcus scarlatinæ* of man can by inoculation beget a bovine scarlatina. Dr. Buchanan's point is that similarity is not identity in regard to the streptococci any more than it is as to the birds above the housetops. He says: "To the less educated judgment there is as little difference between one and another of the chain-forming micrococci as, to the eye of the ordinary dweller in towns, exists between the swift, the swallow, and the martin."

ITEMS, ETC.

The Association of Acting Assistant Surgeons of the United States Army held its first annual meeting at Newport, R. I., on Monday, June 24th. The following officers were elected for the ensuing year: President, Dr. A. Reeves Jackson; vice-presidents, Dr. J. L. Ord, Dr. A. J. Comfort, and Dr. D. S. Lamb; treasurer, Dr. R. J. Dunglison; registrar, Dr. Benjamin L. Holt; recorder, Dr. W. Thornton Parker; council, Dr. William Deeble, Dr. S. S. Turner, Dr. H. E. Sabin, Dr.

H. R. Porter, Dr. J. P. Pratt, Dr. H. E. Turner, Dr. S. B. Stone, Dr. John S. Warren, Dr. S. O. L. Potter, Dr. E. W. Thompson, and Dr. John T. Nagle. The association now numbers seventy-seven members. Applications for membership should be addressed to Dr. W. Thornton Parker, Narragansett Pier, R. I.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending July 2, 1889:

DISEASES.	Week ending June 25.		Week ending July 2.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	7	0	11	3
Scarlet fever	81	8	71	7
Cerebro-spinal meningitis	1	0	3	3
Measles	89	7	88	4
Diphtheria	115	35	99	27

Recent Deaths.—Dr. William N. Curtis, of East Albany, N. Y., died on June 6th, aged forty-five years. He was a native of London, England. He was graduated from the Albany Medical College in 1870.

Dr. Charles William Wolfertz, who died at West Orange, N. J., on June 19th, was one of the vaccinating corps of the Department of Health. He was an alumnus of the College of Physicians and Surgeons of the class of 1886. He was only twenty-five years old when his death, by pulmonary phthisis, took place.

Dr. Daniel W. Hand, of St. Paul, Minn., died on June 1st, of uræmia, in his fifty-fifth year. He was born at Cape May Court-House, N. J., August 18, 1834. He was educated in arts at Lewisburg, and in medicine at the University of Pennsylvania. From 1857 to the breaking out of the war Dr. Hand resided at St. Paul. His services as regimental surgeon, brigade surgeon, and medical director were meritorious and efficient. He was wounded at Fair Oaks. He was a prisoner at Libby prison for a short time. In August, 1864, he was at Newbern, being medical director of the State of North Carolina when yellow fever visited that city, carrying off over twelve hundred of the citizens and eleven of his assistant surgeons. He was attacked by the fever, but recovered quite promptly, although with a renal disease established which eventually ended his life. In 1865 he returned to St. Paul, and before many years stood in the front rank of the profession of his State. He was for many years the president of the State Board of Health.

Dr. William Elmer, an ex-president of the New Jersey State Medical Society, died at his home in Bridgeton on June 27th in his seventy-fifth year. He was a graduate of Princeton in 1832 and of the University of Pennsylvania in 1836, which latter institution has given not fewer than nine of the Elmer family to medicine. Dr. William Elmer had been a leader in Cumberland County not only in medicine, but in religious and charitable administration for half a century. He was the president of the State society in 1860, and was interested in the early movements by which the State board of health became a permanent institution. He occupied official positions in the State Lunatic Asylum, in the State Home for Feeble-minded Children, and in a number of organizations efficient for good in southern New Jersey.

Dr. Samuel Brandeis, of Louisville, died on May 24th, aged seventy years, of disease of the heart, from which he long had been a sufferer. He was a native of Prague, graduated at Vienna in 1846, and left his country for America a few years later. In 1852 he settled down for life at Louisville, where his eminent ability was soon marked by a large following. He was an industrious and scholarly practitioner, who found time to develop a culture and refinement in extra-professional fields that are attained by few; educational progress interested him in a special manner. He held many places of honor and trust, both with his associates and with the general public.

The Superintendents of the Insane.—The following officers of the Association of Medical Superintendents of American Institutions for the Insane were elected at the recent meeting at Newport: President, Dr. W. W. Godding, of Washington, D. C.; vice-president, Dr. Henry P. Stearns, of Hartford, Conn.; secretary and treasurer, Dr. John Curwen, of Warren, Pa.

The Nova Scotia Medical Society.—The twenty-first meeting convened on July 3d at Halifax. Dr. Donald Campbell, of Halifax, is the president, and Dr. W. S. Muir secretary. The programme of scientific business presents over twenty titles of papers and reports as having been promised for the first two days. One of the members gives notice that he will raise the question of whether it is right that duty should be levied upon surgical instruments and medical works. A second question to be raised is the manner of the appointment of the Provincial Medical Board, whether by the Government or by the medical profession.

An International Congress of Otology and Laryngology has been invited to convene at Paris, for a six days' session, beginning on September 16th, the hall of the Trocadéro to be the place of meeting. The committee of organization is made up of very eminent specialists from all parts of France, with Dr. Duplay as president. The secretary, Dr. Loewenberg, may be addressed at rue Auber, 15, Paris.

The New York Cancer Hospital.—Dr. G. A. Kletzsch has been appointed an assistant surgeon.

The Woman's Hospital.—Dr. G. A. Kletsch has been appointed an assistant surgeon.

The New York Polyclinic.—Dr. Henry C. Coe has been appointed a professor of gynæcology, in place of the late Dr. Hunter.

The Transactions of the Medical Society of the State of New York.—The volume for 1889 of this annual publication gives an account of the eighty-third session at Albany, last February. Not only is this an unusually prompt appearance, but the book has a cleaner, brighter look than its predecessors. It was printed for the society by a Philadelphia printer. These improvements must have been undertaken with no little courage in view of the fact that the report of the treasurer shows an increasing deficit, amounting this year to over $500.

The Tennessee Medical-Practice Act.—The new medical-practice act of Tennessee is thus summarized in the "Atlanta Medical and Surgical Journal" for June: There is a board of examiners, six in number, not more than four of whom are to be of the same school of practice. They are appointed by the Governor. No one may practice medicine without a certificate from this board, under penalty of $100 for the first offense, and of $200 afterward. All persons in practice at the time of the passage of the act are entitled to such certificate. Those thereafter desiring to begin practice must present a valid diploma or pass an examination. The examination fee is ten dollars, and the certificate fee is one dollar. Itinerants are to pay $100 a month. The act does not apply to midwives. It has gone into effect, the "sixty days" limit having expired.

College Notes.—Fifty-seven degrees of M. D. were granted at the recent Harvard University commencement. The Uni-

versity of Michigan had eighty medical graduates. The Medical School of Maine had twenty.

Dr. Paul B. Barringer, formerly of Davidson College, N. C., has been elected to the chair of physiology and surgery at the University of Virginia, to take the place of Dr. James L. Cabell, who has resigned from active service. Dr. Barringer is the author of a brief history of the medical department.

Dr. John Whitridge Williams has been appointed chief of the obstetric clinic at the Johns Hopkins University. He will also assist Dr. Howard A. Kelly, the newly elected professor of obstetrics.

Dr. Christopher Johnston, Jr., of Baltimore, has resigned his lectureship on ophthalmology at the University of Maryland. He has been appointed to a fellowship in the Johns Hopkins University. He leaves medicine for philology, and his life-work will probably be given to that department which is designated as Assyriology.

Dr. George Ross has been appointed to the chair of the practice of medicine in McGill University, to be followed in the chair of clinical medicine by Dr. Richard L. MacDonnell.

The Transplantation of a Medical Fraud.—The attention of the New Jersey Board of Health and of the Medical Society of that State is called to the fact that there appears to be in Jersey City an alleged medical college which strongly suggests that miserable affair "The United States Medical College," formerly situated in New York. The "Tribune" of June 29th reports an alleged commencement of that college with twelve graduates and certain other forms of mimicry of a genuine institution of learning.

Journalistic Changes.—The "Weekly Medical Review," published in St. Louis, announces that it will be enlarged to the size of this journal. Another medical weekly is said to be on the ways at St. Louis. The two medical monthlies of Buffalo have coalesced under the title of the older one, the "Buffalo Medical and Surgical Journal." The junior journal, named the "Medical Press of Western New York," existed four years under the able editorial conduct of Dr. Roswell Park.

A Malpractice Suit.—Dr. Mansfield and Dr. Sheldon, of Wakefield, Mass., have been in the fiery furnace of a malpractice suit conducted against them by General B. F. Butler. They escaped with their lives, the jury deciding in their favor, but, as the "Boston Medical and Surgical Journal" intimates, the next worst thing to losing a suit of this nature is to win one; the annoyances and the losses of time, money, and peace of mind are not compensated for by the fact that the jury has happened to side with the defense.

The Honorary Degree of LL. D. has been conferred by Yale University on Dr. Horatio C. Wood, of Philadelphia.

Society Meetings for the Coming Week:

Tuesday, *July 9th:* Vermont State Medical Society (first day—Brattleboro'); Medical Societies of the Counties of Chautauqua (annual), Clinton (semi-annual—Plattsburgh), Greene (quarterly), Jefferson (semi-annual—Watertown), Madison (annual), Oneida (annual—Utica), Ontario (annual—Canandaigua), Schuyler (semi-annual), Tioga (semi-annual—Owego), and Wayne (annual), N. Y.; Norfolk, Mass., District Medical Society (Hyde Park).

Wednesday, *July 10th:* Vermont State Medical Society (second day); Tri-States Medical Association (Port Jervis, N. Y.); Franklin (quarterly—Greenfield), Hampshire (quarterly—Northampton), and Worcester (Worcester), Mass., District Medical Societies.

Thursday, *July 11th:* Medical Society of the County of Fulton (semi annual), N. Y.

Saturday, *July 13th:* Worcester, Mass., North District Medical Society.

Letters to the Editor.

SUBLUXATION OF THE HEAD OF THE RADIUS.

30 West Fifty-sixth Street.

To the Editor of the New York Medical Journal:

Sir: In the interesting paper by Dr. Morris, published in your issue of the 22d instant, Dr. Van Arsdale is quoted as saying, as lately as last March, that the anatomical nature of the injury had not as yet been satisfactorily described; and this statement stimulated Dr. Morris's experiments on the cadaver. Both these gentlemen seem to have overlooked an essay on this subject by Dr. E. M. Moore, of Rochester, read before the New York State Medical Association at its annual meeting in 1886, and published in the third volume of its "Transactions," in which he described the lesion experimentally produced on the cadaver by him in terms almost identical with those used by Dr. Morris. Two specimens illustrating the condition in question were exhibited at the meeting above referred to. It is, of course, doubly satisfactory that the same results should be obtained from separate investigations independently conducted, but it is only fair that priority should be awarded to Dr. Moore for the solution of a much-vexed surgical problem.

In corroboration of Dr. Morris's suspicion that there are cases in which reduction is not effected either by art or by nature, I have had under my care a gentleman whose radius was subluxated two years previously by sudden extension in sliding a heavy weight from a cart on his Western "ranch." The medical man who saw him at the time failed to detect the character of the injury, and the pain caused by attempts at movement induced him to keep the elbow flexed at an angle of about 130°, until adhesions stiffened the joint and required considerable force to restore motion. The thickening about the radial articulation was so great that freedom of pronation and supination will never be practicable. In view of the rarity of this accident in an adult, the case is of interest, and it is noteworthy that its cause was similar to the force commonly applied by nurses to children—namely, sudden extension at the elbow with the wrist in a partly flexed position. Alfred L. Carroll, M. D.

207 West Fifty-sixth Street, *June 25, 1889.*

To the Editor of the New York Medical Journal:

Sir: In an article by Dr. R. T. Morris, in last week's issue of your paper, the author, after referring to a paper read by me on so-called subluxation of the head of the radius, describes some experiments done and observations made with a view to determining the real anatomical lesion in these cases. As my paper may not come before all your readers, and as the author's article appears apt to give rise to misconceptions in regard to my views on the subject (especially as my conclusions are not given verbatim), I would state that, so far from being unacquainted with the chief conclusion of the author's (that the injury was due to interposition of the orbicular ligament between the head of the radius and the capitellum), my whole paper goes to prove that this is one of the three most probable theories admitted (the two others being injury to the radial head and partial anterior displacement, respectively).

The identical experiments illustrated by the author's cut

were done by Streubel in 1850, and others in Germany, and in this country by Van Santvoord and by E. M. Moore ("Trans. of the N. Y. State Med. Assoc.," 1886).

I myself, as late as March 11th of this year, demonstrated a specimen similar to that figured by the author to the Surgical Section of the Academy of Medicine (to which, however, the author has not done me the credit to refer) as illustrating an old and favorite theory, but one not above criticism.

The objections raised by me to this theory are: 1. That, although the interposition of the capsule of the joint is very easily observed on traction, when the skin and muscles have been dissected away, yet in the living subject the muscles and tissues surrounding the joint are so intimately connected with the ligaments that such interposition is improbable; and, if it did occur, muscular action would readily dislodge the interposed parts; and, again, if interposition of so much tissue took place, the fact could be easily made out by clinical observation. Nor does the snap heard clinically on reduction correspond to that produced in partially dissected cadavers.

2. The fact that such an acute observer as Streubel, eleven years after advancing the theory of interposition, was induced by clinical experience to discard it again argues against it.

3. The fact that in many clinical cases the head of the radius can be felt anteriorly displaced, speaks against the theory of interposition.

In a case of subluxation of the radius head shown by me at the May meeting of the Surgical Section of the Academy, the chairman asserted that he could feel this displacement of the head.

I believe that the theory of the author's, that relaxation of the biceps muscle is necessary to the successful production of the injury, is entirely original. But, in my opinion, when a child stumbles or falls while its hand is firmly held by the nurse, the biceps, so far from being taken unawares, is much more apt to produce a displacement of the radial head anteriorly, as was held by Goyrand and Lindemann. When a child stumbles in this way it does not relax its biceps, it is more apt to rupture it.

It is very easy to obtain conditions similar to those described by the author after the most diverse manipulations when partial dissections have been made; but whether they are so readily obtained in healthy children is a question upon which I am somewhat skeptical.

W. W. Van Arsdale, M. D.

Proceedings of Societies.

AMERICAN MEDICAL ASSOCIATION.

Fortieth Annual Meeting, held in Newport, R. I., Tuesday, Wednesday, Thursday, and Friday, June 25, 26, 27, and 28, 1889.

The President, Dr. W. W. Dawson, of Cincinnati, in the Chair.

The Address of Welcome.—The proceedings of the first day were opened by an address of welcome by the Hon. Herbert W. Ladd, of Providence, Governor of Rhode Island. He spoke of the occasion as an exceptional one, for, as a rule, the visits of doctors were not associated with pleasure, and it was rarely that they could be greeted with a smile. Now, however, he hoped they would not only feel they were welcome, but would soon experience that cordiality for which Rhode Island was proverbial.

The President's Address.—After a few other interchanges of complimentary formalities the president delivered the annual address. It was arranged to cover, by sectional headings, the entire position of American medicine. Prefacing this segregation of his subject, he referred to the future position of the learned professions. Such future, he said, was certainly most conspicuous and its obligations imperious. Medical men must be loyal to this grand destiny. Criticism abounded concerning the defects of medical education, but such criticisms came too frequently from gentlemen unacquainted with teaching, with no practical knowledge of the constitution of medical colleges or of the toil, devotion, and sacrifice made necessary by those engaged in didactic and clinical instruction. Education, it must be remembered, could not make all great or equal, but it tended at least to make all safe. In the crucible of private, practical life evolution asserted itself and the fittest survived. The position of the profession in the matter of medical teaching in this country was peculiar. For many years, and even now, with few exceptions, medical colleges were the creation of the members of the profession, most often of the faculties composing the schools, without endowment, without governmental aid, and depending for support upon the sacrifice of time and money on the part of the gentlemen occupying the chairs; and not only were the schools without patronage from the government, but society, from some unknown cause, had ever been against legitimate medicine, depending upon the scientific physician in time of trouble, but in the interim openly supporting all sorts of shams, frauds, and impostors. Elsewhere college work was provided for by the state, especially laboratory investigations. Hence it was not to be wondered at that in such departments this country might be somewhat behind the countries of Europe. While, however, they had been engaged there in elaborating experimental studies, the profession in America had developed the practical. Everywhere could be seen an earnest, burning desire for higher culture, for more exact and thorough knowledge. Especially was this true of the younger members of the profession. A movement was now on foot to concentrate those who possessed preliminary advantages and who could enter the profession with college educations. This was a move in the right direction, if it was not made too exclusive. Every effort which tended to refine the profession without emasculating it should meet with judicious approval. The answer to the question, "Whence are medical students to come and what facilities are now afforded or promised in the future for the education of the 'coming doctor?'" would, he trusted, give some comfort to the pessimist and soothe the restless and at times unreasonable critic. In the first place, the normal schools might be looked to for the supply of better material, year by year, from which medical students would be drafted. Then the most generous provisions were being made all over the land for institutions which would be worthy to be called universities. From these, graduates would emerge fit to rank by the side of those bearing the prized degrees from Oxford, Cambridge, Paris, Heidelberg, or Leipsic. The future was aglow with promise. Liberal donations and bequests were now being made by generous citizens to be used in developing higher culture. The poor in medicine, however much one might deplore him or train him, would, like the poor, be "always with us." As to the physical qualities of the "coming doctor," it was to the country schools, not the city bred, that medicine must look for many of her strong recruits. Cities would often emasculate, and young men were vitiated by indulgence and vice before they became possessed of serious thoughts. In many of the States of the Union already colleges were established in which the degrees of A. B. and A. M. might be obtained. Too strong insistence could not be made as to the necessity of a classical education. Without a knowledge of Latin and Greek

sure and distinguished success was uncertain. It was well not to be impatient. The influences were already projected which should give to the country students equal to the highest standard of preliminary preparation. Much had been done in a most primitive stage, and, he would ask, could more have been accomplished in a century?

Touching upon the subject of medical schools, the speaker referred again to the fact that in this country everything was endowed except medical colleges. All financial responsibilities had been assumed by the members of faculties, who gave every hour not devoted to "earning the guinea" to college work, and in most instances this was done without pecuniary reward. It was only recently that the wise, the generous, the favorites of fortune, and a few of the States had conceived the idea of endowing medical schools—institutions where medicine and surgery could be cultivated without the embarrassments of financial responsibility. In the metropolitan colleges every physician might feel just pride; their graduates, for the most part, would compare favorably with those educated anywhere on this earth. The accomplished Dr. Senn had said, after considerable experience with foreign schools, that the average American student learned more in one month than the average German student in three. Not because he had better teachers or better facilities, but because he made better use of his time. The provincial schools were also doing thorough work in training, and many supplemented their practical clinical studies by hospital attendance in the great cities and by post-graduate courses, and it was most gratifying to know the advantages offered by these organizations. Touching upon the subject of medical journalism, the president said: "Medical journals, metropolitan and provincial, are the heralds, the vanguards of medical progress, the exponents of professional culture. They are closely associated with the colleges in education and in post-graduate instruction. In them appear the best thoughts of the best men; they constitute the great forum of intellectual combat; upon their pages pretension is analyzed and estimated, and worth recognized; that which is new or original is indorsed, or rather encouraged." After passing in critical review the subjects of laboratory work, the history of medical teaching, the medical and surgical library and museum at Washington, the "Medical and Surgical History of the War of the Rebellion," and so on, the speaker went on to say that there were yet clouds. "What," he said, "has been accomplished by the profession in this country, self-reliant and, as heretofore stated, without governmental or social support, is certainly worthy of congratulation, and gives ground for hope of a rosy-hued future; but, alas! there are some dark clouds to be seen, some spots on the sun of promise. Have we inherent defects in our organic law—our *esprit de corps?* Upon the face of our promising future some omens of evil appear—indications which look not up but down, not forward but backward, not to the elevation but rather toward the degradation of our profession. Heretofore we have been an organization into which no species of fraud could enter; pretension, ignorant pretension, stopped at the door. No *ism* or *pathy* was admitted. Something more than a diploma, 'a legal diploma,' was required—a clean bill of conduct, free from false assumption, assumption of universal knowledge of specific remedies, of imaginary potencies; in fact, of all shams and false pretensions; a guild in which there was the greatest freedom for the truth, the largest liberty for the right. No vender of secret remedies was admitted, because of the ignorant presumption in which they were conceived and propagated. But, alas! that we should have fallen upon the evil times when 'patented processes' are attempted, when 'processes' applied to valuable remedies are kept secret. These remedies made with 'patent processes' are in daily use. This is one of the dark spots in the picture. It came in with the 'legally qualified practitioner.' What are antipyrine, antifebrine, salol, sulphonal? The reliant patient may well propound such questions. Who can answer them?" He then went on to say that it might be asked if the standard of professional excellence had been raised by the laws enacted in many States for the regulation of the practice of medicine. These laws, while they banished those without diplomas, made quasi-respectable those who had so-called diplomas from whatever source. Had not such diplomas tended to make vice and presumptuous ignorance respectable?

The profession must be kept pure—pitch could not be touched without defilement—or it would degenerate and sink to the level of a trade. In the State boards of health, by the side of physicians were to be found these "legally qualified" practitioners. Where lay the responsibility? Self-examination on this subject should be searching. If there had been failure on the part of physicians as a whole in their duties to humanity, let them be swift to acknowledge and eager to correct the error. In conclusion, the speaker made an earnest and stirring appeal to the members of the profession, urging the necessity for a national organization to which all questions could be referred for just and final decision. But let them not lose their loyalty to this parent association. Of the American Medical Association let them unite in saying *Esto perpetua.*

This ended the business of the day, and during the afternoon and evening the members and ladies accompanying them availed themselves of various courtesies by the people of Newport and the vicinity.

The Proposed Rush Monument.—The reports of various committees having received attention early on Wednesday, Dr. William Pepper, of Philadelphia, delivered the address of the day, which was virtually an appeal to the sympathies of the association on behalf of the fund for the desired monument to the late Benjamin Rush. Rush, he said, had been a true social reformer, a denouncer of slavery, an opponent of the use of ardent spirits, though not insisting upon total abstinence. While Rush had been active in philanthropy, education, and religion, still he had been, above all else, a physician. Students had gone to Philadelphia from every State to avail themselves of his teachings. He had been among the earliest to advocate an advanced medical education.

The chairman of the Rush Monument Committee, Dr. Albert L. Gihon, of the Navy, then stated that but little progress had been made in the matter of the monument. The medical profession in this country was a hundred thousand strong, and if only forty thousand of these would contribute a dollar each a noble monument could be erected. Dr. Gihon's enthusiasm was so warm and his appeal so earnest that quite a furore was created. Business was suspended for the time being, and in a short while $264 were subscribed toward the Rush Monument Fund.

The Report of the Committee on State Medicine.—Several important reports from section committees were handed in for the consideration of the third day's General Session. Among these was the following definite recommendation by the Committee on State Medicine:

"Your committee on uniform medical legislation have the honor to submit the following report, to wit:

"That, in our judgment, the best interests of the public will be subserved by the enactment of efficient medical legislation in every State of the Union.

"That, for the convenience of the profession of this country, it is advisable to secure uniformity of legislation in the essential features of all medical practice acts.

"This committee therefore begs to recommend as follows:

That in future medical legislation the essential features of the enactment be as follows: That all persons commencing the practice of medicine in any of its branches shall possess a license from the State Board of Medical Examiners, and that every candidate for a license shall submit satisfactory documentary evidence that he or she is a graduate in medicine of a medical institution in good standing with the said board and having a curriculum possessing at least the following requirements: First, an examination to test the student's fitness to become a practitioner. This examination shall include at least English grammar, composition, geography, history, arithmetic, algebra, physics, and the natural sciences, together with at least one of the following languages: Latin, French, or German; provided, however, that the graduates of regular colleges be exempted from said examination. Second, before receiving a degree of M. D. or M. B., candidates for the same shall have attended at least three full and regular courses of medicine of not less than six months each. All candidates for a license shall undergo examination by said board of medical examiners upon the branches usually taught in medical colleges. Said examination shall be both scientific and practical, and of sufficient severity to test the graduate's fitness to practice medicine and surgery. Said board of medical examiners shall issue a license to only such persons undergoing the examinations as may be deemed suitable to practice medicine. Said board may refuse to issue license for the following-named causes—to wit: Chronic and persistent inebriety, criminal abortion, or gross unprofessional conduct. All licenses shall be recorded and made a matter of public record with the county clerk or the clerk of the district court in the county wherein resides the interested person. Said board of medical examiners shall be appointed by the Governor for a period not to exceed five years, the members thereof to be chosen from among the reputable practitioners of the State of not less than five years' residence."

The report was accepted, as was also the following:

"*Whereas*, It is of the utmost importance that the people of this country should enjoy the same advantages from the advances in materia medica, chemistry, and pharmacy that are possessed by the people of Europe and other favored nations; and

"*Whereas*, The patent laws of the United States appear to be so construed as to protect the foreign manufacturers and purveyors of chemical products and to discriminate against domestic manufacturers by creating monopolies in the supply of certain new and valuable products; therefore be it

"*Resolved*, That the American Medical Association hereby most respectfully petitions the courts of the United States to instruct the proper committees to investigate the subject, to take testimony of any such discrimination, to compare the legislation on this subject of the leading governments of Europe and the practical working of our own laws upon copyright, trademark, and any other protection afforded to foreign manufacturers of drugs in frequent use or to be used in the treatment of the sick, and to report such action as it may deem desirable to correct any abuses or injustice to American citizens if they find such abuse or injustice to really exist."

The Statistics of Blindness.—The Section in Ophthalmology offered the following resolution, which also passed the General Session:

"*Resolved*, That the Ophthalmological Section respectfully desires the General Assembly to authorize this Ophthalmological Section to use what influence it can command to induce the census committee of the United States for 1890 to extend the tables relative to the blind and to tabulate to the greatest extent possible the causes of blindness."

The Address in Surgery.—The paper of the day was an address on general surgery by Dr. P. S. Connor, of Cincinnati. Going over the beaten path in dealing with surgery as it was, the speaker brought his subject up to date. There had been as yet but a beginning in intrathoracic surgery, and so far but few subpleural tumors had been attacked, but there was reason to believe that ere long a decided advance would be made in handling forms of thoracic disease now considered as beyond the reach of surgical art. Passing, then, from a *résumé* of what had been accomplished in the surgery of the brain and the spinal cord, he went on to speak at some length on the subject of tuberculosis and cancer of the former. We had learned that it might attack any part of the blood circulation disturbed by general enfeeblement or by even slight injury. The bacilli might be destroyed or become encapsulated, and the softened tissues be taken up or shut in. Then, if the diseased foci were completely removed, as might often be done, the part might be as if it had never been so affected. As to whether diseased joints were best treated by arthrectomy or by typica incisions or by amputations, that matter was at present *sub judice*, but there was little doubt that further knowledge on the subject of tuberculous disease would also determine such surgical measures as would tend to the amelioration and cure of one of the most important and destructive of external diseases. As to cancer, the deductions from a series of carefully prepared statistics demonstrated the fact that one in fifty of the deaths in an aggregate city population of over five millions were due to some form of this disease. The affection was becoming more common throughout the civilized world—certainly so in this country and Great Britain. No more inviting field was open to the bacteriologists and experimenters than this one of cancer. So far as practical treatment was concerned, of nothing were we more certain than of the immense advantage of speedy removal, and, on the other hand, of the utter uselessness, so far at least as ultimate result was concerned, of any interference after wide extension had taken place. In nothing could the association do more than in determining, by collective investigation, all the available facts with reference to the disease, for it was only by combined scientific and practical work that conclusions could be reached as to the causes which excited the disease and the measures best adapted for its relief or cure.

The Auditing Committee reported that there had been paid into the treasury of the association during the year ending June 26th current the sum of $33,798, and that there had been expended the sum of $32,825, leaving an unexpended balance of $973.

The meeting for the ensuing year, it was voted, was to be held at Nashville, Tenn., beginning on the third Tuesday in May.

The Association and the Railways.—A discussion then ensued, or rather a unanimous outburst of indignation against the railroads was expressed, about the persistent manner in which the reasonable title of the association to reduced passenger rates had been hitherto ignored. While base-ball clubs, theatrical troupes, and small picnics could always secure this accommodation, the association had ignominiously failed. Measures were adopted by which it was hoped the difficulty might be overcome and the railroads properly approached on the subject. From a disinterested standpoint it appeared that the difficulty arose from uncertain engineering, and that the broth had been spoiled by a superfluity of cooks.

Officers for the Ensuing Year.—The Committee on Nominations reported the following officers for the ensuing year:

President, Dr. E. M. Moore, of New York; first vice-president, Dr. J. W. Jackson, of Missouri; second vice-president, Dr. W. W. Kimball, of Minnesota; third vice-president, Dr. J. H. Warren, of Massachusetts; fourth vice-president, Dr. T. B.

Evans, of Maryland; treasurer, Dr. R. J. Dunglison, of Pennsylvania, permanent secretary, Dr. W. B. Atkinson, of Pennsylvania; librarian, Dr. C. H. A. Kleinschmidt, of the District of Columbia. Dr. N. S. Davis, of Illinois, will deliver the address in general medicine; Dr. H. McGuire, of Virginia, the paper in surgery; and Dr. A. L. Carroll, of New York, the address in State medicine.

The Progress of Medicine in the Past Half-Century was the title of an address by Sir James Grant, M. D., of Ottawa, Canada, who was then introduced and invited to address the meeting. He said: Mr. President, Ladies and Gentlemen, I must offer you sincere thanks for the cordial invitation extended to me, not only to be present at your meeting, but to take a seat on this platform with the intelligent magi of the profession who are presiding over this great body. I am reminded of the fact that when the Marquis of Lorne was Governor of Canada the Royal Society was invited to luncheon at the Government House. When the health of the President of the United States was proposed—and I must tell you that there is no sentiment proposed in our country, next to that of Her Majesty, which is received with more warmth and genuine cordiality than that of your President—Mr. Mark Twain, who was present, was asked to respond. He thanked His Excellency for the compliment, but regretted that, being unprepared, he felt unequal to the demand. Now, gentlemen, I feel much in the same position upon being unexpectedly called to speak to this large assembly. For fully twenty-five years I have had the pleasure of attending at various times and places the meetings of your association, and it is to me a source of pride and gratification to note the evidences of progress everywhere observable in that profession to which I have the honor to belong.

As I was coming into this meeting I was told that certain gentlemen, pointed out to me, were the insane doctors. Further explanation, I am glad to say, dispelled this unpleasant suggestion, and I learned that they were merely members of the Section in Insanity who were in convention near by. While upon this subject, I may take the opportunity of drawing your attention to the fact that in no part of the domain of medicine has there been more valuable progress than in the treatment of the poor insane. Once these people were subjected to the most atrocious and barbarous usage, being treated, in fact, no better than quadrupeds. It is now, however, over forty years since the whole practice of restraint was thoroughly done away with, chiefly through the intervention of Gardner Hill, of the Lincoln Lunatic Asylum, whose name is intimately associated with this remarkable change for the better in dealing with the problem of the treatment of insanity. Now we find in the great institutions of this country for the care of this class of patients every indication that progressive development in the principles of the treatment of mental aberration is being carried into operation most successfully. The investigations by the late Dr. Gray, of Utica, whose name I mention with reverence and respect, are doubtless well known to you all. The subject of cerebral pathology attracted his closest attention, and his demonstrations by means of microscopical research did much to convey an accurate idea of cerebral structure under very diverse conditions. Strange to say, some of the most pronounced forms of insanity show no evidence of brain lesion or structural changes. Such also was the impression conveyed to me by Tuke, of Edinburgh. Under these circumstances is not the trite and laconic observation of "Punch" most apropos?—"What is matter? Never mind. What is mind? That's the matter."

Pursuing this subject further, the investigations of our physiologists within the past quarter of a century have certainly accomplished much as regards our knowledge of the nervous system. By processes of careful analytical induction such men as Ferrier, of London, Hamilton and Seguin, of New York, and Hammond, of Washington, have been able to define the changes in, and locate the region of, disturbed centers. Disturbance of function caused by organic changes in localized centers of brain tissue become doubtless telegraphed to the periphery, and the resulting facial expression gave a clew to physiologists which, being followed up, has enabled surgeons such as Horsley, of London, Macewen, of Glasgow, and Weir, of New York, to explore the cranial cavity for the existence of cerebral tumors. You know well how these have been operated upon with marvelous success. I am gratified to see near me on this platform an ex-president of this association, Dr. Bowditch, of Boston, one of the original pioneers in the subject of tapping the chest in pleuritic effusion, and one who has worked so vigorously to convey his accurate impressions as regards the treatment of this important disease. Not alone have his observations been confined to the chest, but in the domain of preventive medicine he has also been a pioneer. It has been well said that "an ounce of prevention is better than a pound of cure," but the efforts of the medical profession in this direction prove its members to be a most disinterested class of philanthropists, who, by strenuously endeavoring to prevent the inroads of epidemic influences, thereby curtail their own means of food supply. The great public institutions—such as your churches, public halls, schools, asylums, and general buildings, your jails and hospitals—are now constructed with due appreciation of the most advanced principles of sanitation. Drainage and water supply are carefully scrutinized, and inspectors are appointed by the local authorities to see that structures in these particulars are according to legal requirement. Then, again, in the matter of food supply, investigations are equally extensive and interesting. That menstruum fluid which is so essentially the pabulum of the rising generation—milk—is known to be often the carrier of scarlet fever and diphtheria. So much is being accon plished by these investigations that I can see no tangible reason why the rising generation should not enjoy greater immunity from disease than their predecessors, who had to eke out existence without the grand principles of sanitation now enjoyed. Let me speak for a moment on the subject of what has been termed the great gymnasium of the system, the abdominal cavity, in which such remarkable surgical progress has been made. The name of Ephraim McDowell, of Kentucky, stands forth prominently associated with this progress, for he possessed the skill, the forethought, and the knowledge which enabled him to undertake the first ovariotomy. Following in his path came rapidly to the front Kimball, of Lowell, and Dunlop, of Ohio. In these three men America possesses an intellectual tripod of wonderful activity.

Their achievements are creditable to this country, and their operations are alike appreciated throughout the civilized world. Before me I see a gentleman whose name I can not refrain from mentioning—Dr. Senn, of Milwaukee, who has done so much with reference to lesions of the intestinal canal. While speaking thus eulogistically of my brethren on this side of the line, I feel confident that you reciprocate as to the influence in the same direction of thought which has been exercised by such men as Sir Spencer Wells, Thornton, Lawson Tait, and Keith, of Edinburgh. Almost every organ of the abdominal cavity has been operated on successfully, and such achievements mark, beyond a doubt, the progress of surgery during the past half-century. The exhibition in the adjoining hall gives evidence of the great advance which, within a few years, has been made in the materia medica in this country. This has been chiefly brought about through the instrumentality of the various pharmaceutical associations. The elixirs, the triturates, and the various materials, such as peptonoids, for assisting disturbed

digestive functions are certainly steps in the right direction. Medicinal substances are introduced into the system to combat the abnormal decay of tissue. Pain and suffering are relieved by the inhalation of toxic agents such as chloroform and ether, and we all know what has been done in this respect by our American brethren. Then again the heart's overaction is controlled by digitalis, and febrile exacerbations are reduced by reliable antipyretics. What a change, too, has come over the old materia medica of half a century ago! Not only are medicines administered to-day with greater accuracy and less empiricism, but nothing is now accepted or taken for granted in this field of inquiry. The why and the wherefore are scrutinized. The laboratories in pharmacology are institutions in Canada, one of which is presided over by Dr. Stewart, of McGill University, who, with Shoemaker, of Philadelphia, is actively engaged upon analytical research into the action of therapeutic agents and the processes by which practical remedial results are brought about. While traveling from Boston here yesterday I was reading an address delivered to the Law Society by the Hon. Chauncey M. Depew. From it I learned the remarkable fact that of the twenty-three presidents of the United States, eighteen had been members of the legal profession, and that during eighty-two years of the past century the presidential chair had been occupied by members of the legal fraternity. It seems to me, gentlemen, that the profession of medicine in the United States does not take a very deep or abiding interest in the affairs of state; otherwise more of its members would be represented and thus enabled to guard over our best interests. In the Commons of Canada there are at least fifteen or twenty medical men, irrespective of those in the Senate. In our British High Commission there is also an able medical man whose knowledge in this particular enabled him to direct the authorities with reference to the condition of cattle sent from Canada to England, saving to the Dominion a trade worth several millions annually. Through the members of the medical profession we have acquired a bill in the local legislature of Ontario for the establishment of medical education and registration. That council, with which I have been identified since its inception, over twenty years ago, appoints annually its own examiners irrespective of the teaching bodies. It exacts a high standard of preliminary education, and also a curriculum of medical study equal to those of the best British or American institutions. Through this portal our students must pass before they can be admitted to registration. Thus we guard the best interests of the profession in our country. I was pleased with the resolution from your association presented this morning embracing the idea of advance not only in the principles of preliminary education, but also as concerns the various branches of medical education. With the hundreds now teeming from the numerous universities, and the field of practice being overstocked, it is necessary that as high a standard of excellence as possible should be brought about. Around me to-day I find many of the junior members of our profession. For the benefit of these I would refer to an anecdote told of a young doctor hailing from away West. He was visiting the Parisian hospitals, and, meeting one of the leading professors, was interrogated as to where he came from. "Don't you know my preceptor, sir?" answered the Westerner, naming his State. "No, I do not," said the professor; "what has he written?" "Well, he has not written anything, sir, but he has a *very large practice* down there." Now, to our young men I would say, Keep your notebooks, report your facts, record your observations day by day. In this way you will in time not only be able to assist the medical journalism of the country, but to add to that literature of the profession which has so much enhanced the reputation of this republic. Just reflect on the intellectual activity of such men as Gross, Dunglison, and Biggs; of Van Buren, Gurdon Buck, and Markoe; of Mott, Hamilton, Brainard, and Jewell; of White, of Buffalo, and Bigelow, of Boston, and then on the men who are leading the literature in diseases of women, such as Thomas and Emmet, Goodell and Storer, and other lights too numerous to mention, but whose names are household words with us in Canada. Are not these electric lights in their way radiating an influence for good of a most remarkable character? We on our side of the line, though separated by imaginary chains, feel that in our profession we are united. We are with you in all this achievement of progress and in appreciating the same influences which have prompted you to the accomplishment of so much good. I feel, gentlemen, that I can not better express what I mean than by referring to the message sent over the first completed cable between here and the old country by Queen Victoria: "What God hath joined together let no man put asunder." We are one people; we enjoy the same liberties, civil and religious; we speak the same language; we take our inspirations from the same fountains of science in all that pertains to the best interests of our profession. Therefore I think I can not do better than quote, in conclusion, the expressive lines by your gifted poet who now slumbers with the illustrious dead of this great republic:

Let us, then, be up and doing,
With a heart for any fate;
Still achieving, still pursuing,
Learn to labor and to wait.

The address was frequently interrupted by expressions of gratification by the meeting, and at its close the speaker was awarded round after round of applause.

In the evening a concert and a reception were given by the Newport profession at the Ocean House.

The Address in State Medicine.—The General Session met on Friday at 10 A. M. to listen to an address by Dr. WILLIAM H. WELCH, of Baltimore, on State medicine. Dr. Welch delivered what was really an exhaustive survey of the bacteriological deductions up to the present time. He concluded by warning his hearers to avoid the acceptance of exclusive dogmas or hypotheses as to the exact processes by which pernicious bacteriological agencies might make themselves actively infectious. It was not by sanitary prophylactic measures in one particular direction or another that we could hope to control the prevalence of disease, but by securing sanitary arrangements as far as possible perfect in every particular.

By resolution, the sympathy of the association was expressed for such members of the profession as had been sufferers by the Johnstown calamity, and their dues were ordered to be remitted for the year. Votes of thanks were then passed to all those who had in any way contributed to the well-being or enjoyment of the association in Newport. A special vote of thanks was proposed by Dr. Pancoast, of Pennsylvania, to Sir James Grant.

A deputation was instructed to introduce the new president, Dr. E. M. Moore, but urgent business had called him home.

The proceedings then formally closed.

In the afternoon there was an excursion upon Narragansett Bay.

NEW YORK ACADEMY OF MEDICINE.

Meeting of May 2, 1889.

The President, Dr. ALFRED L. LOOMIS, in the Chair.

Discussion on Phthisis Pulmonalis.—Dr. W. B. JAMES read a paper on "The Relation of the Tubercle Bacillus to its Ætiology." He concluded that Koch's results had been com-

pletely confirmed by investigations made in the seven years since they had been published. The tubercle bacillus must be present in phthisis pulmonalis and as a focus in all the other tubercular inflammations, although the greatest variety of inflammations of other sorts (still further modified by differences in the various tissues composing the body) might arise secondarily. In the lung the essential factor was always the presence of the tubercle bacillus.

He would next consider the question whether the bacilli acted alone, or whether other factors were needed in conjunction, in order that, once inoculated, they might grow. It had been noticed that some individuals were affected by such an infection very differently from others, and also that the same person would not be affected in the same way at different times. A change of climate made at the beginning of a phthisical process often caused its suspension. If rabbits were inoculated with tubercular virus, and some of them were then confined in cellars and others ran free, the latter would more or less escape the disease, while the former died of it. Autopsies made on the bodies of those dying from various other causes in the New York Hospital had shown that in half of these bodies there were areas which had once been the seat of tubercular inflammation. Such observations furnished the best reply which could now be made to the question under consideration.

There was no doubt that bronchial catarrh and pleurisy favored the implantation of the virus in the lung. On the other hand, it was certain that in many cases pleurisy and bronchial catarrh were secondary to a tubercular focus so small or so hidden away (as in the bronchial glands) that it was unrecognizable during life, if no further development of the infection occurred. It had been shown that tubercular infection occurred more readily in parts whose vitality had been impaired by local injuries of any sort, but there was no doubt that the virus could be introduced and grow in perfectly sound tissue. The number of the germs introduced, and their malignancy or virility, also had much to do with the result in the body. The number and distribution of the lymphatics and their relation to the site of first infection might also determine in large measure whether the bacilli were conveyed to the bronchial glands or the lymph nodes, or were left to grow in the walls of the air vesicles. But, in conclusion, he would repeat that the only always-essential factor was the tubercle bacillus.

Dr. J. W. Roosevelt read a paper on "The Relation of the Tubercle Bacillus to the Early Diagnosis and Prognosis of Phthisis." The question resolved itself into this rather: What value was to be attached to the discovery of tubercle bacilli in the sputum of patients as a means of making an early diagnosis of phthisis? We were often confronted with a problem such as that in the following case: A young man is engaged in a business of such a nature that, in order to either advance or even hold his own, he must give it all his time and an unremitting attention. He works hard; after a time he runs down, and begins to lose sleep; he has little appetite, and coughs most of the time. He consults a physician as to whether or not he has the beginning stage of phthisis. If the answer is in the affirmative and a change of climate is advised, the young man's business is ruined, but his life is saved—in case the diagnosis is a correct one. A mistake in diagnosis might unnecessarily sacrifice either his business or his life. Now, the question arose at that point whether the presence or absence of bacilli in the sputum would be positive evidence in favor of or against the existence of phthisis. This question could be answered decidedly in the negative as regarded the latter half of the question. If no bacilli were found we could not say that the young man might not have phthisis. To establish that, not only must the sputum be found free of bacilli in many successive tests, but the examination of the chest, the family history, etc., must also give negative evidence. Often, in a phthisical patient, no deposit of tubercle was situated so as to have any direct or open connection with the air passages. These deposits might be extensive and yet no bacilli appear in the sputa. Again, the bronchial discharges might be so profuse that, like the needle in the haystack, the bacilli could not be found. In advising patients we must not wait to find the tubercle bacillus, or the opportunity of saving life might be neglected till it had passed by.

Phthisis was a complex disease in which several varying factors of causation were present, and in which the pathological results were numerous and much diversified. A common form in New York was one in which the only pathological elements were a deposit of tubercles which gave rise to some pleurisy and some bronchitis. In this form of the disease there was little tendency to the breaking down of pulmonary tissue, and no consolidation could be detected. Thus the physical signs were of no value, even when the disease was far advanced. In these same cases the detection of the tubercle bacillus was commonly impossible early in the disease, when such a discovery would be of most value. In such cases all the physical signs, the history of the patient's family, and careful observations on the course of his symptoms must be taken into account in arriving at a probable diagnosis.

As to the prognostic value of the presence or numbers of bacilli in the sputa, as related to the upward or downward course of the disease, it could be said with emphasis that there was no such value to be considered. On the contrary, it was a great and common mistake to regard the discharge of bacilli increasing, diminishing, ceasing, or absent as a test which would determine whether or not the patient was likely to recover. Manifestly the progress of the disease in the lung and other areas of tissue in the body, near or remote, could not be materially affected by the discharge or the retention of purulent matter containing a few of the many millions of bacteria. And yet the whole antiseptic treatment of the disease was based, apparently, on this idea, and had led to the dosing of these patients with active poisons. We often heard that, under such and such a form of treatment, by inhalations of germ-destroying vapors the "cough diminished, the temperature moderated, the night sweats became less frequent, and the number of bacilli in the sputa became diminished." In a completed history it usually needed to be added to this shortly that the patient presently died. As long as the complex body cell was easier to kill than the simply organized tubercle bacillus, it was idle to put antiseptic drugs into the body in the hope of killing the latter only. A much better and more reasonable plan was to feed the phagocytes. As yet, certainly, there was no specific bacillary poison known. His conclusion, then, was that the discovery of the bacilli was a matter having great positive but no negative value in arriving at a diagnosis, and little value in prognosis.

Dr. James Tyson, of Philadelphia, present by invitation, spoke of the proofs afforded of the bacillary origin of phthisis. The conditions to be fulfilled were as follows: A vegetable organism must be found in the blood and tissues; it must be capable of being removed in a state of absolute purity from the blood and tissues, and, if reintroduced in a state of purity into the blood of an animal susceptible to the disease, must be afterward obtainable from its blood. All these conditions had been met, and the proofs substantiated by the modern culture method. Some interesting corollaries were deduced from this demonstration; thus we must consider it an inevitable conclusion that phthisis was contagious. At the same time every one would admit that it was but slightly so, and that the records furnished comparatively few cases of this sort. For the reason

of this we must look to the mode of action of the tubercle bacillus; it acted as an infecting agent when inhaled with minute particles of dried sputum, and carried in sufficient amount into tissues not capable of resisting it. Like typhoid, it was not easily contagious, because the germs must enter the mouth and pulmonary passages, just as it was necessary that the typhoidal virus should reach the intestines. The experiments of Cornet, who produced tuberculosis in susceptible animals by culture fluids derived from the sponge scrapings of the walls of rooms in which tuberculous patients had been confined and failed to produce it in other rooms where the walls had been scraped, had furnished positive evidence in this direction. A well-known factor determining the malignancy of the disease was the crowding of people in confined quarters; we had a fourfold mortality in prisons and a double mortality in manufactories, as compared with ordinary habitations. Flick, of Philadelphia, having had all the houses in a ward under observation for twenty-five years, had found that those in which tuberculosis occurred were usually (in 90 per cent.) not isolated from other houses, but adjoined houses in which tuberculosis had occurred; and that in 33 per cent. of the houses in which it did occur there was more than one case. A second corollary, founded on the same evidence, was that tuberculosis must be communicable by the taking of food containing its bacilli; and facts had long been accumulating to show that such was the case. Gurley had found that young animals fed on the milk of tuberculous cows developed tubercular affections often enough to show that here was a possible avenue of infection. Bang and others had demonstrated bacilli in the milk of cows having tubercular mammitis. In Cornil's report to the Paris congress he had shown that cultivations of the bacillus put into the lumen of the intestinal canal soon reached the glands of the mesentery. Still, it was a curious fact that there were few well-proved cases of harm sustained by human beings in this way. It was, however, well established that the swallowing of sputum by phthisical patients had often been followed shortly by the diarrhœa and emaciation of intestinal tuberculosis, which was perhaps always brought about in this way. Fowls that had eaten the expectoration of phthisical patients had been found to have tuberculosis of the intestines and liver.

As to the congenital or post-genital inheritance of phthisis, where the former occurred, it must be through the placenta that the actual germs reached a fœtus whose tissues already furnished a soil favorable to their growth. The view that the ovum might take up bacilli at the time of its impregnation was purely speculative.

Dr. H. M. Biggs remarked that there was little to be said in regard to the relation of the tubercle bacillus to phthisis, as there was so little doubt that this relation was a causative one. It seemed to him that we had absolute proof of the nature of this relation. Indeed, there was no fact in medicine, except, possibly, the relation of the anthrax bacillus to splenic fever, which was better proved. The profession could not too soon surrender the even now quite generally accepted views as to the causation of phthisis. The tubercle bacillus was the cause, and the only cause, of tuberculosis. This was the fact of prime importance and should be brought out in sharp relief.

Undoubtedly there were other factors that had some influence in the causation of the disease, but the only essential one was the introduction of the tubercle bacilli. A reduction in the tissue resistance, so that the dose of bacilli needed to start the process was diminished, he considered as the factor second in importance. A large enough dose of bacilli, however, would always and in any person produce the disease without the action of any other agencies.

Heredity in phthisis meant to him not the transfer from parent to child of the actual bacilli, or even of a predisposition or special susceptibility to the disease, but the transmission of organs and tissues that had little resisting power, and easily succumbed when exposed to active noxious influences of any kind, one of which was the tubercle bacillus. A study of the principles of evolution had shown that in heredity there was really a remarkable tendency toward the transmission from parent to offspring, not of disease, but of the best in everything which could be given by the parent body. Only a negative condition—that is, the relative absence of strength—might necessarily be transmitted by feeble parents, even if the best possible was given.

The speaker concluded that the disease was distinctly a contagious and preventable one, and that it was a matter of the greatest moment for the coming generation that intelligent and decided action should be taken for the systematic destruction of the sputa of all phthisical patients, since by this means could be secured the restriction if not the eradication of the disease. We had as good reason for taking such measures as for stopping the spread of scarlet fever and small-pox by quarantine arrangements. It was impossible to speak too strongly on the subject. The sputa of tuberculous patients must be destroyed or safely disposed of, and tuberculous animals must be killed.

Both the profession and the laity needed to be educated into a knowledge and practical recognition of the fact that the germs in tubercular sputum could not multiply outside of the human or animal body, and that when the disease occurred it was due to direct transmission from some other human or animal body affected with it. The speaker closed with a strong plea in favor of a more general, full, and sharp recognition of the fact that the tubercle bacillus was the only cause of phthisis, from a strictly pathological point of view, and that the disease was chiefly produced by inhaling dried and pulverized tubercular sputum suspended in the air as dust.

Dr. H. P. Loomis asked whether there might not be a second primary factor in the causation of the disease—what might be called a pre-bacillary state of the constitution. How much this state consisted in lowered vitality, and how much in other unknown vices in the constitutional or vital make-up, we were not yet in a position to decide. We knew that a condition in which, clinically, the liability to phthisis was notable was sometimes hereditary, or, again, due to vices or habits of living, to alcohol, or to senile parentage. But we did not know why, of all those having such ancestry or vices, or who lived in adjacent dwellings under conditions equally bad, some contracted phthisis and died of it, and some did not contract it. The problem resembled that respecting the reason why mental strain produced insanity in a certain limited class, while in those not included in that class no tendency to the development of insanity appeared after mental strain, though the greatest variety of other mischiefs might be given rise to.

In regard to the number of those in whom phthisis came to an end without getting more than a foothold, as shown by autopsies after deaths from other causes, he would say that sixty per cent. of all bodies showed in some tissue the changes pointing to the presence there in the past of a tubercular inflammation.

Dr. E. L. Trudeau, of Saranac Lake, present by invitation, showed specimens illustrating the growth of tubercle bacilli in great numbers on sections of a potato, and the effects of the inoculation of the lungs of rabbits with tubercular virus after thirty-six days. Inoculations of the virus in animals had been found to produce the most different sorts of tubercular inflammation, according to the site of the injection of the virus, its amount, and the conditions of living to which the animal was afterward subjected. A large dose being put into the vein of

the ear of a rabbit, general tuberculosis of the liver, spleen, and joints, as well as the lungs, had at once followed. A very small dose being put into the apex of one lung and the creature being kept outdoors, a phthisis of a chronic sort followed, in which the fibrous elements greatly predominated, the other viscera escaping entirely.

Dr. W. H. Thomson read a paper on the influence of the microbe theory on treatment, opening with a review of the different antiseptic methods of treating phthisis which had been tried and abandoned within recent years, and always because they failed to make any difference in the final outcome of the disease. Among the remedies spoken of in this connection were sodium benzoate, salicin, iodoform, tannin, and bichloride of mercury given internally; iodoform and allied drugs used as an injection for cold abscesses; sulphureted hydrogen enemata, inhalations of hydrochloric acid, and the use of creasote, tannin, and menthol. Experiments on animals, made in Germany, in which maximum doses of each of the eight best-recommended antiseptics had been given to animals already inoculated with tubercular virus, and without altering in any way the progress of the disease, warranted our dismissing all expectation of destroying the bacilli in living patients in this way. Even half a pint daily of a one-to-one-thousand solution of corrosive sublimate injected into the tissues of a tuberculous guinea-pig had failed to check the course of the disease. Experiments made to ascertain the effects of extreme altitudes on tuberculous animals had also yielded negative results. The speaker had never seen a case of small-pox, scarlet fever, or measles shortened in its course a single day by the use of an antiseptic or any other drug. An entirely similar question to him would be that of whether a field of potatoes could be so treated with a chemical agent that the weeds should be killed, but not the potatoes. He did not see how we could so change the common pabulum that the vegetable but not the weed, the body-cell but not the parasite, should thrive in it. Indeed, he had never hoped that we could kill the bacilli of disease safely.

It might be asked whether he had hopes of any practical result whatever arising from Koch's discoveries. He would answer that one such was already known. He referred to our knowledge of the apparent independence of successive bacterial growths of different sorts on each other. It was not often suggested by writers on these diseases that other bacteria than those called the specific ones took a part in the process. And yet it was, as a fact, a rare thing to find a single variety of bacteria acting alone. In the putrefaction of meat a series of thirteen different sorts of bacteria were required, one set appearing and carrying the process to a certain point, and there giving place to a new species, which carried it through the next successive stage. It had been found that the *Streptococcus pyogenes aureus* was the most widely active infecting agent known; in fact, it was somewhere present in most infectious diseases when suppuration occurred; thus in erysipelas, puerperal fever, diphtheria, suppurative synovitis occurring with endocarditis in scarlet fever or pneumonia, and also in typhoid fever when suppurative collections of matter formed. Might it not be thought probable that work done by this bacillus prepared the way, in many cases, for the growth of the tubercle bacillus? It was well known that the rapidity of the advance of phthisis bore a close relation to the amount of suppuration going on. Accordingly, it became an object of importance to prevent the initiation of a suppurative process, and to either remove or prevent the decomposition of pus formations. The caustic or corrosive action of pus on the living tissues was well known. In such cases creasote might be of real value by checking the suppurative process. In many cases in which he had employed it he had either greatly prolonged life or effected a cure. Most of the success he had met with in the treatment of phthisis had been achieved by the use of creasote.

It was perhaps possible to bring about a limitation of the process by bringing up the resistance of the tissues to the point which obtained in the great majority of people, and an effort was always to be made most faithfully in this direction by every possible improvement in the patient's mode of life.

In conclusion, the speaker described two strongly contrasted types in the physiognomy of people who were born with a liability to phthisis on the one hand and chronic bronchitis on the other, and which appeared before the disease had begun in either case.

The inference to be drawn from this was that such constitutions should be recognized and their powers of resistance increased before the invasion of the bacilli had begun.

Dr. L. Waldstein related two clinical histories which enforced Dr. Roosevelt's conclusions as to the aid in diagnosis and prognosis to be looked for from an examination of the sputa for bacilli.

Dr. B. F. Westbrook, of Brooklyn, thought that several of those preceding him who had emphasized the importance of the bacilli in the ætiology of the disease had overstated the case. He could not agree with Dr. Biggs in making the tubercle bacillus so conspicuous among the factors of the causation of phthisis. He believed that there were others more important. Causation in the organic world was a very complex matter, as had been pointed out by Aristotle two thousand years ago. While, according to present knowledge, the bacillus might be the only directly exciting cause by which phthisis was originated, it was far from being the only factor in that result. Moreover, it was one which could not well be excluded, while some of the others might be, if once thoroughly investigated. In regard to the matter of positive diagnosis by the discovery of bacilli in the sputa, he thought the facts had been somewhat overstated. He had never met with a case of ordinary phthisis in which bacilli were expectorated where a physical examination and the history of the case would not give the diagnosis independently. Still there were cases of pleurisy where suspicious râles were heard at the apex of the affected lung, and the question arose whether primary pulmonary phthisis or pleuritic tuberculosis was present. Here an examination of the sputa might exclude the latter disease if bacilli were found. Emphysema also sometimes gave a crackling at the apex of the lung not distinguishable from that of tuberculosis. Here, too, an examination of the sputa might be of value in diagnosis, both positively and negatively.

With regard to the value of the bacilli in prognosis, if he had a case of pulmonary disease presenting signs of consolidation and excavation, fœtid breath and copious expectoration, and if he found no bacilli in the sputa, he would conclude that the case was one of interstitial pneumonia and that the prognosis was good; if at any time bacilli and fever appeared, he would consider it a bad sign. He thought treatment based on the fact that a bacillus had been discovered had been pernicious on the whole. Antiseptics had their only value in the relief of fœtid bronchitis, in cleansing cavities, and in clearing out the air passages. To fortify the constitution of the patient that he might withstand the disease was the essential thing.

Dr. F. P. Kinnicut agreed with the views expressed by Dr. Roosevelt and Dr. Thomson as to the real utility of the germicides. Their use, and it was a very distinct one, was to render the diseased surfaces aseptic, to aid in the removal of the secretions, and to prevent fermentation and catarrhal disorders in the alimentary canal. Some of them also had a stimulating effect on the nutritive process, and he thought that the value of creolin lay in this direction mainly. Controlling little details in the

daily life of the patient was the really efficient plan of treatment, as shown by the comparative number of the recoveries so obtained.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Meeting of April 22, 1889.

The President, Dr. Alexander S. Hunter, in the Chair.

The Treatment of Acne without Arsenic, Sulphur, Ointments, or Lotions.—Dr. G. H. Fox read a short paper with this title. He did not object to the employment of these remedies, but he wished to make clear that their value was a very limited one, and did not entitle them to forming a routine treatment. A few cases of acne could be relieved by local measures alone, but, in the majority of cases, general treatment of the patient himself, and not of his skin alone, must be combined with these. In this general treatment, medicines might play an important part in certain cases, but it was still far from being generally recognized that diet, exercise, and other hygienic observances were of more account in getting lasting improvement in acne than all drugs put together.

In deciding on treatment it was convenient to recognize two forms or stages of the disease, the irritable and the indolent, as long recognized in the treatment of ulcers. The irritable form was largely reflex in origin, and due to disturbances of menstruation and of digestion. Here usually the skin of the face flushed easily, was fine and soft, and readily became inflamed under stimulating agencies. A watch-key used to press out comedones was apt to raise a red spot. Here all local treatment, except of the most soothing character, was contra-indicated, and constitutional treatment was mainly to be relied on. In the indolent form, vascular excitability was not present, and glandular obstruction was the prominent feature in the condition. The skin was apt to be coarse and doughy. Minute white nodules of sebaceous matter were constantly forming and being retained in the skin, with a termination in inflammation, papules, pustules, or abscesses where the constitution was strumous. Now, the indolent form of the disease demanded vigorous local treatment, and especially a thorough cleansing of the skin. This could not be accomplished by washing with soap, by lotions, or by ointments, but by mechanical evacuation of the engorged glands.

In the first of these two clinical forms of the disease, physicians had for years relied mainly upon arsenic for treatment, and often to the exclusion of other measures entirely. Of this practice he would remark that he believed that if arsenic should be banished from the globe the general practitioner would meet with better success than now in the treatment of acne and allied affections. Another drug which had been extensively used, and with better results than arsenic, was sulphide of calcium. It was often certainly of some value, in cases where there existed a pyogenic tendency, and small doses gave the best results always. But in most cases it was without effect; its virtues had been much overestimated, and its employment was apt to divert the attention of both physician and patient from more important measures.

The value of ergot had not been duly recognized. This drug was of some service in the indolent form of acne. By acting on the muscular fibers about the sebaceous glands and causing an evacuation of their contents, or else by lessening the caliber of the blood-vessels supplying the glands, it seemed to be of benefit in these cases. However, he knew that it was without effect in the hyperæmic form of acne. Here lotions were of some but only of slight value, in his experience. Too often they were the sole remedy used. After years of experimentation with the best prescriptions in this line which he had read of or could devise, he now seldom used a lotion at all. The line of treatment that had, in his hands, been followed by the best results was neither new nor original, and consisted of two things, diet and local massage. Of these, diet was the more important, and he wished to lay stress on this, for, while all physicians would freely admit the value of regulating the diet, few enforced such regulation. In other words, but few recognized that to control the diet was to strike at the root of the matter. The irritable form of acne might be associated with disordered menstruation or other genito-urinary troubles in either sex, but most of the cases would be found due to bad digestion. Local massage could be applied by the fingers or by instruments adapted to the purpose. Its objects were to empty the glands and to cause the disappearance of inflamed lesions. It should leave the skin smoother, softer, and paler. It consisted in pinchings and firm rotary pressures with the finger tips. Its employment must be persisted in faithfully. A gentler and more agreeable way of emptying the glands was by a large circular curette such as the gynæcologists used. Its use had been approved by authorities both abroad and in America, yet was not general. It gave the best results with the least pain. The redness left soon disappeared. While the measures thus far mentioned were usually the only ones required, it remained for him to say, in conclusion, that no fixed plan of treatment would be found to suit all cases.

Psoriasis and its Treatment.—Dr. L. Duncan Bulkley, in a paper devoted to this subject, embodied his clinical studies and analyses of two hundred and sixty-four cases of psoriasis which had been under his care in the past twenty years. Being so common and persistent a disease, it merited careful study. Its cause was almost unknown. It should not be confounded with eczema or scaly papular syphiloderma. It appeared mostly on the body, rarely on the palms or soles. He had never met with it on the tongue. It was less common among the poorer classes. It seemed to exist more in climates where the moisture was great and severe changes of temperature were common, but not in malarious regions. It was common in New York, Boston, Chicago, and Toronto; less so in Baltimore and St. Louis. It varied in different years. His statistics with respect to the ages at which it appeared agreed with those of standard writers. In 81 per cent. of his cases the disease had manifested itself before the thirty-first year, and in only 7 per cent. after the fortieth. Between the ages of ten and fifteen it appeared twice as often in females, but with double the frequency in males between the ages of fifteen and twenty-five. Few of his cases had come under his care at the beginning of the affection; on the contrary, it had usually existed for from five or ten up to forty and fifty years, and this was important, since the longer the duration the harder to effect a cure. Still, even where no cure was possible, the eruption could often be held in check for long periods of time. The disease had no tendency to self-limitation, but its severity could be greatly modified, often by medicines used persistently, by correct diet, baths and general hygiene, and by certain climatic influences of the nature of which little was known. Still there were some cases which remained intractable even under the best treatment. On the whole, psoriasis was one of the most rebellious of all the diseases appearing on the skin. Success in treatment depended on the age of the patient, the date of beginning treatment, and persistency in continuing it. The disease was most curable in children, very rebellious between the ages of twenty and twenty-five, but often curable in later years, especially if associated with gout or rheumatism, with which it had several points in common. Excessive meat-eating and the use of stimulants often precipitated an attack. Oils and fats in the diet, if digested, clothing adapted to prevent chilling of the surface (pure woolen next to the skin), and a warm and equable climate were important factors in treatment. As to internal medication, arsenic was one of the most

efficacious remedies. Alkalies were often of benefit, and were best given in the form of the acetate of potassium, lithium, or calcium. Iron and cod-liver oil were useful. Local applications used early might prevent in large measure the development of the eruption. The use of chrysophanic acid and chrysarobin he had abandoned. The white-precipitate ointment he had found more useful than any other application of this sort. Visits to mineral springs reputed to cure psoriasis led only to disappointment. He had had his patients try a large number of them. He did not know of a single cure effected by sulphur waters, though the reputation of such waters was the highest of any. The curable cases could be found only by trial, and that of the most patient and faithful sort.

Dr. R. W. Taylor opened the discussion of the two papers. The iconoclastic spirit of the first he thought justifiable, and, as it led at the same time to a building up with better material than it destroyed, commendable. For the purposes of discussion, its distinction between an irritable and an indolent form of acne was clever and convenient. The author's want of faith in the efficacy of arsenic was well founded in the main, though it must be said that arsenic did good in some cases. The disease showed itself under so many different forms, in so many different skins, and from such varying causes, that it was hard to generalize in a short paper as to proper treatment. Not enough attention had been given to a possible microbic origin for some forms of acne. Where that could be proved, it would be irrational to treat follicles containing pus resulting from an infection from without by an internal remedy, such as sulphide of calcium, which was supposed to act as an absorbent or disorganizer of pus. Ergot sometimes did good and again did not, or else disordered the health of the patient. The curette and massage (any one of a number of different sorts would answer) were the reliable remedial agents. Pressure in itself acted beneficially. Tabs due to cell exudation and without much epithelial growth could be made to disappear by pressure, and just so acne pimples. The curette was good in itself, and also prepared the way for other agents. Lotions, ointments, and powders should not meet with wholesale condemnation.

In regard to Dr. Bulkley's paper, it was difficult to criticise it; it followed the traditional lines of the text-books and dealt with statistics largely, any inferences drawn from which he regarded as highly untrustworthy. The most important point related to the curability of the disease, and that this was greater the earlier it was attempted he had himself taught for years. He had never been able to decide that there was a diathesis behind psoriasis. There were no proofs of its having a connection with rheumatism, or of its being due to dram-drinking, etc. The most we could say was that the disease represented a bad habit in the skin, and that, the latter being very closely connected with the functions of the body and exposed to weather, clothing, etc., great variety in the course and severity of the disease resulted. Its heredity was admitted by leading dermatologists; it commonly appeared in the children with a certainty proportionate to its intensity in the parents.

Dr. H. G. Piffard said he could agree with Dr. Fox in his generalizations, but not in regard to particulars. Thus, Dr. Fox made acne due to gastric rather than genital troubles, and he (the speaker) believed just the reverse was true. He believed it a disease which might be either of internal or of parasitic or bacterial origin. He did not think we knew anything as to the mode of action of ergot, but he had observed that the severer the case the more likely was ergot to act favorably. By regulating conditions in the uterus it might stop a reflex irritation beginning there. He had used sulphide of calcium, but in as large doses as the stomach would bear—a fourth or a half of a grain. He used it in the indolent form of the disease, and gave it till the skin was enlivened and the lesion took on an active state, aiding in this result by gymnastics, scrubbing, etc. Evacuation of the pustules it was always well to accomplish, but he had found that the wound made by a slender lancet healed more quickly than that following the use of a curette.

The genital origin of the disease he had seen illustrated in many of his cases. As Denslow had pointed out, urethral irritation from a stricture near the meatus or phimosis frequently gave rise to acne in young males; he always made an examination of the genitals in males, and especially looked for evidences of gonorrhœa or masturbation.

With regard to Dr. Bulkley's treatment in psoriasis, he was surprised to hear that he had abandoned the use of chrysarobin. In his experience it had caused the eruption to disappear more quickly than any other topical agent. Its use involved some pain and staining of the clothes, but was justified by the result gained. Arsenic he used in full doses for long periods.

Dr. C. W. Allen had often seen decided benefit from the use of sulphide of calcium in acne, given in doses as small as the twentieth of a grain every two hours or oftener. He had noticed that ergot more commonly relieved acne in women than in men. He believed it useless to treat an acne due to uterine disorder otherwise than by attention to the latter trouble. In men he had applied ergot externally, the fluid extract or a combination with collodion, and with apparent good effect. As one papule helped to induce others, it was important to keep them empty from the first, if possible. He thought highly of the external mechanical treatment of acne. He preferred the comedo extractor of Auspitz as modified by Dr. Piffard to any form of puncturing. The entrance of micro-organisms into the acne pustule was probably the cause of the diffused induration so often appearing, in time, and this infection spread, if left alone, to other papules. This would indicate the necessity of an early evacuation of the obstructed glands, and the value of antiparasitics used externally.

As to psoriasis, he believed it hereditary. He had found no reason for abandoning either anthrarobin, pyrogallol, or chrysarobin, but used more of the latter. If mixed with collodion or liquid gutta-percha, its disagreeable effects could be avoided, and in combination with salicylic acid it was especially beneficial, as the skin was softened at the same time that the infiltrated parts were acted on.

Dr. E. B. Bronson, speaking of the causes and treatment of acne, laid great stress on the important relations of sexual disturbances in the ætiology of the disease. He had found sexual hygiene, a thing commonly best secured by wedlock, of the utmost value in improving the complexions of these patients. He considered acne as a developmental disease. As the beard began to grow, an erethism in the sebaceous glands was developed not unlike the increased activity in the hair bulbs, both glands and hair follicles seeming to have an intimate connection with the sexual system. With digestive disturbances he had found rosacea more commonly developed. As to removing comedones, there were many cases in which it was better to leave them untouched, if they were at all hard to extract, until their removal became easy, lest an increased inflammation be set up. Sulphur he considered an important remedy in the right cases; the amount of suppuration determined the good to be obtained from its use (as a germicide). In acne indurata, operative treatment was that most needed. It was not always recognized that any acne tubercle which blanched on pressure contained gummy or cheesy matter, a surprising amount of which could often be scooped out.

In psoriasis he had found chrysarobin to be of much more value than the mercurial ointments or tar of the old-time treatment. Anthrarobin came next, and was sometimes of equal

value. It did not inflame the skin, and so was indicated in cases complicated by eczema, or in which for any reason chrysarobin could not be borne.

Dr. SHERWELL, of Brooklyn, agreed with Dr. Bronson that acne was a developmental disease, and almost entirely of internal causation. Especially close was the ætiological connection of troubles situated somewhere in the pelvis, constipation, and uterine or any other genito-urinary disorders. Where urethral engorgement or stricture had been found, he and others had repeatedly cured acne by the passage of cold sounds. With regard to psoriasis, he regarded it as arising commonly, in some way, from non-oxidation in the tissue changes—what might be called sootiness in the flues; also from rheumatism and uncleanliness of living, the disturbance due to which acted on a limited pathological area. He agreed with Dr. Bronson as to the value and employment of chrysarobin and anthrarobin.

Dr. WILLIAM H. THOMSON, speaking from the standpoint of a general practitioner, said that for many years he had been accustomed, when consulted for the relief of acne, to examine the genitals in both sexes. He also looked into the state of the digestive apparatus. It was very essential to remember that troubles in this region were commonly associated with and often due to genital disorders. But for the more immediate causation of acne, he now looked to a self-infection by alkaloidal substances arising from intestinal fermentation. There was no one cause for acne. Fermentation of food was in his opinion as active a one as genito-urinary trouble. Acne often occurred in chlorosis and in affections of the liver or pancreas. He had cured acne in several instances recently by giving benzoate of sodium, naphthol, and salol in combination. In psoriasis he got the best results from liquor potassæ in large doses, together with cinchona. He believed the disease hereditary, having repeatedly seen it appearing in three successive generations. He had been surprised at hearing different speakers call attention to an infection by microbes as one factor in the ætiology of acne pustules, as if on that account their origin was local. Was any fact better known than that the soil presented to a micro-organism was the leading factor, and not the advent of the microbe? Most suppurative skin diseases were microbic, but that which determined the soil for their growth in the skin lesion must chiefly concern the physician. However, our local applications and the use of curette or needle were of service temporarily by disposing of the microbes already growing. The mode in which ergot acted was not yet determined.

Dr. CRANMER thought the facts brought out by the discussion not essentially different from those recognized thirty years ago. Dr. Bronson had given the more important fact, in his opinion. Married life would terminate most cases of acne. Dr. Thomson's line of treatment he thought next in value. He himself used alkalies also, and the old-fashioned but efficacious decoctum aloes. Sometimes two Turkish baths a week were all that were required for a cure.

Dr. BULKLEY thought the lesson taught in the evening's discussion was that there was no one line of routine treatment in skin affections. All the methods spoken of had their value in suitable cases. He was thankful to Dr. Thomson for bringing out the fact that the origin of acne was not altogether in pelvic conditions. He himself had come to regard the digestive much rather than the genito-urinary system as the point of origin for the disturbance. He had cured many cases by attention to the chylopoietic system only. He had met with severe and obstinate acne in a number of married people with large families. Irritation of the surface in acne, as by the curette or a rough shave, had of itself an unquestionable value. For extracting comedones he used a minute cataract knife, and an extractor much like a watch-key. As to heredity in psoriasis, his records showed two hundred and eighty-six cases where it had occurred in one member of a family, but not in the brothers or sisters, and but forty-one in which the reverse had obtained.

Miscellany.

Plants and their Alkaloids.—In the "Bulletin médical" for May 8th, Dr. S. A. Nitard remarks that, in an important paper recently read

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$W = V \times \cdot00285$, weight of litre of air at 32° F.

$W = 310{\cdot}29 \times \cdot00285 = 8{\cdot}84$ lbs.

$Q = W \times t \times$ specific heat.

$Q = 8{\cdot}843 \times 7° \times \cdot2374$ specific heat of air $= 14{\cdot}69$, number of heat units given to the calorimeter by the air.

Then $236{\cdot}74 - 14{\cdot}69 = 222{\cdot}05$, number of heat units obtained in

ferent nature's alcohol

morphine, of cinchona and quinine, and of many plants and the alkaloids derived from them, was well known. Coca, says Dr. Nitard, is indisputably the drug to which, above all others, these remarks may be applied. *Erythroxylon coca* possesses, without doubt, analgesic properties, and is held as a superior local sedative, especially where pain exists in the region of the mouth and the throat (as noted and published by Professor Charles Fauvel long before the discovery of the local effects of cocaine), and in calling attention to the virtues of this plant it may be stated that the beneficial effects of wine of coca have been thoroughly established in tuberculous and other ulcerations on the tongue, in the mouth, on the lips, and on the vocal cords; in all this class of cases such a preparation is of great value, prolonging as it does the anæsthetic and sedative effects of cocaine when applied topically, or when such application becomes for one reason or another impracticable, proving itself of great service to the physician by reason of its local action. As coca differs essentially from cocaine, the action of the plant upon the general economy, and not its local action, should be borne in mind. Coca is a most active stimulant tonic, especially when used in vinous combination. No better preparation can be employed than the *vin Mariani*, which contains all the valuable properties of the plant, combined with a generous and absolutely pure wine. This has been found to give the best results. There are numerous conditions in which this preparation is indicated; in a general way, it is serviceable in all those various diseases which come under the clinical head of anæmia, weak heart, chlorosis, various forms of cachectic conditions, neurasthenia, general debility, and convalescence from fevers. As tuberculosis presents essentially anæmic features, it may readily be understood that in it the happiest results may be obtained by the use of this preparation of coca, as also in the other forms of phthisis. Although coca is not a specific in phthisis, and although the author does not assert that it is a destroyer of the bacillus of Koch, it nevertheless proves its efficacy in that disease, he says, and, as has quite recently been stated in Libermann's important work, "La phthisie pulmonaire et laryngée," the bacillus is not the sole factor to be considered in phthisis. Contained largely as it is in the atmosphere which we inhale, it happily remains inert in the great majority of cases. In other words, its victims are those in whose organism it finds a fertile field for growth and development. All our efforts should therefore be in the direction of rendering this field less susceptible to the inroads of the bacillus of tuberculosis until such time as we may be able to act more directly upon this dangerous germ. Among other means at our command to combat and to guard the organism against these inroads may be mentioned hydropathy, hygiene to the fullest extent, and climatology, which should always be taken into consideration by the physician and the patient. All these data are of absolute importance, and at the same time the physician should have at his command some agent which in all cases will, by its reliable action as a diffusible tonic and stimulant, fill the following indication during treatment, namely: The maintenance of perfect nutrition and the guarding against debility in its various forms. A tonic in every respect answering to these indications, and

one which, it has been found, may be given for an indefinite period without any unpleasant reaction in wasting diseases, a wine of coca. The preparation known as *coca Mariani*, which has been employed by the medical profession for the last thirty years, is the only one which has given the author uniformly good results without the unfavorable features which frequently follow in the wake of tonics and stimulants. And he attributes this to the fact that it represents all the volatile principles of the plant, thus differing essentially from preparations made from the dried, comparatively inert leaf (the volatile principles being absent) or, through ignorance of the proper requirements, containing a dangerous added percentage of the alkaloid cocaine. Thus, the author concludes, will be seen the necessity of recognizing the merits of this plant independently of its alkaloid, and the wide field it should occupy and that of the most patient and faithful sort.

Dr. R. W. Taylor opened the discussion of the two papers. The iconoclastic spirit of the first he thought justifiable, and, as it led at the same time to a building up with better material than it destroyed, commendable. For the purposes of discussion, its distinction between an irritable and an indolent form of ulcer was clear and convenient.

Mortality in Cities in the United States.—The following table represents the mortality in the cities named, as reported to Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, and published in the abstract of sanitary reports received by him during the week ending June 28th:

CITIES.	Week ending	Estimated population.	Total deaths from all causes.	DEATHS FROM—										
				Cholera.	Yellow fever.	Small-pox.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.	
New York, N. Y.	June 22.	1,570,428	760	..	..	..	..	..	6	8	32	5	8	
Philadelphia, Pa.	June 22.	1,040,245	400	..	..	..	..	..	17	10	6	6	1	
Brooklyn, N. Y.	June 22.	821,525	.....	..	..	..	..	..	3	7	17	..	6	
Baltimore, Md.	June 22.	500,343	228	..	..	..	..	..	5	2	2	1	....	
San Francisco, Cal.	June 14.	330,000	97	..	..	..	..	..	6	..	1	..	....	
Cincinnati, Ohio.	June 22.	325,000	115	..	..	..	..	..	4	..	4	6	1	
New Orleans, La.	June 15.	254,000	117	..	..	..	..	..	1	..	3	..	....	
Washington, D. C.	June 22.	225,000	122	..	..	..	..	..	2	2	2	1	1	
Milwaukee, Wis.	June 22.	210,000	54	..	..	..	..	..	3	1	..	..	....	
Minneapolis, Minn.	June 23.	200,000	38	..	..	..	..	..	..	2	2	..	....	
Pittsburgh, Pa.	June 22.	230,000	100	..	..	..	..	..	4	4	..	2	1	
Providence, R. I.	June 22.	127,000	50	..	..	..	..	..	..	1	..	..	2	
Denver, Col.	June 21.	160,000	43	..	..	..	..	..	..	..	2	..	....	
Richmond, Va.	June 22.	100,000	43	..	..	..	..	..	..	..	..	..	....	
Toledo, Ohio	June 21.	83,500	20	..	..	..	..	..	..	..	..	..	....	
Nashville, Tenn.	June 22.	65,153	21	..	..	..	..	..	1	..	..	..	....	
Fall River, Mass.	June 22.	65,000	26	..	..	..	..	..	..	..	..	..	....	
Charleston, S. C.	June 22.	60,145	38	..	..	..	..	..	..	..	..	..	....	
Lynn, Mass.	June 22.	50,000	11	..	..	..	..	..	..	..	..	..	....	
Manchester, N. H.	June 15.	42,000	19	..	..	..	..	..	..	..	..	..	....	
Portland, Me	June 22.	42,000	4	..	..	..	..	..	..	..	..	..	....	
Galveston, Texas.	June 7.	40,000	4	..	..	..	..	..	..	..	..	..	....	
Council Bluffs, Ia.	June 17.	35,000	10	..	..	..	..	..	..	..	..	..	....	
Davenport, Iowa.	June 22.	33,715	10	..	..	..	..	..	..	..	..	..	....	
San Diego, Cal.	June 15.	32,000	6	..	..	..	..	..	1	..	..	..	....	
Altoona, Pa.	June 22.	30,000	6	..	..	..	..	..	..	..	..	..	....	
Binghamton, N. Y.	June 23.	30,000	6	..	..	..	..	..	..	..	..	..	..	
Auburn, N. Y.	June 22.	26,000	8	..	..	..	..	..	..	..	..	..	....	
Haverhill, Mass.	June 22.	25,000	6	..	..	..	..	..	..	..	..	1	....	
Newport, R. I.	June 19.	22,000	6	..	..	..	..	..	..	..	..	..	....	
Newton, Mass.	June 22.	21,553	7	..	..	..	..	..	..	..	..	..	....	
Keokuk, Iowa.	June 22.	16,000	2	..	..	..	..	..	..	..	..	..	....	
Pensacola, Fla.	June 22.	15,000	3	..	..	..	..	..	..	..	..	..	....	

THERAPEUTICAL NOTES.

Bisulphide of Carbon.—On the authority of some observations made chiefly in the Purisima Hospital, Santiago, and published in the "Revista médica de Chile," a recent number of the "Lancet" shows that bisulphide of carbon may have more therapeutic power than is usually attributed to it. In England bisulphide of carbon has been employed for diarrhœa and externally for ulcers. Sapelier used it with apparent advantage in typhoid fever. It has also been recommended in diphtheria and other diseases in which micro-organisms occur. The Chilian cases referred to included one of acute and one of chronic dysentery, one of atonic dyspepsia, one of simple gastric ulcer, and one of typhoid fever. About two ounces of a saturated solution of the bisulphide in water, mixed with half a tumblerful of milk or a little syrup, to be taken half an hour or so before meals, was the dose generally given. In the typhoid case, enemata of a pint of water, containing about half a drachm of bisulphide of carbon, were administered to the patient, a child of ten years, whose condition was becoming serious. Iodide of potassium and kairin were also given internally. The diarrhœa lessened, the stools rapidly lost their offensive character, the gurgling disappeared from the iliac region, and the patient made a good recovery.

Uralium as a Hypnotic.—According to one of the March numbers of the "St. Petersburger medicinische Wochenschrift," which quotes from the "Gazzetta degli Ospitali," Poppe employs uralium, a combination of urethane and chloral hydrate, in cases of heart disease, insanity, hysteria, and other nervous affections. He finds that it induces a natural, peaceful sleep, and has a safer and more lasting effect than the hypnotics known heretofore.

ANSWERS TO CORRESPONDENTS.

No. 271.—The solution is made with 8 drachms each of sodium, bicarbonate and borax, 20 grains each of sodium benzoate and sodium salicylate, 10 grains each of eucalyptol and thymol, 5 grains of menthol, 6 drops of oil of gaultheria, 8½ ounces of glycerin, 2 ounces of alcohol, and enough water to make 16 pints.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

HUMAN CALORIMETRY.

SECOND CONTRIBUTION.

By ISAAC OTT, M. D.,
EASTON, PA.

THE power to do work is called energy, and the animal body sets energy free in only two ways—mechanical work and heat. The human machine is an apparatus for converting potential into actual energy, the potential energy being supplied by food, which is changed into the actual energy of heat and work by the metabolism of the organism. To heat has been ascribed five sixths and to mechanical work one sixth of the energy set free. In a paper * recently published there was described an apparatus to determine in a direct manner the amount of heat produced by man. Since that time two improvements have been made in the apparatus; instead of a wooden door an iron one has been used and bound down by eight powerful screw-clamps. The interior edge of the door was lined with rubber as before. In the other apparatus a straight tube permitted the air to enter in a direct way; now it traverses a coiled leaden tube before it reaches the person experimented with. The coiled tube is inside the calorimeter; perhaps it would be better if it was coiled in the water between the cylinders. This arrangement is intended to prevent heat dissipation. With these arrangements and a mattress inside the instrument I have retested the apparatus. As the apparatus necessary for the hydrogen test was not available, I used absolute alcohol. The different physicists who have burned a gramme of alcohol have obtained the following various numbers: Thus Rumford obtained 6,195; Du Long, 6,962; Andrews, 6,850; and Favre and Silbermann, 7,183·6. These numbers mean so many gramme-calories, and the number 7,183 is supposed to be the most accurate. In their experiments, in order to allow for the loss of heat due to radiation, a preliminary experiment was made with the body whose heat was sought, the only object of which was to ascertain approximately the increase of temperature of the cooling water. If this increase be 10°, for example, the temperature of the water calorimeter was reduced one half this number—that is to say, 5° below the temperature of the atmosphere. By this method the water of the calorimeter receives as much heat from the atmosphere during the first part of the experiment as it loses by radiation during the second part. This procedure is called Rumford's compensation. In the human calorimeter the air-tube must be of considerable size for the air to enter, and necessarily permits of considerable loss of heat by the air constantly traversing the instrument. I have tested my calorimeter before and after the performance of the experiments. I give here a test with alcohol:

Time.	A. T.	C. T.	E. T.	Metres.
1.24.....	83°	74·20°	75·5°	758,274
2.24.....	82·3°	74·61°	75·8°	762,650
	82·6°	·41°	75·6°	3,376

577·42 = number of heat units required to raise the calorimeter 1° F.

577·42 + ·41 rise in calorimeter temperature = 236·74 heat units.

Alcohol burned = 9·235 grains × 7,183 number of gramme-calories by burning a gramme of alcohol = 66·33 kilo-calories. As one kilo-calorie is equal to 3·96 heat units, then 66·33 × 3·96 = 262·66.

V = 3,376 litres of air pumped through the calorimeter.

t = 75·6° − 32° = 43·6°, number of degrees the air is heated above 32°.

V + (v × 43·6 × ·002035, co-efficient of expansion) = 3,376.

V + ·0887260 V = 3,376.

1·0887260 V = 3,376.

V = 3,376 ÷ 1·088 = 310·29.

W = V × ·00285, weight of litre of air at 32° F.

W = 310·29 × ·00285 = 8·84 lbs.

Q = W × t × specific heat.

Q = 8·843 × 7° × ·2374 specific heat of air = 14·69, number of heat units given to the calorimeter by the air.

Then 236·74 − 14·69 = 222·05, number of heat units obtained in burning the alcohol.

But the alcohol burned produced 262·66 heat units, and of these 222·05 have been recovered; then 262·66 − 222·05 = 40·61 = loss of heat units or error of the calorimeter. Then the percentage of error is 40·61 ÷ 262 = 15·5. In other words, all results by the calorimeter must have 15·5 per cent. added to them, that they may be accurate. In this paper I have made the percentage of error 16 per cent., as the mean of several experiments showed this to be the average error of the instrument. The constancy of the error made the apparatus one of precision for scientific work.

In my experiments upon man the calculation was made in the same manner. The specific heat of the body was taken to be 0·83.

In estimating the moisture I used Voit's little respiration apparatus, taking the moisture of the air of the room and deducting it from the moisture of the air coming from the calorimeter. Now, according to Helmholtz, 1,000 grammes of water require 582 calories in evaporation from the lungs and skin; then one gramme of water from the lungs requires $\frac{2\,9\,1}{5\,0\,0}$ calories = 2·304 heat units to vaporize it.

The glass bulbs were filled partly with sulphuric acid, and weighed on a delicate balance before and after the absorption of moisture from the air.

The experiments were performed upon a man aged thirty-five years, weighing one hundred and ninety-two pounds, five feet ten inches high, muscular, and in fair health. When he entered the instrument he removed his coat and vest. The observations began about 1 P. M., and terminated at 6 P. M. He dined at 12 M. The food from breakfast and part of the dinner must have been measured in the estimate of heat production, and would give the highest estimate of the twenty-four hours. In my first paper, although the number of heat units obtained was not accurate from want of reliable tests, yet I arrived at the conclusion that the estimates in an indirect manner from the egesta and ingesta were too high. The hourly average was found to be 410 heat units. Now, Leon Fredericque, from the computation of several authors, makes 1·5 calories or 5·94 heat units an hour to the kilogramme of weight as the average heat production. This for the man I employed would be 512 heat units. The heat from the aqueous vapor in condensation was estimated, but the major part was condensed on the interior of the instrument as the

* "New York Medical Journal," March 30, 1889.

hand perceived, or in the twenty five feet of lead pipe traversed by the air. This point came up in the Clausius-Hirn controversy. As is readily seen, the computations for man in the indirect manner are too high, as I believed in my first contribution. Rosenthal recently has found in animals on full diet that the absolute amount of heat was less than that calculated out from oxidation of food, but with a uniformly constant diet the mean value of heat production corresponded to the heat calculated from the combustion of the food. I also made some experiments upon the amount of heat thrown off by the lungs. A piece was removed from the iron door and the man's head enveloped in blankets inserted within the calorimeter. The person sat upon a chair during the observation. In this manner was obtained an hourly average of 57·98 units, thus being of the whole number of heat units to the hour 14 per cent.

Scharling used an imperfect air calorimeter, and in a similar manner found the amount from the lungs to be 14 to 20 per cent. of the whole amount. Helmholtz makes the amount 14·7 per cent. as coming from the lungs.

The rapid rise of temperature in pneumonia is probably due to an interference with the heat dissipation of the lungs by the inflammatory state. The thermo-polypnœic center may be active as usual, but it can not overcome by maximal stimuli the obstruction to heat dissipation.

By placing a pulley outside the calorimeter and attaching to a leather rope a fourteen-pound weight, the man was able by means of the leather rope to exercise within the instrument. The leather band entered one of the air-holes in the instrument. He was only permitted by a knot in the rope to raise this weight a foot high. By moderately lifting 4,222 foot-pounds, an average increase of 94·21 heat units an hour was obtained.

By lifting an average of 7,623 foot-pounds an hour the amount of heat units was doubled over the normal by about one hundred heat units. Hirn, using an air calorimeter of great inaccuracy, found a man aged forty-two at rest to produce 189 calories, while during movement it amounted to 325 to 356 calories. Pettenkofer and Voit found on hunger-day without work the carbonic acid was on an average 716 grammes; on hunger-day with work (turning a loaded wheel), 1,187 grammes; on food-day without work, an average of 928 grammes; with work on food-day, 1,285 grammes; or in nine hours on food-day without work 400 grammes, and on food-day with work 724 grammes. The researches of Rosenthal show that the hourly dissipation, as estimated by the calorimeter, when compared with the hourly excretion of CO_2, shows a very variable relation of the "carbonic-acid factor."

A. T. means air temperature. C. T., calorimeter temperature.
E. T., exit-tube temperature. M. T., mouth temperature.

First Day.

Weight, 192·56 pounds.

Time.	A. T.	C. T.	E. T.	M. T.	Litres.
1.54 P. M.	80·0°	76·69°	77·9°	98·7°	804,335
2.54	82·0	77·36	78·8	98·2	810,402
	81·0	·67	78·3	— ·5	6,067
	78·3				
	2·7				

H. D. = 371·08; H. P. = 291·17.

Weight, 192·24 pounds.

Time	A. T.	C. T.	E. T.	M. T.	Litres.
3.26	82·5	77·23	78·8	98·8	812,550
4.26	82·8	77·99	79·2	98·7	817,676
	82·6	·76	79·0	— ·1	5,126
	79·0				
	3·6				

H. D. = 427·31; H. P. = 411·36.

Weight, 191·90 pounds.

Time.	A. T.	C. T.	E. T.	M. T.	Litres.
4.47	83·8°	77·80	79·3°	98·7°	819,375
5.47	84·4	78·58	80·0	98·3	824,429
	84·1	·78	79·6	·4	5,054
	79·6				
	4·5				

H. D. = 438·13; H. P. = 374·42.

Average, 358·88; add 16 per cent. = 416·30.

Second Day.

Weight, 191 pounds.

Time.	A. T.	C. T.	E. T.	M. T.	Litres.
1.40 P. M.	82·0°	74·60	75·5°	98·3°	826,900
2.40	83·1	75·28	76·1	98·3	832,112
	82·5	·68	75·8		5,212
	75·8				
	6·7				

H. D. = 359·07; H. P. = 359·07.

Weight, 190·68 pounds.

Time.	A. T.	C. T.	E. T.	M. T.	Litres.
3.06	83·0°	75·21°	77·5°	98·2°	832,112
4.06	82·8	75·90	77·5	98·3	837,112
	82·9	·69	77·5	·1	5,000
	77·5				
	5·4				

H. D. = 370·19; H. P. = 386·02.

Weight, 190·40 pounds.

Time.	A. T.	C. T.	E. T.	M. T.	Litres.
4 36	82·4°	75·78°	77·5°	98·2°	837,112
5.36	81·0	76·30	77·6	97·9	842,360
	81·7	·52	77·5	— ·3	5,248

H. D. = 285; H. P. = 237·98.

Average, 327·69; add 16 per cent. = 380·12.

Third Day.

Weight, 191·82 pounds.

Time.	A. T.	C. T.	E. T.	M. T.	Litres.
1.10 P. M.	80·5°	70·83°	72·7°	98·2°	847,825
2.10	80·0	71·40	73·0	98·1	853,415
	80·2	·57	72·8	— ·1	5,590

H. D. = 301·02; H. P. = 286·11.

Weight, 191·18 pounds.

Time.	A. T.	C. T.	E. T.	M. T.	Litres.
2.52	81·5°	71·37°	73·2°	98·2°	853,415
3.52	79·8	71·97	73·4	98·4	858,821
	80·6	·60	73·3	·2	5,406

H. D. = 319·65; H. P. = 351·38.

Time.	A. T.	C. T.	E. T.	M. T.	Litres.
4.22	77·6°	71·83°	73·5°	98·4°	858,821
5.22	81·0	72·54	74·0	98·4	864,537
	79·3	·71	73·7		5,716

H. D. = 388·22; H. P. = 388·22.

Average, 341·90; add 16 per cent. = 396·60.

Now, the average of the three days' observations is 397·66.

The average amount of moisture coming over from the calorimeter and absorbed by the sulphuric-acid bulbs was 5·49 grammes, and as it requires 2·30 heat units to vaporize a gramme of water, then a gramme of watery vapor in condensing will give off 2·30 heat units, and 5·49 grammes will give off 12·62 heat-units; then 397·66 + 12·62 = 410·28 heat units as the daily afternoon average of a man weighing 192 pounds.

Head only in the Calorimeter.

Weight, 191·34 pounds.

Time.	A. T.	C. T.	E. T.	M. T.	Litres.
1.07 P. M.	79·2°	71·53°	72·9°	98·3°	
2·07	80·8	71·60	72·9	98·3	5,700
	80·0	·07	72 9		

H. D. = 13·04; H. P. = 13·04.

Weight, 191·12 pounds.

Time.	A. T.	C. T.	E. T.	M. T.	Litres.
2.47	82·2°	71·65°	73·1°	99·3°	
3.47	82·5	71·78	73·2	99·3	5,180
	82·3	·13	73·1		

H. D. = 42·85; H. P. = 42·85.

Weight, 190·84 pounds.

Time.	A. T.	C. T.	E. T.	M. T.	Litres.
4.18	80·6°	71·80°	73·2°	98·2°	
5.18	78·2	71·88	73·0	98·2	5,108

H. D. = 24·09; H. P. = 24·09.

Average of the day, 26·98.

Head alone in Calorimeter.

Weight, 192·58 pounds.

Time.	A. T.	C. T.	E. T.	M. T.	Litres.
1.11 P. M.	80·4°	71·30°	73·0°	98·2°	
2.11	79·9	71·41	73·0	98·6	5,325
		·11		·4	

H. D. = 37·95; H. P. = 5·97.

Time.	A. T.	C. T.	E. T.	M. T.	Litres.
3.0	79·8°	71·48°	72·6°	97·8°	
4.0	79·8	71·57	73·2	97·8	5,165

H. D. = 29·61; H. P. = 29·61.

Time.	A. T.	C. T.	E. T.	M. T.	Litres.
4.31	80·2°	73·62°	73·2°	97·6°	
5.31	80·6	73·74	73·2	97·6	5,270

H. D. = 44·49; H. P. = 44·49.

Daily average, 26·69.

Average H. P. of the two days, 26·83 + 16 per cent. = 31·13.

Now, on an average, 12·5 grammes of moisture come over from the lungs. This would make 28·75 heat units from the condensation of vapor. Then 31·13 + 28·75 = 57·98 heat units as the average amount thrown off by the lungs, or about 14 per cent. of the whole amount of heat thrown off by the body. The reason that the moisture coming over from the lungs alone exceeds that normally coming over from the whole body is that the man is breathing immediately under the lead coil through which the air is aspirated; normally he lies with his head at the other end of the calorimeter.

Lifts a Fourteen-pound Weight One Foot High.

Weight, 191·50 pounds.

Lifts weight 201 times = 2,814 pounds.

Time.	A. T.	C. T.	E. T.	M. T.	Litres.
1.2 P. M.	77·5°	72·10°	73·6°	98·4°	
2.2	76·8	72·80	74·5	98·7	3,965
		·70		+ ·3	

H. D. = 396·18; H. P. = 453·90.

Weight, 191·32 pounds.

Lifts weight 340 times = 4,760 foot-pounds.

Time.	A. T.	C. T.	E. T.	M. T.	Litres.
2.49	79·8°	72·95°	74·7°	98·8	
3.49	78·2	73·63	75·3	98·85	4,780

H. D. = 379·71; H. P. = 387·64.

Weight, 190·58 pounds.

Lifts weight 465 times = 6,510 foot-pounds.

Time.	A. T.	C. T.	E. T.	M. T.	Litres.
4.30	78·0°	73·74	75·5	98·7	
5.30	78·2	74·40	76·0	98·7	4,615

H. D. = 381·09; H. P. = 373·60.

Average H. P. = 405·04, add 16 per cent. = 469·84.

Lifts weight 315 times = 4,410 foot-pounds.

Weight, 191·16 pounds.

Time.	A. T.	C. T.	E. T.	M. T.	Litres.
1.20	82·5°	70·51°	71·8°	98·5°	
2.20	78·7	71·29	72·8	98·45	4,890
		·78			

H. D. = 450·38; H. P. = 414·78.

Lifts weight 312 times = 4,368 foot-pounds.

Weight, 190·84 pounds.

Time.	A. T.	C. T.	E. T.	M. T.	Litres.
3.7	78·9°	71·34°	73·0°	98·05°	
4.7	78·9	71·91	73·4	98·05	4,897
		·57			

H. D. = 329·12; H. P. = 310·29.

Lifts weight 320 times = 4,480 foot-pounds.

Weight, 190·4 pounds.

Time.	A. T.	C. T.	E. T.	M. T.	Litres.
4.31	78·9°	71·92°	73·8°	98·4°	
5.31	82·2	72·60	74·2	98·6	4,849
		·68			

H. D. = 380·32; H. P. = 411·92.

Average per hour, 378·99, add 16 per cent. = 441·62.

Add average amount of moisture in sulphuric-acid bulbs per hour, 21·2 grammes, or 48·76 heat units. Then 455·73 + 48·76 = 504·49 heat-units per hour by moderate work in lifting a weight, an average increase of 94·21 heat units per hour for 4,222 foot-pounds of work.

Lifts 14 pounds 353 times = 4,942 foot-pounds.

Weight, 190·22 pounds.

Time.	A. T.	C. T.	E. T.	M. T.	Litres.
1.12	84·0°	72·34°	74·1°	98·35°	
2.12	83·1	73·28	75·0	98·7	4,868
				·45	

H. D. = 658·35; H. P. = 716·13.

Lifts 14 pounds 736 times = 10,304 foot-pounds.

Weight, 189·84 pounds.

Time.	A. T.	C. T.	E. T.	M. T.	Litres.
2.51	82·9°	73·23°	75·0°	98·6°	
3.51	81·5	74·31	75·8	98·9	4,911

H. D. = 761·36; H. P. = 808·58.

Average per hour 762·30, add 16 per cent. = 884·26.

Add 21·2 grammes of moisture or 48·76 heat units, and I have 933·02 heat units produced by hard labor in lifting weights; an average of 7,623 foot-pounds producing an increase of 522·74 heat units above his average, over double the normal by about a hundred heat units per hour. Taking the last experiment, elevating about five tons per hour a foot high doubles the heat production per hour.

The following are the chief conclusions of this paper:

1. A man weighing one hundred and ninety-two pounds during the afternoon produces 410 heat units in an hour on

an average, and not 512, as calculated by oxidation changes and the amount of egesta.

2. Of the whole amount of heat dissipated, about 14 per cent. is thrown off by the lungs.

3. The elevation of about five tons an hour a foot high doubles the hourly heat production.

THE DIAGNOSIS AND TREATMENT OF CERTAIN FORMS OF RHINITIS.*

By CHARLES H. KNIGHT, M.D.

Since we have learned to recognize the intimate relations between the nose and other organs, the importance of nasal pathology is in danger of being overestimated. Instances of nasal reflex have multiplied to an alarming extent. Asthma, chorea, epilepsy, ocular and aural disturbances, headache, and laryngeal affections are familiar examples. It seems that the list of ills for which the nose is to be held responsible is not limited to neuroses. An attempt has been made to show that intestinal hernia may be caused by intra-abdominal pressure resulting from constant hawking, coughing, and sneezing, provoked by chronic obstruction or disease of the nares.† A condition, perhaps not very uncommon, termed by Guye,‡ of Amsterdam, "aprosexia," is said to depend upon nasal disease. It consists, as the name implies, of inability to fix the attention, is accompanied by marked physical and mental depression, and is supposed to result from obstruction of the lymphatics which pass from the brain to the nasal fossæ. Hack, whose observations in the department of nasal neuroses have been especially numerous, goes so far as to propose treating certain joint affections through the nasal mucous membrane, and it has even been affirmed that such a disease as primary laryngitis does not exist, nasal stenosis or a nasal lesion invariably being found to act as a predisposing cause of simple inflammation of the larynx. Yet, making due allowance for the play of imagination on the part of the observer and of the patient, it must be admitted that nasal lesions aggravate and even excite phenomena in other regions remote from as well as in proximity to the nose. There seems to be no fixed proportion, as regards importance, between the nasal trouble and the associated disorder. Serious nervous phenomena sometimes appear to depend upon comparatively trifling structural change within the nasal fossæ. On the other hand, extensive intranasal disease may fail to produce reflex or other disturbance, and it is not unusual to discover extreme abnormal conditions within the nose the existence of which had not been suspected. In the presence of a decided pathological condition or deformity, such as a collection of polypi or a well-defined ridge or deviation of the septum, it may be quite safe to assume that an asthma, a frontal headache, impaired hearing, or a more serious neurosis, may depend upon the local lesion and will disappear on its removal. Independently of these grosser lesions, it seems to be an established fact that certain changes limited to the mucous membrane may excite neurotic phenomena. A satisfactory explanation of the relation of cause and effect here displayed can be reached only through a study of the physiology and pathology of the sympathetic nervous system.

Without entering upon a discussion of this question, it has seemed to me that we might profitably give a few moments to a consideration of the changes referred to, which may be included under the terms hyperæmia, hypertrophy, and hyperplasia. Although one or more of these pathological conditions is conspicuous in every case of rhinitis, yet no little confusion exists regarding the meaning and application of these terms, and clinically the conditions are separated by no fixed line, but merge into each other by imperceptible gradations.

Hyperæmia is defined as "preternatural accumulation of blood in the capillary vessels, more especially local plethora"—in other words, "congestion."

Hypertrophy is "the state of a part in which the nutrition is performed with greater activity, and which, on that account, at length acquires unusual bulk." Finally, hyperplasia is "excess of formative action." Dunglison, from whom these definitions are taken, says that "hyperplasia relates to the formation of *new* elements, hypertrophy being an increase in bulk of pre-existing normal elements." For this reason the former has been called "numerical hypertrophy," the enlargement of the part being due to increase of the number of elements entering into its composition. The word hyperæmia is used to include both capillary congestion and distension of the venous sinuses of the turbinated bodies, the so-called "erectile tissue." The latter process is to a certain degree physiological. In simple hypertrophy there is merely increase of bulk as a result of increased functional activity, but the word is also employed to designate enlargement from prolonged irritation. In the latter sense it may properly include both hyperplasia and hyperæmia, as just defined. But in true hypertrophy, function is more active, while in hyperplasia it is impaired. This distinction is of special interest in connection with a rather sweeping assertion recently made by a distinguished authority to the effect that in all cases of chronic nasal catarrh secretion is actually diminished. The most striking example of genuine hypertrophy is seen in the turbinated enlargement projecting toward the concave side of a deviated septum. At first glance the deflection would seem to be a result of the hypertrophy, whereas the reverse is generally if not always true. As guardian of the inferior meatus, the inferior turbinated body must increase its dimensions as the bending septum expands the nasal cavity. So with increased function we have increased bulk. Strictly speaking, "hypertrophy" should be reserved to describe conditions of this kind, but its application to all forms of thickening of the nasal mucous membrane is to some extent authorized by long usage, and it may now be difficult if not impossible to restrict it within proper limits. Perhaps one excuse for retaining the word hypertrophy as a synonym for hyperplasia is that the former is more euphoni-

* Read before the Section in Laryngology of the New York Academy of Medicine, May 28, 1889.

† W. Freudenthal, "Monatsschr. für Ohrenheilk.," etc., No. xi, 1887.

‡ "Deutsche med. Wochenschr.," No. 43, 1887.

ous. It should be understood, however, that it is not ordinarily applied to simple vascular engorgement of the turbinated body, although it may be in reality more appropriate to that condition. Clinically, therefore, we mean by "hypertrophy" a condition of permanent thickening of the mucous membrane due to the existence of more or less hyperplasia.

From a therapeutic standpoint it is important that we should distinguish between hyperplasia, or hypertrophy, and hyperæmia with turgescence of the turbinated "erectile tissue." Persistence of the last-mentioned condition leads to the former, and here preventive medicine is offered a most inviting field. How may we arrest the tendency of chronic hyperæmia of the nasal mucous membrane to pass on to a condition causing perpetual discomfort to its victim, and requiring for its cure rare patience and endurance on the part of all concerned? To begin with, it is essential that we should be familiar with the objective appearances of these conditions. The subjective symptoms may not much differ, except as regards duration and intensity, but, by combining the information gained by the eye, by touch with the probe, and by the use of cocaine, we may usually discriminate. It may be difficult to assign certain cases which occupy the border line to their proper class, but we may at least determine which type predominates. Hyperæmia finds its typical representation in the condition popularly known as a "cold in the head"—acute catarrhal rhinitis. But, as a matter of fact, persons thus affected seldom consult a physician, so that clinically we most often meet with it in those already suffering from chronic rhinitis. Consequently, the same subject often offers us a field for the study of various pathological conditions, the same nasal cavity exhibiting at one point simple hyperæmia, at another the changes of chronic inflammation. Possibly, too, in neglected cases, or in those affected with a constitutional disease, still another region may have reached that unfortunate condition of atrophy, with its unmistakable symptoms. Admitting, therefore, the possible concurrence of these different conditions in the same individual, we shall more fully realize the importance of identifying them and adapting to each, as far as possible, its appropriate treatment.

It is unnecessary to review all the symptoms of the various forms of rhinitis. I merely wish to remind you of certain distinctive features met with in a rhinoscopic examination. The special points to be noted are the color of the surface, the character of the nasal secretion, the extent and shape of the swelling, its density or resistance, its sensitiveness, and its vascularity. Inspection shows the color of the parts in hyperæmia to be intensely red, and the secretion, after the first stage, is copious and fluid. The tumefaction is uniformly globular, easily compressed, usually quite sensitive, and it bleeds readily on rough contact with the probe. In hyperplasia the color of the surface is less intense, it is often livid or purplish, and in advanced cases it is quite apt to be paler than normal. The swelling may have an irregular contour, owing to variation in the amount of new tissue at different points, and is usually neither very sensitive nor very vascular. Occasionally the membrane becomes distinctly lobulated or papillated. This is most commonly seen at the posterior extremity of the inferior turbinated body, where the shape and color of the tumor have caused it to be compared to a mulberry. Its appearance in the rhinoscopic mirror is pathognomonic. This variety may be exceptionally vascular, and we sometimes observe quite protracted bleeding after the use of the snare in such cases. The nasal secretion is apparently increased, because of the fact that it has become less fluid and more tenacious, and hence is apt to be retained within the nasal cavities. Undoubtedly, with increase of hyperplastic tissue and consequent interference with the function of the glands of the mucous membrane, the secretion is not only perverted in quality, but notably diminished in quantity. Here the cause is largely mechanical. Decrease of secretion may also be observed in certain forms of rhinitis, without marked hyperplasia. In the latter case the interruption of function is perhaps of neurotic origin. The contrast in the behavior of hyperæmia and hyperplasia on pressure with a probe and under cocaine is very striking. The hyperæmic swelling yields readily to pressure, and quickly recovers its shape as the blood-vessels refill. The hyperplastic swelling is much more solid and resistant, lacks the smooth, tense appearance of the former, and is capable of relatively slight compression. The tissues do not give way to the probe, and on the removal of pressure the furrow made by the instrument is slowly effaced. A similar phenomenon is observed with cocaine. The hyperæmic swelling rapidly shrinks to the subjacent bone. In hyperplasia the mucous membrane can not contract more than may be permitted by the new connective tissue. In this way cocaine has become a most valuable addition to our diagnostic resources. It is also of great service in connection with treatment, by mapping out the regions more particularly affected by structural changes. By attention to the foregoing points we may escape at least two errors—first, that of operating with a snare on a simple vascular swelling of the turbinated body, and, second, that of attempting to cure a case of confirmed hyperplastic rhinitis by means of sprays and local medications.

In considering the treatment of these conditions it is impossible to exaggerate the influence of constitution and diathesis. Consequently, general therapeutics, diet, and hygiene must not be neglected. Occupation, habits, and climate are in many cases important factors, and should receive due attention.

Local treatment with sprays, douches, vapors, medicated bougies, ointments, and powders may be used according to the taste or credulity of the practitioner. It may be accepted as a first principle in nasal therapeutics that simple catarrhal rhinitis should receive only the most unirritating applications. In general, everything more than momentarily painful should be avoided. Sedative steam inhalations and preparations of medicated vaseline or oil are usually most grateful and least harmful. Fluid albolene, a petroleum product recently introduced, is an elegant vehicle for many of the more useful medicaments, which may be applied in the form of spray or vapor. Astringents, though largely used, are of doubtful value. Cocaine gives temporary relief by removing stenosis, but there is reason to suspect that its frequent

and habitual use may do serious damage. Antipyrine has recently been recommended by Hinkel,* and it seems to possess antiseptic, sedative, and hæmostatic properties. Its anæsthetic effect is said to resemble that of cocaine, being less marked but more protracted.

The use of sprays has been discarded by some whose opinion is worthy of regard. My own belief is that much of the discredit which has befallen the spray arises from the fact that too much is expected of it. We hear to-day of cases of chronic catarrhal rhinitis cured in a few weeks by sprays of medicated vaseline. There must be something peculiarly antagonistic in the climate of New York, since I am not acquainted with any one here who works these miracles. Again, there is no doubt that damage may be done by excessive air pressure and improper medication, and thus the disrepute of the spray be still further extended. But under proper precautions the spray is a valuable, if not an essential, adjuvant in the treatment and cure of catarrhal conditions. I use the word *cure* with hesitation, since we must all recognize the difficulty of entirely eliminating climatic and seasonal elements, and some of our spring cures are likely to return to us for treatment with the first bleak winds of autumn. In those obstinate cases of chronic turgescence on the border line of hyperplasia linear cauterization, superficial or submucous, may be required. My experience with the latter and with interstitial injections of carbolic acid, ergotine, etc., has been very limited. Reports from certain observers are favorable, yet the precise advantage of these methods is not quite clear.

When, in spite of treatment, or perhaps in consequence of treatment, or as a result of repeated attacks of inflammation, hyperplasia has supervened, these measures are seldom sufficient. The mass of newly formed tissue, which interferes with the functions of the nose, must be removed by surgical methods or destructive agents. The knife, the saw, scissors, drills, the snare, the galvano-cautery, and various chemical caustics may be selected from, according to the indications in each case. At the same time strict cleanliness and asepsis should be maintained by means of frequent irrigations with Dobell's solution or a similar detergent, or weak solutions of bichloride of mercury. It is an excellent rule in these cases to make haste slowly; not attempt to do too much at one sitting. It is much easier to repeat the operation than to restore tissue which has been destroyed. The danger of establishing a condition of atrophy should always be remembered. What we desire to accomplish is not merely the removal of obstruction, but also the restoration, if possible, of normal secreting function. While the morbid process is still confined to the mucous membrane, caustics, of which chromic acid is just now the favorite, and the galvano-cautery will be found most useful. The removal of more extensive hyperplasia may be most readily effected by means of the cold wire snare. In my experience, as a general rule, hypertrophies which can not be engaged in the loop of the snare without the aid of transfixion needles may be more easily reduced by the galvano-cautery. I prefer to use a very slender electrode at a white heat. Thus the field is not obscured by a clumsy instrument and the tissue is rapidly destroyed. If the space between the walls of the nasal fossa is very narrow the septum should be protected by an ivory shield, or we may use one of the specially devised nasal specula. The heated cautery point buries itself in the tissues, and its detachment is often followed by bleeding, generally insignificant.

In this respect it is superior to the cold wire snare. With the latter, hæmorrhage, very slight at first, is apt to be considerable in the course of a few hours. This seems to me to have been especially noticeable since the introduction of cocaine. Moreover, cocaine sometimes shrinks the tissues to such a degree as to greatly increase the difficulty of applying the snare. It may be suggested that cocaine might be used *after* the adjustment of the loop, but in that case, the first steps of the operation often being the most painful, one might as well dispense with the anæsthetic altogether. When the bone has become involved the cold wire snare will frequently answer every purpose, but in some cases the saw, the nasal trephine, and the various forms of surgical drill will do the work more quickly and with but little if any more pain.

In this brief review it has been impossible to mention all the therapeutic resources at our command. My object has been merely to suggest the general principles and a few of the details which guide me in my own practice.

In conclusion, I would speak a word of caution regarding the indiscriminate boring, sawing, and cutting of the nasal passages now in vogue. It is not my purpose to decry intranasal surgery. On the contrary, it is my firm conviction that the most brilliant results may be expected from a judicious resort to surgical expedients in suitable cases, but it has been my misfortune to see irreparable damage done and the most serious risks assumed in the reckless use of certain engines of destruction recently placed at our disposal. What, then, are the indications for surgical intervention in intranasal disease? The answer comes naturally enough when we recall to mind the functions of the nose. Its primary and most important function is respiratory; therefore any obstacle in the nasal passage which compels breathing through the mouth must be removed. Secondarily, it is the organ of olfaction, and the sense of smell is not infrequently impaired by conditions which demand surgical treatment. Furthermore, in a limited number of cases, remote disturbances, reflex neuroses, may result from conditions which may not abolish or apparently disturb these special functions. Here also surgery may be our only resource. Finally, a neoplasm, a deformity, or a hypertrophy may encroach upon the nasal passage, but perhaps not enough to seriously or consciously incommode the patient. The secretions are retained and act as irritants to the mucous membrane. In such case nasal drainage must be restored by surgical measures. In many cases these indications are unmistakably clear. In others we may be able to decide upon the best mode of treatment only after the most careful study. The present tendency in nasal therapeutics is certainly in the direction of "pernicious activity," and it seems to me that the final condition of a large proportion

* "New York Medical Journal," Oct. 20, 1888.

of cases subjected to modern methods is, if anything, worse after they have escaped our hands. It is surprising with what comfort some people wear their crooked noses until the inquisitive rhinologist makes his ingenious pathological discovery. Every septum that is bent or thickened does not need to be planed down or straightened. Every turbinated body that is enlarged does not need to be snared or cauterized. If the temptation to meddle with them is too strong to be resisted, milder measures may perhaps avail with more comfort to our patients and greater credit to ourselves.

No. 20 West Thirty-first Street.

PARING AND SUTURE CLAMP FORCEPS.

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When operating for vesico-vaginal fistula I have often been annoyed and delayed by the difficulty of keeping the tissue tense while paring and suturing. To overcome this difficulty I have devised, and caused to be made by George Tiemann & Co., New York, the following instrument, which seems to meet all indications for operation for simple vesico-vaginal fistula and other operations upon the female genitals, and renders the operations comparatively simple and easy, reducing the time of their performance more than two thirds. The instrument consists of two blades, each nine inches and a half long, which are crossed and locked similarly to the Hodge forceps. One inch of the extremity of each blade is made round, into which are inserted two hooks, three eighths of an inch apart. The hooks are sharp and small at the free end, and thick where they enter the blade, so made to avoid tearing out easily. The shanks, four inches long, bear the screw lock of the Hodge forceps. The handles are five inches and a half long, slightly curved downward, in order to be out of the way of the operator, with a ratchet to hold the blades together, the rotation of the tissue hooked up having a constant tendency to extend the blades. The right-hand blade is marked with an R on the handle, and the left hand blade with an L. In the end of each blade is a female screw. Each blade is provided with two extra blocks, one an inch long, made round, into which are inserted three hooks equidistant, and has a male screw on one end and a female screw on the other end. The other block is an inch and three fourths long, is also round, has inserted five hooks equidistant, and has a male screw on one end. The hooks of the extra blocks are exactly like those on the main blade. The blocks are marked with the letters R and L to indicate to which blade they belong. These extra blocks are to be screwed on to the main blades whenever the operator desires to increase the capacity of the instrument, making the instrument to have, at the option of the operator, either two, five, seven, or ten hooks on each blade, respectively, thus giving it a capacity of meeting many and varied indications. When performing any of the operations hereinafter mentioned the operator should notice the amount of tissue necessary to be pared, and should arrange the instrument to meet the needs of each individual case by screwing on to the main blades the blocks that will furnish hooks sufficient for him to hold, pare, and suture the extent of tissue necessary to overcome the existing difficulty. The whole instrument is made as light as is consistent with strength and durability. Fig. 1 represents the instrument with two permanent hooks on the main blades, and the extra blocks, of three and five hooks, respectively, which can be screwed on to the main blades as desired. Fig. 2 represents the application of the instrument. A shows the manner of hooking the blades into the tissue. B shows the manner of rotating the blades after being hooked into the tissue.

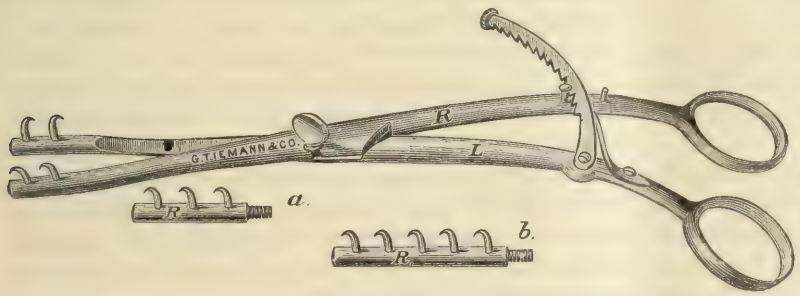


Fig. 1.

The operation for simple vesico-vaginal fistula is thus performed: The patient is placed in the position recommended by Dr. J. Marion Sims for such an operation. Chloroform is administered, Dr. Sims's duck-bill speculum introduced, and an assistant holds up the right buttock. The instrument being unlocked, the left-hand blade is passed into the vagina and hooked into the mucous tissue on the right side * of the fistula, not too near the edge, and rotated from left to right, thus bringing the lock up with the points of the hooks looking toward the right side; and, as the screw of the lock is upon the top of the blade, the handle is held down and the right-hand blade is then passed in over the other, and the hooks are hooked into the left side of the fistula; it is then rotated from right to left, and brought above and across the left-hand blade. The blades are now locked and the handles brought together and fixed by the ratchet. The fistula is thus firmly held, with its edges everted. The next step is to pare the edges, which is best done with Dr. Emmet's straight and curved scissors. This accomplished, pass the needles, armed with silver wire, one in front of the first hook, then one between each two adjacent hooks, and, lastly, one on the outside of the last hook. Twist up the sutures and cut them off, unlock the blades, rotate them in the opposite direction from that in which they were passed in and hooked, thus relieving the hooks, withdraw the blades, and the operation is complete. Fig. 3

* Right and left as mentioned in this article have reference to the operator's right and left—viz., the right side of the fistula, the right side of the median line, and the right side of the lacerated perineum mean on the operator's right as he faces the parts; so with the left; not the patient's right and left.

represents the instrument after having been hooked near the edges of the fistula, rotated and locked, holding the fistula open, to show the sutures. To complete the operation, draw

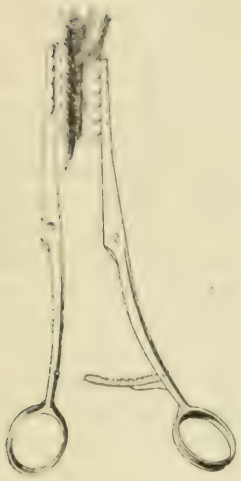
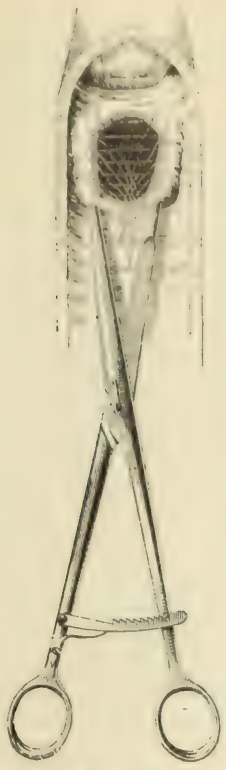


Fig. 2.


Fig. 3.

the handles together, constricting the fistula, twist up and cut off the sutures, unlock, rotate in the opposite direction from that in which they were applied, and withdraw the blades.

The advantages gained are these: First, by fixing the fistula with the instrument, the operator is enabled to pare the edges at one stroke of the scissors. Second, the blades constricting the pared edges of the fistula furnish considerable support for the passage of the needle, which can be pushed through both sides at once, taking good hold at the same time, and also from this fact the sutures can be better twisted and adjusted. Lastly, the operator has entire control of the parts, for by depressing the handles he elevates the fistula, and during the paring and suturing can bring it clearly into view.

This simple instrument can be used in all operations wherein eversion, elevation, and continuous and perfect adjustment of the tissue are necessary, as in laceration of the perinæum, colporrhaphy (anterior and posterior), etc. When performing the operation of elytrorrhaphy, the patient is placed in Sims's position and his duck-bill speculum introduced. The operator, determining his line of operation, passes in the left-hand blade of the "paring and suture clamp forceps," hooks it into the anterior wall of the vagina on the right side of the median line, and rotates the blade from left to right. He then passes in the right-hand blade, over the one already in position, hooks it into the anterior wall of the vagina on the left side, at the same distance from the median line, and rotates the blade from right to left. The right-hand blade is then brought down upon and across the left-hand blade and locked. The operator can now put the tissue between the blades upon the stretch by separating the handles. He can then bring the mucous membrane so stretched clearly into view by depressing the handles, and is thus enabled to readily cut away or freshen the mucous membrane in any given direction, as in Sims's V-shaped operation for procidentia, apex to vulva, base to os uteri, or Emmet's operation for procidentia. The three points, one in front of the os uteri and the two lateral ones, are easily located and freshened while the tissue is firmly held by the forceps; or, as is suggested by Mundé, all the intervening tissue between the blades can be freshened or denuded and the sutures passed and twisted up. The operator having entire control of the parts, by elevating or depressing the handles of the forceps the blades giving support to the tissue allows him to pass in the needles, armed with sutures, more accurately. The operation is completed by drawing the handles of the forceps together, thus bringing the freshened surfaces into accurate and perfect contact, without any traction upon the sutures whatsoever. The sutures are then drawn up, twisted and cut off, the blades are unlocked and each is rotated in the opposite direction from that in which it was applied, unhooked, and withdrawn.

Emmet's, Mundé's, and Stoltz's operations for cystocele can be greatly facilitated by the use of this instrument; also like operations on the posterior vaginal wall. Emmet's operation for urethrocele is thus performed with the "paring and suture clamp forceps": Sims's speculum is introduced; the left-hand blade is passed into the vagina and hooked into the anterior wall on the right side, parallel to and an inch and a half from the point where the slit in the urethra is to be made, and rotated from left to right and held in this position. The right-hand blade is then passed in and hooked into the anterior vaginal wall on the left side, at a point immediately opposite to the other blade and at the same distance from the median line, and rotated from right to left, bringing it down to and across the left-hand blade; the blades are locked and the handles separated until the tissue between the blades is placed upon the stretch; the handles are then fixed by the ratchet, a grooved sound is passed into the urethra, and the slit is made just in front of the neck of the bladder. "The hyperplastic mucous urethral membrane is drawn through this slit with a tenaculum, trimmed down until the urethral canal appears free, and its border is sewed by fine silk or catgut sutures to the mucous membrane of the vagina." Should the operator desire to constrict the edges of the slit, he can unlock the blades and unhook them, and rehook them on either side of and near the slit, rotating them as before, and hold the edges firmly everted while stitching the urethral mucous membrane to the mucous membrane of the vagina. He then unlocks the blades and, rotating them in the opposite direction from that in which they were applied, withdraws them. Cystocele in many cases can be overcome by paring the tissue and making two longitudinal wounds in the anterior wall of the vagina, parallel to and on either side of the urethra, extending from either side of the os uteri to the edges of the vulva. These,

when sutured and healed, will form two longitudinal cicatrices, which will give support to the relaxed anterior wall.

The posterior wall can be so treated for proctocele, the wounds to extend from either side of the posterior vaginal pouch to the edges of the vulva, parallel to and on either side of the median line. In procidentia, the paring and suturing of both the anterior and posterior walls of the vagina in the directions mentioned, will form, when healed, four longitudinal cicatrices which will act as four splints, preventing the sinking down of the uterus or the shortening of the antero-posterior diameter of the vagina. The width of the denuded surfaces in any of the operations must be determined by the condition of the case. The paring and suturing can be done very readily with the "paring and suture clamp forceps" manipulated as before described.

In perineorrhaphy, Mundé says: "While denudation is under process, the index and middle finger of the left hand of the assistant who holds the left leg, and the right hand of the other assistant, separate the labia by traction on the sound skin, and enable the operator to see the vaginal canal as he proceeds inward; this traction must be uniform, and is regulated by the operator at will during the whole operation, so as to secure the best possible symmetry of the two halves of the wound, and exactly corresponding points of entrance and exit of the sutures." This traction can be made with this instrument with more uniformity than with the hands of an assistant, and the instrument gives the operator complete control of the parts, both when denuding and when suturing. The instrument is applied in this manner: The left-hand blade is hooked into the sound skin on the right side of the lacerated perinæum, and rotated from left to right; then the right-hand blade is hooked into the sound skin on the left side of the wound and rotated from right to left. The blades are then locked. The elasticity of the rotated edges causes the handles to be fully extended, and the operator can, by depressing them, draw the sides of the wound tense, and, thus causing the wound to gape at its outer edges, readily bring the tissue at the bottom of the rent to view. The tense condition of the sides allows the operator to pare them with Emmet's flat scissors, kept level with the surface, without any danger to the structures below the mucous membrane. The paring done, the sutures are passed. After this the wound and vagina are thoroughly cleansed. The handles of the instrument are brought together and fixed by the ratchet, which causes the blades to bring the two halves of the freshened wound into close contact and firmly hold them in this position. The operator draws up the sutures one by one and twists them, unlocks the blades, and removes the instrument. There is no traction upon the sutures to bring the edges of the wound together. They are held together by the blades of the instrument, and by so supporting them the operator is enabled to twist up and tighten the sutures with more uniformity than he can possibly do by drawing the wound together by the sutures. Again, when the blades are removed, the strain comes alike upon all the sutures at one and the same time, and greatly diminishes the danger of their tearing out.

Fig. 4 represents the instrument applied as directed to a lacerated perinæum, and shows the rent gaping by the action of the instrument, the tissue pared, the sutures passed. To complete the operation, draw the handles of the instrument together, thus bringing the pared edges accurately into position.



Fig. 4.

When operating for lacerated perinæum, the operator must adapt the instrument to the length of the rent, using the number of hooks which will thoroughly evert and accurately adjust the tissue after it has been pared and the sutures have been passed. He must be careful to see that the instrument, after being applied as before described, will thoroughly and accurately bring the edges together before he commences the paring. In other words, the operator, after hooking the blades on either side of the rent and everting the edges, locks the blades and draws the handles together. He then readily sees if the edges of the rent are brought into proper and exact apposition throughout its entire length; if they are not, he should notice what the difficulty is and overcome it by unhooking the instrument and reapplying it in such direction as will enable him, by drawing the handles together, to make the edges meet at all points. This done, he extends the blades and proceeds with the operation as before described.

HYSTERECTOMY:

REPORT OF A CASE, WITH REMARKS.

By RICHARD DOUGLAS, M. D.,

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I was consulted on December 2, 1888, by Julia H., colored, aged twenty-seven, married, never pregnant: her menstrual flow always normal in quantity, regular and painless. Her symptoms, as related, consisted of great disturbance to digestion, pain and flatulence after eating, most obstinate constipation, dysuria, constant pain, and some tenderness over the lower region of the abdomen.

For the preceding three months, so great had been her distress from these various symptoms, her general health had become seriously impaired, and her weight, formerly 160 pounds, was now reduced to 120 pounds. About five years ago she discovered in the right inguinal region a lump of about the size of an orange. For several years it changed but little; four months ago, however, without any known cause, it was observed to be rapidly enlarging and assuming a more central position;

at times on her turning over in bed the lump seemed to fall from one side to the other. Her general health had been perfect until disturbed by the growth of the tumor. Examination showed the abdomen to be distended to about the size of a six months' pregnancy. The enlargement was most prominent to the right side. The tumor was smooth, globular, hard, inelastic, non-fluctuating, and freely movable—the area of dullness extending from the pubes to the umbilicus, from the right inguinal through the hypogastric to the left inguinal region.

Vaginal examination gave only negative evidence; the cervix was short, conical, and high. Nothing could be felt in either broad ligament. The sound passed four inches forward. Uterine hæmorrhage was not and never had been a feature of the case. In fact, there were no uterine symptoms *per se*. The symptoms were constitutional or remote, of which disturbance to digestion and nutrition was the most pronounced. These, together with the history of the growth and the physical signs, led to a diagnosis of subperitoneal fibroid tumor of the uterus, probably pedunculated. These growths ordinarily give rise to but little disturbance; in this particular case quite the contrary was true. Dependent largely upon her own exertions for support, she contemplated with dread a life of forced indolence, if not invalidism. Fortunately, she fully appreciated what the future had in store for her if the tumor was left undisturbed, and urged upon me its removal.

Considering the case favorable for hysterectomy and one in which the operation was clearly indicated, after most careful preparation of the patient I undertook the operation on December 8th last.

An incision about three inches in length was made in the middle line, the abdominal cavity opened, and the tumor with its surroundings explored. To my gratification, the diagnosis had been surprisingly correct. I found a subperitoneal fibroid of about the size of a child's head, movable, free of adhesions, springing from the upper and posterior aspect of the uterus; the attachment was somewhat pedunculated. The tumor had risen almost entirely out of the pelvis, drawing in its upward growth the uterus and appendages. It did not extend between the folds of the broad ligament, and, as before stated, adhesions were very slight—only one of consequence, that being omental.

The bladder in its relation to the uterus was normal; there was no adhesion of that viscus to the tumor. To complete the picture, the left ovary was found lying well up on the side of the tumor, while the right lay in a mass of adhesions low in the pelvic cavity.

This case presented *in toto* all those supposable conditions which Greig Smith takes as illustrative of a typically simple case for hysterectomy. The operative procedure was so simple it is scarcely worth detailing. Enlarging the incision to one inch above the umbilicus, passing my hand from above under the tumor, with the aid of atmospheric pressure thus obtained I turned the mass out, Dr. Buist now holding it well up out of the cavity.

The left broad ligament with its ovary and tube lay high up on the side of the tumor in a position to be easily embraced with a serre-nœud. On the right side affairs were not so simple. The ovary was firmly imbedded in a mass of adhesions, the tube much enlarged; the relations of the appendages of this side were quite different from those of the left side. The right lay too low to be embraced by the wire; fearing too great tension on the ligament would cause it to slip from the grasp of the serre-nœud, which accident would certainly be followed by hæmorrhage from the proximal part, I deemed it at least prudent to leave the ovary undisturbed. The greater portion of the tube and broad ligament was doubly ligatured and divided. The left appendages being held close to the uterus, the wire loop was thrown around the mass, constricting the uterus about at the internal os. The wire was now tightened through Kœberlé's serre-nœud. Sponges were packed around the proposed pedicle, and the mass was cut away an inch and a half above the wire. There was no bleeding from the stump; however, the serre-nœud was immediately tightened by several turns of the screw. The stump was now trimmed of extra tissue. For want of better pins, two steel knitting needles were passed through the pedicle above the wire. The peritoneal cavity having been well protected, there was no need of irrigation or sponging, which is often done to excess. The pedicle was fixed in the lower angle of the wound. The abdominal wound was closed in the ordinary way down to the stump; here the parietal layer of peritonæum was stitched with interrupted catgut sutures to the peritoneal covering of the stump below the wire. The stump was now treated with a saturated solution of perchloride of iron in glycerin. Iodoform gauze was packed under the clamp and pins to protect the cavity from any discharge from the pedicle. The patient was put to bed, having sustained but little shock. For forty-eight hours she suffered some from traction on the stump. The bladder was very irritable. A little morphine was given hypodermatically.

During the first twenty-four hours the clamp was tightened by a slight turn of the screw. On the second day the temperature was 101·8° F., and this was the highest during the progress of the case. On the seventh day the wound was dressed; everything was dry, sweet, and free from suppuration; the stump looked mummified.

On the day following I was surprised to find the dressing moist with the ichorous pus from the stump. There was no elevation of temperature. Her general condition was excellent. The parts were thoroughly cleansed with bichloride solution, dusted with iodoform, and packed well about with gauze to protect the cavity from contamination. The incision had healed beautifully down to the stump. Owing to the quantity of discharge, the pedicle was cleansed and dressed every day. The serre nœud being occasionally tightened, on the twenty-first day after the operation the pedicle separated and the clamp was removed. Upon the separation of the pedicle a funnel-shaped depression an inch and a half deep was left. Through this the ligature applied to the right appendages came away. The hole rapidly filled in by granulation. The subsequent history of the case contains nothing of note. Five weeks after the operation there was a moderate menstrual flow. She recovered rapidly and has continued to improve in health and strength. The tumor weighed six pounds and three quarters. In its center there was a cavity containing about three ounces of clear fluid. I must here express my gratitude to Dr. Buist, Dr. Winn, Dr. Harris, and Dr. Wood, who upon this, as upon many other similar occasions, rendered valuable assistance, and encouraged me by their presence and indorsement.

Since performing this operation it has been my good fortune to observe the methods and results in abdominal surgery of several European operators, but more especially of my distinguished instructor, Dr. Granville Bantock, of London. All his work is characterized by system, simplicity, and dexterity. But it is in hysterectomy for massive fibroids with extensive adhesions and broad pelvic attachments, requiring careful enucleation, that the superior judgment and marvelous skill of this distinguished operator are shown to best advantage.

It is surprising how tolerant the peritoneal cavity is to the presence of large fibroids, even those in which extensive

adhesions are almost certainly known to exist; patients wear their tumors with comparative grace and comfort.

Upon the other hand, in the case here reported, after the rapid growth of the tumor was awakened, its presence caused such distress from obstruction to blood circulation and the channels of nutrition, emaciation was so rapid, and physical pain and mental anxiety were so great, that some active procedure was imperative. True, all these symptoms may be alleviated, but I am convinced this was one of a large class in which total extirpation is the only resort. Yet Mr. Keith's proclamation is in some degree authoritative. He, in a very brief but pregnant communication to the "British Medical Journal," December 10, 1887, says: "I say it deliberately, hysterectomy is an operation that has done more harm than good, and its mortality is out of all proportion to the benefits received by the few."

A word of warning to the rash, a plea for conservatism, is always "vantage ground" chosen by the aged and experienced warrior. To his many successful hysterectomies, as much if not more than to any other operation, Mr. Keith owes his position of pre-eminence. In this same article, above referred to, he indulges in no mean compliment to Apostoli. Was it enthusiasm over electricity rather than aversion to hysterectomy that induced him to utter so condemnatory a speech of an operation which from the point of view of necessity is as justifiable as any major operation?

Carefully study the description of some of Mr. Keith's hysterectomies requiring enucleation, one could never believe he would feel, with H. P. C. Wilson, of Baltimore: "I shrink and have a feeling of terror come over me when I find that I am obliged to perform hysterectomy" ("Trans. of the Am. Gynæc. Soc.," 1886).

Now that Apostoli's method is known to be suitable to only a few carefully selected cases, if not absolutely futile in all, and oophorectomy is unreliable and often wholly impracticable, what are we to do for women dying—and they do die—from fibroid tumors?

Greig Smith, basing his conclusions upon the results obtained by Bantock, Thornton, and Tait, regards it a justifiable procedure. Again, the mere fact that these surgeons are constantly doing the operation speaks for their belief in the necessity and faith in results.

In a study of this operation surgeons are still perplexed as to how best to treat the pedicle. We can affirm upon authority that Keith, Bantock, and Hegar have by the extraperitoneal method attained results unequaled by "any one, or any combination of operators by the intraperitoneal method." Notwithstanding this, Keith says: "The principle of extraperitoneal or clamp method may seem to be the better, but on this point experience has made me change my mind."

Granting the serre-nœud to be crude and unsurgical, and being fully convinced that some method of safe intraperitoneal treatment will be found, one can not study the results at the Samaritan Hospital and question the superiority of the extraperitoneal treatment over any known intraperitoneal ligation and suture, whether it be simply Schroder's plan; or after the ingenious method of Dr. Polk, in which, when complete, the stump is intra-abdominal yet extraperitoneal; or the combined abdominal and vaginal method, accredited, I believe, to Dr. Mary Dixon Jones; or, later, the interparietal method of Hacker; or, still more recent, the new method of Kelly.

One can with comparative ease graphically describe most surgical operations; a nephrectomy or ligation may be depicted step by step, and, whilst no two operations are exactly alike, their details are very similar. Not so with hysterectomy. Note the vast difference between an ordinary supravaginal amputation of the uterus for a non-adherent fibroid and for one growing out in the broad ligaments, rising up into the abdominal cavity, adherent to everything, short at the base, without a pedicle, requiring the elastic ligature and the most difficult enucleation, each step testing the skill, knowledge, and patience of the surgeon. So variable are the complications met with in fibroid growths that the surgeon who attempts their removal by any proscribed plan or principle other than those broad principles upon which all surgical technique is based will find he will often have to abandon his undertaking in despair. Dr. Wylie fully appreciates this when he says: "Each case must be a law unto itself." Experience alone will enable us to cope with the difficulties that are met with.

Without presuming to be in the least critical, I can but remark the sweet simplicity of the case by which Dr. Howard Kelly illustrates his new method of intraperitoneal and extraperitoneal treatment of the stump ("Am. Jour. of Obstet.," April, 1889).

The special features of the operation for which he claims originality are:

1. The last row of interrupted sutures are left long for the purpose of elevating the stump should hæmorrhage occur.

2. The subperitoneal ligation of the uterine arteries as they ascend on the cervix.

3. The important but not original method of closing the abdominal incision about the stump.

"If," says the writer, "the broad ligaments are spread out on the tumor at the side, they are tied off in a double row of ligatures down to the base of the tumor." In my own limited experience and unusual advantages of observing at the Samaritan Hospital, this primary step of freeing the tumor from the folds of the broad ligament which Dr. Kelly treats so lightly is the greatest difficulty and obstacle to the operation. When such a condition is present, enucleation is necessary. A pedicle must be formed; the stump may be from two to four inches in diameter.

Fig. 4 in Dr. Kelly's article is only diagrammatic, of course; quite like the stem of a toad-stool; in no way resembling an ordinary fibroid.

Dr. Kelly treats the stump after Schroeder's plan, except that the last row of sutures approximating the peritonæum are left long. The stump is then held aside while the operator ligates the uterine arteries subperitoneally. Can the surgeon forget that the pathological is but the perversion of the normal; that in so much as the cells and fibrillæ are increased and distorted in the hyperplastic process, just so is the anatomy destroyed?

Given a large, soft fibroid, where are the uterine arteries?

Can it be hoped that one thrust of the needle, one bite of peritonæum, will embrace the artery? Surgery is a science, not a chance shot.

The next step is that of stitching the parietal peritonæum about the stump. This all operators endeavor to do after some fashion, relying, however, upon the clamps and pins to support the pedicle, upon which oftentimes there is great traction. Dr. Kelly relies upon the forceps and sutures to hold the pedicle up. It appears to me that the tension would soon cause the sutures to cut through and the stump, a sloughing mass, to sink down, and that into the peritoneal cavity.

The objections to Dr. Kelly's method are:

1. It is not applicable to a fibroid growing low on the uterus or spreading out in the broad ligaments.

2. Unless the pedicle was unusually long, separation from the parietes would soon occur.

3. The uterine arteries can not be definitely located. In case they were not grasped by the ligature, hæmorrhage would certainly supervene.

4. Should hæmorrhage occur in spite of precautions taken, forcible elevation of the stump would be attended by obvious dangers.

5. The method is so intricate that the operation would necessarily be a prolonged one.

In a communication to the "Am. Jour. of Obstet." from T. J. Crofford, M. D., commenting unfavorably upon this and all other methods now in vogue of doing hysterectomy, that writer reports a case in which he successfully removed the entire uterus, his aim being to "leave no pedicle of uterine tissue, and there is no necessity to fasten the stump anywhere."

I believe he claims originality for this method. It is nothing more than Bardenheuer's modification of Freund's operation, abandoned on account of high mortality. "Thus, step by step, the way was paved for the vaginal method."—*Sutton.*

No one having had the care of an extraperitoneal stump can fail to wish for some improvement. Dr. Polk, by his modification of Bantock's plan, comes nearer solving the problem. Yet in Dr. Dudley's case, treated after Polk's method, there was slight hæmorrhage on the fourth day, and the patient subsequently died.

PRACTICAL SUGGESTIONS ON THE REMOVAL OF FOREIGN BODIES FROM THE EAR,

*WITH ILLUSTRATIVE CASES.**

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The subject of removal of foreign bodies from the ear acquires its importance from the fact that these cases are frequently met with and that acquaintance with the surgical anatomy of the external auditory canal and drum-head is absolutely necessary for their proper management. Moreover, the fact that unskillful meddling may at once transform an otherwise comparatively harmless condition into one of great danger calls for a more extensive familiarity with this subject among general practitioners, since to *the family physician first* these patients appeal for relief. To him especially, therefore, these suggestions and illustrations will be offered.

The foreign bodies to be found in the ear may be classified in various ways. For instance, they may be parasitical or non-parasitical; those that do and those that do not swell; animate or inanimate; those produced within the ear or those introduced therein, etc. The brief period of time at our disposal compels me to confine my remarks to the consideration of the removal of foreign bodies of non-parasitical character which have been introduced within the ear. Cases of this kind when first seen, if the foreign body is inanimate, *seem* simple and without danger, but, improperly interfered with, they become grave in character and difficult of management. If, however, the foreign body is animate—a small bug, for example—its active character and the vulgar superstition of its possible "getting into the brain"—where alone, by the way, a "foreign body" (!) sometimes exists—almost invariably make the case seem from the outset distressing and urgent to an exaggerated degree. One should therefore be upon his guard lest he be either too careless in the former or too hurried in the latter case, yet be alert to the indications of the particular case presenting and active in properly fulfilling them.

Case I. *A Bed-bug in the Cul-de-sac of the Canal; Instillation of Coal-oil followed by Continuous Pain; Removal of the Bug with a Cotton-wool Brush; an Alkaline Wash gives Instant Relief from Pain.*—A boiler-maker, aged twenty-four, awoke at 3 o'clock A. M. on June 14, 1888, with a fluttering in his left ear "as if a bug were in it." He instilled into this ear, upturned, a few drops of "coal-oil," which at once put a stop to the fluttering. The bug failed to come away with the oil, and, having suffered continuous pain in the ear ever since, he applied to me for relief in the afternoon of the same day. His use of "coal-oil" in this manner had proved efficient several years before in removing a bug from his ear.

Examination showed the tissues covered with oil, and a small dark object in the *cul-de-sac* of the canal, which was afterward removed with a cotton-wool brush, the canal then being syringed with a warm, slightly alkaline aqueous solution, affording entire relief from pain. The dark object proved to be a small bed-bug.

Case II. *A "Candle-bug," having flown into the Ear, causes Impaction of Softened Cerumen against the Drum-head; Removal with a Curette and by Syringing.*—A locomotive fireman, aged twenty-three years, applied for treatment on June 21, 1888. He stated that he had had a bubbling, snapping sound in his left ear, especially on drinking anything, for the past two days. He had slight deafness and autophonous voice in this ear. All these symptoms had developed suddenly two evenings before while he was firing on his engine. His suspicions that a bug had flown into his ear were stated to his mate, the engineer, who had noticed his deafness on this side.

Examination showed cerumen occluding both canals; in the left one it was soft, and imbedded therein was a dark object. The cerumen was impacted against the drum-head. A portion

* Abstract of a paper read before the Medico-chirurgical Society of St. Louis, September 18, 1888.

of the cerumen was removed with the curette, the remainder by syringing, which brought away the dark object also, a long, black-winged insect, such as is ordinarily called a "candle-bug."

Case III. *A Gnat in the Ear; Abrasions of the Canal Wall and Drum-head by Probing with a Toothpick; Gentle Syringing.*—A cashier, aged twenty-six years, was seen by me late in the evening of July 8, 1887, when he stated that while he was out driving on the afternoon of the same day a gnat had flown into his right ear. This had distressed him so greatly that he had at once probed the canal with a toothpick covered with a layer of his handkerchief. After finishing his drive he promptly repaired to his family physician, who, noting several wounds in his ear, at once referred him to me. When seen he complained to me of tinnitus and tenderness of the right ear.

Examination showed an abrasion of the posterior and anterior wall at the isthmus of the canal, a wound of the membrana flaccida, and a slight one of the anterior-inferior quadrant of the membrana tympani vibrans. A very small, black, seemingly structureless object seen in the *cul-de-sac* was removed by gentle syringing, and the ear then dried with absorbent cotton-wool. A soothing vulnerary was applied to the abraded spots and a mild purgative administered, no further discomfort being experienced by the patient.

These cases fairly illustrate how insects enter the ear. Oil should not be used to kill or remove such intruders. If the insect is very small, it may sometimes be ejected by forcibly blowing into the canal. If the invaded ear is upturned and filled with warm water, the insect will either at once seek the surface or perish for want of air. In the latter case it may subsequently be removed by syringing, which is the preferable method, or with a cotton-wool brush or curette. A little reflection will show the folly of hurriedly *probing* the ear for the removal of a live insect. Abrasion of the canal and drum-head at least, and very often complete rupture of the latter, is apt to be caused by such a procedure. In many cases the insect will have already escaped from the ear before the remedial attack upon the organ is begun. Should there be any doubt as to the insect still being within the ear, the doubt should first be satisfied by ocular inspection of the canal. If the patient is suffering pain from the *movements* of a live insect in the ear, unnecessary delay would be cruel, and we should at once upturn the canal and fill it with warm water, proceeding as advised above.

Case IV. *A Clipping of Hair in the Cul-de-sac of the Canal, pressing on the Drum-head, producing Aural and Cerebral Symptoms, with Subacute Catarrh of the Tympanum.*—A clerk, of Jewish parentage, aged sixteen years, applied for treatment on July 24, 1887. He stated that he had had otorrhœa of the left side for two weeks in January, 1887. In April, at one time, he had a spasmodic pain in this ear. After pitching quoits a few days before July 24th he sat down to dinner and was seized with vertigo and headache. At times he had tinnitus. The family physician had been administering internal remedies before referring him to me.

Examination showed evidence of slight catarrhal otitis media; the drum-head was dull, resembling glass covered with condensed moisture; there was not the slightest evidence of former otitis media purulenta. Resting on the floor of the *cul-de-sac* of the canal, extending obliquely inward and upward, and pressing directly against the drum-head, was a clipping of stiff hair. Removal of this with a cotton-wool brush, slight Politzer inflation of the tympana, and the administration for several days of small doses of mercury, brought about great improvement by July 30th, when the patient was referred to his family physician for tonic treatment.

Case V. *A Splinter of Wood driven into the Ear of a Locomotive Engineer at a Collision, producing Displacement of Cerumen, and, together with the Concussion, producing Deafness, Pruritus, and Tinnitus Aurium; Much Hair growing from the Tragus, obstructing the Meatus; Removal of Hair and Cerumen with Scissors, Curette, and Syringe.*—A locomotive engineer, aged fifty-four years, was first seen by me on March 18, 1888. On December 20, 1887, in a head-end collision with a freight train, he had remained at his post, and sustained a fracture of the left femur about four inches above the knee, the lower fragment being split into the knee joint. His left eye was injured and his thorax partially crushed, so that respiration was painful, and he had slight paresis of the upper extremities. There were also wounds of the neck, tongue, and upper lip. Previous to the accident no aural affection had been recognized, but ever since he had noticed partial deafness and occasional pruritus in both ears. There was frequent tinnitus in the left, occasional in the right ear; sometimes he felt sharp pains darting from the spine to the ear and other distal points. Hearing for a forty-eight-inch watch, a quarter of an inch, each ear; he heard a very low voice with either ear at fifteen feet. Examination showed a small amount of loosened cerumen, together with a fresh splinter of wood in the left ear; cerumen in the right ear; both meatus and intertragal notches closed by a profuse growth of hair from the tragus. The hair was removed with scissors, cerumen and splinter of wood with curette and syringe, followed by Politzer inflation of the tympana. Internal treatment was instituted, and on March 20th the patient reported no tinnitus aurium since the last visit; his head felt less heavy, and a forty-eight-inch watch was then heard an inch distant by each ear, a gain of 300 per cent. in hearing for the watch. Treatment was continued and the patient was soon discharged greatly improved.

These cases show how a foreign body may be within the ear without the person's knowledge. Whenever one is consulted by a patient with persistent "cerebral" symptoms, such as vertigo, headache, etc., a careful and thorough examination for ear disease should be made, especially if these symptoms develop after any occurrence which may have induced ear disease or caused the impaction against the drum-head of an unsuspected foreign body. It is important to note that small foreign bodies in the ear may produce prominent subjective symptoms, and even actual otitis, by prolonged irritation.

Case VI. *A Cotton-wool Wad in the Tympanum; the Drum-head lost by Otitis Media Purulenta of nearly Thirteen Years' Duration; Removal of a Polypus Eleven Years before; Removal of the Wad with Probe and Forceps; Cure of the Otorrhœa in Five Months, with an Intercurrent Attack of Scarlatina.*—A school-boy, aged fifteen years, applied for treatment on January 29, 1888. A specialist of this city had removed a polypus from the affected right ear eleven years before, and subsequently treated him for otorrhœa six years. He was then placed under the care of another for a while. After this the patient was creditably treated by the family physician, who saw him at intervals. Upon discovering that a cotton-wool wad had become deeply displaced, he referred the patient to me for subsequent attention. The patient complained of whistling and blowing

tinnitus, deafness, and a mephitic discharge from his right ear. He had no earache.

Examination showed a cotton-wool wad deeply displaced, upward and inward, in the right tympanum. The drum-head was destroyed, except its anterior edge, in which seemed to be imbedded the malleus, its posterior attachments apparently divided long ago. After removal of the wad of cotton wool with a probe and forceps, the tympanum seemed filled with granulation tissue, pus, and whitish desquamated epithelium. The incus and stapes could not be found. The tip of the promontory was free from granulations. The Eustachian tube was freely pervious. Touching the outer wall of the attic with a cotton-wool brush produced a disagreeable sensation in the right side of the tongue.

Cleansing with peroxide of hydrogen, with local and internal medication varied according to indications, brought about a cessation of the discharge and disappearance of the granulation tissue. On February 3d he heard a forty-eight-inch watch at two inches with the affected ear; hearing for the voice was improving; and the tinnitus had disappeared. In May he contracted scarlatina, and, though he was singularly free from exacerbation of his ear trouble during the attack, yet it was followed by a relapse thereof. Treatment was resumed, and the ear was so far dried and hardened by the latter part of June that he was permitted to visit Europe. He could hear a loud voice at twenty-five feet with the affected ear at this time.

In cases of perforated or lost drum-head a foreign body in the tympanum or attic is a dangerous complication if neglected. In such cases, if the foreign body has reached the inner end of the canal, the syringe, if used at all, must be used with the greatest care, lest the foreign body be driven into the attic or antrum. *En passant*, this advice is apt in cases of cerumen and former otorrhœa. It is better to use some retracting instrument, such as a bent probe or hooked curette, until we have removed the foreign body to a point where it can more readily be seized with the forceps, when we complete its removal with this instrument. Satisfactory illumination of the parts and sight of the foreign body are essential in the performance of this operation.

Case VII. *Suspected Foreign Body in the Ear; Slight Catarrhal Inflammation; relieved entirely by Treatment.*— A superintendent of a mining company, thirty-six years of age, presented himself for treatment on January 24, 1888. Several days before this he had thrown into his office stove a broken bottle, the crash being followed by a feeling as of a piece of flying glass entering the right ear. He at once unwisely probed his ear with a pin covered with a layer of handkerchief, but brought nothing away. Pressing upward on the lobule of his ear, a feeling of fullness in the ear was felt which had since persisted. He visited two separate physicians, who examined his ear, pronounced it all right, and advised him to let it alone. Upon expressing dissatisfaction with this opinion, the patient was referred by the latter to me, when I also found the canal empty and normal, the drum-head slightly retracted, and somewhat opaque and lusterless. A Politzer inflation of the ear, with mild internal medication, relieved his symptoms permanently.

A patient, his relatives, or his friends, may often insist upon it that a foreign body is in the ear and demand one's interference. Except where there is a live insect moving about in the ear, we should under no circumstances depart from the rule so wisely observed by the two physicians mentioned above: *No matter how positive a patient, his relatives, or friends may be that there is a foreign body in his ear, never attempt the removal of such until you have first provided yourself with satisfactory illumination of the canal with a mirror; examine the ear thoroughly by ocular inspection and convince yourself of the presence of a foreign body.*

Case VIII. *A Grain of Corn in the Ear; Harmless until disturbed; forced into the Cul-de-sac of the Canal by shifting of the Patient's Head during Efforts at Extraction; Ear syringed; "Blind Groping" with a Probe; Laceration of the Canal and Rupture of the Drum-head; Removal, under Anæsthesia, with a Hooked Curette and Foreign-body Forceps; Otitis Media Purulenta Consequent on Maltreatment.*—A school-boy, about twelve years of age, put a grain of corn into his right ear in the latter part of August, 1886. Upon his confessing this to his parents, they waited patiently for two weeks for its extrusion by decomposition. They then consulted a surgeon in the nearest town. He informed me recently that he found the foreign body well within the canal, but not against the drum-head. Having satisfactory illumination of the parts, he attempted removal with the angular forceps. He had barely touched it when the boy, feeling slight pain in the tender canal, resisted further interference with the forceps. The parents refused to permit the administration of an anæsthetic, and at their solicitation he endeavored, as a last resort, to syringe it out, but failed, telling them that anæsthesia was absolutely necessary, and wisely declined to treat the case further without it. The patient was taken in a few days to a neighboring State, where two separate physicians attempted removal without anæsthesia. It was stated that "they blindly groped for the corn" with a probe. The patient was then referred by them to a medical practitioner of this city, who, after unsuccessful attempts at removal, requested me to perform the operation at his office, which I did as follows: Chloroform having been administered to the resisting, unwilling patient, examination showed the auricle highly congested; the canal greatly lacerated; traumatic inflammation of the entire cartilaginous canal wall; the tegmen of the canal denuded of soft tissues and lacerated to the bone in places; the membrana flaccida scraped, and the pars vibrans membranæ tympani perforated at its posterior-superior quadrant, causing otitis media purulenta; a foreign body in the *cul-de-sac* of the canal lying against the lower half of the drum-head. By carefully cleansing and drying the parts with a cotton-wool brush, and laying back the ragged edges of the lacerations, a speculum was readily introduced through which the deeper parts as described were seen as well as the foreign body, which seemed to be, as stated, a rounded grain of corn. With a hooked curette the foreign body was gently extracted to the isthmus of the canal, where it was seized with a Sexton foreign-body forceps and readily removed. Hæmorrhage followed, but was easily checked with a stream of hot water. A cotton-wool wad was temporarily inserted, with the expectation of further cleansing the canal and insufflating some vulnerary powder. No further opportunity of examining the case was tendered me, but the medical practitioner afterward informed me that the patient was recovering.

In the "Medical News" for March 1, 1884, page 242, was reported by me, from Dr. Sexton's aural clinic, a case very closely resembling this last one, together with eight others of foreign body in the ear, occurring during my service on the surgical staff of the New York Eye and Ear Infirmary. You will find a comparison of these profitable and interesting. Case VIII, which I have just presented to you, shows how harmlessly a foreign body may remain within the lumen of the meatus, provided it is not interfered with. There is always a drooping of the cartilage of the concha

where it joins that of the canal at its superior and posterior rim; this makes a kind of drop-valve which may retain a foreign body when once introduced within the canal. Often, in such cases, simply drawing the auricle upward and turning it forward will open this valve and permit the foreign body to fall out. If this is unsuccessful, when the head is jarred also, the aural speculum should be introduced, and, under illumination and in sight, the bent end of a probe or a foreign-body hooked curette should be carefully passed over the foreign body and then depressed beyond, so that the hook or ratchet-like teeth can seize the intruder and draw it out. With very nervous patients and children, should the foreign body become displaced inward toward the isthmus, the patient's head should be held steady by a strong assistant, and a quick, sharp stream of warm water should be directed above or in corkscrew fashion past the foreign body. This can very readily be done if the stream is directed upward as it enters, for the canal is largest at this point where the foreign body lies loosely, as it does, and the stream of water returning below will carry it toward the meatus, whence it must be removed as directed above. If, however, the stream of water is cast directly inward in the axis of the canal, it will do harm only, and drive the foreign body farther toward or to the drum-head. In steady patients a foreign body on the outer side of the isthmus can be more readily removed with the foreign-body forceps, hooked curette, or bent probe. Whenever the patient is a child or very restless you should not attempt instrumental interference with a foreign body lying near the isthmus unless you are prepared to administer an anæsthetic should your manipulations prove unsuccessful, or the foreign body be forced beyond the isthmus, the narrowest part of the canal, falling into the *cul-de-sac*, since the floor here declines inward. The foreign body will then lie lower in the line of vision and its lowest part will be hidden from sight by the intervening isthmus. It will now rest against the drum-head. Here, then, is a condition of affairs demanding the interference of *a skillful operator only*. No one unfamiliar with the manipulation of instruments in the deeper part of the auditory canal should have the temerity to interfere here except in an emergency, and then by syringing, and that not too forcibly, lest he rupture the drum-head. Should this prove ineffectual to remove the foreign body, the patient should be placed in charge of some practitioner familiar with this operation. If the foreign body is moderate in size and the hooked curette can be passed a trifle over its upper point without touching the membrana tympani, it may be withdrawn thus from the *cul-de-sac*—the most difficult part of the operation—when you should proceed as advised above. If, however, the foreign body is large, or impacted anywhere in the canal, or, as in some cases, can not be passed by a hooked curette, it must then be seized between the teeth of a Sexton foreign-body forceps and withdrawn, at least as far as the outer side of the isthmus. Skill in the use of this, as of every other instrument, is essential to the development of its advantages, as is illustrated by the failure of some in using the Sexton forceps.*

* See "Archives of Otology," June, 1888, pp. 106 *et seq.*

Every self-reliant physician who has good eyesight, a steady hand, and instruments suitable for illumination of the ear and the performance of this operation, bearing in mind the facts to which I have drawn your attention, should not hesitate to attempt it. *Never introduce any instrument into the ear unless you can see where and how it is acting.* Try to discover the indications in the individual case presenting, determine exactly how you can best meet them, proceed with deliberation and care, and, above all, *hasten slowly.*

THE PROPHYLAXIS OF RINGWORM OF THE SCALP.*

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It certainly has not escaped the attention of medical men throughout this country that the number of cases of ringworm of the scalp has very much increased during the last decade. While the governments of European countries use all possible exertion to prevent this contagious disease from spreading, we remain apathetic. America even welcomes to her hospitable shores scores of immigrants whose children bear on their heads the unmistakable signs of this disgusting disease.

If we do not heed (perhaps in a spirit of ideal unselfishness) the danger arising therefrom to our families and ourselves, we ought to take into serious consideration at least the deplorable condition to which those children of the poorer classes are reduced. Breathing the stimulating air of this free country, and surrounded by all the blessings of modern civilization, they find themselves prevented, Tantalus-like, from partaking of what is so liberally offered to all the rest. To these children the schools are closed. Whenever they become sick or destitute, admittance into hospitals and charitable public institutions is often refused and always rendered difficult to them, on account of the contagiousness of their scalp disease. In the dispensaries and outdoor departments of hospitals these little patients are rarely so fortunate as to meet with a physician who has the time and inclination to institute a thorough treatment. It is hardly necessary to point out these evils more minutely. They are so glaringly conspicuous that any suggestion of measures by which they might be remedied will be seasonable.

It is the object of this paper to call the attention of the general practitioner, as well as the specialist, to the importance of the prophylaxis of ringworm of the scalp, and to point out a few general measures for the control of the disease wherever it presents itself in public or private practice.

Three points seem to me to deserve special consideration:

First.—It is necessary to make a correct diagnosis of ringworm of the scalp as soon as it comes under observation.

Second.—The treatment of the disease should contain in itself some elements of prophylaxis.

* Read at the fortieth annual meeting of the American Medical Association, Newport, June 25, 1889.

Third.—Great care should be exercised before pronouncing a patient cured and fit to go back to school or be admitted into an institution.

A wrong diagnosis, a delay in instituting proper treatment, is frequently the cause of epidemics. In examining cases it will be well to begin with a careful inspection of the hair. As is well known, the hair becomes affected very early in ringworm of the scalp, and its changed condition remains pathognomonic throughout the entire course of the disease. The hairs look as if "nibbled" off close to the scalp, the short portions that remain appearing dry and bent or twisted. On closer inspection with a lens, they are observed to be lusterless, more or less swollen or bulged here and there, and on pulling at them they are found to be quite brittle. They may be surrounded with a white pulverulent matter, which is a compound of epithelial *débris* and fungus. The presence of these short broken-off hairs is very characteristic. The changes affecting the scalp may be looked upon as the results of various degrees of irritation produced upon the tissues, either by the presence of the fungus or by medical interference or by both. The intensity of this reaction, as it were, is in no relation to the quantity or quality of the fungus. It varies according to the individual disposition in every case, and conveys to the observer no intimation as to the severity of the disease proper. In some cases there is no irritation at all, or very little. In others (especially in recent cases), small, rounded or irregularly shaped, dull-red patches are present. These patches are spoken of in most of the text-books as "erythematous"; but in reality their color is of a peculiar kind, which may be described as follows: The redness looks as if painted on the surface of the scalp with a material which has penetrated only the superficial layers of the epidermis. If the hair follicles are the special seat of irritation, pustules or small furuncular abscesses will make their appearance. It may finally come to the formation of "kerion"—inflammatory, œdematous, boggy, honey-combed tumors, discharging from the follicular openings a mucoid secretion. Viewing these symptoms of ringworm of the scalp in this light, we can readily understand that the disease may be most likely to assume the character of seborrhœa and eczema, passing through all the different stages, from the dry, slightly scaly variety of the former to the pustular, crusted form of the latter. Eczema and seborrhœa, in fact, frequently coexist with ringworm of the scalp, and render a correct clinical diagnosis very difficult, sometimes impossible.

Cases of ringworm of the scalp which have passed through a high degree of irritation and are nearly cured may exhibit the smooth bald patches like those met with in alopecia areata. In France the opinion is prevalent that there exist two forms of alopecia areata—a contagious and a nervous one. It is impossible (so it is asserted) to make a differential diagnosis between these two forms. All persons affected with alopecia areata are consequently subject to strict regulations recently put in force by order of the French government in all schools and military establishments. The identity of the contagious form of alopecia areata and ringworm of the scalp has not been proved; so much, however, is evident, that we should look upon cases of alopecia areata, especially when occurring in children, as a possible source of infection and danger to others.

I need not dwell upon the differential diagnosis between ringworm of the scalp and psoriasis or lupus erythematosus, because it commonly offers no difficulties. To mistake a case of favus for ringworm, or *vice versa*, would make but little difference in regard to prophylactic measures.

Microscopical examination is indicated in all doubtful cases. A few hairs and scrapings taken from the border of a suspicious patch are soaked in a mixture of equal parts of water and liquor potassæ and then examined with a magnifying power of about three hundred diameters. It is advisable to look not for the mycelia of *Tricophyton tonsurans*, which, as you know, are often absent from specimens, but for the conidia or spores. These round little bodies, which are generally present in large quantity, are highly refractive, of a uniform size, and frequently arranged in chains. Besides this, their nuclear contents, their double-contoured outline, their tendency to bud, and their non-alteration by ether, are distinctive features. In making a microscopical examination I usually begin by searching the field with a low power for remnants of broken-off hairs and short stumps, because these are most likely to be found invaded by the characteristic spores.

To the use of the microscope we should resort more frequently than we really do. It must, however, be remembered that the absence of the fungus (microscopically demonstrated) has only a relative value, while the presence of the fungus is the positive and scientific proof of the correctness of the clinical diagnosis—ringworm of the scalp.

Widely varying as are the opinions in regard to the treatment of ringworm of the scalp, there exists one point on which most authorities agree. That is the beneficial action of epilation. The rooting out of the diseased hairs acts as an antiseptic, an irritating, and a prophylactic measure. It combines these very desirable qualities, however, only if it is properly executed. If it is done carelessly or left entirely to hands untrained for the purpose, it will work more harm than good. Instead of acting as an antiseptic, it may give rise to numberless little wounds where septic matter may easily enter. Instead of being the ready means of getting rid of a large quantity of infectious material, the latter may be carelessly strewn about and thus brought in contact with the healthy scalps of other children. Instead of properly irritating or, rather, stimulating the deeper layers of the scalp, it finally may produce severe irritation, requiring temporary cessation of the treatment. The manner in which epilation is practiced is furthermore all-important as to the amount of pain caused. While there is "howling and gnashing of teeth" wherever the epilating forceps is used by an inexperienced attendant, there is generally not a tear in the eyes of the children wherever it is done by an expert. A salve of salicylic acid, in a strength of from ten to fifteen per cent., applied the night before is a good help in rendering epilation easy. It still remains, however, a process which is very tedious and takes up too much of the physician's time. In France, where epilation on a large scale was first introduced in 1855, male and female servants are employed, whose whole duty consists in extracting the

hair of those patients affected with vegetable parasitic diseases. I have seen the *modus operandi* of these *épileurs* and *épileuses* (as they are called) at the hôpital St.-Louis, Paris, while following the service of Dr. Besnier. It is in the main that described by Bazin. "The epilators are seated, and cause the head of the patient to rest upon their knees. With one hand (generally the right) they hold the forceps as one holds a writing-pen; the other hand is applied to the part about to be epilated, with the thumb and index finger of which they put the skin on the stretch so as to keep it steady. They then extract the hairs, pulling them out in the direction of their axis, and only a small number at a time—two, four, six, or at most a small bundle. It is necessary to avoid epilating too quickly or too gently, there being an intermediate point which one can only arrive at after a little practice." The extraction of the hairs at the edges of the patches should first be effected, and from the edges the epilation should be extended inward toward the center.

Dr. Besnier, the eminent French dermatologist, devotes one clinic every week to the special treatment of outpatients affected with ringworm of the scalp. An *épileur* is attached to his service and prepares for treatment a large number of scalps every week. The hair pulled out is destroyed, and the forceps, towels, etc., are carefully disinfected after use. The remaining hair is kept closely cut, every two or three days the scalp being carefully clipped with short scissors. There are three *épileuses* at the "hôpital des enfants malades" and two at the "hôpital Trousseau."

Epilation practiced after this manner has turned out to be a measure not only of great curative but also of high prophylactic value. The extraction of the hair by means of epilating sticks has been recommended by Dr. L. D. Bulkley. It is an excellent means of quickly getting rid of many of the loose and brittle hairs, and, if preceding epilation with the forceps, has proved to be a practical and time-saving measure.

In order to prevent self-inoculation, as well as the infection of others, some physicians keep their patients' scalps soaked with greasy substances containing the antiparasitic remedies, or apply even an impermeable dressing. These measures are liable to cause much undue irritation, which is a great drawback in the treatment of ringworm of the scalp. Salves with pure vaseline as constituents are preferable in this direction. It has been suggested by some authors to apply some of the customary remedies dissolved or suspended in liquor gutta-perchæ or collodion. These substances form an adhering layer when painted on the diseased spots. Though I do not share the popular idea that they will act by choking the parasite, as it were, I think they are very valuable as precautionary measures. Simple tincture of benzoin, I think, is still more reliable in this regard. It can be applied all over the scalp by aid of a soft nail-brush, and dries quickly into a thin film, which keeps much of the infectious material confined to its place. Besides this, it combines the highly antiparasitic quality of alcohol with that of benzoin. I have used with good success a solution of bichloride of mercury in simple tincture of benzoin (1 to 300) while treating a large number of cases of ringworm of the scalp. The physician should always insist on his little patients' wearing skull-caps made of linen or some other material which can be washed easily. The use of towels, brushes, combs, etc., by the diseased and healthy in common must be strictly prohibited. We should never weary of laying proper stress on this point, and explain it to the parents and relatives of our patients again and again.

When is a child permanently cured of ringworm of the scalp? This question is not easily answered. "When the formerly diseased patches," says Tilbury Fox, "are covered over with fine, downy new hairs, and all vestiges of the texturally altered ones have disappeared, then a cure may be pronounced, and then only; and this point can only be determined by accurate and minute examination by a lens or the microscope." This is very true in cases where the disease has existed in one or a few circumscribed patches. In cases where the disease has been distributed all over the scalp it will be difficult to select hairs and scales for microscopical examination, and the possibility of some slight signs of the disease escaping detection is very great. The only safe way, therefore, will be to keep the persons under observation for two or three months, making from time to time a careful inspection of their scalps. It may be of importance to trace an epidemic of the disease to its original source. I will therefore not forget to mention the well-known fact that some domestic animals—such as horses, cattle, dogs, and rabbits—may communicate ringworm to man. In Germany, as well as in France, there exist some regulations instructing the veterinary surgeons to seclude from military service those horses affected by the disease. That the air under certain conditions may become loaded with the germs of the fungus and thus spread the disease has been asserted by Tilbury Fox, but lacks the confirmation of others. Some of the prophylactic measures mentioned above find a place in the treatment of ringworm of the body, a disease which, in itself not difficult to cure, may give rise to ringworm of the scalp in the same individual or in others.

Now, in conclusion, what can be done to facilitate the carrying out of these general principles in public practice? We need, I think, a special service for the free treatment of vegetable parasitic diseases of the skin in some of the dispensaries of our large cities. This measure, though constituting a preliminary step only, would undoubtedly result in a great many advantages. It would afford a fine opportunity—

First.—For making extempore microscopical examinations for diagnostic purposes.

Second.—For studying the vegetable parasitic diseases of the skin, with a special view to their origin, *genius epidemicus*, and general prophylaxis.

Third.—For practicing epilation on a large scale by trained nurses.

The physicians in charge of these classes, furthermore, would become most competent in regard to all questions of public hygiene in this direction. They could frame rules as to preventing or checking epidemic outbreaks in

schools and public institutions, these rules to be printed and distributed among principals of schools, teachers, and superintendents. They might finally find it necessary to do what at present would meet with but slight approval—ask for interference by the law.

To these clinics, which need be held but once or twice a week, all the patients suffering from ringworm could be referred. To carry out this suggestion would be connected with little expense, which dwindles into nothing when we come to consider the amount of good which would thus be accomplished in the interest of the common welfare.

If ringworm of the scalp has once been introduced into a school or public institution, it generally spreads like fire. It requires the most energetic treatment and untiring efforts on the part of the physician, who generally has to content himself with keeping constantly under control what he is unable to stamp out. Let us therefore recall to memory the old Latin saying:

"Principiis obsta, sero medicina paratur."

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Supra-clavicular Hernia of the Lung.—"Professor Chorel, of Brussels, reports an interesting case of supra-clavicular hernia of the lung occurring in a child of about three years of age. The child came into the hospital for a large cold abscess of the left thigh; this was operated upon by scraping out and subsequent drainage. A short time afterward it was observed that a tumor had formed over the left clavicle, about the size of an orange. The skin covering it was not reddened or discolored. The tumor was not tender; on percussion it gave a tympanitic note, and was found to be completely reducible; on auscultation, a soft vesicular murmur was heard, together with somewhat prolonged expiration, indicating the existence of pulmonary emphysema; the tumor was soft to the touch, giving a sensation of false fluctuation, such as is sometimes noticed in white swelling of the knee. It appeared suddenly, and seemed to be likely to increase in size, as whenever the child cried or moved about it became larger. It was situated immediately behind the clavicle, extending into the space between the scaleni; laterally its boundaries were indistinctly marked; it extended upward to about three fingers' breadth above the clavicle. The diagnosis made was that of pulmonary hernia; the only affection with which it could be confounded was localized subcutaneous emphysema, or a serous congenital cyst; it was, however, quite evident, from auscultation and percussion, as well as from the history and the complete reducibility of the tumor, that it must be a pulmonary hernia. The child, when admitted into the hospital, was very thin and weak, and during the treatment of the abscess chloroform was required, which produced a serious amount of syncope, artificial respiration having in consequence to be kept up for some considerable time. Professor Chorel suggests that the energetic movements then made, when the lung was rapidly distended, may have caused it to force its way through the lax connective tissue and the weak and wasted muscles of the supra-clavicular region. The treatment adopted was very simple. Reduction was made, and maintained by means of a piece of card-board well padded and fixed by a spica bandage. In this way a complete cure was obtained. Professor Chorel is not aware of any other case of pulmonary hernia occurring in a child. Indeed, the condition is rare even in adults."—*Lancet.*

The Hygienic Congress at London.—We learn from the "Lancet" that the organization committee of the International Hygienic Congress, to be held in London in 1891, has met, Sir Spencer Wells being chairman and Dr. Corfield one of the secretaries. The committee contains among others the names of the following: Sir Douglas Galton, Professor Frankland, Professor Hayter Lewis, Dr. Thorne Thorne, Dr. Mapother, Dr. Mouat, and Mr. Ernest Hart. This committee will presently be enlarged so as to represent the varied interests of public hygiene, and a preliminary circular is in preparation.

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THE RECOGNITION OF VULVO-VAGINAL INFLAMMATION IN CHILDREN.

Dr. F. Spaeth, of Hamburg, in an interesting article on this subject, published in the "Münchener medicinische Wochenschrift" for May 28th, arrives at certain conclusions which are of considerable practical interest, especially from a medico-legal standpoint. He shows that since the discovery of Neisser's gonococcus it has been recognized that many cases of vulvo-vaginal inflammation in children which before would have been set down as of unknown origin, or regarded purely as complications of the acute exanthemata, are really due to specific infection. Fraenkel reported eighty-four cases occurring in 1881 in the Hamburg General Hospital during an epidemic of scarlet fever, but did not seem to recognize the specific character of the discharge, although he constantly found in it a coccus that closely resembled Neisser's. Cseir, who observed a similar epidemic, not only found the specific coccus, but proved that the discharge was gonorrhœal, since it produced the characteristic ophthalmia. Hofmokl has recently confirmed the latter's statements. Spaeth's cases were twenty-one in number, the patients' ages ranging from three to eleven years. In fourteen cases Neisser's coccus was found in the discharge, and in every instance the urethral mucous membrane was involved in the inflammatory process, while in the seven children with non-specific leucorrhœa the urethra was not affected. The latter canal seems to be the favorite seat of the gonococcus; hence the inflammation is most severe and persistent here.

In order to establish the diagnosis of gonorrhœa in little girls it is only necessary to irrigate the vagina thoroughly, then to press a drop of pus from the urethra, and to subject it to microscopical examination. The source of infection it is not easy to discover. In one half of the writer's cases the mother had gonorrhœa. There is no doubt that the epidemics which occur in families and hospitals, in which the disease is frequently regarded as a complication of scarlet fever, when it is merely a concomitant, are due to the use of infected clothing, sponges, *pots de chambre*, or thermometers. Impure connection is a comparatively infrequent cause. This is important in view of the fact that suspicion is sometimes directed toward an innocent man, who may have gonorrhœa at the time when he is accused of assaulting a child. Even if the vulvo-vaginal inflammation in the latter is proved to be specific in character, the probability of the infection being transmitted through one of the above-mentioned media should render a medical witness very cautious about giving a decided opinion as to its exact source in a given instance.

MINOR PARAGRAPHS.

TOBACCO-SMOKING AS A SAFEGUARD AGAINST INFECTIOUS DISEASE.

At a recent meeting of the Vienna *medicinisches Doctoren-Collegium*, an interesting discussion on tobacco-smoke and diphtheria took place, the impulse toward the discussion having been given by a communication on this subject by Dr. S. Hajek, of Vienna. Induced by the experiments of Tassinari, of Pisa, on the destructive influence of tobacco-smoke on bacteria, Dr. Hajek had made researches in the *Stadtphysikat* of Vienna, in order to determine the proportion of the cases of diphtheria among smokers and among non-smokers. For this purpose he had collected data for the preceding three years, considering all individuals of the male sex upward of twenty-two years of age as smokers. Among all these, three thousand persons had had diphtheria during that time, and the proportion of the smokers to the non-smokers was, on an average, 1 to 2·8. Dr. Hajek, moreover, said that he would discuss this subject more exhaustively in a work to be published shortly, as he was of the opinion that in bacteriological and hygienic questions a certain importance, though a minor one, should be given to statistics. The speaker directed attention to a statistical work by Professor Oser bearing on this subject of the proportion of cases of diseases in men and in women in a certain epidemic of exanthematous typhus. Oser had observed that three times as many women as men were affected by the disease. The explanation of this difference was considered to be that men, in most cases lived for only a few hours in insanitary dwellings, and thus became infected less easily than women. This difference ought also to be taken into account in collecting the data for diphtheria. The speaker wished, moreover, to emphasize the difficulty of determining the exact number of smokers. Dr. Neudorfer called attention to the fact that a real destroyer of bacteria, pyridine, was present in tobacco-smoke. Dr. Schiff added that in all bacteriological laboratories smoking was forbidden, as the smoke undoubtedly hindered the growth of the cultivated bacteria.

NIGHT TERRORS IN CHILDREN.

Dr. G. L. Ullman, in the "Albany Medical Annals" for June, treats of *pavor nocturnus*, or "night terrors" in young and excitable children. The causes are various, chief among which are some form of vivid impression, violent play, and great hilarity in the evening or the latter part of the day. He condemns all severity of treatment or harshness of voice on the part of the parents. Soothing measures are the best, and in the event of "spells" recurring with some frequency, he has found the bromides useful, to be given shortly before bedtime. Valerian and asafœtida have been of service. "The charming advice of good nature, coupled with time," always meets his expectations admirably.

GUY'S HOSPITAL.

This institution has recently undergone a singular experience in its losses by death. Within about a week of one another there have died an emeritus member, ripe in years and honors and known as a "fashionable" practitioner; also another member, a pale, young enthusiast of a student. Death has touched the two extremes of age and service. The death of the younger man is regrettable from every point of view, as he was at the opening of a career that promised to be both brilliant and useful.

Dr. George Owen Rees, F. R. S., consulting physician to the hospital, died on May 27th, aged eighty-four years. He was a co-laborer with Dr. Bright, and fifty-three years ago published his work on the analysis of the blood and urine. Dr. Rees was physician extraordinary to the Queen. He entered Guy's as a student in 1829, and retired from active duty there in 1873. He was Lettsomian lecturer in 1850 and Croonian lecturer in 1857, and delivered the Harveian oration in 1869. "He was a veritable Nestor of the profession, in the best sense of the term." Dr. Leonard Charles Wooldridge, also of the staff, died unexpectedly on June 6th, at the age of thirty-two years, after eating an anchovy sandwich. An autopsy revealed congestion and ecchymosis of the stomach and duodenum, and numerous follicular ulcers of the colon, with moderate cardiac dilatation. Death had taken place by syncope. Overwork at the hospital had contributed to this untimely ending of a most promising career. The deceased obtained his membership in the College of Surgeons about ten years ago. His medical degree was granted in 1886. In 1887 he became assistant physician at Guy's. He was a lecturer on physiology, and had assisted in the Local Government Board's scientific work. He was the son in-law of Sir Edward Sieveking. The "Lancet" speaks of his "rare genius and sleepless industry," and regards him as the most talented of the men of his own immediate period. His father was Leonard Wooldridge, a surgeon of repute at Overton.

BADGES FOR PARISIAN STUDENTS.

The Parisian students have recently decided to wear certain marks of distinction to denote the courses which they are pursuing. Medical students will wear, on a *boutonnière* of red and black, a little violet band with a skull made of some white metal. Army medical students will wear, on a garnet *boutonnière*, the symbol of health—the rod of Æsculapius in gold. Students of pharmacy will be distinguished by the emblem of pharmacy, a silver shaft encircled by a gold serpent, worn on a green *boutonnière*.

GARROD'S SULPHUR LOZENGE.

An interesting account of the therapeutics of sulphur has lately appeared in the "Lancet," written by Sir Alfred B. Garrod. Dr. Garrod regards small and long-continued doses the best means of securing the remedial influences of this drug; and he has found that a lozenge containing five grains of sulphur with a grain of cream of tartar meets nearly all the indications calling for a long-continued administration. This lozenge, named the "compound sulphur lozenge," is convenient and not disagreeable in taste; patients can ordinarily be readily induced to persevere in using it for an almost indefinite period. The lozenges have been in use about five years, and are gradually growing in popularity. Dr. Garrod has been informed by one of the makers of medicinal lozenges that he has sold and sent out, in the course of six months, as much as three hundredweight, or at the rate of 220,000 per annum. Dr. Garrod's experience will at least lead many medical men to test the virtues of sulphur in a range of troubles for which it is at present but rarely employed, more especially if they can have access to a form of lozenge as convenient and free from objection as the one described in his paper. If his experience is repeated in this country in regard to "hepatic colic," a term which covers a multitude of the indigestions, we do not require a prophet to forecast that the lozenge will have here a demand as great as, or greater than, in London. It will probably eventually come into the vest-pocket of a great proportion of our countrymen who eat rapidly, and who expect attacks of "colic" from time to time, without appreciating that they are preventable by a proper mastication of food. In hæmorrhoidal conditions not

suitable for surgical treatment, and in cases of bleeding from the rectum, benefit has been derived from one lozenge every night for weeks or months. It commonly mitigates the pruritus and the whole chain of accompanying symptoms. So far as we have been able to learn, this compound sulphur lozenge has not yet been made in this country, but it is highly probable that it will be laid before the profession in a short time.

SCURVY IN THE RUSSIAN ARMY.

Scurvy having been endemic at some of the garrison towns of Russia, says the "Lancet," an army surgeon, who set himself to the task of locating its causes, has reported that the bad food served to the soldiers will readily explain its existence and increase. He recommends that the army purveyors be discharged and that abattoirs be established in all garrison towns, and that all "superior" flour be excluded from the soldiers' dietary. His scheme for the feeding of the men includes the use of a vegetable soup each day in the following proportions: Twice a week, cabbage soup; twice, potato soup; and one day each, a soup of turnips, peas, and macaroni.

THE STOLIDITY OF THE CHINESE.

According to the "Deutsche Medizinal-Zeitung," an English physician residing in China points out that the most characteristic difference between the Chinaman and the Caucasian of Europe lies in the former's lack of nervousness. We in America, who have seen the Chinaman working incessantly in his little laundry, shall find no difficulty in believing the statements of the English physician when he says: "The Chinaman can write all day, he can work all day, he can stand for a whole day in one position, weaving, hammering gold, or cutting ivory, without once being attacked by nervousness. This peculiarity makes itself apparent in early youth. The Chinaman can bear any kind of bodily exercise. Sport and play are to him unnecessary labor. He can sleep anywhere and in any position—amid thundering machines, deafening noises, the cry of children, or the wrangle of grown people; on the ground, in bed, or on a chair." In his own innocent way the Chinaman is almost a Sybarite.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending July 9, 1889:

DISEASES.	Week ending July 2.		Week ending July 9.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	11	3	15	2
Scarlet fever	71	7	54	3
Cerebro-spinal meningitis	3	3	1	1
Measles	88	4	39	3
Diphtheria	99	27	84	18

Recent Deaths.—Dr. Stephen Wickes died on June 8th, at Orange, N. J., having had an apoplectic seizure about three weeks before. He was born in 1813 at Jamaica, Long Island. He was educated at Union College, graduating when eighteen years of age. In 1834 he was graduated in medicine at the University of Pennsylvania. He practiced in Troy, N. Y., for several years, being associated with the eminent Dr. Thomas W. Blatchford. In 1852 he made Orange his permanent home, and there continued in practice until a few years ago. He was the author of a "History of Medicine in New Jersey and of its Medical Men from the Settlement of the Province to A. D. 1800," also of a monograph on "Sepulture." He had nearly completed a "History of Newark Mountain," to which he had given much of his attention for twenty-five years. He was the editor of the transactions of his State society from 1861. He was physician to the Memorial Hospital from 1873. He was a presiding elder in the Presbyterian Church and president of the Essex County Bible Society. He was a man of decided character, diligent, thorough, fond of research, and independent and original in his form of expression.

Dr. Philip F. Brakeley, of Belvidere, N. J., died on July 3d, aged seventy-five years. He had been for nearly half a century quite a prominent figure in medical affairs in the northern part of the State, occupying a position not unlike that of that other veteran, the late Dr. William Elmer, in the southern section. Dr. Brakeley was for about forty years the secretary of the Warren County Medical Society. Like Dr. Elmer, who was nearly his peer in years, he was an alumnus of the University of Pennsylvania, medical department, of the class of 1842. His death was ascribable to the advancing disabilities of age, hastened by disease of the heart.

Dr. William Robinson Findley died at Altoona, Pa., on July 5th, in his seventy-ninth year. He was a practitioner in Blair County for about fifty-eight years, and had been a permanent member of the State Medical Society since 1863.

Dr. Edward Tobie died on May 12th, at Buffalo, N. Y., at the age of fifty-eight years. He was one of the elders of the profession, and possessed of most noble traits of character. He had built up a very large practice, and his untimely death was seemingly due to the fact that he never spared himself. He was a graduate of the Geneva Medical College in the year 1855. His death was occasioned by a sudden and overwhelming apoplectic seizure.

Dr. John Jordan Brown, of Mifflinville, Pa., a representative in the last State Legislature, died on June 25th. He was found unconscious in his office and did not rally. He was a graduate of Jefferson Medical College, of the class of 1870.

Dr. Charles Bland Radcliffe, of London, died suddenly on June 18th, of bleeding from a varicosity on the surface of an umbilical hernia of large size and long standing. Dr. Radcliffe was well known for his special labor in the field of neurology, for his writings on convulsive disorders, and for his articles in Reynolds's "System of Medicine." He was one of the physicians of the National Hospital for the Paralyzed and Epileptic, and was formerly attached to the faculty at the Westminster Hospital, both as attending and as consulting physician.

Dr. J. Lewis Smith, Jr., a son of the well-known writer on diseases of children, died at his home in New York, on Monday, the 8th inst. The deceased, who was a young man of much promise, was a graduate of Bellevue Hospital Medical College, of the class of 1884.

The New Hampshire Medical Society.—At the recent annual meeting of this society the following officers were elected for the coming year: Dr. William Child, of New Hampton, president; Dr. Lyman B. How, of Manchester, vice-president; Dr. Granville P. Conn, of Concord, secretary; Dr. Daniel S. Adams, of Manchester, treasurer; and Dr. Thomas Hiland, U. S. N., of Concord, anniversary chairman. The society was incorporated in 1791, and preparations are in progress for a centennial meeting two years hence.

The Hospital of Johns Hopkins University.—Dr. Henry M. Hurd, of Pontiac, Michigan, has been appointed superintendent of the hospital. He is at present the superintendent of the State Asylum for the Insane at Pontiac.

St. Francis's Hospital, Jersey City.—The medical board has elected officers for the ensuing year as follows: President,

Dr. Nathan Gross Bozeman; secretary, Dr. Hamilton Vreeland; curator, Dr. William Perry Watson.

Change of Address.—Dr. Frederick Peterson, to No. 201 West Fifty-fourth Street.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from June 16 to July 6, 1889:*

By direction of the Acting Secretary of War, the following changes in the stations of officers of the Medical Department are ordered: Ten Eyck, Benjamin L., First Lieutenant and Assistant Surgeon (recently appointed), ordered to Fort Leavenworth, Kansas; Gardiner, John de B. W., Captain and Assistant Surgeon, relieved from duty at Fort Leavenworth, Kansas, and ordered to Fort Reno, Indian Territory; Par. 3, S. O. 132, June 8, 1889, A. G. O., is so amended as to direct Wales, P. G., First Lieutenant and Assistant Surgeon, to report to Fort Huachuca, Arizona, for duty in place of Presidio of San Francisco, Cal.; Wyeth, M. C., Captain and Assistant Surgeon, relieved from duty at Fort Huachuca, Arizona, and ordered to Fort McDowell, Arizona; Woods, Leonard, First Lieutenant and Assistant Surgeon, relieved from duty at Fort McDowell, Arizona, and ordered to Presidio of San Francisco, Cal. Par. 2, S. O. 138, A. G. O., June 15, 1889.

Forwood, William H., Major and Surgeon. By direction of the Secretary of War, the extension of leave of absence on surgeon's certificate of disability granted in S. O. 118, May 22, 1889, from this office, is further extended four months on surgeon's certificate of disability. Par. 14, S. O. 142, A. G. O., Washington, June 20, 1889.

Fisher, Walter W. R., Captain and Assistant Surgeon. The leave of absence for one month granted by S. O. 30, c. s., Department of California, and extended fifteen days by Par. 3, S. O. 37, c. s., from these headquarters, is further extended fifteen days. Par. 1, S. O. 41, Headquarters Division of the Pacific, San Francisco, Cal., June 12, 1889.

Harris, Henry S. T., First Lieutenant and Assistant Surgeon. By direction of the Acting Secretary of War, leave of absence for two months is granted. Par. 13, S. O. 140, A. G. O., June 18, 1889.

Corson, J. K., Major and Surgeon. Granted leave of absence for one month, with permission to apply for an extension of one month. Par. 2, S. O. 65, Headquarters Department of the Columbia.

Hoff, John Van R., Captain and Assistant Surgeon, is relieved from duty at Fort Reno, Indian Territory, and ordered to Fort Riley, Kansas. Par. 6, S. O. 145, A. G. O., Washington, D. C., June 24, 1889.

Bache, Dallas, Major and Surgeon, is relieved from duty at Fort Riley, Kansas, and ordered to report to commanding general, Department of the Platte, for duty as Medical Director of that department. Par. 6, S. O. 145, A. G. O., Washington, D. C., June 24, 1889.

Woodruff, Ezra, Major and Surgeon, is, by direction of the Secretary of War, relieved from temporary duty at Fort Monroe, Virginia, and will report in person to the commanding officer at Fort Hamilton, N. Y., for duty at that station. Par. 5, S. O. 146, A. G. O., June 25, 1889.

Fisher, Walter W. R., Captain and Assistant Surgeon. By direction of the Secretary of War, the extension of leave of absence granted in S. O. 41, June 12, 1889, Division of the Pacific, is still further extended fifteen days. Par. 8, S. O. 146, A. G. O., Washington, June 25, 1889.

The leave of absence for one month granted Major J. K. Corson, Surgeon, by Par. 2, S. O. 65, c. s., Department of the Columbia, is extended one month. Par. 1, S. O. 45, Headquarters Division of the Pacific, June 24, 1889.

Leave of absence for twenty-five days, to commence on or about July 2, 1889, is granted Captain A. R. Chapin, Assistant Surgeon. Par. 6, S. O. 145, Division of the Atlantic, June 27, 1889.

Gibson, R. J., Captain and Assistant Surgeon, reports arrival July 2, 1889, at Camp Lewis, Fisher's Island, New York, in compliance with Par. 5, S. O. 133, Division of the Atlantic, which designated him as medical officer for the encampment (rifle practice) at Fisher's Island, New York.

By direction of the Secretary of War, Captain Andrew V. Cherbonnier, Medical Storekeeper, will, in addition to his present duties, take charge of the office and perform the duties of acting assistant medical purveyor in St. Louis, Missouri, during the absence of Captain George T. Beall, Medical Storekeeper. Par. 2, S. O. 151, A. G. O., July 2, 1889.

Leave of absence for one month is granted Captain W. C. Gorgas, Assistant Surgeon, to take effect on the arrival of a medical officer to relieve him. Par. 2, S. O. 84, Headquarters Department of the Missouri, July 3, 1889.

By direction of the Secretary of War, leave of absence for two months is granted Captain George T. Beall, Medical Storekeeper. Par. 8, S. O. 148, A. G. O., June 27, 1889.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the two weeks ending June 29, 1889:*

Beardsley, Grove S., Medical Inspector. Granted a year's leave of absence, with permission to leave the United States.

Ferebee, N. M., Surgeon. Detached from special duty at Naval Academy and to await orders.

Rothganger, George, Assistant Surgeon. Ordered to the Naval Hospital at Mare Island, Cal.

Siegfried, C. A., Surgeon. Detached from the U. S. Steamer Quinnebaug, and to wait orders.

Curtis, L. W., Passed Assistant Surgeon. Detached from the U. S. Steamer Quinnebaug, and to wait orders.

Smith, George T., Assistant Surgeon. Ordered to the Army and Navy Hospital, Hot Springs, Arkansas.

Society Meetings for the Coming Week:

Tuesday, *July 16th:* Medical Society of the County of Otsego (annual—Cooperstown), N. Y.

Saturday, *July 20th:* Medical Society of the New York Post-graduate Medical School and Hospital.

Letters to the Editor.

SUBLUXATION OF THE HEAD OF THE RADIUS.

133 West Thirty-fourth Street, *July 8, 1889.*

To the Editor of the New York Medical Journal:

Sir: Answering the letter of Dr. Van Arsdale in your issue of July 5th, please allow me to say that it is a matter of small importance whether my paper brought forward any original ideas. Not knowing of the papers of Moore, Van Santvoord, and Streubel, I made a few simple experiments upon the cadaver, and published the results for what they were worth in your issue of June 22d. The question as to the real nature of the injury had puzzled me, but the experiments were satisfactory.

The specimen presented by Dr. Van Arsdale, as stated in

his letter, did not illustrate any of the points which I made in reference to the movements of the orbicular ligament, and that is why I did not do him "the credit to refer to it."

In answer to the important points in Dr. Van Arsdale's letter, I would say: 1. In spite of the close attachments of muscles to the anterior ligament, the fibers known as the orbicular ligament can slip over the head of the radius while the anterior ligament remains undisturbed. 2. The fact that in many cases the head of the radius can be felt anteriorly displaced does not speak against the theory of interposition, but rather in favor of it, for, the head of the radius being liberated from the loop of the orbicular ligament, the biceps muscle would naturally be expected to displace the head of the radius anteriorly. 3. If Dr. Van Arsdale will try to produce subluxation of the head of the radius while the biceps muscle of the cadaver is put upon the stretch, he will believe with me that the orbicular ligament can not slip over the head of the radius into the joint space except at a moment when the biceps muscle of the patient is relaxed and "off its guard." Robert T. Morris, M. D.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN PRACTICE OF MEDICINE.

Meeting of April 16, 1889.

Dr. R. C. M. Page in the Chair.

A Case of Purpura Hæmorrhagica.—Dr. E. A. Bracklow presented a patient. Improvement of some duration had been obtained from the administration of sulphate of quinine in acidulous solution, but the old condition had returned sooner or later after every sort of treatment tried. There was associated kidney disease.

Dr. G. R. Lockwood said he had been struck with the uncertainty in various writers as to what really constituted the morbid state present in or with purpura hæmorrhagica. Many spoke only of the essential cases, to the exclusion of those which were symptomatic—*e. g.*, occurring in scarlet fever, etc. Others associated purpura hæmorrhagica with a general cachexia due to poor food, residence in damp cellars, etc., and with swelling of the gums and loosening of the teeth; still others with anæmia, enlargement of the liver and spleen, retinal hæmorrhages, and escape of blood on the mucous surfaces. The pathology, symptomatology, and treatment were not well defined, in other words; the literature on the subject, and especially the reports of cases, needed review and original study. The treatment of the condition had been unsatisfactory with the exception of one instance where the faradaic current, used for the first time when the patient was *in extremis*, had brought about recovery. There was one form of the disease not sufficiently recognized. It was common to hear of mild cases which were recovered from in which there were more or less frequent recurrences. But he referred now to instances where hæmorrhages and acute collapse came on very suddenly, the patient dying in profound nervous depression. Thus a soldier, in good health apparently when such an attack had come upon him, had died after an illness of only eighteen hours. In another instance a young lady had been seized with hæmorrhages into the skin, and from the nose, mouth, bowels, uterus, kidney, and stomach; the temperature had risen to 107° F., and after two days of profound nervous depression the patient had died in coma.

Dr. W. S. Gottheil said he appreciated the confusion now existing in the descriptions of purpura as distinguished from purpuric diseases, but thought no very marked distinction needed to be made between them. A first class should be made of cases where hæmorrhages occurred into the skin only (in which also recovery always occurred). In a second class should be placed the severe cases where hæmorrhages from the mucous membranes and internal viscera occurred. But, apart from this, he would have the pathological conditions under which the disease occurred studied in themselves, and named accordingly. The connection was the main thing, since purpura was only a symptom of quite a number of different affections.

The Value of Simulo in Epilepsy.—Dr. M. Allen Starr read a report of the results obtained from the employment of tincture of simulo in a number of cases of epilepsy and hystero-epilepsy. His conclusions were that it was without value in hysterical convulsions of every sort, in *petit mal*, and in procursive epilepsy, and that it was not the equal of the bromides in *grand mal*. But, on the other hand, it caused no general disturbance as the bromides sometimes did, and in such cases might be used to replace them as a means of reducing the frequency of real epileptic seizures. If used, he would advise that the dose be increased daily. The chief objection to the employment of the drug in ordinary practice was its expensiveness.

Dr. E. D. Fisher thought the drug worthy of trial. Some had found that if a third of the ordinary dose of the bromides was replaced by simulo, the effect of each drug was much enhanced.

Dr. L. C. Gray had tried the drug in five different cases, both in combination and by itself. His experience with it had resulted in his entirely abandoning its use. Any change of treatment was followed by temporary improvement in epilepsy, but a value of this sort simulo had in common with too many other agents to be recognized as having a specific action.

The Significance of the Crepitant Rale.—Dr. Frank W. Jackson read a paper with this title, in which he had compiled opinions from various standard writers to the effect that the crepitant râle did not occur in pneumonia alone. There was a difference in the definition of the râle by various writers, but all practically followed either Laennec or Walshe. Laennec had located the origin of the sound in the pulmonary cells, believing it due to the breaking of bubbles of air forming in a serous exudation, and described it as a moist sound. Walshe described it as a dry crackling, comparable to the breaking of a fine tissue, and probably produced when stiffened air cells were distended. The reader believed both moist and dry crepitant râles occurred, having noticed them sometimes in the same patient on different examinations. More recent foreign writers made it due to a variety of possible conditions (thus to the tearing loose of the walls of the vesicles from a fluid, beginning œdema of the lung, pleuritic adhesions, collapse of air vesicles, œdema of the pleura dependent on old lung diseases, and the first stage of pulmonary apoplexy), as well as to the incipient stage of pneumonia. Dr. Leaming, in this country, had sought to enforce the view that all râles were of pleuritic origin, basing his belief on the finding of fibrin on the pleura, in cases where râles had been heard a few hours before death, and when the lung was completely solidified. He considered it a valuable sign of pneumonia and phthisis, but not as a positive indication of either. Dr. Loomis made the crepitant râle due to pleuritis; Dr. Delafield made it a friction sound; Dr. Roosevelt, a sound due most commonly, and perhaps always, to pleuritic rubbing, and occurring in pneumonia, phthisis, and dry pleurisy.

The speaker had a few observations of his own to offer from a strictly clinical point of view. The crepitant râle, in his experience, was not always persistent; that is, it often disap-

peared and then appeared again, from moment to moment. The very fine and dry crackling râles, coming in a gust or shower, were but rarely heard. The crepitant râle was heard in dry pleurisy, in pneumonia, and in phthisis, and in no case could one tell by the râle alone whether the case was one of pneumonia or not. Many patients whose only symptom was pain in the chest had crepitant râles, and this he believed to be due to dry pleurisy alone or to pleuritic adhesions. In œdema he believed the râle was subcrepitant of a very liquid character. There seemed to him a strong probability that the crepitant râle common to pneumonia, phthisis, and dry pleurisy was due to a pleuritic exudation.

His conclusions were that the crepitant râle was not pathognomonic of pneumonia; that it was heard also in phthisis, in dry pleurisy, and in broncho-pneumonia; that there was a strong probability that it was almost always due to pleuritic inflammation; and that the question as to whether it was also heard in œdema of the lung and in pulmonary apoplexy was as yet unsettled.

Dr. J. W. Roosevelt thought that among the many loose statements made in explanation of physical signs the loosest had been concerned with the causation of the crepitant râle. We were not yet in a position to say what the cause really was, in his opinion. Some had said that this râle was produced in the air vesicles; others, that it could not be there produced because the air did not move in these spaces. The latter statement he must absolutely deny. The inflation of lung tissue produced by even a small motion of the chest had been proved to the eye experimentally. We were told that the pleural surfaces alone produced this sound. Others said that crepitant râles could not arise in a solidified lung. He saw no reason why they should not be produced in the latter way. We overlooked the fact that a solidified lung moved, or else the pleura did not move with the chest. The solidified lung was capable of expansion, if only by the filling of the bronchi, as could be shown experimentally. Some spoke of it as a curious thing that the crepitant râle was heard only near the seat of pain, but it was equally curious that the pain did not correspond to the seat of the pleurisy and was located sometimes even in the other lung. Sometimes crepitant and subcrepitant râles were heard just before death, and the autopsy showed no pleurisy present. On the other hand, he could say from personal observation that these râles could sometimes be heard in cases of pure pleurisy. It was also heard in pulmonary œdema. If the pleura could produce the sound, why not also a solidified lung? His conclusion, therefore, was that the crepitant râle was valuable as a sign of either pleurisy or pneumonia only in connection with other symptoms.

Dr. W. W. Van Valzah agreed that the crepitant râle might appear in each of the several conditions named. A simple means of separating those cases where the source of the râle was in the pleura from those where it was in the lung itself was to fix the lower third of the chest-wall by throwing the arms about the patient's waist, and then having him breathe and cough. If, then, the stethoscope still revealed the existence of a râle, the source of the sound was evidently pulmonic. If, on the other hand, the pain on breathing and the râle were both suspended by thus clasping the chest, both had evidently come from a pleural affection. In pleuritic râles the extent over which they were heard was small, moreover. They were comparatively loud and harsh and the amount of sound varied much. In pneumonia the râle not of pleural origin was comparatively a faint sound, deep-seated, and varying little in amount.

The Chairman believed that the real crepitant râle originated in the lung, but might be imitated as a result of conditions in the pleura and bronchi, and in some cases indistinguishably.

Book Notices.

A Treatise on the Diseases of Women, for the use of Students and Practitioners. By Alexander J. C. Skene, M. D., etc. New York: D. Appleton and Company, 1888. Pp. xiv–966.

Dr. Skene's well-earned reputation as one of the leading gynæcologists of America is in itself enough to insure a favorable reception of his book, and this will be the more heartily given after the work has been examined. Like the books published by Emmet and Sims, it voices the author's own ideas and methods of practice—deductions from his own observations to the almost entire exclusion of those of other authorities. All, or almost all, of the many mooted points with which the gynæcology of to-day bristles are not discussed by the author, whose aim has been to present the practical part of gynæcological surgery in brief, concise descriptions of the various disorders of the female sexual organs and of the modes of treatment which he himself follows, rather than a summary of all the methods now in vogue. Illustrative histories of cases are given with a view to the better explanation of details of treatment, as well as of the different phases of the same disease.

A large portion of the work is devoted to the diseases of the bladder and urethra, as one might fancy would be the case, for Dr. Skene has already contributed much to the literature of that subject. Some controversial matter has crept into this section of the work, but its presence is not manifest to a disagreeable extent.

The work shows that its author is nothing if not original, and is replete with practical suggestions and details of operative technique by which other eminent authorities might profit in many instances. The treatment of uterine myo-fibroma by the galvanic current is supported, and some stress is laid upon abnormal invagination of the cervix as a cause of uterine displacements. The chapters relating to the use and abuse of pessaries are most admirable, if one fault, to which subsequent attention will be paid, is ignored. The proper application of these much-abused instruments in the treatment of uterine displacements is clearly defined, as are the injurious effects of careless or ignorant use of the same.

The book will be welcomed by the practitioner of gynæcological experience as a valuable addition to his reference library, but it will be of but little real assistance to the student or tyro, as the fault just mentioned is apparent throughout its extent. This fault consists in the almost absolute neglect of mentioning the contra-indications to the use of the sound as a uterine repositor, and to the performance of operations involving the uterus or the circumjacent pelvic tissues. In gynæcological surgery pre-eminently should care be taken to prepare the patient for operation, and to postpone it until such time as may be required for preparation has elapsed and all evidences of acute pelvic inflammation have disappeared. Yet the only reference to this all-important subject is to be found in the statement, frequently recurring in the histories of the cases cited, that the patient was treated until she was in a condition which was suitable for operation, with no description of that condition and no caution against operating at any time or in any case. To the expert this is of no importance, but to the callow practitioner, who will blindly follow his text-book's directions, it may mean invariable pelvic peritonitis as a complication in his uterine cases. Again, ulceration of the vaginal and uterine walls resulting from the pressure of a neglected or ill-fitting pessary is very uncommon in comparison with the evil effects of the use of even perfectly fitting pessaries when the uterine ligaments are the seat of inflammation, or the enlarged, prolapsed ovary is cruelly pressed upon by the same malplaced instrument.

In general, the work is a concise exposition of the gynecological surgery of to-day, and, though it treats its subject only from the standpoint of its author's experience and belief, it will well repay him who reads it carefully. Dr. Skene's teachings may be at variance with those of equally eminent authorities, but he adduces enough of clinical proof in support of his methods; and the quality of a pudding is best ascertained by an actual ingestion test, not by theoretical criticism of the recipe after which it had been constructed.

The book, in typography and illustrations, is a credit to the publishers. Numerous woodcuts and several colored plates illustrate the work and testify in regard to the ability of the artist.

Clinical Lectures on Albuminuria. By Thomas Grainger Stewart, M. D. Edin., Fellow of the Royal College of Physicians of Edinburgh, etc. New York: William Wood & Co., 1888. Pp. xi–250.

This work is worthy of serious attention. The author details the results of personal observations apparently made with care. However much we may venture to doubt many of his conclusions, we can not overlook the importance of the facts presented. Unfortunately, the tables of statistics are by no means convincing. It is a great pity that more detail is not given. Dr. Stewart first tabulates the incidence of albuminuria in 505 "presumably healthy people," and finds albumin present in 166. Of these, the quantity was sufficient to be shown with cold nitric acid in 76, but in 90 picric acid only showed the reaction. This is a very large percentage, and certainly makes one think that more cases should be studied. Turning to page 37, we find a table of 450 patients with various disorders, of whom 136 showed albumin, 99 with nitric acid and 37 with picric acid. The author says that at first one is surprised to find 32·2 per cent. of presumably healthy people with albuminuria, while only 30·2 per cent. of the patients had it, but calls attention to the fact that of the former 76 and of the latter 99 showed albumin with nitric acid, and that therefore a larger proportion of the sick show a relatively larger *quantity* of albumin than the well. We find, however, in the 99 cases among the sick whose urine reacted with nitric acid, 43 of Bright's disease, 7 of probable Bright's disease, and 9 which were "accidental." Paying no attention to the latter, we have among 450 sick 50 cases of Bright's disease with enough albumin to react with nitric acid. Now, it seems fair to subtract these from the total, and then compare the remaining cases with those in the first table. We have among the healthy 76 in 505 whose urine reacted to nitric acid, while among the sick we have 49 in 400. The rather startling result is that 15·5 per cent. of persons in health have albuminuria, while among the sick only 12·25 per cent. (exclusive of those with Bright's disease) present this symptom! The number of cases examined is far too small. Another criticism which we must make on these tables is that their utility is much reduced by the omission of any statement of the whole number of cases examined in each class. When Dr. Stewart says that nervous affections do not seem a frequent cause of albuminuria, since he finds only 6 among 450 patients, it would be more valuable to us if he had stated the total number of nervous cases examined. The author continually compares his *classes* with the *whole series* of 450, instead of giving the numbers in each class in which there was or was not albuminuria. Two things we would note regarding these tables—first, that not five hundred and five, but at least five thousand cases should be examined before accepting Dr. Stewart's percentage results; second, that among the sick no tables of value can be made unless the number of cases in each class is considered as well as the whole number.

The author considers picric acid and cold nitric acid the most satisfactory qualitative tests for albumin, and seems to think the latter of more clinical value than the former. For quantitative estimation, Esbach's method is stated to be the best for clinical use.

The book, as a whole, is very interesting. The subject is carefully and clearly studied, and the various views of different authorities are fairly presented.

Lectures to Practitioners on the Diseases of the Kidney amenable to Surgical Treatment. By David Newman, M. D., Surgeon to the Western Infirmary (Outdoor Department); Pathologist to and Lecturer on Pathology at the Glasgow Royal Infirmary, etc. London: Longmans, Green, & Co., 1888. Pp. xv–472.

The author has made a careful study of his subject and his book is interesting. It is to be regretted that he has not added a complete list of the authors and papers consulted. There is much to praise in the clearness of his style and the completeness of his descriptions; but we can hardly be satisfied with the paragraphs upon diagnosis. Like so many others, Dr. Newman first states that there is a close resemblance between various diseases, and then proceeds to give descriptions of symptoms which are so absolutely unlike that one wonders how he or any one else could ever make an error, or indeed see any similarity in the disorders. Now, it is not absolutely clear cases which usually cause error. In his description of renal swelling (page 97 *et seq.*) almost every paragraph contains the word "generally." This is well enough, but for the diagnosis of difficult cases we can not rely upon generalities; we want to know what unusual conditions may exist and how they are to be interpreted. We do not "generally" mistake either ascites or an ovarian cyst for a renal tumor or *vice versa*, and when doubt exists as to whether one or another of these is present, we have to deal with conditions which *resemble* each other, not with those which do not.

The book, except for the points noted, is very clear and good. Those who have much to do with surgical cases will find it worthy of study. The pathological descriptions are good. The indications for operations are clearly and rationally given. Rather elaborate statistics are tabulated showing the results of operations as well as other matters.

Bright's Disease of the Kidney. By Alfred L. Loomis, M. D., LL. D., Professor of Pathology and Practice of Medicine, New York University Medical College, etc. Detroit: George S. Davis, 1888. Pp. 117. ["The Physicians' Leisure Library."]

In this book Dr. Loomis sets forth his views upon these important subjects in a manner which is disappointing. Although the style seems clear, yet one finds some difficulty in ascertaining exactly what the author means to say. The pathological anatomy given will hardly be accepted by most pathologists. The symptomatology is well handled. The causes of dropsy and albuminuria are not made plainer than has been done by earlier authors. The treatment indicated seems most rational and is worthy of the author. On the whole, the book can not be considered as a very valuable contribution to the literature of the subject.

GENERAL LITERARY NOTES.

Among recent foreign publications we note the following:

Asselin & Houzeau, Paris.—P. Tillaux, "Traité de chirurgie clinique." Vol. II. 2d fasc. (6*fr.*) —— D. Labbé, "De l'ozone. Aperçu physiologique et thérapeutique." (1*fr.* 50.)

J. B. Baillière & fils, Paris.—H. Thompson, "Leçons cliniques sur les maladies des voies urinaires." Transl. by Robert Jamin. (3*fr.*) —— Borry, "De l'enclavement de l'iris consécutif à l'extraction de la cataracte, principalement d'après la méthode française (historique), pathogénie, prophylaxie." (3*fr.*) —— E. Gautretet, "Urines (dépôts, sédiments, calculs). Application de l'analyse urologique à la seméiologie médicale, avec une préface de Lecorché." (6*fr.*)

O. Berthier, Paris.—L. N. Worthington, "Chimie inorganique et organique, botanique, zoologie."

Ch. Brehm, Montpellier.—A. Jaumes, "La declaration des causes de décès et des maladies épidémiques."

H. Briand, Angers.—G. Dupont, "De la perte de poids que subissent les cadavres dans l'air atmosphérique."

Bristind, Havre.—Le Gad, "Observations d'une épidémie de variole jugulée par les revaccinations en masse."

Cerf & fils, Versailles.—S. Y. Ménard, "Note sur la maladie des chiens."

A. Coccoz, Paris.—L. A. Demelin, "Documents pour servir à l'histoire anatomique et clinique du segment inférieur de l'utérus pendant la grossesse, l'accouchement et les suites de couches." (3*fr.* 50.)

A. Delahaye & Babé, Paris.—B. J. Narich, "À propos d'une opération de céphalotripsie sans broiement chez une femme à bassin oblique-ovulaire.—Petite modification dans le cranioclaste."

E. Deshays, Rouen.—R. Brunon, "Réflexions à propos d'un nouveau cas de myosite infectieuse primitive."

O. Doin, Paris.—L. Tripier, "Guide pratique de petite chirurgie." —— Charlier, "Traitement spécifique de la phtisie pulmonaire par le cuivre." (1*fr.* 75.) —— J. Ronvier, "Hygiène de la première enfance." —— B. J. Narich, "Expériences avec le cranioclaste de Carl Braun (de Vienne) dans les bassins très rétrécis et proposition d'un nouveau procédé d'extraction du fœtus avec le même instrument."

Bureaux de l'Encéphale, Paris. — Rouillard, "Les amnésies (valeur séméiologique, étiologie, classification)." —— H. Savage, "Des troubles d'esprit développés à l'occasion de fiançailles." Transl. by V. Parant.

Bureau du Journal de médecine de Paris, Paris.—J. Jasenriez, "Quelques considérations sur les stations climatériques françaises."

Lecrosnier & Babé, Paris.—J. Renaut, "Le milieu intérieur et le tissu conjonctif lâche et modelé." —— G. Thermes, "Traité élémentaire d'hygiène et de thérapeutique de l'hystérie." —— De Wecker and E. Landolt, "Traité complet d'ophtalmologie." Vol. iv, 3d fascic. (20*fr.*) —— G. Wickham, "Appareils de Wickham pour le traitement des hernies." (1*fr.*)

F. Levé, Paris.—J. Morice, "Du bain prolongé. Note sur un cas de phosphaturie chez un névropathe arthritique."

G. Masson, Paris.—G. J. Bull, "Lunettes et pince-nez." —— Ch. Monod, "Compte rendu des travaux de la Société de chirurgie pendant l'année 1888."

P. Savy, Paris. — L. Ranvier, "Traité technique d'histologie." (18*fr.*)

Steinheil, Paris.—V. Fremont, "Vichy; indications et contre-indications." —— P. Balme, "De l'hypertrophie des amygdales (palatine, pharyngienne, linguale)." —— D. Courtade, "Contribution à l'étude thérapeutique de la digitale dans les affections organiques du cœur." —— H. Gillet, "De l'embrocardie ou rythme fœtal des bruits du cœur." —— F. Regnault, "Des altérations crâniennes dans le rachitisme." —— L. Riocreux, "Syphilis. Hérédité paternelle." —— A. Ruault, "Contribution à la pathologie de la quatrième amygdale (amygdale de la langue)." —— A. Ruault, "Le spasme glottique d'origine nasale."

Vaillant-Carmann, Liège.—Lenger, "De la tarsectomie postérieure dans les piedsbots varus osseux."

J. F. Bergmann, Wiesbaden.—H. Nebel, "Bewegungskuren mittelst schwedischer Heilgymnastik und Massage." —— M. Nitze, "Lehrbuch der Kystoskopie." —— O. Becker and W. Hess, "Bericht von 7. period. internat. Ophthalmologenkongress 1888." —— F. Siebenmann, "Die Schimmelmykosen des menschlichen Ohres." —— R. Frommel, "Über die Entwickelung der Plazenta von *Myotus murinus*."

Breitkopf & Härtel, Leipsic.—H. Schmidtborn, "Ueber Asthma nervosum." —— W. A. Freund, "Uber Akromegalie." —— C. Krafft, "Behandlung der durch Perforation des Wurmfortsatzes hervorgerufenen Perityphlitis stercoralis."

Dorn'sche Buchhandlung, Ravensburg.—J. L. A. Koch, "Zweifalten, kurzgefasster Leitfaden der Psychiatrie."

Ferdinand Enke, Stuttgart.—Rosenbach, "Der Hospitalbrand." —— Rafaël Coën, "Spezielle Therapie des Stammelus und der verwandten Sprechstörungen." —— F. Hersing, "Kompendium der Augenheilkunde."

G. Fischer, Jena.—Ziegler and Nauwerck, "Beiträge zur pathologische Anatomie und zur allgemeinen Pathologie." Vol. iii.

Gnevkow & v. Gellhorn, Kiel.—J. Hahn, "Ueber Transplantation ungestielter Hautlappen nach Wolfe."

A. Hirschwald, Berlin. — O. Berkhan, "Ueber Störungen der Sprache und der Schriftsprache." —— C. A. Ewald, "Klinik der Verdauungs-Krankheiten." ii, "Die Krankheiten des Magens."

Schumacher, Berlin.—Orchansky, "Sur l'état de trouble de la conscience." —— M. Bernhardt, "Beitrag zur Lehre von den allgemeinen und localen traumatischen Neurosen." —— G. Burckhardt, "Weitere Mittheilungen über Gefissbewegungen, theoretisches und praktisches."

K. J. Trübner, Strassburg.—H. W. Freund, "Vorschläge zur Reform des Hebammenwesens in Elsass-Lothringen."

F. C. W. Vogel, Leipsic.—A. Volland, "Die Behandlung der Lungenschwindsucht im Hochgebirge." (1*M.* 50.) —— v. Ziemssen's "Handbuch." Vol. x, 9th ed. —— C. Schröder, "Die Krankheiten der weiblichen Geschlechtsorgane." 9th ed. (12*M.*)

W. Braumüller, Vienna.—I. Neumann, "Lehrbuch der venerischen Krankheiten und der Syphilis." i.

Stationlewitsch, St. Petersburg.—Orchansky, "Sur l'innervation volontaire."

Buschmann, Antwerp.—De Mets, "La réfraction et le sens chromatique dans les écoles primaires à Anvers."

Prato, Milan.—V. Mibelli, "Sulla patogenesi dell' alopecia areata." "Sulla esfoliazione areata della lingua."

J. Balmas Planas, Barcelona.—Bassols Prim, "Estudios sobre la tuberculosis a proposito del congreso que a este objeto se reunio en Paris en julio de 1888."

Domenech, Valencia.—P. Colvee y Roura and D. Vincente Peset Cervera, "Experimentos sobre el alcoholismo agudo."

Pinhero, Rio de Janeiro.—D. Freire, "La mission du Dr. Sternberg au Brésil. Réfutation du rapport publié par ce médecin."

BOOKS AND PAMPHLETS RECEIVED.

Lectures on Massage and Electricity in the Treatment of Disease (Masso-electro-therapeutics). By Thomas Stretch Dowse, M. D., Fellow of the College of Physicians of Edinburgh, etc. Bristol: John Wright & Co., 1889. Pp. xix–379.

Synopsis of Human Anatomy, being a Complete Compend of Anatomy, including the Anatomy of the Viscera, and numerous Tables. By James K. Young, M. D., Instructor in Orthopædic Surgery and Assistant Demonstrator of Surgery in the University of Pennsylvania, etc. Philadelphia: F. A. Davis, 1889. Pp. ix, 3 to 393. [Price, $1.40.] [Physicians' and Students' Ready Reference Series.]

Darwinism. An Exposition of the Theory of Natural Selection, with some of its Applications. By Alfred Russel Wallace, LL. D., F. L. S., etc. With Map and Illustrations. London and New York: Macmillan & Co., 1889. Pp. xvi–494. [Price, $1.75.]

Strathpeffer Spa; its Climate and Waters. With Observations, Historical, Medical, and General, descriptive of the Vicinity. By Fortescue Fox, M. D. (Lond.), Fellow of the Medical Society of London. Illustrated. London: H. K. Lewis, 1889. Pp. xvii–165.

Transactions of the American Orthopædic Association. Vol. I. Published by the Association, 1889.

The Medical Directory of Philadelphia, comprising Lists of Physicians, Dentists, Druggists, and Veterinarians in Philadelphia and Camden. Together with Descriptions and Details relating to Colleges, Hospitals, Dispensaries, Training Schools, Homes, Reformatories, and Charitable Organizations; the Code of Ethics of the American Medical

Association; and Laws relating to the Professions represented. 1889. Philadelphia: P. Blakiston, Son, & Co.

Transactions of the College of Physicians of Philadelphia. Third Series. Volume the Tenth. 1888.

Seventy second Annual Report of the Managers of Friends' Asylum for the Insane.

The Radical Cure of Hernia. By Thomas W. Kay, M. D. [Reprinted from the "Maryland Medical Journal."]

Constitution and By laws of the New Mexico Medical Society, with History. Adopted December, 1885; revised April, 1889. Las Vegas, New Mexico.

On Unusual Methods of acquiring Syphilis, with Reports of Cases. By L. Duncan Bulkley, A. M., M. D., of New York. [Reprinted from the "Medical News."]

Studies on the Ætiology of the Pneumonia complicating Diphtheria in Children. By T. Mitchell Prudden, M. D., and William P. Northrup, M. D. [Reprinted from the "American Journal of the Medical Sciences."]

Scarlatinous Otitis. By Charles H. May, M. D. [Reprinted from the "American Journal of Obstetrics and Diseases of Women and Children."]

The Rational Method of preventing Yellow Fever on the South Atlantic Coast. By J. C. Le Hardy, M. D., Savannah, Ga. (Read before the Medical Association of Georgia, at Macon, Ga., April 18, 1889.)

A Clinical Study on Alopecia Areata and its Treatment. By L. Duncan Bulkley, A. M., M. D., New York. [Reprinted from the "Medical Record."]

De la lobéline dans la thérapeutique de l'asthme. Mémoire présenté au 1er congrès brésilien de médecine et chirurgie et lu devant le même congrès à la séance du 15 Septembre 1888 par le Dr. Silva Nunes.

Reports on the Progress of Medicine.

PHYSIOLOGY.

By LOUISE G. RABINOVITCH, M. D.,
PHILADELPHIA.

On the So-called Toxic Antagonism of Some Poisons.—Besides the physiological antagonism of poisonous substances, researches have been made by some authors to find a toxic antagonism or an antidotal rôle of two poisons taken *vis-à-vis* in the organism. Atropine and morphine have been regarded as toxic antagonists.

M. G. H. Roger ("Jour. des soc. sci.," No. 21, 1888) has experimented on rabbits, with the purpose of determining the existence or non-existence of a toxic antagonism between hydrochloride of morphine, neutral sulphate of atropine, sulphate of quinine, and potassium chloride. To be enabled to draw experimental conclusions, the author determined the poisonous dose of each element, or the toxic equivalent of Bouchard. (This dose is the toxic amount of the substance necessary to be dissolved in 20 c. c. of distilled water.) The intravenous injections were made with a rapidity of 4 c. c. a minute to the kilogramme of the animal's weight. After M. Roger's experiments with mixed injections of morphine and potassium chloride, each substance acted, as regarded its toxic equivalent, as if it had been injected alone. Often both poisons acted synergetically, and their corresponding toxic effects were added to each other (morphine and atropine; quinine and morphine; atropine and quinine). In some cases the toxicity of the mixture was decidedly greater than the sum of the poisonous effects which should be expected to exist (quinine and potassium chloride). In the course of exploration of the substances named the author has never succeeded in finding a toxic antagonism, a more or less complete neutralization of one poison by another.

The Specific Action of Menthol on the Thermic Sensory Nerves (Goldscheider, "Archiv fur Anat. und Physiologie").—M. B. ("Journal de méd. de Paris," No. 26, 1888) reports the author's conclusions in saying that the sensation of cold produced by the application of menthol to the skin or the tongue depends not upon evaporation of the substance, but upon a specific (probably a chemical) action of menthol on the terminal organs of sensation of cold. From the physiological point of view, menthol and phenol are antagonistic. A continual friction performed with a five-per-cent. solution of phenol renders the skin insensible to thermic agents. An application of menthol to such an artificially insensible part makes the sensibility reappear. The insensibility caused by cocaine injections is not remedied by menthol. If menthol acts at all, the phase of excitation may be followed by a paralytic phase. Menthol acts also, to a certain degree, on the nerves of sensation of heat and of tactile sensibility proper.

On the Chemical Phenomena of the Respiration in Electric Tetanus.—MM. Hanriot and Ch. Richet ("Jour. des soc. sci.," No. 9, 1888) give the following conclusions of their work: 1. The normal ventilation in dogs, being twenty-three litres an hour and kilogramme, is doubled by electrization. 2. The weight of carbon dioxide excreted to the kilogramme increases from the normal standard, 1·2, to 4·2. 3. The normal proportion of carbon dioxide contained in the expired air, 2·6 per cent., reaches 4·2 per cent. after electrization. 4. The ratio of the carbon dioxide and oxygen varies little, but may be augmented. 5. The surplus of the heat produced by the muscular overwork goes in part (50 to 75 per cent.) to maintain the animal heat; the remainder is spent on muscular work and radiation.

The Influence of the Pneumogastric Nerves on the Urinary Secretion.—MM. Arthaud and Butte ("Jour. des soc. sci.," No. 20, 1888) conclude from their recent experiments that the pneumogastric nerves influence the urinary and, to a certain degree, the other visceral secretions. An excitation of the peripheral end of the vagus caused a diminution of the biliary secretion; the deep vessels of the stomach contracted after an excitation of the same nerve. An excitation of the peripheral end of the cervical pneumogastric, after excision of the branches proceeding from the inferior cervical ganglion, caused a noticeable variation of the cardiac pressure, though the rhythm remained unchanged. The urinary secretion of one kidney is not equally influenced by an excitation of the right and left vagus. An excitation of the peripheral end of the right vagus, somewhat above the diaphragm, gave for a definite length of time in the right kidney zero, and in the left 12 c. c. of urine; the same stimulus on the left side gave 11 c. c. from the right, and 8 c. c. from the left kidney. The conditions were not influenced by whether the stimulus was applied to the vagus above or below the heart. The facts lead the authors to think (1) that the variations of the cardiac rhythm do not influence the phenomena of secretion, and that this is an indirect demonstration of the special vasomotor action of the pneumogastric on the kidneys; (2) that a crossed distribution of the vagi exists.

Note on the Modification of the Electric Tension in the Human Body.—M. Ch. Féré ("Jour. des soc. sci.," No. 5, 1888) calls to mind the fact that certain animals whose skin is remarkably dry, like the cat, have the property of accumulating electricity under certain circumstances (especially under the influence of rubbing), and losing it under the form of a flash; that some individuals present the same phenomenon to a certain degree, especially in dry and cold weather, when the atmosphere is relatively deprived of humidity. The electricity is then said by M. Féré to be seen to discharge from the human body through the hair in the form of flashes or tufts, producing a characteristic crackling sound. The author states some convincing examples, and supposes the fact to be of importance for the theories of hypnotism and the transference of polarization, elective sensibility, and certain actions at a distance.

Experimental Researches on the Reproduction of Albuminoids in the Blood.—M. Sophin ("Jour. des soc. sci.," No. 20, 1888) has performed experiments under the directions of M. Dastre. The following are the results: 1. An augmentation of the albuminoids of the blood is noticed after the withdrawal of a given quantity of the same from the blood, the animal remaining in a stage of inanition after the operation. This augmentation is absolute, not merely relative; in three experiments the augmentation was 20, 22, and 29 grammes. 2. The relative and absolute augmentations of the albuminoids are due principally to the growing number of the red globules. 3. The augmentation of the al-

buminoids in the serum is relatively feebler; in the three cases it was 8, 11, and 6 grammes. 4. The fibrin is considerably augmented as compared with its normal amount in the blood.

The Action of Intravenous Injections of Glucose.—M. L. Butte ("Jour. des soc. sci.," No. 20, 1888) has shown in a previous work that one part of the injected glucose disappeared in the economy and the remainder was eliminated. His late researches, performed to ascertain what became of the glucose retained in the organism, give the following results: The central temperature rises gradually after an intravenous injection of glucose. As regards the modifications of the pulmonary exhalation of carbonic-acid gas, they are constant and in intimate relation with the presiding temperature. In six experiments M. Butte observed constantly an augmented weight of the exhaled carbon dioxide after twenty, thirty minutes, and even an hour, after the injection. The author concludes by saying that the nutrition is evidently augmented after an injection of glucose. The fact is sustained by the rise of the temperature and by the increased quantity of oxygen absorbed and carbon dioxide exhaled in the substance of the tissues. With reference to the overactivity of the nutrition, M. Butte attributes it to the combustion of the glucose, and adds that it must only be an exaggerated physiological phenomenon, as shown previously by Chauveau, who saw in glucose the principal source of animal heat.

Some Examples of Dynamogenesis in the Centers of the Organs of Special Senses (Mathias Duval, "Comptes rendus de la soc. de biol.," December, 1887).—Paul Loye ("Rev. des sci. méd," No. 6, 1888) reports that simple luminous excitations (without any image) of one eye bring about a relatively clearer perception of an image by the other eye. The analogous fact is true of the sense of hearing; some deaf persons hear distinctly sounds pronounced while a noise is being continually produced; the same sounds do not affect the same patient's hearing in an absolute silence. These facts seem to depend upon the general phenomena called by Brown-Séquard dynamogenesis.

On the Conjoint and Correlative Action of Antithermics and Antipyretics on the Nervous System, and particularly on the Sensory Centers; Relative Deductions on the Seat of Thermogenesis.—In this note M. J. F. Laborde ("Jour. des soc. sci.," No. 21, 1888) shows that M. Lépine's experiments on acetanilide lead to the following law: All true antithermic agents, or agents which reduce the normal animal temperature (the pulse being almost always simultaneously diminished), act at the same time on the sensory function of the nervous system, and attenuate or abolish this function. The statement is thus formulated: All thermic moderators are necessarily moderators of the nervous sensory actions. The facts are important, M. Laborde alleges, from the practical and doctrinal points of view, for they touch directly upon the problem of thermogenesis. Expecting to report in future a thorough study of the subject, the author relates his principal conclusions as follows: 1. The antithermic action is exerted primarily and preferably on the sensory centers of reception and perception in a manner to reduce or annihilate instantaneously the functional activity of these centers; hence thermic depression must be followed by correlative depression of the phenomena of sensibility. 2. It follows that the organic centers of sensibility and those which preside over the dissipation of animal heat are in intimate relation. It results that the location of the thermogenic focus or foci is reduced to the location of the centers of sensibility. 3. It is important not to neglect the fact of the intimate relation existing between the trophic phenomena and those of sensibility. The conscious sensibility which belongs to and must be looked for in the cerebral sphere must be strictly distinguished from the reflex sensibility belonging to the spinal region, since experimental work shows that (*a*) a section or any equivalent lesion of the spinal cord is followed by a progressive thermic reduction, which approximates a warm-blooded to a cold-blooded animal, and this condition interferes with a further production of heat; (*b*) any lesion of the cerebral centers provokes hyperpyrexia, and this implies thermogenesis. In the light of these facts, the focus of thermogenesis must be located in the cerebral regions. The author concludes by referring to the recent works of Schreiber, Ott, Carpenter, Ch. Richet, etc., which have shown the existence of thermic centers in the cerebrum. Gerard's experiments are finally referred to, which confirm the existence of cerebral thermic centers (in the corpus striatum).

The Influence of the Proportion of the Atmospheric Oxygen on the Respiration (Speck, "Zeitsch. f. klin. Medicin," Band xii, p. 447–532).—A. F. Plique ("Revue des sci. méd.," No. 33, 1888) formulates the author's work thus: The proportion of the atmospheric oxygen may vary within the limits of minimum 9, and maximum 63 per cent. without causing any discomfort in men. But it is necessary to remain motionless at the minimum proportion, all muscular activity increasing the need for oxygen. The acceleration of the respiratory movements and pulse begins at the ratio of 10 per cent. of oxygen. The augmentation and diminution of the production of carbon dioxide are not synchronous with the corresponding phases of the oxygen. The reverse is rather true, *i. e.*, the minimum amount of oxygen being accompanied by a maximum production of carbon dioxide. The utilization of the augmented proportion of oxygen by the economy increases as long as this gas can dissolve in the serum and combine with the hæmoglobin; the surplus of oxygen remains indifferent and without chemical action. A diminished amount of oxygen is of no consequence as far as the limit of 9 per cent.; at a ratio of 7 to 8 per cent. labored respiration begins.

An Experimental Investigation of Strychnine Poisoning.—At the suggestion of Dr. Henry P. Bowditch, the work was undertaken by Dr. Robert W. Lovett ("Jour. of Phys.," Nos. 2 and 3, 1888) to ascertain if the spinal cord showed any special facility in taking strychnine from the circulation and storing it up in its tissues; or, in other words, to determine whether strychnine exercised its peculiar power upon the spinal cord because there was more of the drug present there than in the other organs, or because the cord was more susceptible to its action than muscle, brain, liver, etc. After a careful and minute investigation of the subject the problem is answered in a general way as follows: 1. The spinal cord has the power of selecting strychnine from the circulation and of storing it up in its structure, for at the occurrence of convulsions, or at a definite time after the injection of a certain amount of the drug, the cord is found to contain relatively more than the liver, the muscles, the brain, or the ovary. That the fact is not due to the marked vascularity of the cord is shown by taking into consideration the rich vascularity of the liver, which yet contains a smaller amount of the drug, as compared with that of the cord. 2. At the time of convulsions the relative amounts of strychnine in the blood and in the spinal cord vary with the amount of the drug administered. If it is a large dose, the blood contains overwhelmingly more; but if it is a small dose, a larger amount relatively is found in the cord than in the blood. The amount of the drug in the cord necessary to produce convulsions seems to be more or less constant, independently of the dose, the surplus of the same in the blood being, apparently, in proportion to the size of the dose administered. The author concludes that the spinal cord in cases of strychnine poisoning certainly contains more strychnine than other organs; but whether or no it is more susceptible to the drug than other organs can not be ascertained at present. It is added also that, in a medico-legal sense, the work is of importance as regards the storage power of the spinal cord for strychnine, and especially where the stomach contents can not be relied upon in cases of poisoning by this drug; and in this respect it is an addition to the work of Dr. Chittenden on the "Significance of the Absorption and Elimination of Poisons in Medico-legal Cases."

The Influence of the Ramus Lingualis Trigemini on the Formation of Lymph in the Tongue (A. Maracacci, "Arch. ital. de biol.," iv, 1).—M. Dastre ("Rev. des sci. méd.," No. 63, 1888) reports the author's agreement with Ostroumoff's view that a prolonged excitation of the tongue causes œdema of the corresponding part. M. Maracacci observed the persistence of the difference in volume of the two halves of the organ after section of it, and also after death by hæmorrhage the latter excluding engorgements of the vessels. Anatomical examination by means of Prussian-blue injection enabled the author to find that the larger lymphatics of the tongue reached a ganglion of considerable size in the vicinity of the submaxillary. Excitation caused this ganglion to swell considerably on the side of stimulation. The filling lymph is regarded as originating in the tongue itself, and the fact is ascertained by compressing the organ to interfere with the afflux of lymph from other parts. It is concluded that the lingual nerve has a direct influence on the production of lymph in the tongue.

On the Resorption of Liquids introduced into the Subcutaneous Lymphatics of the Frog (J. Archanow, "Archiv für Physiol.," p. 377, 1887).—M. Leon Fredericq ("Revue des sci. méd.," No. 63, 1888) reports the author's experiments on frogs. The lymphatics of the posterior extremity were injected with from 0·2 to 0·5 c. c. of a sodium indigosulphate solution, and a blue coloration of the tongue followed; the beginning of the coloration is supposed to coincide with the moment of absorption. M. Archanow demonstrates that the absorption is performed independently of the lymphatic heart, and that the coloring matter penetrates directly into the blood-vessels at the very seat of injection; that the absorption depends upon the permeability of the blood-vessels, regardless of the conditions of the lymphatic tracts. The absorptive power is augmented with the elevation of the temperature, by the acceleration of the cardiac pulse, and by the movements of the animal. It is not interfered with by the destruction of the central nervous system. The latter is regarded as exerting an indirect influence by governing the heart and the movements of the extremities.

Experimental Studies on Hyperpyrexias.—M. Ch. Richet ("Jour. des soc. sci.," No. 20, 1888) has studied the influence of artificial hyperpyrexia, and the result of maintaining the high temperature for a considerable length of time. He says that animals whose temperature attains 45° C. [113° F.], and even 45·6° C. [114° F.], may survive if this thermic stage lasts for a short interval. But an animal succumbs if its temperature is about 43° C. [109·4° F.] for two hours; a crisis occurs before death, the temperature gradually falls, the nervous system seems powerless to generate any more heat, and finally death ensues. Chloralization previous to the artificial hyperpyrexia was found by the author to hasten and assure death. The effect of chloral on the nervous system is considered as that of a depressing agent, which is added to that of the hyperpyrexia. This fact, it is stated, must be of importance in medicine, for the use of chloral seems dangerous in delirium, insomnia, and in other accidents occurring in hyperpyretic patients.

Apparatus for the Determination with Precision of the Exterior Thoracic Shape, the Extent of the Respiratory Movements, the Profiles and Sections of the Trunk, and the Amount of Inspired and Expired Air (Presented by M. Marey).—M. G. Demeny ("Jour. des soc. sci.," No. 20, 1888) has shown the permanent modifications of the frequency and amplitude of the respiratory movements which occur in individuals who perform great muscular exertion, and particularly in those subject to the exercise of running. The author finds that after a six months' course at the school of gymnastics of Joinville le Pont, in Paris, the respiratory frequency diminishes to half the normal standard, but the amplitude increases considerably. The apparatus is composed of: 1. A compass scriber to measure the thoracic diameters and to inscribe the variations of these diameters in the inspiratory and expiratory phase. 2. A thoracometer giving the form of a horizontal section of the thorax at a given height. 3. An inscription apparatus for different profiles of the body. 4. A registering spirometer.

The Influence of the Nervous System on the Collateral Circulation (A. Stefani, "Accademia di Ferrara," July, 1887).—M. Dastre ("Rev. des sci. méd.," No. 63, 1888) reports the following: The reasons of the formation of a collateral circuit after ligation or obliteration of a main artery are unknown. The old doctrine of the mechanical effect of the augmentation of pressure and dilatation of the collateral arteries has no ground. The author seeks for an explanation of the fact in a nervous influence. In previous experiments the axillary artery in the salamander was ligated. A collateral circulation was found to be established in cases where the nerves were intact; a section of the nerves interfered with the circulation. In frogs the facts were approximately the same, though in some cases the collateral circulation was found in the absence of the nervous influence. Experiments on rabbits were not conclusive, for the ligation of the vessels and section of the nerves induced gangrene of the limbs. Experiments on birds gave results which agreed with the author's views. The author tries to establish that this nervous action is of a reflex nature, having its starting-point in the exsanguinated organ and its cause in the anæmia itself, transmitted to the nervous centers and reflected upon the vessels of the region in which dilatation occurs.

Miscellany.

ANSWERS TO CORRESPONDENTS.

No. 272.—We have not been able to find anything in literature on that particular point, but we have no doubt of the availability of the dynamo current for the purpose mentioned. We would suggest your writing to the Edison Company.

No. 273.—We doubt the possibility of obtaining one, and we very much question the expediency of asking for it. As we understand the matter, the board assumes that an applicant is prepared for any sort of examination, and might conceive an impression against him if he sought to ascertain the scope of the examination in advance; moreover, the examination is not wholly in writing.

No. 274.—See Taylor's "Clinical Atlas of Venereal and Skin Diseases," part i, page 26, foot-note; also the article there referred to.

No. 275.—Much has been published on that subject. Among books that are readily accessible, we would refer you to Creichton's "Bovine Tuberculosis in Man," London, 1881.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

LABORATORY NOTES OF TECHNICAL METHODS FOR THE NERVOUS SYSTEM.

By IRA VAN GIESON, M. D.,
FIRST ASSISTANT AT THE LABORATORY OF THE ALUMNI ASSOCIATION OF THE COLLEGE OF PHYSICIANS AND SURGEONS, NEW YORK.

METHODS OF OPENING THE BRAIN AT AUTOPSIES AND FOR GENERAL DISSECTION OF THE BRAIN.

1. *Meynert's Basal Section of the Brain.*—The ordinary method of opening the brain at autopsies by slitting open the corpus callosum, laying aside the hemispheres, and then making longitudinal and transverse incisions, renders it difficult to handle the brain without tearing it, and, after hardening, the pieces can not be fitted together well, so that the lesions may be accurately localized in conjunction with the microscopical examination. Meynert's section is much more valuable for the purposes of localization after hardening, and is recommended for general use at autopsies and as an instructive method for demonstrating to students the coarser anatomy of the fresh brain. With some modifications of Meynert's original plan, the section is made as follows:

Resting the brain upon its hemispheres and lifting up the cerebellum, the pia mater and vessels are cut above the corpora quadrigemina and around the crura and inner margins of the temporal lobes on either side until the middle cerebral arteries are reached. The incision of the pia then follows the middle cerebral arteries into the Sylvian fissures, and passes to the terminations of the posterior branches of the Sylvian fissure. As the incision of the pia follows in this way, the boundaries of the temporal lobes, the temporal convolutions should be gently separated from the neighboring convolutions and from the base.

The apices of the temporal lobes are then lifted up, and, resting the knife flat on the base, their junction with the base is cut, until the descending horn is opened. Then inserting the knife into the descending horn, the incision passes outward and backward to within an inch of the apex of the posterior horn, or even to its extremity, severing the junction of the occipital and temporal convolutions on the lateral surface of the brain. During this manipulation the cornu Ammonis and posterior pillars of the fornix should not be cut. The temporal lobes are thus freed from the base and folded outward and backward over the occipital lobes, giving access to the island of Reil (Fig. 1). The operculum is then pulled well outward to completely expose the convolutions of the islands, and a slightly curved transverse incision (*a*, *a*, Fig. 1), with the convexity directed frontally, is made connecting the anterior sulci of the islands on both sides. This incision should be deep enough to pass through the anterior horns of the ventricle to the corpus callosum.

The cerebellum is then lifted up with the left hand, and placing the knife in the ventricle at *c*, Fig. 1, and passing it beneath the rounded posterior extremities of the optic thalami, the internal capsules on either side and the anterior pillars of the fornix and septum lucidum are cut from behind forward without injuring the basal ganglia. As the



FIG. 1.—Drawing of the brain, showing how the brain axis is exposed before it is cut out. *a*, anterior sulci of the islands of Reil; *b*, convolutions of the island; *d*, descending horn in the reflected temporal lobe; *e*, cornu Ammonis, with the posterior pillar of the fornix passing from it into the ventricle; *f* passes across the convolutions of the operculum to the cut surface of the junction of the temporal lobe with the base.

internal capsules are being cut, the cerebellum is gradually rolled over forward on the base, in order to lift up the basal

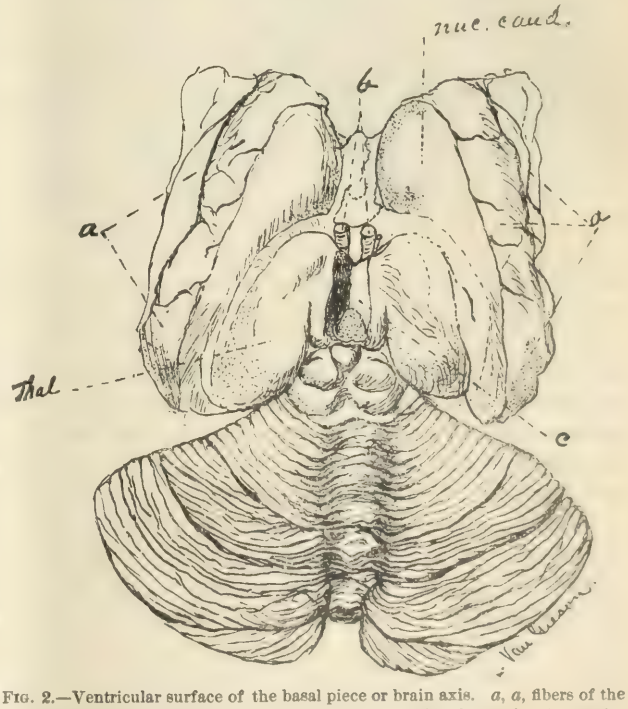


FIG. 2.—Ventricular surface of the basal piece or brain axis. *a*, *a*, fibers of the internal capsule cut transversely as they enter the basal ganglia; *b*, anterior pillars of the fornix cut across; *c*, third ventricle; *nuc. caud.*, caudate nucleus; *thal.*, optic thalamus.

ganglia from the corpus callosum. A square piece—"the basal piece" (Fig. 2)—is in this way cut out of the base. The fornix is left lying on the corpus callosum.

When the brain is soft, and in children's brains and in cases where the basal ganglia are injured by hæmorrhage, the above described method of removing the basal piece is modified by putting the index and middle fingers of the left hand through a transverse incision of the base (Fig. 1, *a*, *a*) into the anterior horns of the ventricles and raising the basal piece, while the internal capsules, anterior pillars of the fornix, and septum lucidum are cut from before backward. This plan of cutting out the base is not recommended except when the brain is very soft, because the introduction of the fingers into the ventricles is apt to damage the ependyma.

The advantage of this plan of opening the brain is that it uniformly separates the organ into two great anatomical subdivisions. The square basal piece—the *brain axis* (Fig. 2)—includes the island, basal ganglia, internal capsules, crura, pons, medulla, and cerebellum. The remaining piece —*the brain mantle of Burdach* (Fig. 3)—includes the convolutions, corpus callosum, fornix, and cornu Ammonis. This method also exposes the internal capsule (Figs. 2 and 3) advantageously for the localization of lesions in the internal capsule, because its fibers are cut transversely between their entrance into the basal ganglia and the centrum ovale.



Fig. 3.—Ventricular aspect of the brain mantle. *a*, internal capsule; *d*, posterior border of the corpus callosum; *b*, cornu Ammonis; *c*, descending horn; *e*, operculum; *f*, anterior pillars of the fornix cut transversely.

Both these pieces may be hardened *en masse* by making transverse incisions about one half to three quarters of an inch apart in the basal piece, and both transverse and longitudinal incisions into the white matter of the larger piece not quite reaching to the pia mater, which serves to hold the convolutions together for the purposes of localization after hardening. The incisions should be kept open with absorbent cotton, and each piece should be suspended in gauze or laid on absorbent cotton in a large volume of Müller's fluid (five or six times the volume of the pieces), which is kept cool and changed on the second, fifth, and eighth days, and again in the third week. It is best to remove the cerebellum from the rest of the brain axis at the autopsy unless the integrity of its pontial relations is desirable, so that in hardening the fluid may penetrate into the floor of the fourth ventricle. The cerebellum is removed by cutting away its crura close to the pons. The practice of inspecting the fourth ventricle by splitting the cerebellum in the median line is apt to distort the floor of the fourth ventricle by the traction of the two divergent cerebellar hemispheres.

2. *Division of the Brain into Transverse Segments for Examination at Autopsies.*—This method is used quite frequently at the laboratory in Heidelberg, and consists simply in making serial transverse vertical slices of the brain about three quarters of an inch thick, first having removed the cerebellum and pons by cutting the crura cerebri transversely. When the slices have been hardened they may be easily fitted together for the detailed localization of the lesions. This method is good for the preparation of certain museum specimens and for lantern demonstrations of tumors or cortical lesions by stained sections of the entire brain, made with the Gudden microtome.

3. *Preparation of the Brain for the Dissection of the Association, Commissural, and Projection Fibers, by the Cleavage Method.*—The pia mater is carefully removed from the convolutions, and the brain—suspended in gauze in forty-per-cent. alcohol, which is renewed on the third day—is turned on a new surface each day to avoid flattening. No incisions are made except a small one through the infundibulum to let the fluid into the lateral ventricles. At the end of the first week of hardening, the alcohol is replaced by sixty-per-cent. alcohol; at the end of the fourth week this is replaced by eighty-per-cent. alcohol, and then, for three weeks or a month, the brain is left in strong alcohol. With this treatment the bundles of fibers of the white matter become tough and elastic, and a particular tract may be isolated by pushing and cleaving aside the surrounding structures with a scalpel handle. The same method of hardening may be used if dissociation of the tracts is to be practiced in some particular portion of the brain, such as the brain axis or brain mantle.

As an example of how a system of fibers may be dissected out when the brain is successfully hardened in this way, the path of the motor tract in the brain axis is selected. The brain axis (Fig. 2) is hardened as described above, and the pyramids of the medulla are loosened from the olivary bodies, and from each other in the median line to their decussation, with the handle of a scalpel. The superficial transverse fibers of the pons are cut in the median line and pushed away from the pyramids with the scalpel handle inserted in the groove between the inferior pons border and medulla, until they are reflected as two flaps on the middle cerebellar crura. The pyramids are now exposed between the two sets of transpontial fibers, and, when freed from a few interlacing pons fibers, they may be picked up with the forceps and followed up through the middle thirds of the crura into the internal capsules. This method is exceedingly valuable for teaching purposes, and a series of these cleavage dissections is the best way of giving students a clear idea of the various association, commissural, and projection systems. Plates 18 to 22 of Meynert's

"Psychiatry," translated by Sachs (Putnams, New York, 1885), and Plates 28 and 30 in Edinger's "Zehn Vorlesungen über d. Bau d. nerv. cent. Organe," 1885, may be used as guides for other dissections of the different systems composing the white matter.

NOTES ON THE HARDENING OF THE BRAIN.

Müller's fluid does not preserve the ganglion cells as perfectly as bichloride of mercury or alcohol, but it preserves the nerve fibers and neuroglia well; it gives the proper consistence for cutting sections, and all the important methods of staining the nervous system depend upon bichromate hardening. The obstacle in getting perfect hardening results with Müller's fluid is the great impermeability of the cerebral tissues. To get the best results in hardening the pieces should not be more than one to two cubic centimetres in volume, and should be left in the fluid at the temperature of the room until they have a dark-brown color, and sections cut by hand do not wrinkle when placed in water. This may take four or five months or longer, and the blocks should be frequently tested to guard against their becoming brittle. Rapid hardening in the thermostat is not often used in this laboratory; it is not so good as slow hardening at low temperatures, or at the ordinary temperature of the room. In hardening with heat, the superficial portions of the specimens become hardened too rapidly, and become dense and prevent the fluid from gaining access to the central portions of the blocks. If rapid hardening is necessary, it is much better to renew the fluid frequently after the first two or three weeks of the hardening, and at each renewal to gradually increase the strength of the bichromate-of-potassium solution up to five per cent. *Erlicke's solution* hardens the superficial portions of the blocks more rapidly than Müller's fluid, and consequently does not preserve the central portions so well. It also has a greater tendency to make the specimens brittle. The bichromate solution should always contain camphor (a piece of the size of a pea to each pint of the fluid) to prevent the development of micro-organisms.

When specimens have become brittle it is very difficult to get them into good condition for cutting. A prolonged immersion of the specimens in equal parts of glycerin, alcohol, and water reduces the brittleness somewhat, but the best results have been obtained by soaking the blocks for twenty-four or forty-eight hours in a fifty-per-cent. or stronger aqueous solution of ammonia. A twenty-four-hours' immersion in peroxide of hydrogen also tends to make the specimens less brittle. When very large segments of the brain are to be preserved for microscopical examination it is best while hardening to keep the bichromate solution cold for the first month or two in a refrigerator.

If specimens are not thoroughly hardened in Müller's fluid, the subsequent permanent preservation in strong alcohol does them considerable injury. The alcohol slowly dissolves out the chrome salts and changes the myelin. In the course of a year or two cholesterin crystals form in the alcohol, and minute cavities and vacuoles appear in the specimens and they do not stain well. If for any reason it is necessary to examine specimens before they are thoroughly hardened, it is best to keep the material for permanent preservation on the shelves in water containing camphor, or dilute, thirty to forty per cent., solutions of alcohol. In the laboratory even thoroughly hardened material is not kept permanently in strong alcohol. Seventy or eighty per cent. is used, and in certain cases water. Well hardened material kept in water has a tendency to become brittle in the course of years. The structure of the neuroglia never shows so well, and carmine staining is never so successful in sections of material which has been placed in alcohol as in sections cut from specimens while in Müller's fluid, or kept in water slightly tinged with Müller's fluid.

DIVISION OF THE SPINAL CORD INTO ITS ANATOMICAL SEGMENTS FOR MICROSCOPICAL EXAMINATION.

The portions of the cord from which each pair of spinal nerves arise are termed the corresponding segments of the cord, and it is desirable to use this well-defined anatomical segmental structure of the spinal cord as a basis for the localization of lesions in the microscopical examination. We can then know exactly from what part of the cord a given section is taken.

The cord may be hardened with the dura mater attached, but is distorted less if the dura is removed. At intervals of little less than half an inch the cord should be traversed by transverse incisions not completely severing the cord, in order that the pia mater may hold the pieces together in their serial order. The cord is then rolled up in a loose spiral and laid in Müller's fluid on absorbent cotton. After the subsequent alcohol hardening the attachments of the nerve roots form a guide for the division of the cord into its proper segments.

To distinguish the spinal segments after they have been taken from their serial order in the hardened cord, I have found it most convenient to mark them by sticking a hot teasing needle in the white matter of one half of the upper surface of each segment. This burns a permanent little hole in the segment, and, by making notes of the different positions of the needle-holes in the different segments, a number of blocks from the cord may be carried through the celloidin imbedding process together and easily identified. If imbedded on pieces of white wood, the number of the segment or portion of the spinal segment to which the imbedded specimen belongs may be written on the wood in pencil. In the sections the needle-hole also indicates the right or left hand side of the cord. When it is necessary to examine the spinal nerve roots, these may be reflected against the corresponding segment and tied in place with thread, and then the segment with its roots is imbedded in celloidin, so that transections of the upper level of the segment will include transections of the corresponding nerve roots. The lumbar and sacral segments are so short that the entire segment may be mounted on the block of wood; but in the cervical and dorsal regions it is more convenient to use only the upper thirds or quarters of the segments for mounting.

OSMIC-ACID STAINING OF LARGE NERVE TRUNKS.

Most of the human peripheral nerve trunks are so thick that osmic acid does not penetrate into them when stretched

out in the ordinary way on a bridge, as advised by Ranvier. To stain the human posterior tibial or sciatic nerves affected with peripheral neuritis, the nerve trunks are cut with sharp scissors into segments a little less than half an inch long. One extremity of the segment is held with a forceps, and with a second forceps the protruding funiculi at the other extremity are gently pulled out of their lamellar sheaths and laid in the one-per-cent. osmic-acid solution for twenty-four or forty-eight hours. This manipulation cracks the myelin sheaths transversely somewhat, but the osmic acid penetrates well among the fibers, and stains them quite uniformly. Osmic-acid nerves are kept best in glycerin.

NEW STAINING METHODS FOR THE PERIPHERAL NERVES.

1. *Dilute Aqueous Solution of Basic Fuchsin for staining the Connective Tissue of the Peripheral Nerves in the Fresh Condition.*—A slender funiculus of a human nerve, pulled out as described above, or a bit of the sciatic of a frog or mouse (not over half an inch long), is laid upon a slide for twenty to thirty seconds, until its surface begins to stick to the glass. (If the bit of nerve is very wet, it is moved about on the slide until some of its surfaces begin to adhere to the glass.) Then, with two teasing needles, the nerve is rapidly rolled or pulled away from the adherent portion, so that it is spread out into a thin film on the glass. Before it dries—this is to be avoided by breathing on the specimen—a drop or two of an aqueous solution of basic fuchsin, such as is used for bacterial staining (one drop of a saturated alcoholic solution of basic fuchsin in eight or ten c. c. of distilled water), is placed on the specimen. The slide is inspected with the low power, and in two or three minutes the nuclei of the endoneurium will be stained. The specimen may be mounted and studied in the staining fluid, or the dye may be washed with water; the stained nerve is dried in the air on the slide and permanently mounted in balsam. In drying in the air, the endoneural cells are not perceptibly distorted. Sometimes the dye penetrates through the constrictions of Ranvier for a slight distance between the axis-cylinder and periaxial sheath. I have found this method of service in studying the endoneurium in normal nerves, in experimental nerve lesions, and in peripheral neuritis in the human nerves.

2. *Acid Fuchsin for staining Isolated Hardened Nerve Fibers.*—Nerves are hardened from three to five weeks in Müller's fluid, and then, after washing out some of the Müller's fluid in water, for a week in strong alcohol. A slender strand of fibers, about half an inch long, is teased very finely in water on a slide. The water is then removed, and the specimen covered with a drop of a saturated aqueous solution of acid fuchsin (Grübler's) for two to five minutes. The teased fibers are washed in water, then thoroughly in two alcohols, cleared in oil of cloves, and mounted in balsam. The axis-cylinder, neurilemma, constrictions, incisures of Schmidt, neurilemma nuclei, and branching cells between the fibers have a distinct red color. In successful preparations the incisures show very distinctly. This method is so simple and efficient in demonstrating all the details of the nerve fiber, except the medullary sheath, that it is recommended for staining specimens for classes in normal histology.

The most convenient nerves to prepare for this method are the spinal nerve roots, because they can be teased more readily than the peripheral nerves, which contain more connective tissue. When nerves have been hardened for a short time (three to eight days) in Müller's fluid and subsequently in strong alcohol, or when they have been placed in ether and then hardened in alcohol, or when they have been entirely hardened in alcohol, the myelin is coagulated in the form of a network—the neuro-keratin network. This method also stains the neuro-keratin network distinctly. Fibers stained by this method may be kept for months in oil of cloves.

3. *Peroxide of Hydrogen for bleaching Peripheral Nerve Fibers stained with Osmic Acid.*—Osmic acid preserves nerve fibers more perfectly than any other reagent, but very often the medullary sheath is stained so dark that the other details are obscured. Peroxide of hydrogen removes the black color from the myelin and makes the fibers transparent, so that they may be examined with high powers. The stained fibers are teased in water, and a few drops of hydrogen peroxide are flowed under the cover glass, while the specimen is being examined with high-power lenses. Sections of osmic-acid nerves may be bleached in the same way, but it is difficult to stain them afterward with the ordinary dyes. If the fibers are treated with strong alcohol after they have been bleached in the peroxide solution, the myelin coagulates in the form of a network. This method is good for studying the incisures of Schmidt and the structure and size of the axis-cylinder, which does not shrink in careful osmic-acid hardening.

ACID FUCHSIN AND PICRIC-ACID MIXTURE FOR STAINING SECTIONS OF THE PERIPHERAL NERVES AND CENTRAL NERVOUS SYSTEM.

Sections which have been properly hardened in Müller's fluid and then in alcohol are stained rather deeply with hæmatoxylin—preferably Delafield's solution—to color the nuclei. They are then washed in water, and left for three to five minutes in acid fuchsin and picric-acid mixture prepared as follows: A few drops of a saturated aqueous solution of Grübler's acid fuchsin is added to one hundred c. c. of a saturated aqueous solution of picric acid, until the mixture has a dark-garnet color. The sections are then rapidly washed in water and in two volumes of alcohol, cleared in oil of origanum, and mounted in balsam. This stain selects the ganglion cells, neuroglia, blood-vessels, and sclerotic areas, distinctly giving them a garnet color. The axis-cylinders are stained red and the myelin is stained yellow. This stain is used considerably in the laboratory in place of carmine.

Transplantation of the Cornea.—The "Lancet" says that "Dr. Gradenigo, Professor of Ophthalmic Surgery in the University of Padua, has just succeeded in transplanting the cornea from the eye of a barn fowl into the eye of a patient under his care. On the eighth day after the operation the transplanted cornea presented a quite pellucid and convex appearance. Such a result has not yet been recorded in the annals of continental surgery."

THE GENESIS OF TUMORS.*

By THOMAS H. MANLEY, M. D.

Although the title of this essay is suggestive of a discussion of much interest, I may say in the beginning that my efforts will be directed not so much with a view of presenting anything new or original in the study of new formations as to a review of the features peculiar to some of them, and especially important to the surgeon and practitioner to become familiar with and recognize.

The study of the origin, physical properties, special processes, ætiology, and termination of tumors has from the very earliest ages occupied the attention of many of the ablest minds in medicine.

We find in the works of Hippocrates many observations replete with interest in connection with those morbid growths which now, in our days of microscopical analysis, seem rather crude, but are yet not without considerable clinical value.

And so we do in the writings of others, from Galen and Ambroise Paré down.

From all that can be gleaned from the writings of the Greek, Arabian, and Roman practitioners, they always looked on the advent of a tumor with great alarm, classed all in the same category, the benign and the malignant, and never undertook their removal with the knife, but were usually contented with internal medication, which they firmly believed would reduce in volume or wholly dissipate many of great size. Occasionally, however, besides drugs, some used the seton or caustic when the growth was diminutive or very superficial.

For those large and deep seated, or connected with the trunks of large vessels, nothing was promised or attempted in the way of external applications.

With the dawn of dissection, the use of the ligature and of the microscope, and with the flood of light reflected from the brilliant genius of John Hunter, Astley Cooper, Baron Larrey, Dupuytren, Malgaigne, Graafe, Lucitanus, Virchow, Mott, and Physick, besides many others, immense and rapid strides were made in our knowledge of this branch of surgery.

The keen and analytical eye of the early anatomist quickly discerned the wide difference in the consistence, location, and peculiarities of each; and from *macroscopical* observation alone a rather primitive but very useful classification was made.

We had tumors from humors, from injuries, and from heredity. Every kind of sore which had for its characteristics pain and persistence was designated cancer and deemed malignant. Very naturally in the early days of surgery very little use was made of the knife, as complete anæsthesia and the ready methods of controlling hæmorrhage were then unknown. The knowledge of the minute physical elements, molecules, or cells, the histology of normal tissue, or the pathology of morbid enlargement, was impossible till the microscope was invented; and we may truly say that all was conjecture; that we had no real foundation for scientific classification till the latter half of the present century.

At present our classification, though of infinite value, is based mostly on physical peculiarities, on cell elements, on the form and arrangement of the latter, and is not only very imperfect, but in some instances deceptive and delusive, with a tendency to work evil if too rigidly adhered to.

This comes from too much reliance on pathology and an attempt to create a purely artificial distinction in deranged histological changes.

The presence of a certain microbe is held to be enough to decide the true nature of a lesion or growth and to indicate its probable termination.

The ætiology of tumors is still very obscure; about their causes little is positively known. Much time has been spent, extensive research made, and most profound analytical reasoning exhausted in fruitless efforts in this direction. Here, indeed, nature seems to defy art and, as it were, imply that there must be a limit to its advance, though, with the astounding progress made in not only arresting but curing disease by the revelations of Jenner, Pasteur, and Lister, we have good reasons for hoping that this ground will soon be broken, and that many of those now seemingly incurable afflictions will readily yield to scientific management and their nature be better known.

Why an organized structure will at times become the seat of histological derangement—as, for instance, an inward infiltration of epithelial cells penetrating and destroying everything in its destructive march—while at another, under apparently similar conditions, there is a formation of benign variety, we do not understand, and hence can not explain. All we can do is to study the apparent origin, course, and results in each in the way they interest us, and to this end a few considerations are now offered. Broadly stated, all neoplasmata may be divided into two varieties—the benign and the malignant. Each is totally unlike the other in its natural—or, as it is termed, its clinical—history, but with cellular elements or histological structure quite similar.

In tumors we have every kind of organization, development, transformation, disintegration, degeneration, retrogression, and metastasis, the liquids in each at times becoming solids, and *vice versa*, the benign becoming malignant, and the contrary; the hopelessly incurable, for some unknown, inscrutable reason, coming to a halt and making no further progress, or perhaps fading out of sight altogether; while, on the other hand, the apparently innocent are seen suddenly taking on appallingly destructive changes. No race, age, sex, or condition is exempt, but the course of each is markedly influenced by any of the foregoing circumstances. Since the microscope has come into general use many are deluded with the impression that by its use *alone* we can definitely and absolutely recognize the true nature of those morbid formations. By the aid of the lens it is an incontestable fact that we have been able to better see the minute elements of a part; that the field of vision has been vastly extended by its intelligent use; but, no matter how perfect the instrument or well trained the manipulator, there are growths which can not be diagnosticated by this sole agency.

* Read before the Fifth District Branch of the New York State Medical Association, May 28, 1889.

The only manner in which the true nature of a neoplasm can be certainly decided is by cautious, continued clinical observation in conjunction with the aid of this instrument.

I believe, from experience, that in more than ninety per cent. of morbid growths the skilled and careful observer will recognize their character with certainty by their naked-eye appearance, their history, and the condition of the patient.

We all lately saw a most timely and truthful illustration of this in the case of the late unfortunate Crown Prince of Germany. The German doctors met in consultation and unanimously agreed that their august patient was stricken with mortal disease—cancer. This decision was reached without any microscopical examination whatever.

The specialist comes on the scene, slices off a bit of the proliferated tissue and sends it, for examination by the microscope, to the acknowledged father of cellular pathology, Virchow. This was more than a month after the German doctors consulted.

Well! What comes of Virchow's examination? Nothing. He didn't know anything about what it was; or, if he did, he expressed his views in such ambiguous terms and language that his results would quite easily fit either way, and no one knew exactly what real conclusions he did arrive at.

The very perfection of improved vision to which the microscope has brought us has, no doubt, worked much mischief with those operators who rely mainly on its revelations for guidance in diagnosis.

Supposing we do find epithelial hyperplasia with rudimentary embryonic cells, or in another situation the real alveolar structure of malignant disease, must we frighten our patient to death with the announcement that he has cancer? And even if he is so stricken, must we fold our arms and see his malady rapidly sapping and vitiating his vitality without at least making a bold effort to head it off or temporarily arrest its progress?

Pathologists designate tumors homœoplastic or heteroplastic, homologous or heterologous, according to the tissue elements of which they are composed. The term homologous means that the growth is made up of elements similar to the organ or part of the body from which it sprung; heterologous implies that it possesses tissue foreign to that from which it started.

Now, it may seem paradoxical and absurd to so speak, but there really is not, in its fullest sense, such a thing as a foreign or heterologous growth in the human body.

Green * says, "Every pathological element has its physiological prototype." Hence every deviation from normal form or size is attributable, not to the introduction from without of any new element, but to deranged physiological action. Nothing is elaborated in the body in the most chronic and painful or lingering diseases which can not be found in a person in perfect health. This is quite necessary to bear in mind in dealing with new formations. There is scarcely a tissue but may at some epoch of life become the seat of adventitious growths, that of which the nerves and brain are composed being most rarely invaded.

Of the organs most frequently attacked and tissues involved in the female are the breast, uterus, and ovary; in the male, the œsophagus, rectum, tongue, and lip. Of tissues, the epithelial, mucous membrane, and cutaneous in one variety of cancer; the parenchyma in cancer of organs. Sarcoma has a special predilection for connective tissue. Of the whole glandular system, the lymphatics are most frequently the seat of enlargement and infiltration. Why this is so does not seem clear, though there are many theories. Some attribute it to their remarkable faculty for absorption, and maintain that they take to themselves and store up in their parenchyma all the deleterious elements abounding in the system.

This will not explain it, though it may in a measure when we speak of cancer, syphilis, and scrofula or tubercle. But there are many well-marked dyscrasiæ in which they escape any taint, as in sarcoma, scurvy, pulmonary tuberculosis, and many others.

The lungs, of all the organs, are most rarely the seat of malignant hyperplasia, though it seems rather remarkable that with their constant and unceasing action we seldom find in their composition, except in the bronchial glands, anything undergoing tissue hypertrophy.

So-called benign growths may at times become malignant or menace life by their size and situation, as with the thyreoid gland or with an enormously enlarged uterine fibroid. Some of those neoplasmata are not very sensitive, and give no pain except by their impinging on a nerve-trunk or greatly stretching adjacent parts, while others are extremely painful from the beginning.

The malignancy of a growth can not always be estimated by this symptom of pain, though its presence, when of long duration and of a cumulative character, is a cause of much anxiety, and, taken with other indications, is of considerable diagnostic value. Pain is said to be always a warning of the economy that something is going wrong, that a morbid action has commenced. This is undoubtedly true in a general way, but there are so many exceptions to the rule that one may be in doubt whether it is well to place too much reliance on it while there are so many neoplasmata in which it may be entirely wanting. It is notorious that with the variety of cancer which for its peculiar histological elements is designated sarcoma there usually is no pain of any moment. I recently had a practical proof of this in a man from whom I removed the left lower jaw for infiltrating round-celled sarcoma. From the beginning of his complaint, which ran a rapid course, he had no pain, and its absence led his family physician to strongly doubt the presence of any malignant disease till the scalpel and microscope satisfied him.

The entire jaw bone, the inferior maxilla, from the symphysis to the articulation, was diseased and broken down, but from the time he first became conscious of any trouble he said he suffered very little. Again, scirrhous epithelial cancer, which usually kills by slow torture, in some situations is entirely devoid of any pain whatever. This, too, was

* "Pathology," ed. ii, p. 37.

well illustrated in a man whom I was recently called to see in consultation.

He had a large nodular growth at the pyloric orifice of the stomach, and was rapidly breaking down from lack of nourishment and disordered digestion, but had no inconvenience whatever from this new epithelial formation, and would not have known it was there if his attention had not been called to it. This absence of pain is noticeable very often in malignant disease of the viscera. It is strikingly so with cancer of the kidney, œsophagus, liver, and stomach.

It is only when on or near the surface of the integument or a mucous membrane that cancer causes very great agony. However, with innocent growths there may be now and then great pain. Hypertrophy of the papillæ at the meatus urinarius of the female is frequently attended with intense distress, and when not relieved may seriously jeopardize health.

An instance, too, of this came under my notice some time ago wherein a young woman, recently married, was infected with gonorrhœa by her husband. She was treated in the usual way for this, but when the discharge ceased and the inflammation subsided she suffered the greatest kind of torture on urinating. Not that she had to empty the bladder often, as in cystitis, but when evacuating it the pain was dreadful. I knew that this condition was no ordinary concomitant of gonorrhœa, and examined her, when I found, not the condylomata of syphilis, but two or three of those vascular, warty growths just within the urethral orifice sometimes found as a result of the long-continued acrid discharge of gonorrhœa. After they were cut out and the part was cauterized her trouble ended as if by magic.

Many of us have an every-day reminder of the annoyance of those little excrescences called corns, which will not infrequently inconvenience one as much as the gout.

The period of life at which tumors grow and thrive best is somewhat variable, though it may be fairly set down as middle age; at that time at which the vital energies begin to ebb, when degenerative changes are most active, when the hair begins to grow gray and thin, the teeth decay, the muscles lose their earlier tonicity, the arteries ossify, the skin begins to wrinkle and atrophy, and the body grows fat. Usually at this stage less sleep is needed than formerly.

The waste is now more rapid than repair, and, as far as physical strength and vigor go, man, at forty-five or fifty, has seen his best days; some, of course, earlier, and some later, but this rule will stand when we are corporeally considered.

With the mind it is quite different, as we often see the lamentable want of harmony here—this active and buoyant, while the body is rapidly breaking up.

At this epoch of life, and later, normal processes seem to lose their balance or equilibrium, as it were, and the economy sends into diseased or morbid growths which may now appear ample nutritive materials to nourish the whole body, and we witness the ceaseless waste which, unhappily, we are only too often unable to arrest or retard. The body is starved that a useless appendage may thrive; and, even when finally the digestive organs give out, the neoplasm keeps up its ravages till it has at last left the skeleton bared of everything but ribbon-like muscles and a shrunken, attenuated skin.

While new formations are most frequently encountered at or after the meridian of life and in all conditions, still there is no question but they are markedly influenced by race, age, climate, occupation, and diet.

Strumous growths in the joints and glands are met with chiefly in childhood.

It will be noticed here that I retain the old nomenclature, and do not, as is the custom of the day with most pathologists, classify these as tubercular, for in many of the diseased glands no bacillus is found, and, besides, I believe that this classification has worked much confusion and accomplished more ill than good.

It may be argued that as the bacillus is usually found in the gland, hence the pathological condition should be designated tubercular.

It seems to me just as logical to set every case of simple enteritis down as cholera, because occasionally the microscopist encounters the genuine comma bacillus in the excreta of this bowel trouble.

It would seem best, in this instance, to adhere to the older clinical classification in this species of malnutrition, for we all know, as we always recognized it, that tuberculosis is practically an incurable disease, whereas scrofula, on the other hand, in various degrees and forms, is as peculiar to childhood as measles or varicella, and is readily curable.

Some of the most vigorous and hardy individuals we meet carry the scars of this malady. Hence, though the tubercles of scrofula and pulmonary phthisis are similar and the microbe of each is identical, they differ very widely in their clinical aspects.

I have often thought that the confounding of both as the same, from a clinical point of view, has led to much needless mutilation, especially in dealing with diseased bone.

Sarcoma in youth is rather infrequent, but when met with is terribly malignant, running a very short course.

Syphilitic tumors or glandular enlargements from specific causes may be seen at any age after the contagion is acquired.

The testes are a common seat of this infection and sometimes attain great size, and to one unfamiliar with the pathology of this malady it will be difficult to decide whether or not the enlargement may not be attributable to malignant disease. The testes here are strangely devoid of pain on severe pressure, though, if the patient denies the disease, or there is a strong suspicion, a mercurial course will easily decide the matter. Senn,* in his article on surgical bacteriology, tells us that, if we are in doubt as to whether a given lesion is syphilitic, cancerous, or tubercular, the question can be readily settled by inoculation. This is denied by Cohnheim, but the experiment is so simple that it is worth trying, at any rate.

There is an undoubted connection between certain occupations and habits in the production of neoplasmata. It is generally agreed among the English surgeons that cancer of the scrotum is quite peculiar to chimney-sweeps; and when

* "Transactions of the American Surgical Association," p. 212.

we see cancer of the lip and tongue rarely except in the male sex and in smokers, we must, I think, admit that tobacco has something to do with its development—that it is an exciting cause at least.

We are told that the malady is never seen among natives of the South Sea Islands, be their parents natives or Europeans, and that strumous enlargements are not met with in the primitive tribes of North American Indians.

While malignant formations are very infrequent among the African negroes, their women are often afflicted with uterine fibroids.

Darwin and Huxley tell us that no kind of adventitious swelling is often met with in the lower animals in the undomesticated state, or in the uncivilized races of man, but that, when their surroundings and habits change, they soon begin, in common with other beings under similar influences, to show signs of local degeneration.

It would seem that the presence of these neoplasmata is one of the many penalties we must pay for our advanced civilization.

Would it not, indeed, seem absurd to argue to the contrary, to deny that overfeeding with highly nitrogenized food, little or inadequate exercise; "living to eat, not eating to live"; alcohol drinking, in the way of wines, beer, and stronger spirits; venereal excesses, legitimate and illegitimate; residing in the modern city apartment-house, caged and cornered, without ample light or air, like the animals of a menagerie, and with the now almost universal habit of deliberate poisoning of the body with tea, coffee, and tobacco—can it be wondered at, then, that in proportion as we ascend the social scale we and our children degenerate, and that one form or phase of this degeneration or process of decay comes in the way of tumors?

We practitioners, who can take a calm, impartial retrospective view, can see the full force and truthfulness of this in our own country, where, without the constant and unceasing influx of the hardy sons of Europe, many industries entailing toil and hardship, it is feared, would languish.

Diet must have an important bearing in determining the kind of growth and its chemical composition.

It has long been known that, in the cervical lymphomata of children, giving too much animal food or too little vegetable is an exciting cause, in addition to the bad ventilation and herding the little ones together in close quarters.

We most frequently find those stony concretions of the bladder in certain districts where there is an excess of lime in the drinking-water, and in those who over-indulge in certain kinds of wine.

There must certainly be some imprudence in diet at times, for the progress of a growth of a given species may be arrested by restriction to a certain regimen.

Every kind of tumor is more frequent in women than in men, and in the single than in the married. Whether this is due to the more confined occupations of the sex and their domestic habits is uncertain. In my experience, the results in treatment are better with them, especially after the menopause. I think this important to bear in mind in giving a prognosis, for a woman's chances of relief are vastly better the older she is, certainly in malignant disease.

Among the early growths in the female, in the order of frequency, the ovarian cyst comes first, which, though devoid of malignant elements, sometimes dangerously threatens health and life by great pressure on surrounding parts and by appropriating from the blood what should go to the body, thereby producing gradual starvation or inanition; for as a growth increases in volume and weight the unfortunate patient emaciates and weakens, till at last the new tenant has won the day.

We can give no rational explanation for the existence of those abdominal tumors. They undergo every kind of metamorphosis in different individuals. At the present time their career is usually cut short by the intervention of the surgeon; and though, if left alone, they usually go on and destroy life, it is evident to any one who has seen many of them and who is familiar with the laws of pathology, that they do sometimes undergo of themselves spontaneous and permanent cure. The process of disintegration in them, in this event, is one of transformation—simply the reverse of development.

Nature goes to work and takes back what she contributed. First, the aqueous elements are taken up by the absorbents; the vessels atrophy and disappear, the sac and loculi contract; the mucous, mucoid, fibrous, and connective-tissue elements undergo fatty metamorphosis, this in turn liquefying, and thus, in the course of time, the whole of this enormous accumulation has dwindled out of sight.

This same process often takes place in every kind of cellular hyperplasia.

I read the report recently of a case bearing so directly on this part of our subject that I can not forbear quoting it here.

It was an ovarian case published by the French surgeon * Maingault. He tells us of a woman on whom he was called to operate for an ovarian cyst. When he made the opening incision and exposed the tumor, he found a gravid uterus. He decided it unsafe under the circumstances to continue the operation, and sewed up the wound. She was confined three months later, when it was noticed that the ovarian swelling was much diminished in size. Six months after parturition Maingault again examined her and could find no trace whatever of a morbid enlargement. Two years later she died of pneumonia, when at the autopsy the same surgeon could find no evidence of there having been a tumor, except the presence of a small knotty cicatrix extending from the stroma of the ovary into the broad ligament.

I believe a very large number of cases of cystic degeneration undergo spontaneous cure, especially those in advanced life, by the process of retrogression. Nature will sometimes work wonders in this direction.

As it is not within the scope of this discussion to touch on treatment, except inferentially, I will not stop to dwell on what can be done with the intelligent and judicious use of medicines in dissipating many of these formations.

The question has been debated with considerable spirit as to whether or not certain hyperplasiæ owe their origin to the mental state, to psychological influences, some

* "Nouv. élém. de méd. et de chir. opér.," Paris.

maintaining that they have seen too many instances directly connected with great tension of mind to regard them as mere coincidences; others, on the other hand, go great lengths to prove the contrary by showing that malignant disease finds its way into the circles of the wealthiest and apparently happiest as well as into the laborer's domicile.

From what I have seen, I must incline to the latter view, though I do think that frequently there is a direct and positive connection between the development of cancer and the state of the mind.

We by all odds find it most frequent in the morose, phlegmatic, and melancholy, and rarely in the gay, cheerful, and buoyant; in fact, in the opposite to those afflicted with tuberculosis, who are usually to the last hopeful.

Though I can not subscribe to the mental condition as a cause of development, I can not say this with respect to its effects on the progress of the disease.

I have seen the fiery heat of a large, fungous, sloughing cancer choked off more than once, as if by magic, by the mere touch of the hand. No one will deny the efficacy of happy and hopeful mental impressions in many of those neoplasmata.

We have authentic records of the king's evil, as scrofula was called, because of the manner in which this affliction was once cured by the royal touch. It would really seem that those nomadic, itinerant cancer quacks now and again relieved a case which men who have reached the very summit of fame in their profession had given up as hopeless.

The tumors which they get the greatest credit for curing may not have been of a malignant type; but even if they are not, we see enough in them, and the manner in which they are disposed of, to satisfy us that the relation between mind and matter, mental influence and tissue metabolism, is positive, distinct, and indisputable.

Every kind of emotion, without question, exerts a most remarkable effect in many of the neoplasmata or tumor-like formations.

The mention of the knife with the thought of shedding blood will often terrify a sensitive person.

In those large, bulging, inflamed hæmorrhoids at the anus where we have tried every expedient short of strangulation, injection, or excision, but without good results, after we speak of operation—which is usually promptly rejected—fear produces wonderful effects. In one night I have seen the whole mass disappear. On more than one occasion I have seen this phenomenon where ocular evidence was obtainable.

It may be said that this can be readily explained on the theory that the sphincter relaxed and permitted the protrusion to disappear up the bowel.

To satisfy myself on this point, I have several times taken the rectal speculum and explored the mucous lining in search for them, but without result.

Nothing whatever remained but the shrunken, withering stalks, which disappeared in a few weeks, leaving no trace of the original lesion.

Like all other ills and ailments of man, those morbid growths are frequently hereditary, and, everything being equal, they are most likely to occur in the progeny of those who had been similarly afflicted themselves.

Family resemblance is transmissible, as all family traits, virtues, vices, and habits are. We can often recognize a member of a family by his peculiar gait, the poise of his head, or quality of his voice, so that it is but a natural corollary that he should likewise inherit the tendency to malignant disease in the way of new formations. Of course, if our habits, circumstances, surroundings, and climate are different from those under which our parents were bred, so shall we differ vastly in our physical make-up and constitution from them and escape in a measure their infirmities of mind or body, or acquire others of a kind to which they were strangers, so that in this way many escape the effects of heredity.

When we are in doubt about the nature of a sore, however, and there is a distinct family history of a similar taint, it is good confirmatory evidence.

The ætiology of new formations is of far-reaching importance, as it should have a decisive bearing on prognosis and treatment; but, strange to say, we are to-day as much befogged in the matter of causation as ever. Science has been able to assist us here only to a very limited extent.

Are cancerous growths in their beginning due to a local irritation or traumatism, or is there not always, before any outward manifestation of them is seen, thorough systemic infection, giving rise to what is called the cancerous cachexia?

From long and careful observation and the perusal of the works of authorities, ancient and modern, new and old, there seems to be but one conclusion which we can come to in this matter: it is that the disease is always constitutional, usually transmissible, and by no means yet discovered curable.

In some people its energy is spent on an ulcerating sore; this lesion the consequence, not the cause. This will destroy life in itself through pain and drain.

A surgical operation for the removal of the growth will undoubtedly very often give one many additional years, but to effect a cure in its broadest sense—never.

The system is thoroughly saturated with the dire disease, and art is often powerless. How the surgeon will decide the matter as to intervention with the knife belongs to treatment—something very important, which I will not enter into other than to say that it is altogether a different matter now to what it was in the early part of the present century and before it, when so many died of pain and hæmorrhage on the operating-table, while to-day, with our perfect anæsthesia and ready methods of controlling hæmorrhage in any part of the body and with the use of antiseptics, we may, with reasonable safety, remove almost any kind of new formation without imperiling life.

Tumors of every kind grow not unlike the body—*i. e.*, they sometimes develop rapidly, occasionally very slowly, and not seldom halt, remaining quiescent until they move on again. Many undergo no change in size or appearance for years. Many of the congenital blemishes—such as the nævus and port-wine mark—undergo no visible changes throughout life, though the natural history of every tumor embraces its

transformation or, as it is usually termed, disintegration or obliteration.

The elements slowly take on calcareous or fatty changes, possibly inflammatory and purulent. This latter is the most speedy process. The surgeon will often induce by art changes of structure, ending in the involution and disappearance of the tissue hyperplasia.

This metamorphosis of the molecular elements of a tumor undergoes every kind of mutation, which will occasionally lead to relief or cure, but unfortunately, in certain structures, tends to destroy life. This is seen in the atheroma of arteries, when their coats become the seat of fatty or ossific changes, ending in a dilatation of their lumen, aneurysm, or a bursting of the vessel itself, which, if occurring in the brain, usually ends in death.

This process of degeneration is often met with in connection with development itself, as we so often witness it in connection with ovarian cysts of the multilocular variety, where, while in one loculus or compartment we find mucous, in another serous, in a third dish-water-colored liquid, and again in a fourth, fatty changes commencing.

All this points most beautifully to the great diversity of phenomena of pathological action going on simultaneously—the developmental and processes of decay, each seeming, as it were, to win the mastery.

When spontaneous disappearance of one of those neoplasmata does occur, there is no doubt but the first organized tissues to become affected are the blood-vessels, probably becoming affected in a manner not unlike the cessation of the circulation in the umbilical cord at birth.

This gradual diminution of the volume of the blood-current proceeds, probably, from the deeper vessels to the surface capillaries, and from the center toward the periphery.

While the sanguineous supply is being reduced in this manner, the absorbents are actively at work; and the chemistry of pathological transformation, sometimes gradually, again with great rapidity, mummifies, liquefies, and dissipates the remnant or *débris*.

The medical attendant, in imitating this process so wonderfully elaborated by the economy, at one time accomplishes his purpose by making his attack direct through surgical methods; again he will attain the same end, if a well-trained and observant physician, by the aid of change in surroundings, climate, diet, and the intelligent use of electricity and drugs, etc.

It has been curiously noticed that the victims of malignant growths are seldom stricken by prevailing epidemics or maladies peculiar to the changing seasons; but when they are it is said the effect is most salutary, often staying pathological changes indefinitely.

As a rule, independent of the seat of the malady itself, the organs are usually healthy, and the patient expresses himself as being as well as ever if only freed from the localized affliction.

It has been a mooted question what relation the social state as regards marriage or celibacy bears in the production or predisposition to tumors.

No one, I think, conversant with the normal physiological phenomena of the female generative system, and who has observed the profound and beneficent effects of maternity, will deny that it seems something more than probable that in the well-developed, hale, and hearty maiden of amative propensities, well fed, and permitted the unrestrained society of the male sex, the prolonged absence of copulation and the penalty enjoined by nature for not giving reasonable vent to pent-up passions may be, and often is, a disordered state of the organs of nutrition, and especially those of the reproductive functions, resulting in a surplus of the formative elements which is made manifest in the way of morbid growths.

Since marriage has been so abused and it has become unfashionable to have large families, it is hardly to be wondered at that the ovary and uterus are so frequently the seat of degenerative changes.

Now, with regard to the tissues which are most liable to transformative changes ending in degeneration, the form, habitat, chemical, histological, or pathological constituents of the various neoplasmata—to go into each of them in detail more than has been done would carry us much further than the limits of this essay was intended to reach.

However, in closing, it may be well to epitomize and recapitulate some of the leading features of those growths oftenest seen.

The cancer of former times, the early part of the present century, is now classified in two divisions—the one called cancer proper, which includes all epithelial growths wherever found; and the other designated sarcoma.

In one respect they both are identical: they are both fatal. Sarcomatous growths are quickly and fearfully destructive.

The diagnosis of each may be arrived at with considerable degree of certainty by the clinical history and a competent knowledge of the ætiology of each.

Sarcoma is generally a disease of early age, is seldom accompanied with much pain, and always confines its ravages to the connective tissue at the outset. It is disseminated by the blood-vessels, and, I believe, the *genuine article* invariably returns after enucleation. Microscopically, it is distinguished from true cancer by the shape and arrangement of its cellular elements.

Carcinoma, on the other hand, oftenest comes late in life, and seems to have a predilection for the epithelial elements, when it is known as epithelioma.

In the male, as already stated, the lip, the œsophagus, the tongue, and the rectum are the most often attacked by new epithelial formation.

In the female, the uterus, the mammary gland, and stomach seem specially to invite its attack.

No doubt in epithelial cancer we may stay its progress by operation, but it is doubtful that by any means at our command we can cure it.

The malignant and non-malignant tumors may, by their size and situation, seriously imperil health and life itself, as with a scirrhus of the œsophagus or rectum—the one by shutting off the necessary supply of food and embarrassing breathing, and the other by preventing the free egress of fæces.

The enlarged fibroid, by its great volume, may become a source of distress and annoyance.

Any vessel or duct in the body may have its lumen narrowed or obliterated by these enlargements, which spare no tissue in the body, and, unfortunately, when this does occur in malignant neoplasmata, often nothing can be done, as, owing to their invariable tendency to infiltrate, invade, and compromise the integrity of adjacent parts, they can only seldom be displaced.

In innocent tumors, when their cyst-walls have inflamed and contracted extensive adhesions, their enucleation may be attended with great difficulty.

Finally, I think we may summarize as follows:

1. That, of all animal creation, man is most frequently the victim of malignant tumors.

2. That the malignant variety leads toward death, though, by intelligent surgical intervention, life may be prolonged.

3. That, while we know a benign growth may undergo malignant changes, the reverse is seldom known to take place.

4. That habits, diet, climate, environment, and heredity are undoubtedly active factors in causation.

5. The benign, particularly of the skin, remain through life, though they may disappear spontaneously, and they too may be the starting-point of dangerous disease.

6. There are many which develop only in certain organs or tissues—the so-called homologous, which, under certain circumstances, undergo atrophy, or cease to grow.

7. The effect of psychological and physiological influences on the arrest of progress and obliteration of neoplasmata is so often seen that it must be admitted.

8. In the diagnosis the clinical history alone is often ample to decide the true nature of the formation, the bacteriological and microscopical revelations being contributory evidence only in themselves, not to be too much relied on.

9. As many tumors arise from defective or perverted nutrition and imperfect metabolism of tissue, they may and should be dealt with by constitutional measures.

10. When, however, it appears that medicine makes no impression, the knife should be recommended early, as at the present time—when modern surgery has reached such perfection that with anæsthesia all pain is avoided, with antiseptics purulent infection prevented, and with the aid of the modern clamp-forceps and temporary transfixion ligature hæmorrhage impossible—an operation is stripped of all its former horrors and dangers, and can be at least recommended if for no other purpose than the relief of pain and further extension of life.

302 West Fifty-third Street.

Uralium.—"The latest of hypnotics, 'uralium,' is produced by the combination of chloral and urethan. It is prepared by Signor Gustavo Poppi, of Bologna, a medical student, who declares with all the ardor of youth that it is the best of hypnotics. . . . No doubt the ammonium base of the urethan may counteract in part the depressing action of the chloral, nevertheless the new hypnotic does not recommend itself to us."—*Dublin Journal of Medical Science.*

THE TIME REQUIRED IN THE STOMACH DIGESTION OF DIFFERENT FOODS IN INFANCY.*

By MAX EINHORN, M. D.,
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The digestibility of foods was for a long time judged by the time required for their disappearance from the stomach. The less time a food requires for that object, the more easily digestible is it. I only mention, for example, the scale of digestibility built upon this principle by Beaumont and Richet, which is cited as standard in Ewald's† book, "Klinik der Verdauungskrankheiten." Although we know that the digestion of food is only partially performed by the stomach—the greater part being done by the intestines—still, the time of retention of food in the stomach is of importance. Besides the work the stomach performs in real digestion, it has an additional task—to prepare the substances contained in it for their entrance into the intestines, and to convert them into a condition suitable to those circumstances. Therefore, the less time occupied by a substance in leaving the stomach, the quicker must it have been converted into that condition. Thus this substance is, so far as concerns the stomach, more easily digestible.

Whereas for adults the normal time of stomach digestion for the most different substances has been determined by many authors, there has as yet been very little done in this respect for infants. Still, the question as to the time of stomach digestion in infants is of great importance, for, whereas, on the one hand, the answer to this question is closely associated with that of how often an infant ought to be fed, on the other hand, the knowledge of the length of time that the various infant foods remain in the stomach is especially important as an indication of the digestibility of these foods.

These points of view decided Dr. J. Rudisch and myself to undertake some investigations regarding the stay of different food materials in an infant's stomach; but, as my colleague and friend has been too busy with his practice, I was forced to take up the work, in fulfilling our mutual idea, alone.

The proposed question I have investigated, thus far, only in infants of the earliest age (three to nine months old). The food materials which were considered in our investigation were:

A. Mother's milk.

B. Cow's milk: *a*, undiluted; *b*, diluted with water; and *c*, diluted with barley-water.

C. Artificial infant foods: *a*, Nestlé's milk food; *b*, malted milk; *c*, Carnrick's soluble food; and *d*, Mellin's food.

The investigations were pursued in the children's ward of Randall's Island Hospital, and I am indebted to Dr. Simmons, Dr. Maxwell, and Dr. McCready for their kind permission.

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* Read by title at the fortieth annual meeting of the American Medical Association.

† Ewald, "Klinik der Verdauungskrankheiten," i, p. 95.

The only statements found in literature on our subject are those of H. Leo,* and treat of the stay of mother's and cow's milk in an infant's stomach. Leo briefly states that one hour after milk feeding, the stomach, in infants a few weeks old, is already normally empty; in somewhat older infants the milk is retained a little longer, the maximum time being an hour and a half for breast-nursed infants and two hours for infants fed on cow's milk. There are no further remarks on this subject, so far as I am aware.

The course of the investigations made was as follows: First, we determined, in a number of healthy breast-nursed infants, in how long a time after the last nursing the stomach became empty; then a number of artificially fed infants were selected, all of them well as regarded their stomach; only two of them lacked somewhat in bodily development, the others being perfectly normal. In these infants, on different days, several food materials were examined with reference to the time of their stay in the stomach. During the days of examination the infants had the usual food of the institution; three hours after the last feeding, usually between five and six o'clock A. M., the infants were fed with the substance to be investigated, and were examined one to two hours afterward with the stomach tube (consisting of a Nélaton catheter, No. 14 A).

Allow me, gentlemen, to describe more fully the *modus operandi*. The introduction of the stomach tube is very easily performed. I have found it more convenient to examine the infant in the recumbent position. A towel is spread around the chest and arms of the child and easily held by the nurse (in this way the child is prevented from interfering with its arms during the procedure). Thereupon the tube is pushed with its oval end into the mouth of the infant. Usually, the child begins to suck and to accomplish several swallowings; both these circumstances facilitate the introduction. One need only push the tube farther into the mouth (without putting his finger into the child's mouth), and it goes quickly through the œsophagus into the stomach. Sometimes the children cry and do not like to suck the tube; the procedure is then somewhat more difficult. You then introduce the left index finger into the child's mouth until the regio epiglottica is reached, slightly depress the back of the tongue, and guide the tube with the right hand along the forefinger and a little to the left. If the child cries or makes a deep expiration, the tube will often encounter resistance at the introitus œsophagi; in this case it is necessary to wait until the child makes an inspiration; then the tube easily goes through the œsophagus and enters the stomach.

The stomach, as well as the other abdominal contents, is under positive pressure during expiration. But, the cardia being slightly closed and the walls of the œsophagus pressing upon each other, the occlusion is thus increased, even during expiration, by the circumstance that by the diminution of the thoracic space a pressure is exerted on the outside walls of the œsophagus. In this way, normally, notwithstanding the pressure exerted on the stomach during expiration, nothing of its contents can come out; but as soon as there is a communication made by the introduced tube between the stomach and the outside world, any fluid in the stomach will, during a forced expiration, seek the place of less pressure, and will thus make its appearance. Ewald's expression method in adults is founded upon this principle. In infants, the undiluted stomach contents can be obtained in the same way. The expirations of the child are usually sufficient to bring up the stomach contents; but, if the spontaneous expirations of the child exert too weak a pressure to force the contents out, one can make the child cry, and thus increase the expirations and the pressure. After a few seconds the stomach contents, if such exist, always appear. If, in spite of the child's crying, nothing comes out after about a quarter to half a minute, the stomach, as a rule, is empty, or there may exist only traces of contents. One can convince himself more fully whether the stomach is empty or not by blowing air from his own mouth through the tube into the stomach of the child. If there is fluid present in the stomach, the air, striking through and above the fluid, causes a rising of bubbles, which when bursting give a gurgling sound audible to the observer. If there is no fluid in the stomach, one can hear the air striking the stomach walls, but without producing any such sounds. In this way it is possible, without washing out the stomach, to determine whether it is empty or not.

According to the method described I always proceed in making these investigations.

Although the chief object of this investigation was to determine how long after feeding it took the stomach to become empty, or whether after two hours there were yet some contents present; notwithstanding, as a secondary matter, observations were always made upon the physical and chemical qualities of the undiluted stomach contents. Every food to be investigated was given upon two different days to the same children. On the first day the stomach of one part of the infants was examined an hour to an hour and a half after the trial feeding, whereas in the other part the examination was pursued an hour and a half to two hours after the feeding. On the second day the examination was performed just in the same manner, with the only difference that the succession was inverted; in this way all infants were examined once an hour to an hour and a half and the other time an hour and a half to two hours after the feeding. The time counted from the beginning of the trial feeding to the introduction of the tube was always accurately stated and determined, whether the stomach was found empty or not.

The food materials undergoing the investigation were always given in the same quantity—viz., four ounces. As to the artificial food substitutes, the preparation was made according to the receipt accompanying them.

When contents were found in the stomach they were examined for their physical condition; then they were filtered and investigated as to their reaction (acid or not) and as to the presence of free hydrochloric acid; sometimes also as to the presence of lactic acid, propeptone, peptone, and the rennet ferment. As soon as the quantity of the filtrate was sufficient, the degree of acidity was determined. As usual, the determination of the degree of acidity was accomplished

* H. Leo, "Berlin. klin. Wochenschr.," No. 49, 1888.

I. HUMAN BREAST MILK.

NAME.	Age.	Date.	Time since last feeding. h.	Time since last feeding. m.	Stomach contents.	Condition of the coagula.	Reaction.	Acidity.	HCl.	Lactic acid.	Propeptone.	Peptone.	Rennet.	Observations.
1. Braun	6 mos.	9, v, 1889.	1	10	+	Pretty fine.	Acid.	—	0	+	+	+	+	
		10, v, 1889.	2	0	0									
2. Totten	5 mos.	10, v, 1889.	1	0	+	Fine.	Acid.	30	0		+	Traces.	+	Congo paper gets dark blue.
		9, v, 1889.	2	0	0									
3. Williams	3 mos.	10, v, 1889.	1	15	0									
		9, v, 1889.	2	0	0									
4. O'Brien	7 mos.	10, v, 1889.	1	0	+	Fine.	Acid.	10	0	+	+ little.	0	+	
		9, v, 1889.	2	0	0									
5. O'Mara	9 mos.	10, v, 1889.	1	10	+	Pretty fine.	Acid.	15	0	+	+ little.	Traces.	+	
		9, v, 1889.	2	0	0									
6. Weiss	7 mos.	10, v, 1889.	1	20	+	Thick.	Acid.	20	0	?	+	+		
		9, v, 1889.	2	0	0									
7. Smith	7 mos.	10, v, 1889.												The mother refused the examination of the child.
		9, v, 1889.	2	0	0									
8. Commencint	4 mos.	9, v, 1889.	1	0	+	Fine.	Acid.	6	0					

II. COW'S MILK AND BARLEY WATER (*āā*).

1. Hammer	6 mos.	11, v, 1889.	1	0	+	Thi'k, not coherent.	Acid.	20	0	+	+	?	+	
		13, v, 1889.	1	45	Very little.	Fine.	Acid.	—	0					
2. Rickers	6 mos.	11, v, 1889.	1	0	+	Thick & somewh't coherent.	Acid.	35	0	+	+	+	+	
		13, v, 1889.	1	50	Traces		Acid.							
3. Bernstein	9 mos.	11, v, 1889.	1	0	+	Medium.	Acid.	30	0		+			
		13, v, 1889.	1	55	0									
4. Doraw	3 mos.	11, v, 1889.	1	30	+	Medium.	Acid.	—	0					
		13, v, 1889.	1	50	Traces		Acid.	—	+					
5. Jackson	2 mos.	11, v, 1889.	1	30	+	Fine.	Acid.	20	0	+	+	+	+	
6. Smith	7 mos.	13, v, 1889.	2	5	0									

III. COW'S MILK AND WATER (*āā*).

1. Hammer	6 mos.	14, v, 1889.	1	20	Traces		Acid.		0					
		15, v, 1889.		45	+	Medium, a little coherent.	Acid.	15	0		+	+ traces.	+	A piece of greenish mucus.
2. Rickers	6 mos.	15, v, 1889.		45	+	Medium, a little coherent.	Acid.	15	0		+	+ traces.	+	
3. Bernstein	9 mos.	14, v, 1889.	1	20	Very little.	Thick.	Acid.		0					
		14, v, 1889.	1	25	0									

IV. COW'S MILK.

1. Hammer	6 mos.	16, v, 1889.	1	15	0									
		31, v, 1889.	1	25	+	Thick.	Acid.	—	0					
2. Rickers	6 mos.	16, v, 1889.	1	15	0									
		31, v, 1889.	1	24	0									
3. Bernstein	9 mos.	16, v, 1889.	1	20	+	Thick.	Acid.	—	0					
4. Doraw	3 mos.	16, v, 1889.	1	20	+	Thick, somewh't coherent.	Acid.	—	0					
5. Jackson	2 mos.	16, v, 1889.	1	25	Little.	Thick lumps.	Acid.	—	0					
		31, v, 1889.	1	0	+	Quite fine.	Acid.	40	0					
6. Smith	7 mos.	16, v, 1889.	1	25	0									
		31, v, 1889.	1	0	+	Fine.	Weakly acid.	—	0					
7. Taylor	6 mos.	31, v, 1889.	1	0	0									

V. NESTLE'S MILK FOOD.

						Condition of the flour								
1. Hammer	6 mos.	17, v, 1889.	1	15	+	Fine.	Acid.	10	0					
		20, v, 1889.	2	10	+	Fine.	Weakly acid.	5	0					
2. Rickers	6 mos.	17, v, 1889.	1	20	+	Fine.	Acid.	10	0	+	?	0	+	
		20, v, 1889.	2	0	+	Fine.	Acid.	12	0		+	+	+	
3. Bernstein	9 mos.	17, v, 1889.	1	25	+	Medium.	Acid.	40	0	+	+ much	+	+	Congo-paper turns blue.
		20, v, 1889.	2	15	+	Medium.	Strongly acid.	50	0		+	+		

V. NESTLE'S MILK FOOD—(*Continued*).

NAME.	Age.	Date.	Time since last feeding h.	Time since last feeding m.	Stom. ach contents	Condition of the flour.	Reaction	Acid fly.	HCl.	Lac tic acid.	Propep tone.	Peptone.	Ren net.	Observations.
4. Doraw	3 mos.	17, v, 1889.	2	0	+	Fine.	Acid.	8	0		+	+		
		20, v, 1889.	1	50	+	Fine.	Acid.	15	0	+				
5. Jackson	2 mos.	17, v, 1889.	2	0	+	Medium.	Strongly acid.	60	0	+	+ much	+	+	
		20, v, 1889.	1	55	0									
6. Smith	7 mos.	17, v, 1889.	2	0	0									
		20, v, 1889.	1	50	0									
VI. MALTED MILK.														
1. Hammer	6 mos.	21, v, 1889.	2	0	0									
		22, v, 1889.	1	15	+	Fine.	Acid.	20	0					
2. Rickers	6 mos.	21, v, 1889.	2	0	0									
		22, v, 1889.	1	15	+	Fine.	Acid.	25	0		+	+	+	
3. Bernstein	9 mos.	21, v, 1889.	2	10	+	Fine.	Acid.	30	0	+	0	+	+	Congo turns blue
4. Doraw	3 mos.	21, v, 1889.	1	20	+	Fine.	Weakly acid.	—	0					
		22, v, 1889.	1	50	+	Medium.	Acid.	20	0		+	+	+	
5. Jackson	2–3 mos.	21, v, 1889.	1	25	+	Thick.	Strongly acid.	40	0	+	+	+	+	The cont'nts look like water with pieces of roll swim'g in them.
		22, v, 1889.	1	55	+	Thick.	Acid.	45	0		+	+		
6. Smith	7 mos.	21, v, 1889.	1	20	+	Fine.	Weakly acid.	8	0	+	Traces.	0		
		22, v, 1889.	1	50	0									
7. Sullivan	7 mos.	21, v, 1889.	1	15	0									
VII. CARNRICK'S SOLUBLE FOOD.														
1. Hammer	6 mos.	23, v, 1889.	1	15	+	Thickly coherent.	Weakly acid.	—	0		Traces.	+ traces.	+	
		25, v, 1889.	1	55	+	Fine.	Acid.	30	0					
2. Rickers	6 mos.	23, v, 1889.	1	25	+	Thickly coherent.	Acid.	—	0		0	+		
		25, v, 1889.	1	50	+	Thickly coherent.	Acid.	2	0		?	+	+	
3. Sullivan	7 mos.	23, v, 1889.	1	20	+	Thickly coherent.	Weakly acid.	25	0				+	
		25, v, 1889.	1	50	+	Fine.	Weakly acid.	—	0					
4. Doraw	3 mos.	23, v, 1889.	1	55	+	Fine.	Acid.	—	0					
		25, v, 1889.	1	25	+	Fine.	Acid.	20	0		+ little.	+		
5. Jackson	2–3 mos.	23, v, 1889.	2	0	0									
		25, v, 1889.	1	25	+	Fine.	Strongly acid.	35	0		+	+		
6. Smith	7 mos.	23, v, 1889.	2	0	Traces.	Fine.	Weakly acid.	—	0					
		25, v, 1889.	1	20	+	Fine.	Acid.	—	0					
VIII. COW'S MILK AND WATER (*āā*).														
						Condition of the coagula.								
1. Hammer	6 mos.	24, v, 1889.	1	25	Traces.	Pretty fine and coherent.	Acid.	—	0					
2. Rickers	6 mos.	24, v, 1889.	1	20	Very little.	Pretty thick.	Acid.	—	0					
3. Sullivan	7 mos.	24, v, 1889.	1	20	0									
4. Doraw	3 mos.	24, v, 1889.	1	30	0									
5. Jackson	3 mos.	24, v, 1889.	1	35	0									
6. Smith	7 mos.	24, v, 1889.	1	30	0									
IX. MELLIN'S FOOD.														
1. Hammer	6 mos.	29, v, 1889.	1	45	0									
2. Rickers	6 mos.	29, v, 1889.	1	20	+	Thick lumps.	Acid.	20	0					
3. Sullivan	7 mos.	29, v, 1889.	1	15	+	Medium.	Acid.	—	0					
4. Jackson	3 mos.	29, v, 1889.	1	50	+	Thick lumps.	Acid.	50	+					
5. Smith	7 mos.	29, v, 1889.	1	45	Traces.		Acid.	—	0					

by means of a one-tenth standard sodium-hydrate solution and phenolphthalein serving as an indicator. The number of cubic centimetres of the sodium solution used to neutralize 100 c. c. of the filtrate give the figure of acidity. I usually took for this purpose two c. c.; I had then to multiply the obtained number of cubic centimetres of the so-

dium solution by fifty in order to determine the degree of acidity.

In testing for free hydrochloric acid we made use of Günzburg's phloroglucin-vanilline reaction, which is the most reliable; * but, besides this, we examined also by means of Congo-paper, and, wherever the results obtained with Congo differed from those with Günzburg's test, we mentioned it in the remarks.

As regards the time in which the stomach digestion is finished, one can not always expect repeated experiments to have absolutely like results, for, on the one hand, there are individual peculiarities of the different infants under observation, and, on the other hand, the condition of the stomach in one infant at different times will show some variations. Our conclusions will be derived from the majority of results achieved.

After these remarks I should like to show you, Mr. President and gentlemen, the tables containing the results of our experiments.

From Table I (human breast milk) it is evident that in all breast-nursed infants the stomach was empty two hours after the last nursing. Probably one would find the stomach empty as early as in an hour and a half, but I could not test this question, because of the refusal of the mothers to subject their babies to a re-examination.

The stomach contents obtained an hour after feeding always had an acid reaction, did not give any reaction for free hydrochloric acid with the phloroglucin-vanilline solution, and showed small degrees of acidity; the figures varied from six to thirty. By means of Congo-paper a positive reaction was found in two (Braun and Totten) of the stomach contents, but this positive result of the Congo reaction must have been due to the acid albuminates or to the lactic acid present in these cases. Propeptone was found in most cases and peptone in some of them. The condition of the milk coagula was in two infants very fine, in three pretty fine, and in one infant (Weiss), which was not very well, thick and coherent; besides this, much viscid mucus was also present in this last case.

Table II (cow's milk and barley water) shows that in from an hour and three quarters to two hours after feeding with a mixture of equal parts of cow's milk and barley water the stomach was found either empty or nearly empty. By "traces" I mean that condition where there were found only a few drops of fluid in the tube. The stomach may practically be considered as empty in such cases. The stomach contents obtained an hour after feeding always had an acid reaction, showed degrees of acidity from twenty to thirty-five, and contained no free hydrochloric acid. Only once did I find in the infant Doraw, an hour and fifty minutes after feeding, free hydrochloric acid in the few drops contained in the tube. The coagula flakes were twice very fine, twice medium, and twice thick.

Tables III and VIII (cow's milk and water, āā) show that in about an hour and a half after feeding with a mixture of equal parts of cow's milk and water the stomach was found empty. Here also we found in the stomach contents a slight acidity, no free hydrochloric acid, and the condition of the coagula flakes various, fine, medium, and in Rickert's thick.

Table IV demonstrates the behavior of undiluted cow's milk. In an hour and fifteen minutes to an hour and twenty-five minutes after the trial feeding the stomach was empty in most of the infants. Free hydrochloric acid could not be detected. In nearly all the infants the coagula were thick, and only in one fine.

Table V contains the experiments with Nestlé's milk food. Two hours, and even a little longer, after feeding, all the infants, with the one exception of Smith, had still a great deal of the food in their stomach. The flour particles were very minute and well distributed. The acidity was relatively high only in Bernstein and Jackson, whereas in all the others it was low (5 to 12). Free hydrochloric acid was always wanting.

Table VI (malted milk). Here we found the stomach empty in three infants after two hours, and in one (Sullivan) after one hour and fifteen minutes, whereas in three other infants the stomach, at the end of the second hour of digestion, was not yet empty. On the second trial day the infants took only half of the food portion given to them. The stomach contents always showed a very minute distribution of the solid particles, only in Jackson (which child was not well at the time) there were somewhat large particles suspended in the fluid; the whole mass looked like water with small pieces of roll swimming in it. The acidity fluctuated from 8 to 45; free hydrochloric acid was not found.

Table VII (Carnrick's food). At the end of the second hour in four infants the stomach as yet was not empty, but contained a considerable quantity of food; in two of the infants (Thompson and Smith) the food had already disappeared from the stomach. The contents showed always a fine, minute distribution of the solid particles, but the same were somewhat coherent in three of the infants. The acidity fluctuated between 20 and 35. Free hydrochloric acid was wanting.

Table VIII (cow's milk and water, āā). These results have already been related in conjunction with those of Table III. The reason why we again took up the investigation of equal parts of cow's milk and water after having examined the artificial infants' foods was in order to demonstrate that the functions of the infant's stomach did not suffer much by the long period of experimentation—*i. e.*, that the stomach did not work slower as regarded the transport of its contents to the intestines—and in order to have in this way a better control. In fact, this time also in all infants the stomach was found empty after an hour and a half.

Table IX (Mellin's food). According to the recipe, the preparation is as follows: Two tablespoonfuls of Mellin's food, a quarter of a pint of water, and three quarters of a pint of cow's milk. The mixture is composed in this way in greatest part of cow's milk, and can not be considered, therefore, as an artificial food. Of the infants examined after an hour and three quarters, two infants had already an empty stomach, whereas in the stomach of the third contents

* Einhorn, "Medical Record," 1888, p. 227.

were present. As regards the condition of the stomach contents, in two the milk was found coagulated in thick lumps, whereas in one the coagula were very fine. Free hydrochloric acid was found in only one, Jackson's.

In making up a short *résumé* of the results obtained in the examination of the stomach contents upon our different trials, we see, first, that even mother's milk can be found under certain circumstances, although very seldom, in a more or less thickened, coagulated condition. The undiluted cow's milk is usually found in thicker coagulated lumps. The diluted cow's milk appears in fine curds, and only occasionally in thicker coagula.

The degree of acidity in the stomach contents was in the milk, as well as in the other food materials, always a low one, and free hydrochloric acid could hardly ever be detected.

The reason why the free hydrochloric acid, although secreted by the stomach—as can be easily seen by the propeptone and peptone formed in the stomach—can not be detected, lies in the circumstance that the albuminates of the milk and of the other food materials combine with the acid to form acid albuminates.

The degree of acidity is not diminished thereby, but the test for free hydrochloric acid will prove negative so long as the latter is not present in sufficient quantities. (One can easily convince himself of this fact in the following way: Add separately to 5 c. c. of distilled water and 5 c. c. of milk 1 c. c. of a one-tenth standard hydrochloric-acid solution; the water will give, with the Günzburg solution, a positive characteristic test for hydrochloric acid, whereas the milk will prove to contain no free hydrochloric acid with the same Günzburg's test. But, if we determine the degree of acidity in the water and in the milk, we find the same greater in the milk than in the water.) From the low degree of acidity nearly always found in the normal infant's stomach, it appears that normally the infant's stomach secretes less hydrochloric acid than that of adults. Leo* likewise remarked the fact that in milk-feeding the acidity of the infants was a low one.

It has usually been the custom to prescribe hydrochloric acid† in derangements of infants' stomachs, because, upon examination of the vomit, no free hydrochloric acid was found. Inasmuch as, according to my observations, there is no free hydrochloric acid present in the normal stomach contents of infants, it will be seen that there is no indication for supplying the supposed absent hydrochloric acid.

In order to quickly understand the time required for the stomach digestion of the different food materials‡ in the same infants, I made in a comparative table (X), having only reference to the time in which the stomach becomes empty or is yet filled. It is evident from this table that undiluted cow's milk, as well as that diluted with water or barley-water, leaves the stomach in from an hour and a half to two hours, whereas the other artificial food substitutes are still found usually after two hours in the stomach. Milk is in this way the most easily digestible food for infants' stomachs.

Among the artificial food substitutes examined as to the time of their stomach digestion, malted milk seemed to take the first, Carnrick's the second, and Nestlé's food the last place.

As regards the question of artificial infant feeding, since early times mother's milk has been considered as the looked-for ideal; the more we are able to make the food approximate human milk, the better is it. A priori, the milk of mammals shows in appearance as well as in composition great similarity to human milk. Therefore, very

X. A COMPARATIVE TABLE OF THE DURATION OF TIME REQUIRED FOR THE STOMACH-DIGESTION OF INFANTS IN COW'S MILK AND VARIOUS ARTIFICIAL FOODS.

NAME.	Age.	COW'S MILK (NOT DILUTED).		COW'S MILK AND WATER ($\bar{a}\bar{a}$).		COW'S MILK AND BARLEY WATER ($\bar{a}\bar{a}$).		MELLIN'S FOOD.		MALTED MILK.		CARNRICK'S SOLUBLE FOOD.		NESTLE'S MILK FOOD.	
		Time since last feeding.	Stomach contents.	Time since last feeding.	Stomach contents.	Time since last feeding.	Stomach contents.	Time since last feeding.	Stomach contents.	Time since last feeding.	Stomach contents.	Time since last feeding.	Stomach contents.	Time since last feeding.	Stomach contents.
		h. m.		h. m.		h. m.		h. m.		h. m.		h. m.		h. m.	
1. Hammer	6 mos. *a.*	1 15	0	45	+	1 00	+			1 15	+	1 15	+	1 15	+
	b.	1 25	+	1 25	Only traces.	1 45	Very little.	1 45	0	2 00	0	1 55	+	2 10	+
2. Rickers	6 mos. *a.*	1 15	0	45	+	1 00	+	1 20	+	1 15	+	1 25	+	1 20	+
	b.	1 25	0	1 20	Very little.	1 50	Traces.			2 00	0	1 50	+	2 00	+
3. Bernstein	9 mos. ..	1 20	+			1 00	+							1 25	+
	..			1 25	0	1 55	0			2 10	+			2 15	+
4. Doraw	3 mos. ..	1 20	+			1 30	+			1 20	+	1 25	+	1 50	+
	..			1 30	0	1 50	Traces.			1 50	+	1 55	+	2 00	+
5. Jackson	2 mos. *a.*	1 00	+			1 30	+			1 25	+	1 25	+	1 55	0
	b.	1 25	Very little.	1 35	0			1 50	+	1 55	+	2 00	0	2 00	+
6. Smith	7 mos. *a.*	1 00	+							1 20	+	1 20	+	1 50	0
	b.	1 25	0	1 30	0	2 05	0	1 45	Very little.	1 50	0	2 00	Traces.	2 00	0
7. Taylor	6 mos.	1 00	0							1 35	+				
8. Sullivan	7 mos. ..							1 15	+	1 15	0	1 20	+		
	..			1 20	0							1 50	+		

* Leo, "Berlin. klin. Wochenschr.," 1888, No. 49.

† "Annual of the Universal Med. Sciences," 1889, vol. i, E. 24.

‡ Remark.—Mother's milk was not added in this table, because the time for mother's milk was taken from other infants being nursed by the breast.

early cow's milk was used as a substitute for human milk. Later on, exact milk analyses were made by different observers, and it was learned that human milk contained less casein and more milk-sugar than cow's milk; furthermore, it was perceived that human milk was coagulateed by acids in very fine, small flakes, whereas cow's milk was curdled in thick lumps. In order to make cow's milk more like human milk, it was diluted with water, and milk-sugar was added, first by Biedert * and then by Raspe; † this diluted milk gives even a finer coagulation.

This simple method of preparing food so nearly approximating human milk certainly merits to be highly recommended, and it is used indeed with the best results in the whole world.

At the last meeting of the New York Academy of Medicine, on June 13th, Professor Rotch, of Boston, in his excellent paper on "Infant Feeding," laid also much stress on using only diluted cow's milk with the addition of milk-sugar, and warned against the use of all so-called patent food materials, because physicians ought to look themselves to the foods they gave, and not rely upon business men to find out foods and to recommend them. Merely from this principle we should not use the artificial foods for infant feeding.

As you have seen before, the result of our investigation is that the time of stomach digestion is much longer for all manufactured artificial foods than for milk (human, cow's undiluted and diluted); in this way it is proved by experimentation that milk should have the preference, and therefore I fully agree with Professor Rotch.

If asked what conclusions we may derive from these investigations, they would be as follows:

1. Infants deprived of human breast milk should be fed, first of all, with (diluted) cow's milk, especially as we are now able to protect the milk by sterilizing it (by means of Soxhlet's apparatus) from decomposition and bacteria.

2. Infants artificially fed should not be fed every two hours, as thus the stomach would be over-filled, but ought to be fed with these foods at greater intervals.

3. In sick infants the absence of free hydrochloric acid in the stomach contents should be no indication for prescribing it.

The Treatment of Diarrhœa in Phthisis.—"Dr. Polyák, of Görbersdorf, gives in the 'Orvosi Hetilap' the results of some trials he has made of two recently suggested remedies in the diarrhœa of phthisis—viz., silicate of magnesia in the form of talc, which has been recommended by Debove, and lactic acid, recommended by Dr. Sézary and Dr. Aune. About eight ounces of talc were well shaken up in a pint of milk, and this, or even a larger quantity, was given daily. Dr. Polyák thinks it quite impossible that long-continued use of talc can heal intestinal ulcers. Lactic acid proved in his hands a much more satisfactory remedy. The initial dose employed was thirty grains per diem in four ounces of water; this was increased subsequently, but not more than seventy-five grains per diem were given. On the third day the diarrhœa and the pain were generally arrested, and during the next day or two the stools assumed their ordinary character. It was found advisable to continue to give small doses for some time longer."—*Lancet.*

* Biedert, "Arch. f. path. Anat. u. Physiol. u. f. klin. Med.," Bd. lx, p. 352.

† F. Raspe, "Arch. f. Hygiene," Bd. v, E. 2.

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THE INFLUENCE OF THE OVARIES ON THE ORGANISM.

In a recent issue we gave an outline of Professor Brown-Séquard's curious investigations into the influence of the testicles on the organism, and further information concerning his ideas will be found in the present issue. In connection therewith, as we suggested in our article of July 6th, it is interesting to consider the significance of the ovaries apart from their reproductive function.

It would be a difficult matter to compute the vast number of cases in which the ovaries have been removed. It is but a few years since the text-books on gynæcology and general surgery could compass in a table of small dimensions the names of those who had performed oophorectomy and the number of cases in which they had operated. Now the number of operators is "like the stars," and not a few have reported series including several hundred cases. A great deal of valuable information has been derived from the publication of these cases, and much more is to come. Glaevecke has analyzed a great mass of data of this character, and his conclusions are suggestive, not to say startling, at least in some respects. Of cases in which the ovaries had been removed, he found that in 88 per cent. menstruation ceased at once or after a short time; in the remaining 12 per cent. it continued at rare intervals and with a much diminished flow. The cessation of menstruation is explained on the theory that the ovary is the source whence the impulse to menstruation proceeds. In about half the cases the molimina menstrualia still recurred in obedience to habit, together with a recurring irritation of the uterus proceeding from the proper nerve centers, and causing hyperæmia. The phenomena of the menopause were present in most cases: flashes of heat, dizziness, headache, leucorrhœa, sweating, etc. In most cases also the vagina and uterus became atrophied after a short time, uteri that had been enlarged from chronic inflammation or the presence of myomata becoming as small as or smaller than the normal. In 42 per cent. of the cases the body increased in weight and in the supply of subcutaneous fat. In most of the cases the sexual desire was notably diminished and in many it was extinguished. In almost all cases the mind became more or less affected, and not infrequently melancholia resulted.

After the removal of the uterus, menstruation ceased in all the cases analyzed, and atopomenorrhœa or substitutes for menstruation never occurred to any extent. Molimina menstrualia recurred regularly for a short time, with pain and annoyance in the abdomen, this being explained by the continuance of ovarian activity and the reflected pelvic hyperæmia

recurring monthly. Removal of the uterus had no perceptible influence upon the vulva and vagina, and the ovaries did not necessarily undergo atrophy for several years. The influence upon the general nutrition is said not to be so decided as that of removal of the ovaries. Sexual desire is also influenced to a much slighter degree than after oophorectomy. In a third of the cases there was more or less mental derangement.

Thus it will be seen that the conclusions from this analysis are not entirely in accord with general opinion nor with the expressed views of some writers of large experience. In the matter of sexual desire, it has been repeatedly asserted that this was more likely to be intensified than diminished by removal of the ovaries. As to the mental effect, it will doubtless appear too sweeping a statement to be true that all, or nearly all, women whose ovaries are removed suffer unfavorable mental changes. Were this the case, it would be in itself a sufficient reason for the greatest circumspection before performing the operation.

Keith has recently stated that 10 per cent. of his patients who recover from hysterectomy subsequently suffer from melancholia or other form of mental disease. Even if this percentage, much smaller than the proportion stated by Glaevecke, suffered in this way, it should make one hesitate to impose upon a woman the risk of changing the ills she has for others that are worse. What is chiefly required in this matter at the present time is not greater operative skill so much as calmness and clearness of judgment to decide as to cases which are suitable for operation. These cases may be divided into three classes: 1. Those in which an operation is imperative. 2. Those in which the propriety of an operation is questionable. 3. Those in which an operation, for whatever reason, should not be performed.

And we consider it a reasonable proposition that an operation should not be performed, and the life of the patient jeopardized, if moderate relief from her existing evils can be obtained by less dangerous procedures.

DOMESTIC AND PUBLIC HYGIENE.

The women physicians of all schools of practice in the city of Chicago have formed a Woman's Medical Union for the Advancement of Domestic and Public Hygiene. In New York, the Ladies' Health Protective Association, which has done good work in the matter of street cleaning and the abatement of public nuisances, is now investigating matters relating to the management of the public schools that are of sufficient interest and moment to rouse the seven sleepers or any other inert body of indifferent citizens. But the most unique organization for inducing municipal authorities to enforce sanitary laws is a little colony of college-bred women about to be established in Rivington Street. In that unsavory locality, graduates from the leading literary colleges for women, together with a woman physician, are about to take up their abode, and to adopt all the inconveniences of such a life, in the earnest endeavor to convert some of the great unwashed into the washed by means of baths at five cents each; to interest young girls in the subject of cleaner living; to improve the gutters for those who play in them; and to diminish as far as possible, by a personal statement to the proper representatives of municipal government, the avoidable horrors that they expect to share with the natives of this region, for smells are no respecters of persons, neither is the sight of decaying animal and vegetable matter. This little band of young and pretty women have been told again and again that they need not expect to teach the people anything, but consoled in the same breath by the assurance that they themselves will learn a great deal. The movement is not a so-called religious or intellectual venture. It is a simple scheme of ethical culture, beginning at the foundation of things, without cut-and-dried rules, prejudices, or opinions. Books are wanted for the girls. It is hoped that, if a girl can be induced by personal influence to read one book, she may rise equal to a desire for another. Not even the most sanguine of the Rivington Street colony expect to teach the mature women anything, though they have plans for making the poor souls happy now and then. In a little speech on the subject, a bright and charming Smith College graduate said: "The mothers are always left out. The men have pleasure; they get drunk and fight. The little children can play in the gutter till eleven o'clock at night. Boys and girls have their dance halls. But the laborer's wife signs her death warrant, so far as all pleasure is concerned, the instant she marries. The plush gown that constitutes the wedding garment is her last splurge." The colonists' idea of giving these mothers pleasure is to present them with something good to eat; and our college graduates trust that some listless, weary woman may rouse herself and wish to learn of them how to make it.

Hygiene as the basis of morals is one of the governing principles of modern philanthropy. Every year a disposition to raise the fallen and befriend the friendless by affording them increased material and physical prosperity widens its dominion. Two or three, here and there in little groups, have worked out social problems in this way all over the country. In England, it is said, the strenuous efforts of one woman—she found herself in prison once on account of those efforts—have revolutionized the entire sanitary code. It would seem that there is not a shadow of a chance now for the Circumlocution Office in our large cities. The farmer has decided to cut his corn himself, so the larks must be up and about their business. The nineteenth century is the woman's century, as Goethe has it, and the unprejudiced critic must observe that the nineteenth-century college graduate does her full duty to the times in the matter of domestic and public hygiene.

MINOR PARAGRAPHS.

A BLACKMAILING PLOT DEFEATED.

Mr. Malcolm Morris, a London surgeon, recently the subject of an attempt at blackmail, in the guise of a suit for breach of promise of marriage, has had the satisfaction of seeing two of the conspirators against him sent to prison. The principal offender was sentenced for five years, the other for eighteen

months. The sympathy of the London profession was unanimously in Mr. Morris's favor in the contest, and, now that he has won his cause, he has been presented with an address of confidence and respect. Many of his *confrères* have also subscribed their names to a paper agreeing to make up a fund to reimburse him for a part of the heavy expenses made necessary by the contest, headed by Sir Andrew Clark, Sir James Paget, Sir Alfred Garrod, Dr. Quain, Dr. Ord, Dr. Broadbent, Mr. Critchett, and many other well-known men. The "Lancet" also appears upon the list for five guineas, and its editor congratulates Mr. Morris on the result, and praises him for his courage in making a stout resistance where a weaker man might have been tempted into a compromise with the conspirators.

THE NEW BLOOMINGDALE ASYLUM.

It is said that the superintendent of the asylum, Dr. Charles H. Nichols, is about to visit a number of European lunatic asylums, and that the results of his observations will be considered in arranging the plans of the new asylum at White Plains. Dr. Samuel B. Lyon will be acting superintendent during the absence of Dr. Nichols. In view of the fact that the new Bloomingdale will have a fund of a million dollars with which to build, Dr. Nichols's mission will be seen to be a highly responsible undertaking and quite the opposite of a holiday trip. It may, and doubtless will, have a wide-reaching influence upon the future of asylum construction.

A REMARKABLE ACCUMULATION OF TRICHINÆ.

It is stated in the "Medical and Surgical Reporter" that Dr. Senator, of Berlin, lately reported an account of the autopsy in the case of a man who had died of cancer of the œsophagus. The body was found to be overrun with trichinæ, every fiber of muscular tissue being inhabited by them by the hundred. One piece of muscle weighing less than two grains contained, by count, two hundred and eighty of the parasites. Inquiry being instituted, it was learned that he had had trichiniasis twenty-seven years before, but had recovered and been able to attend regularly to his duties as a night-watchman until the other malady laid him up, only suffering from occasional pains of a rheumatic character.

A QUESTION OF PRECEDENCE.

The "Lancet" says that a question of precedence between the Royal College of Physicians and the Royal College of Surgeons was brought to an issue lately by Sir Andrew Clark, who is the president of the first-mentioned college. On taking the chair at the beginning of his second term he stated that he had been called upon to sign a document as president which was also signed by the head of the College of Surgeons as well as by the president of the General Medical Council. He insisted that his signature should precede the others, and, the matter having been referred to the Heralds' College, it was found that he was in the right, and his name was made to head the list by the Garter King at Arms.

THE SEXUAL GLANDS AS SOURCES OF ENERGY.

We lately gave a summary of an account, published in one of our Paris contemporaries, of M. Brown-Séquard's practical tests of his theory of the influence of the testicle on the economy. Our Paris correspondent, in a letter since received, states that the liquid used in the subcutaneous injections is prepared by adding from two to five cubic centimetres of distilled water to the juice obtained by crushing a testicle and filtering the mixture. In a note addressed to our correspondent, dated June 28th, M. Brown-Séquard says: "A communication will be made to-morrow by a Paris physician of three cases of weakness due to old age, treated by subcutaneous injections of a liquid extracted from the testicles of guinea-pigs and rabbits. The success was as great in each of these cases as it was in myself." Our correspondent further informs us that M. Brown-Séquard regards it as important to prolong the functional activity of the testicles—a most natural corollary of his theory—and that he has even gone so far as to advise an incomplete form of masturbation, falling short of ejaculation, in two cases where there was cerebral weakness, and with most favorable results. In the article that we published on this subject two weeks ago we suggested that whatever was true of the testicles in respect to their influence over the system might also be true of the ovaries, and our correspondent adds that M. Brown-Séquard also entertains this idea, and has accordingly asked some medical women to test the question in their own persons.

THE INCREASE OF LEPROSY.

One of the prominent questions of the day is that of the renewal of leprosy. Leper-houses are springing up in one part and another of the English-speaking portion of the world, after an abolition of two centuries or more. There have been frequent allusions to the growth of the disease in the foreign journals. Three cases have lately been brought to light at Cape Breton Island, Nova Scotia, one of the patients being far advanced in the disease and a very repulsive object. This is the report of Dr. Smith, medical attendant at the lazar-house at Tracadie, who was sent to the island by the Canadian Department of Agriculture, in whose jurisdiction rest all like inquiries relative to the public health. The singular feature in the report is that a very advanced case of leprosy should have been permitted to continue unisolated in relatively close proximity to a retreat designed to meet the necessities of just such cases; in a straight line the distance of the leper from the leper-house did not exceed three hundred miles. The boundary line of a province passes between them, however. The three newly discovered cases were in Nova Scotia, but the lazaretto is in New Brunswick. The intervention of a territorial line like that will often prove a serious obstacle to the prompt resolution of a health problem; what disposition the Government will make of these cases has not been announced. It is reported that other subjects of leprosy are at large in the northern part of New Brunswick; they are generally Acadians of French extraction.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending July 16, 1889:

DISEASES.	Week ending July 9.		Week ending July 16.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	15	2	23	0
Scarlet fever	54	3	50	9
Cerebro-spinal meningitis	1	1	1	1
Measles	39	3	55	3
Diphtheria	84	18	76	26

The Orange Mountain Medical Society met on the 12th inst. at the house of a member in Springfield and a committee was appointed, consisting of Dr. Bayles, Dr Harvey, and Dr. Bradshaw, to report a memorial note concerning the late Dr. Stephen Wickes. The paper of the evening, by Dr. Carl Buttner, was on the "Climatic Treatment of Consumption."

Recent Deaths.—Dr. Austin White Thompson, who died at Northampton, Mass., on June 11th, was the well known proprietor of the "Shady Lawn," in that city. This was a private hospital organized by him over fifteen years ago. He was born in 1834, at Pelham, and was educated at Harvard University, taking his degree in arts, with the salutatory oration, when only twenty years of age. He was graduated in medicine in 1857, from the Harvard school. He was an assistant superintendent at the Insane Asylum at Northampton under Dr. Pliny Earle. He was a member of his State medical society, and an ex-president of the Hampshire District Society. He was in his fifty-fifth year when death, by pulmonary tuberculosis, overtook him.

Dr. Theodoric P. Mayo died on June 20th, at Richmond, Va., in the sixtieth year of his age. He was a native of Virginia and educated at Richmond. He was graduated in medicine from the medical college of that city in 1853. In the late war he served as surgeon of the Virginia contingent in the Confederate army.

Dr. Jonathan Mann died on June 15th at Boston. He graduated in medicine at the Berkshire Medical College in 1843, and became a member of the Massachusetts Medical Society in 1852. He was in his seventy-fourth year when his death took place. About eight years ago he withdrew from active practice.

Dr. Ellwood Wilson, of Philadelphia, has died at the age of sixty-seven years. He was one of the founders of the Jefferson Hospital and for many years a trustee of Jefferson Medical College. He was born in Pennsylvania and graduated in medicine, from the school above named, in 1845. He was formerly one of the lecturers at the Nurses' Home, on obstetrics and diseases of women. He was one of the original members and officers of the Philadelphia Obstetrical Society, and had been a member of the College of Physicians since 1851.

The New York State Medical Association.—The seventh special meeting of the Fifth District Branch will be held in Port Jervis (Orange County), N. Y., on Tuesday, August 27th. For those who are willing to spare the time after the meeting, a carriage drive of seven miles along the Delaware River to Milford, Pa., is promised. Members are urged to make an effort to attend this meeting, as the following committee of arrangements are making every preparation to insure an interesting meeting, both scientifically and socially: Dr. J. H. Hunt (chairman), Dr. W. B. Eager, Dr. M. C. Conner, Dr. T. W. Bennett, Dr. W. H. De Kay, and Dr. J. A. Munson. Dr. W. T. Lusk, of New York, is the president, and Dr. E. H. Squibb, of Brooklyn, the secretary.

The Medical School of Maine.—The medical department of Bowdoin College, at Brunswick, Me., has only limited resources for the clinical instruction of its students, who are said to show a tendency to desert the school and to take their last year's course in institutions which have hospital privileges. On June 24th the students held a meeting and adopted resolutions in which they suggest that the school could be made more prosperous by being moved to Portland, where there are two hospitals and some other clinical resources.

The Royal Victoria Hospital.—The "Montreal Medical Journal" for June announces that the building of the Royal Victoria Hospital has at last been begun. The estimated cost is upward of half a million dollars. The arrangements for the treatment of disease and for the comfort of the patients embrace many modern features. Very special attention has been directed by the architect to introducing into the wards all the modern improvements which tend to facilitate clinical teaching.

A New Medical College in Tennessee.—The trustees of the Grant Memorial University have voted to add a medical department to the university. A full faculty has been selected, with Dr. E. A. Cobleigh as dean. It is expected that the new department will be opened at Chattanooga, Tenn., in September next.

The University of Buffalo.—Dr. Charles Cary, professor of anatomy in the university, has been transferred to the chair of materia medica and therapeutics, made vacant recently by the resignation of Dr. E. V. Stoddard.

Dr. John Jordan Brown, a notice of whose death at Mifflinville, Pa., appeared in our last issue, writes from Bloomsburg, Pa., as follows: "In the obituary notices of July 13th you make a note of my death. I wish to make a few corrections. 1. I no longer live at Mifflinville, Pa. 2. I never was a member of the Legislature. 3. I never died. The balance of the notice is correct."

A Seaside Home for Children.—Dr. L. Coffin, of the Brooklyn Seaside Home, informs us that arrangements have been made at Coney Island for the reception and care of a class of children heretofore unprovided for—those of the middle and independent classes.

Change of Address.—Dr. Edward N. Liell, to "The Wave Crest," No. 39 East Fiftieth Street.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from July 7 to July 13, 1889:*

McParlin, Thomas A., Colonel and Surgeon. By direction of the acting Secretary of War, the retirement from active service this date, by operation of law, under the provisions of the act of Congress approved June 30, 1882, is announced. Colonel McParlin will repair to his home. Par. 2, S. O. 157, A. G. O., July 10, 1889.

Smith, Andrew K., Colonel and Surgeon, promoted surgeon, with rank of colonel, to rank from July 10, 1889, vice McParlin, retired.

Town, Francis L., Lieutenant-Colonel and Surgeon, promoted surgeon, with rank of lieutenant-colonel, to rank from July 10, 1889, vice A. K. Smith, promoted.

Perley, H. O., Captain and Assistant Surgeon, is ordered to accompany troop from Fort Wayne, Michigan, to Gognac Lake, Michigan, to encamp there with the Michigan State troop from August 8 to 13, 1889. Par. 1, S. O. 154, Headquarters Division of the Atlantic, July 9, 1889.

Perley, H. O., Captain and Assistant Surgeon, is granted fourteen days' leave of absence, to commence about July 14, 1889. Par. 2, S. O. 154, Headquarters Division of the Atlantic, July 9, 1889.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending July 13, 1889:*

White, S. Stuart, Assistant Surgeon. Detached from the Trenton, July 7, 1889, and ordered to the Naval Hospital, Brooklyn, N. Y.

White, C. H., Medical Inspector. Detached from the Trenton and to wait orders.

Norfleet, Ernest, Passed Assistant Surgeon. Detached from the Trenton and ordered to the Monocacy.

Ames, H. E., Passed Assistant Surgeon. Detached from the Monocacy and to proceed home and wait orders.

Harmon, G. E. H., Surgeon. Detached from the Constellation and ordered to the Naval Academy.

Lowndes, C. H. T., Assistant Surgeon. Detached from the Constellation and ordered to the Naval Academy.

Harvey, H. P., Surgeon. Detached from the Vandalia July 7th, and to proceed home and wait orders.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service from June 10, 1889, to July 13, 1889:*

Fessenden, C. S. D., Surgeon. To proceed to Cairo, Ill., on special duty. July 8, 1889.

Long, W. H., Surgeon. Granted leave of absence for twenty-eight days. June 18, 1889.

Austin, H. W., Surgeon. To proceed to Cairo, Ill., on special duty. July 8, 1889.

Irwin, Fairfax, Surgeon. Granted leave of absence for ten days. July 6, 1889.

Meade, F. W., Passed Assistant Surgeon. Granted leave of absence for thirty days. June 24, 1889.

Magruder, G. M., Assistant Surgeon. Relieved from duty at Baltimore, Md., to report to the Supervising Surgeon-General for duty as acting chief clerk and attending surgeon. July 10, 1889.

Goodwin, H. T., Assistant Surgeon. Granted leave of absence for thirty days. July 8, 1889.

Society Meetings for the Coming Week:

Tuesday, *July 23d:* Medical Society of the County of Putnam (annual), N. Y.

Proceedings of Societies.

AMERICAN NEUROLOGICAL ASSOCIATION.

Fifteenth Annual Meeting, held at Long Branch, N. J., on Wednesday and Thursday, June 26 and 27, 1889.

The President, Dr. E. C. Seguin, of New York, in the Chair.

Malaria as a Cause of Degenerative Diseases of the Spinal Cord.—Dr. Morton Prince, of Boston, presented a paper on this subject in which he spoke of the frequency of tabes and other spinal degenerations in cases which also presented a history of malaria. The first case he had recorded had been one of locomotor ataxia with typical tabetic crises before each malarial chill. Another patient had had gastric crises regularly once monthly, and another crises beginning with rigor and followed by diarrhœa, this occurring every three weeks. The latter case had been diagnosticated as malarial by the family physician. Altogether the author reported in detail six cases showing the coexistence of tabes with malaria, and six cases where the malarial history had been associated with disseminated sclerosis. Besides these he had notes of three other cases of multiple sclerosis, two of locomotor ataxia, and one of lateral sclerosis with a similar relation. Generally the malarial poison was present in the system previous to the development of spinal symptoms. He pointed out coincidences in the course of syphilis and malarial poisoning, such as the slowness of action of the poison and its amenability to treatment; and also called attention to the relation of the syphilitic virus to tabes. He had found but little to support his ætiological theory in literature. Erb, following Schulze, had stated that tabes might occur as a sequel to intermittent fever. Tuczek had proved that tabes could be caused by the ergot parasite. Many nervous disorders were undoubtedly due to malaria, such as neuralgias, anæsthesias, severe psychoses, etc. He alluded to the deposition of pigment in the brain in some cases of pernicious malarial fever. It would be very important for many army pensioners if it could be definitely determined that tabes and sclerosis might be sequelæ of malarial disease.

Dr. L. C. Gray, of New York, saw no reason why the malarial poison should not cause spinal diseases. We did not yet know the exact character of that poison. But there was a sort of periodicity in many spinal and cerebral disorders as well as in peripheral nervous affections which was often as marked as that of fever and ague. He had noticed this particularly in intracranial syphilis. Some of these neuropathies were even relieved by quinine, as he had observed in cases of tabes. When we spoke of latent malarial disease and rested our diagnosis merely upon periodicity, there was danger of error. If Laveran and Councilman were right in their discovery of the malarial germ, this should be looked for in such cases as the author had described in order to corroborate the diagnosis. Improvement or recovery under the use of quinine was no criterion.

Dr. E. C. Spitzka, of New York, saw nothing in the nature of the case to forbid an ætiological association between malaria and cord disorders, but he agreed with the preceding speakers that sufficient proof of such relation had not been adduced. To show an ætiological significance, it was necessary to present absolute and intrinsic proof of it. If it could be shown that, as in syphilis, there were nervous symptoms at the time of the malarial attack, it would be a different matter. In the secondary fever of syphilis there was absence of the knee jerk. Most nervous symptoms in malarial disease were of a neuralgic character. The anæsthesias differed from those of tabes. It had been found that pigmentary thrombosis or embolism was the most frequent cause of serious nervous disturbances in malarial disease. He believed, however, that, like any other cachexia, antecedent malarial poisoning might predispose to spinal affections. He had observed a case of paretic dementia of the tabetic type which was probably influenced ætiologically by severe malarial infection.

The President could not recall a single case of tabes or multiple sclerosis which presented any relation to malaria.

Dr. Prince thought there could be no question as to the correctness of diagnosis as regarded the nervous symptoms in his cases, and as to the antecedent malarial disease; all of his cases had been in men who had been in the army service, and he had documentary proof in the shape of Government records of their having suffered from that poison. The really doubtful question was whether the malarial poison still existed in the system at the time of the development of the spinal disorders. In some of them there had been evidence of its persistence in the shape of typical malarial rigor and pyrexia. He did not consider his ætiological explanation decisive, but merely suggestive.

Dr. Spitzka thought that there were many cases of nervous disease owing their origin to exposure during the war which were contemptuously rejected by the Pension Bureau. It seemed to him that the association ought to call the attention of the Government to the great injustice which might be done.

Nuclear Ophthalmoplegia with Poliomyelitis (Polioencephalitis Superior and Poliomyelitis).—Dr. B. Sachs, of New York, reported a case of this affection. The relation between these two forms of disease, which had been suspected by Hutchinson, Mauthner, and others, was proved by this case. But one other was on record, that of Seeligmüller. The history of the patient was briefly that a ptosis of the right eye gradually developed, followed after a few months by ptosis of the left eye also, and soon after a paresis of all the external muscles of both eyes appeared. This resulted in almost absolute fixation of the right eye, but left a slight inward and upward movement of the left. There was immobility of the left pupil to light, but not to accommodation. The right could not be examined, because of corneal opacity. During the development of this nuclear ophthalmoplegia, a subacute poliomyelitis affecting

the entire right leg supervened. There was now marked atrophy of the entire right leg. The knee jerk was lost on both sides. There were no sensory disturbances, there were no tabetic symptoms, and the patient's condition was normal in all other respects. This case proved that the affection of the nuclei in the floor of the third and fourth ventricles was due to the same pathological process which gave rise to poliomyelitis when it affected the gray matter of the cord.

Dr. Spitzka said the report of the case had been so complete that, as there was but one other such case on record, it did not admit of either criticism or comparison. He referred to Thomsen's case of unilateral nuclear paralysis, where there had been gummatous infiltration on both sides, the explanation of which was to him quite impossible.

Dr. Sachs asked if fibers could be traced up through the ciliary nuclei.

Dr. Spitzka answered in the affirmative, and made blackboard drawings illustrative of their course.

Hyperostosis Cranii.—Dr. W. N. Bullard, of Boston, then presented for Dr. J. J. Putnam a skull which was a remarkable example of this condition. The case had been reported to the association two years before. The patient was a woman, thiry-one years old at death. The chief symptoms had been headache, broadening of the head, dropping out of the teeth, loss of hearing, and vertigo, beginning gradually some years ago. There had been extreme exophthalmia. There had been no retinal changes. Extensive pachymeningitis had been discovered at the autopsy. There were thinning and atrophy in parts of the skull. The orbital cavities were greatly diminished in size. Virchow considered hyperostosis cranii due to inflammatory changes. In this case probably the inflammation had originated at the ear. Dr. Putnam had a patient now with similar symptoms, in whom the exostoses were first noticed in boyhood, and desired the opinion of members as to the justifiability of removal of certain exostoses for the relief of pain. Dr. Bullard himself thought it might be difficult to determine which of the exostoses produced the pain. Some of the exostoses were very diffuse, and the operation might have to be extensive.

The President believed that the pain would be more apt to originate from basal lesions, possibly dural inflammation about the issuing nerves. The jaw in this case was interesting because of its senile conformation and angle, despite the patient's youth.

Spontaneous Degenerative Neuritis of the Brachial Plexus.—Dr. W. M. Leszynsky, of New York, read a paper with this title. The patient was a laborer, aged thirty-eight. He had first had pain in the left shoulder, shooting down the arm, which had been ascribed to exposure to wet. There had been then no involvement of the shoulder joint and the motility of the arm had been unimpaired. All the muscles had reacted well to faradaism, except the deltoid, which had been atrophied. There had been no sensory disturbance, but there had been pain on pressure. Gradually other muscles had become paralyzed, until a large number of the arm muscles had been useless. The paralysis had been accompanied by pain, so excruciating that the patient could not sleep at night. A feeling of numbness had extended from the shoulder down the arm over the radial distribution, and a gradual anæsthesia and analgesia had supervened throughout the same area. The faradaic excitability had disappeared, and there had been galvanic superexcitability. Then he had begun gradually to improve, and would ultimately recover. The case had been remarkable in its severity, in its idiopathic origin, and in the escape of the median and ulnar nerves from the inflammatory process. Not more than one case had to his knowledge been found in literature.

Dr. Prince thought it would be difficult in the early stages of such a case to distinguish it from progressive muscular atrophy of the shoulder type. He recalled a case of his own in which there had been every reason for considering it to be neuritis. It had begun with cramps, such as were observed in writer's cramp, and it had been several years before other symptoms proved the case to be one of progressive muscular atrophy. The most common cause in such cases as the author's was traumatic arthritis, but generally the results were slight.

Dr. W. R. Birdsall, of New York, had seen this case before, and was impressed with the idea that it might be a periarthritic affection, but the author's careful study of the case seemed to exclude this. He recollected that at that time there had been some ankylosis of the shoulder joint in the case.

The President considered the study of the differing resistances in the healthy and diseased arm made by the author interesting, and asked if any member had had experience in such measurements.

Dr. Gray had noticed much variation in resistance in many of his patients from day to day.

Dr. M. A. Starr, of New York, had measured the resistance in Basedow's disease, and had found it to vary within a thousand ohms in the same cases from time to time. Electricity was diffused through muscular better than through any other tissue. The chief resistance was in the skin. Probably but little of the current permeated nerves, and hence alterations of nervous tissue would not have much to do with the variations mentioned by the author.

Dr. G. M. Hammond, of New York, stated that it was well known that the resistance differed from day to day in animals. He asked if in this case it had been measured for a number of times, and was answered that eight trials had been made.

Dr. Birdsall thought the question of resistance had little to do with our study of disease. It was easy to explain the numerous variations by the wide differences in vascularity and moisture of the tissues at different times. It might be due in this case to paralysis affecting the physical condition of the tissues The saturation of the epidermis by perspiration would explain the variations mentioned by Dr. Gray. He had made measurements in cases of Basedow's disease some time ago, and believed that the diminished resistance found was due to the moisture of the skin. It could not depend on dynamic conditions in the nervous system, but was purely a matter of physics about which there was no great mystery.

Dr. Gray said the explanation by moisture of the skin was not applicable in his cases. The differences which he had observed had not been owing to the humidity of the atmosphere, although atmospheric conditions might possibly induce dynamic changes in the body.

Dr. Sachs pointed out that on one day the author's patient showed 580 ohms increase on the diseased side, and on another day 1,170 ohms increase on the sound side. Such variations evidently had little to do with the pathological process in the patient. Eulenburg had measured the resistances in cases of paralysis agitans and of Basedow's disease, but without any practical results. As such measurements were very complex, they required exceedingly great care.

Dr. Prince objected to the use of the palm of the hand for precise experimentation, owing to the great variability of the thickness of the skin, and consequently of the resistance. He thought the forearm ought to be used.

Dr. Leszynsky had not brought forward the question of resistance in this case as a diagnostic symptom. It was increased in the affected arm at every examination. With the subsidence of the symptoms the resistance gradually diminished, but there was a difference between the sound and morbid sides throughout

the disease. As to the question of moisture, there was excessive perspiration upon the paralyzed arm, while the normal arm was dry, in spite of which the resistance was greater upon the former. He thought it better to place the electrode upon the wrist than in the hand. There had been no antecedent traumatism in the case; the roughening of the shoulder joint was the result of the paralysis.

Interpeduncular Myxosarcoma.—Dr. M. Allen Starr, of New York, presented a specimen of this sort. The growth lay in the middle cranial fossa, in the median line, between the crura cerebri, which it separated. It extended into the lateral ventricles, separating widely the caudate nuclei and optic thalami. The patient had been a male, aged twenty-one months at death. At the age of thirteen months, in October last, a lateral nystagmus had been observed in both eyes, varying from time to time. Dr. Knapp and Dr. Roosa had found a slight pallor of the optic discs, which they had considered normal. Subsequently exophthalmia had developed, gradually increasing until death. Convergence of the eyes had been impossible, although no paralysis of a cranial nerve had been discoverable. The reflexes of the iris had been lost. Toward the middle of April, this year, the child had become unable to walk. The knee jerks had been exaggerated; there had been ankle clonus and typical spastic rigidity. Finally, the back could not be held up, and subsequently the head could not be supported. There had been gradual emaciation. There had been no apparent headache. From time to time the scalp had been congested. About this time the pallor of the optic discs had indicated atrophy. There had been no blindness, no hemiopia, no aphasia, as far as could be ascertained in so young a child. Toward the middle of May ataxia of the arms had developed, but without loss of muscular power. On June 8th vomiting and Cheyne-Stokes respiration had come on, and the child had died in nine hours. The diagnosis of tumor had been made, but the question of localization was of great interest. Nystagmus was not a localizable symptom, but had been found most frequently in lesions of the corpora quadrigemina. The exophthalmia indicated intracranial pressure, the gait disturbance led one to think of a cerebellar lesion, while the ataxia of the hands pointed to a basilar trouble affecting symmetrically either the pons or the medulla. The question of operative interference had been considered, but he had opposed that proposition because of the difficulty of localizing the tumor. The autopsy proved that the pons was not even pressed upon, and that the cerebellum was normal. There were twenty ounces of fluid in the ventricles. He would ask if there was any localizing value in nystagmus or exophthalmia, and what the probable cause of the ataxia had been.

The President, referring to the question of ataxia, recalled a case of remarkable bilateral ataxia with optic atrophy, where a large interpeduncular tumor was found between the crura. He thought such ataxia was to be accounted for by pressure upon the motor tracts or motor nuclei. To him the most puzzling feature of Dr. Starr's case was the absence of blindness. As to the nystagmus, it had as yet, in his opinion, no localizing value. He had seen two cases with lesions of the quadrigeminal bodies, but without nystagmus.

Dr. Leszynsky said the child might have had only central vision, which might explain the presence of nystagmus, but Dr. Starr answered that the visual fields were normal.

Dr. Sachs was reminded of Meynert's case of tumor in both optic thalami, with ataxia similar to that in Dr. Starr's case. He thought the thalami might have been pressed upon in the latter, but still was not sure that that would cause the ataxia. He considered nystagmus very frequent in many cerebral disorders of children.

Dr. H. M. Lyman referred to a case he had seen recently of defective cerebral development in a child where there was also nystagmus.

Dr. Gray asked how a diagnosis of intracranial tumor had been made so early in this case, and was answered that the diagnosis had not been made until all the symptoms described had made their appearance.

Dr. Hammond thought ataxia depended upon injury to the optic thalami or corpora striata, and referred to a case of Weir Mitchell's in which there was a remarkable unilateral ataxia, with a lesion of the optic thalmus and corpus striatum upon the opposite side.

Dr. Leszynsky had seen a child, several years ago, with well-marked nystagmus, which had disappeared in the course of time. There had been no discoverable cause.

A Contribution to the Study of Anæsthetic Leprosy, with Special Reference to Partial Sensory Disorders.—Dr. George W. Jacoby, of New York, read a paper with this title. The points to which particular attention should be paid in all cases were the electrical excitability of the muscles, the condition of the reflexes, the presence or absence of fibrillary twitchings, and the condition of sensation. Upon these data depended the diagnosis between anæsthetic leprosy and syringomyelia, as well as that of the central or peripheral localization of the leprous process. The conclusions arrived at by the author, from the analysis of his own and other cases, were that the diagnosis between the two diseases could not always be made; that partial sensory disorders were not characteristic of syringomyelia, but might occur in anæsthetic leprosy as well as in purely peripheral affections; and, finally, that a differential diagnostic point between central and peripheral loss of temperature sense might lie in its complete loss in the one case and its partial loss in the other.

Dr. Starr said that the same question as to the diagnosis between syringomyelia and anæsthetic leprosy had only recently occurred to him. Three weeks ago he had seen a case with Dr. Prince A. Morrow, of New York, in which there had been a gradual onset of an atrophic and anæsthetic affection of the right arm. The patient had come from the Sandwich Islands, and had been exposed to leprosy. There was anæsthesia to temperature and pain, but not wholly to touch, along the hand and part of arm. There were three small, reddish-brown spots on the arm, which Dr. Morrow considered leprous in character. The idea of syringomyelia had at once occurred to the speaker, but the history of exposure in a leprous country sufficed to make anæsthetic leprosy at least the more probable nature of the disease; but without such history it would have been almost impossible to make the diagnosis. As to the matter of partial loss of sensation, in the cases of multiple neuritis and *beri beri* he had seen the sensory loss complete, with the exception, however, of muscular sense.

The President remarked that he had now under observation a case of leprosy, but had as yet made no careful examination of the temperature sense. His case illustrated the ease of diagnosis at an early period, when confusion with syringomyelia could not occur. The patient had a wine-colored eruption on the entire left leg and part of the thigh, the foot being free, and there were three or four similar spots on other parts of the body. There was distinct analgesia with some anæsthesia in these areas, but there was no paralysis or atrophy. The patient had come from the Sandwich Islands. The well-defined limitation of the anæsthetic areas showed that it could not be neuritis. Of late the anterior leg muscles had become paretic, but there was no reaction of degeneration. The left hand was beginning also to manifest similar symptoms. There were no ulcers.

Dr. C. K. Mills, of Philadelphia, had seen two cases of leprosy. He thought the author's point with regard to partial sensory disorder very interesting, but he did not see why there should not be partial disturbance also in neuritis, and, in fact, in traumatic neuritis it was quite frequent. The nature of the sensory disturbance depended upon the extent of the injury to the nerve. In ordinary multiple neuritis it might be true, as Dr. Starr insisted, that there was complete loss of sensation, through destruction of all the sensory fibers. He did not see, however, why the sensation to cold should not be injured as much as any. It should be borne in mind that in all infectious diseases attacking the nervous system there was a tendency to seize upon the central as well as the peripheral portions at the same time.

Dr. Gray agreed with the last speaker as to partial sensory disorders met with at times in peripheral neuritis. He had observed them also in multiple neuritis, where, for instance, there was impairment of the touch and temperature senses, yet the pain was excruciating. He did not see that it was easy to diagnosticate syringomyelia, and Wichmann and Starr had given no rules for diagnosis in their pamphlets. He believed that no one had made a diagnosis of syringomyelia in life.

Dr. Starr stated that Schulze had made the diagnosis in three cases, which had been substantiated by autopsy. The points for diagnosis were the general conclusions drawn from a study of collected cases. Anna Bäumler had brought together one hundred and sixteen cases, to which thirty or more had since been added.

Dr. Gray thought these diagnostic points would apply to many other spinal lesions.

Dr. Birdsall had had ideas similar to Dr. Gray's as regarded the diagnostic indications in syringomyelia until he had read Roth's collection of cases. In a certain number of such cases there were clinical pictures differing altogether from those of other spinal lesions and from that of peripheral neuritis. Disturbance of the temperature sense was the particular characteristic. Still, the testing of this sense had been constantly neglected in studying other spinal cases, and it was possible that it might often be disturbed in other spinal disorders. It was hard to see how any other lesion could produce precisely the same symptoms as those of syringomyelia. It was a question whether tracts for temperature and pain could be localized in the cord. Peripheral nerve lesions might cause injury to some sense fibers and not to others, although generally all were injured, particularly where the inflammation was truncal in character. There might be partial sensory disturbance in dermal forms.

Dr. Gray said it was easy to localize disease in the anterior cornua, in the lateral and posterior columns of the cord, but the diagnosis of central lesions was very difficult. The fact that out of one hundred and fifty cases of syringomyelia only three had been diagnosticated during life proved the truth of his assertion. The diagnostic suggestions given were therefore empirical. The presence or absence of the temperature sense had not been sufficiently tested as yet. How would one distinguish a chronic central myelitis?

Dr. Birdsall stated that central myelitis began acutely, and thus differed from the slow advance of syringomyelia.

Dr. Mills thought the question of partial sensory disorder most interesting. But he thought that there would be more apt to be partial disturbance in a truncal than in a dermal neuritis.

Dr. Frederick Peterson, of New York, asked the president if the tendon reflexes had been exaggerated in his case of leprosy, and was answered in the affirmative. He had asked this because he had recently read an interesting study of the reflexes in anæsthetic leprosy made by Dr. Suzuki, of Tokio, and published in the "Sei-a-Kwai" medical journal, in which there was an analysis of seventeen cases. One patient had normal reflexes, while all the others had increased tendon jerks, and in some of the cases there was even ankle clonus. The conclusions arrived at by the author were similar to Dr. Jacoby's.

The President called attention to the fact that so many cases of leprosy were now being continually imported into the United States. It seemed as if the country was threatened with its domiciliation. It was a question whether it was not the duty of physicians having such cases to report them to the authorities.

Dr. Wharton Sinkler, of Philadelphia, mentioned the recent presence of two cases in Philadelphia. The physician in charge had been fined by the Board of Health for not reporting them.

Dr. Prince wondered at the manner in which leprous patients were allowed to go about, and thought also that the attention of the authorities ought to be called to the disease, and reports to the boards of health be required.

Dr. Gray knew that in the East, where the disease was prevalent, isolation was practiced. He wished to know what the actual danger of contagion was.

Dr. Brill said that the attention of the New York Board of Health had already been called to the matter.

Dr. Jacoby said that Schulze was altogether too positive in his assertions. This author went so far as to contend that cases of leprosy, where cavities had been found in the cord, were not leprosy at all, but syringomyelia. As for himself, he thought a central lesion probably often existed in this disease, although it was well known that the essential pathology lay in a truncal neuritis. A simple dermal neuritis could not be assumed in leprosy. In his case, for instance, the indurated and swollen ulnar nerve could be distinctly felt. He did not agree with Dr. Gray that the diagnosis of syringomyelia could not be made. The only danger lay in mistaking it for leprosy. He had only last evening come across the work of Suzuki mentioned by Dr. Peterson, but had noticed the identity of that author's conclusions with his own, although they had been arrived at from different points of view.

A Description of Two Chinese Brains, and a Note on the Pli de Passage Inferieure Interne in the Human Brain.—Dr. F. X. Dercum, of Philadelphia, presented two contributions with these titles. He exhibited the brains described. Dr. Mills had made a morphological analysis of one in 1886, and descriptions of three Chinese brains had been added to literature by Moritz Benedikt. The six brains thus far analyzed exhibited unusual complexity due to excessive sinuosity of the gyri, and a tendency to excessive transverse fissuration. The frontal lobes were especially large and complex. There was unusual confluence of fissures, indicative of a low degree of development, such as was often seen in the negro's and sometimes in the white man's brain. There was unusual length of the parallel and Sylvian fissures, also eversion of the orbital and temporal lobes.

Dr. Mills said it was very important to keep adding to our morphological descriptions of such brains until accurate deductions could be drawn from a very large number.

Dr. Spitzka stated that the dictum that a tendency to confluence of fissures indicated a low type of development was not accepted by most anthropologists. The more brachycephalic the skull, the greater was the development of transverse secondary folds. The elephant, which stood among the highest of mammals, had a broad skull and a tendency to confluence of fissures. The Chinese were not low in development. The internal *pli de passage* in the negro and idiot was significant only when the general cortical development was poor. The real cause of the location of the chief sulci lay in the inherent

architecture of the brain, and was due to the arrangement of groups of cells and fibers, but the secondary and tertiary sulci might be influenced by other factors, such as the course of vessels. While we might never be able to localize the higher functions of the mind, there was something in the physiognomy of the Chinese brain which struck him as differing altogether from that of the Caucasian. But it was not the same difference as was noticeable between the negro and Caucasian brains. The peculiar moral attitude of the Chinese pointed to some relation between the structure of their brains and the character of their minds. Still, he had observed a great difference between these two Chinese brains, and there was no feature in them which might not be reproduced in the Caucasian brain.

Dr. DERCUM had not wished to imply that transverse fissuration was indicative of a low type, but thought the unusual confluence showed a lack of cortical development. He did not consider them brains of a low type, but many features such as were found in the brains of the negro and ape were found here also. The excessive sinuosity, however, indicated a higher cortical development. For instance, in one brain there were five well-developed frontal gyri.

Dr. SPITZKA had the same idea as Dr. Dercum. As compared with the Caucasian brain, the Chinese was in some respects inferior, and in others exhibited a superabundance of gyri. He spoke of the resemblance between the negro and ape brains. The differences between the brains of the orang-outang and chimpanzee were greater than those between the brains of the chimpanzee and a human being. There was no uniform appearance of the ape's brain. Vogt and another had classified the human brain into three types—the negro, Mongolian, and Caucasian—corresponding somewhat to the three lower types of the gorilla, chimpanzee, and orang-outang.

The Pathology of Sensory Aphasia, with an Analysis of Fifty Cases in which Broca's Center was not Diseased.—Dr. STARR read a paper with this title. In all of these cases collected by the author some form of sensory aphasia had been present, and in all the lesion had lain in the posterior lower third of the brain. In seven of the cases there had been pure word-deafness, and in these the lesion had been limited to the posterior portion of the first and second temporal convolutions. In eleven cases there had been pure word-blindness, and in these the lesions had been found distributed either in the angular gyrus, the occipital lobe, the temporal convolutions, or the inferior parietal region. In seven cases word-deafness and word-blindness had been coexistent, although the use of language had not been lost; and in these the temporal convolutions had been involved, the involvement extending in some to the inferior parietal, angular, and occipital convolutions. The practical application of the localization of aphasia lesions was obvious, for the regions concerned in speech were especially accessible to the surgeon. Another fact of interest was that it seemed to be proved that there was no ideational center. An idea might be impaired, but could not be wholly destroyed, by a single cortical lesion. Thought, being regarded as the play of consciousness along association fibers between sensory centers, could not be localized.

Dr. J. H. LLOYD, of Philadelphia, had now a case of simple homonymous hemianopsia without psychical or word-blindness, and wished to know whether there was any diagnostic importance in this condition as to localization. Was there a preponderance of one hemisphere over another as regarded sensory memories of language?

Dr. STARR said that the matter of psychical blindness had recently been discussed by Wernicke and another. A lesion affecting both occipital lobes or the association tract bilaterally produced psychical blindness, but a lesion along either tract itself did not cause this condition. Nine cases of psychical blindness from lesion of one hemisphere alone had been reported.

Officers for the Ensuing Year were elected as follows: President, Dr. E. C. Spitzka, of New York; vice-presidents, Dr. Wharton Sinkler, of Philadelphia, and Dr. H. M. Lyman, of Chicago; secretary and treasurer, Dr. G. M. Hammond, of New York; councilors, Dr. Henry Hun, of Albany, and Dr. C. L. Dana, of New York.

A later History of a Case of Focal Epilepsy for which Trephining and Excision of the Motor Centers were Performed.—Dr. J. H. LLOYD, of Philadelphia, read a paper with this title. Full details of the case had been reported at the last annual meeting of the association. At that time but three months had elapsed after the operation, and Dr. Ferrier, of London, had stated in the discussion that the time was too short for a decisive result as to the usefulness of the operation. Now that more than a year had passed, further details could be given. Before the operation the patient had had many seizures daily. There was no fit for four months after the operation. Since that time, however, there had been some ten seizures in nine months.

Dr. SPITZKA said there was a minority, but a powerful minority, of clinicians and physiologists who hesitated to accept the dictum that spasms were always of cortical origin when clonic in character and local in manifestation. There were well-authenticated cases of spasm, such as were generally described as cortical, which undoubtedly had their origin in the pons or medulla. He therefore thought it premature to advise a surgical procedure when there was still doubt as to the position of the convulsive center. He was of opinion that the seat of irritation in the great majority of cases of epilepsy was in the lower centers, such as Nothnagel's convulsive center.

Dr. MILLS mentioned the case of a man who had been subject to unilateral convulsions beginning in the hand. There had been a scar upon the head, and trephining had been done at this spot in order to relieve severe pain probably due to trigeminal irritation in the scalp or dura. This operation had relieved the pain, but had caused Jacksonian epilepsy upon the other side. The operation had been repeated in the same spot, the membranes and cortex being removed to some extent, and with great success. It was an apparent illustration of the fact that convulsions might occasionally be the result of operations themselves.

Dr. DERCUM had seen the same case, and stated that the dura had not been opened in the first operation. At the second trephining the membranes had been found united. There had been a pachymeningitis. The patient had had surgical epilepsy. Six months had elapsed between the operations.

Dr. LLOYD said it was a question whether one could have localized epilepsy from irritation of the lower centers, as Dr. Spitzka had intimated. He had always held the idea that such spasm was of cortical origin. In the case that he had just described the absence of fits for four months led him to believe that he had removed the parts concerned in their manifestation. He had been hopeful of the efficacy of this method in the relief of such a disorder, and was not yet willing to give up the idea that something might be accomplished in this way. He thought it would be justifiable to operate again in this same case.

Dr. SPITZKA asked if the cortex removed had been examined microscopically, and what the pathological condition found was.

Dr. LLOYD answered that the microscopist had reported atrophy of the cortical cells.

Dr. SPITZKA remarked that atrophied cells could scarcely be very potent in the production of epilepsy.

The Diagnostic Signs of Melancholia.—Dr. LANDON C. GRAY, of New York, presented a paper upon this subject, in

which he called particular attention to the difficulty of diagnosis of simple melancholia at times. It was usually, when in mild degree, confounded with neurasthenia. He had recently made a study of eighteen cases of this form, and pointed out what he considered the three cardinal symptoms—viz: depression, insomnia, and posterior cervical pain. The last named he thought especially characteristic. This pain was sometimes neuralgic in character, at others vague and continuous. Simple melancholia such as this should not be confounded with neurasthenia or melancholy states dependent upon hepatic or nephritic disease, or with non-typical forms of insanity.

Multiple Neuritis and Infectious Cerebro-spinal Meningitis.—Dr. H. S. Upson, of Cleveland, read a paper in which he considered the relation between these affections. Dr. Mills had first suggested the possibility of a connection between the two. His own case was briefly as follows: A woman, aged twenty-seven, had intense pain and tenderness in the extremities, together with stupor and slight opisthotonos. No electrical examination could be made, because of the extreme hyperæsthesia. She had had a multiple neuritis a year before, but recovered. The autopsy revealed congestion of the pia of the brain and cord, with marked serous effusion, and a microscopic examination of the ulnar nerve revealed interstitial inflammation there. In the opinion of the author, the nerve trunk inflammation was not parenchymatous, but rather of the membranes, and was analogous to the process in the brain and cord; the nerve fibers were involved secondarily. He had not looked for bacteria.

Dr. Mills naturally felt interested in the case. He had had an autopsy in one of his own cases. Portions of nerves and sections of the brain and cord had been examined by Dr. Gray, of Washington, and this examination had proved conclusively the association of neuritis with the cerebro-spinal meningitis.

Dr. Spitzka referred to the vacuoles in the author's sections, and said retarded lymph outflow might be important in causing the death of tissue and the formation of gas bubbles which these vacuoles must be considered to represent. He had noted also two bodies in the section larger than ordinary leucocytes, very delicately stained, which the author should have carefully delineated.

Case of Abscess of the Brain; Operation; Death on the Ninth Day.—Dr. C. K. Mills, of Philadelphia, gave an abstract of a paper on this subject by Dr. J. T. Eskridge, of Denver. The patient had had typhoid fever. Two months later there was purulent inflammation of the middle ear, and not long after symptoms of brain irritation followed, such as headache, delirium, and persecutory delusions, together with paralysis of the right hand and the right angle of the mouth. The skull was trephined over the face and hand centers, and a purulent inflammation was found under the dura. The wound was then dressed, and the patient died nine days later. A widespread suppurative meningitis was found at the autopsy. Dr. Mills thought the case of great practical value. He thought trephining should have been performed in two places—at the center, which had been properly localized, and also over the mastoid region, where the inflammatory process had originated.

Peroneal Form of Progressive Muscular Atrophy.—Dr. B. Sachs, of New York, presented a paper on this subject. The author reiterated his statement of last year that this form was closely related to Duchenne's type. He gave very full details of the cases of two brothers that had recently come under his observation through the kindness of Dr. Gibney. The boys had been thirteen and ten years of age. There had been a gradual development of double club-foot in both at the age of five years, followed by an atrophy proceeding upward, beginning in the leg and toe muscles and spreading to those of the thigh, in one case also involving muscles of the upper extremities. The knee jerks had been present. In one there had been general anæsthesia, in the other paræsthesia. There had been full degenerative reaction in some of the muscles in one boy, partial in the other. The progressive wasting rendered treatment of this form of club-foot less satisfactory than that of congenital cases. He would suspect this peroneal form in all cases where acquired club-foot was associated with progressive wasting of the leg muscles, and particularly if heredity or family occurrence of the disease could also be established.

Dr. Sinkler could recall several similar cases, one in particular of two brothers. But doubtless more would be seen if careful attention were paid to the matter.

Dr. Birdsall did not think the presence of knee-jerk so important a diagnostic point as the author seemed to regard it. He had seen a few cases of old poliomyelitis where the paralysis and atrophy were below the knee, and yet the knee-jerks were quite active on both sides. It could not, therefore, be an essential point in diagnosis.

Dr. Bullard had also observed the presence of the knee-jerk in old cases of poliomyelitis.

Dr. Prince asked if the author had said that the absence of pseudo-hypertrophy was a diagnostic point between this form and primary myopathies, and was answered in the affirmative. He did not consider this true.

Dr. Spitzka asked if the symmetry and the coincidence of time and intensity as shown in the photographs were always found, and was answered in the affirmative.

Dr. Sinkler corroborated two of the speakers as to the presence of the knee-jerk in cases of old poliomyelitis, and cited an instance from his own experience.

Dr. Gray objected to the division of progressive muscular atrophy into groups. Why should there be an arm type, a face type, and a leg type? Such division might be carried out indefinitely. A more useful classification would be upon the pathology of the disease, a division into central, muscular, and peripheral nerve lesions.

Dr. Sachs said he did not lay great stress upon the presence or absence of the knee-jerk. Yet in extreme atrophy of the vasti from poliomyelitis, the knee-jerk was always absent; and if it was present he should consider the case one of progressive muscular atrophy. He had himself tried to discard subdivisions as much as possible, but the present classification was a clinical necessity. A better one might be made when the pathology was more accurately determined. At present there were spinal and non-spinal cases, but there was no certainty as regarded peripheral nerve cases.

Pseudo-hypertrophy.—Dr. Prince exhibited some microscopic specimens from the muscles of a patient with this affection. The patient was now twenty-eight years of age. The specimens showed a large quantity of connective tissue, hypertrophy of a few fibers, and great atrophy of many of the fibers. There was also great loss of striation, but no fatty or granular degeneration and no vacuolization.

The following papers were read by title:

A Series of Cases of Cerebral Hæmorrhage of Unusual Interest.—By Dr. J. H. Lloyd, of Philadelphia.

The Histological Examination of Nerves removed for Trigeminal Neuralgia.—By Dr. J. J. Putnam, of Boston.

The Pathological Anatomy of Chorea.—By Dr. C. L. Dana, of New York.

Paranoia in Two Sisters.—By Dr. Frederick Peterson, of New York.

Election of Members.—The following new active members were elected: Dr. W. M. Leszynsky, of New York; Dr. C. Eugene Riggs, of St. Paul, Minn.; Dr. H. S. Upson, of Cleve-

land, O.; and Dr. Hobart A. Hare and Dr. J. P. C. Griffith, of Philadelphia. Mr. Victor Horsley and Dr. David Ferrier, of London, were elected honorary members.

NEW YORK NEUROLOGICAL SOCIETY.

Meeting of June 4, 1889.

The President, Dr. George W. Jacoby, in the Chair.

Alcoholic Paralysis with Central Lesions.—Dr. W. P. Wilkin reported the history of a case of this affection, and exhibited microscopic sections of the cord. The patient, a woman, aged thirty-one, had died, after four days' stay in Bellevue Hospital, with acute alcoholism and alcoholic paraplegia. At the autopsy the liver was found to be fatty and much enlarged, weighing eight to ten pounds; the kidneys large, the cortex thickened, and the markings indistinct; the brain showed much extravasation around the blood-vessels. There had been a leptomeningitis about the spinal cord, especially marked over the posterior part and involving the posterior nerve roots. Degenerative changes were found in the posterior columns, most marked near the periphery. The interstitial increase had not been confined to one system of fibers; it had extended to a lesser degree through the lateral columns of the cord. In the sciatic and tibial nerves there had been considerable increase of interstitial tissue, and in some places a disappearance of axis cylinders. This case was presented as one of ascending degenerative changes and as showing that alcoholic paralysis might involve lesions not of the periphery only, but also of the central nervous system. The author referred to Schaffer's and other cases corroborative of this statement.

Dr. Dana, who had had charge of this case at Bellevue, stated that the cord had been so badly hardened that good sections had been obtained with difficulty. Still the leptomeningitis and ascending degeneration in the cord had been conclusively demonstrated. He held the opinion that central lesions might sometimes occur in alcoholic cases.

Septic Peripheral Neuritis due to Pyelo-nephritis.—Dr. Dana then exhibited a case of this disease with the following history: John L., aged twenty one, was admitted to hospital December 13, 1888, with symptoms of acute articular rheumatism affecting all the extremities. There was no history of alcoholism or venereal disease. There were pus and albumin in the urine, continuing five weeks. In the middle of January paralysis came on, the rheumatism abating. There were anæsthesia and burning pains. The nerves affected were the ulnar and median of each arm and the anterior tibial of each leg. Atrophy and degenerative reaction appeared. Improvement began about March 16th. Electrical examinations in April, 1889, showed degenerative reaction complete in the flexors of the right arm and partial in those of the left. The patient was now improving very slowly, but there was still sensory and motor paralysis of arms. The speaker regarded the articular affection as a pseudo-rheumatic disorder due to septicæmia. It had not responded to the usual remedies.

Dr. Sachs said that if there was any question as to the diagnosis of the nervous affection it would lie between peripheral neuritis and atrophy following joint lesions. But the anæsthesia in this case was conclusive in corroborating Dr. Dana's diagnosis.

Peripheral Paralyses due to Carbonic-oxide Poisoning.—The President read a paper with this title. (To be published.)

Dr. Sachs thought that an excellent case had been made out for the author's carbonic-oxide theory. Numerous cases of musculo-spiral paralysis generally credited to pressure might possibly have such an origin. It was a suggestion that ought to be entertained.

Dr. Starr said the cases reported were interesting, and no doubt peripheral in their nature. But we should be cautious in ascribing unilateral paralyses to a general intoxicant in the system. Other poisons occasioning paralysis caused symmetrical lesions, as exampled in poisoning with alcohol, lead, or arsenic, and in diphtheria, where the injuries were always bilateral. He was aware that of course, as in lead-poisoning, the paralysis was sometimes more marked upon one side than the other. This was, therefore, a presumption against the course ascribed by Dr. Jacoby. What was the cause, then? He described cases of coma of his own, where patients lying for many hours would have pressure-paralysis of the ulnar or other nerves. In another case a patient had paralysis of the adductors of the arm after a uræmic convulsion, which was ascribed to the grasp of the attendant. The speaker thought pressure of some sort more probable as a cause in the cases just portrayed than carbonic oxide.

Dr. Sachs stated that carbonic oxide differed from the other poisons in the rapidity of its effects. Those mentioned by Dr. Starr were very slow. In such rapid cases as these it might not be safe to apply the symmetrical rule.

Dr. Dana regarded the cases as due to the action of both elements. In coma, for instance, very slight pressure might produce paralysis where ordinarily it did not. The paralyses so frequent in alcoholic intoxication were explicable in this way. Carbonic oxide might affect the system in a similar manner.

The President said that the same objections had been made in cases of ether and osmic-acid injections. He did not consider his position beyond question, but, with the two other cases in literature added to his own, the theory advanced was tenable.

Examination of the Insane.—Dr. Allen Fitch then read a paper upon this subject, in which he showed that the usual certificates of insanity were not commitments in a correct sense, and that physicians were not responsible for the patient after his entry into an asylum. He considered the physical symptoms of more importance than any other upon which to form an opinion of insanity. It was not always possible to classify the disease in early examinations, nor best to do so in the certificates. He showed that in nearly all cases that came before the courts on writs of *habeas corpus* the persons were discharged, notwithstanding that nearly all were insane. Physicians should have had actual experience in asylums to be competent to examine the insane. He emphasized the value of a physical examination, and said that in feigned insanity there would be little opportunity for mistake were more attention given to these physical peculiarities. He then related numerous interesting cases in illustration of various points in his paper. He thought heredity had no bearing on such kinds of insanity as the puerperal form and general paresis. He then presented for the consideration of the society the "Gallup Lunacy Bill," now in the hands of the Governor of the State of New York awaiting his signature to become law. Some of the bad features of this bill were considerably discussed by Dr. Starr, Dr. Dana, Dr. Douglas, and Dr. Sachs, and a resolution was unanimously passed disapproving of the bill and requesting the Governor to have it carefully reviewed by the Commissioners in Lunacy before signing it.

Miscellany.

The Cartwright Prize.—At the recent commencement of the College of Physicians and Surgeons of New York it was announced that the Cartwright Prize had been awarded to an essay written conjointly by Dr. Hobart A. Hare and Dr. Edward Martin, of Philadelphia. But

the successful competitors voluntarily surrendered the prize because their essay had just been awarded a prize elsewhere. It appears that the essay had been put into competition for both prizes, with the expectation that the decision of one prize would be made early enough to permit them to withdraw from the second competition in case they were successful in the first. But owing to delay in the decision of the prize which should have been announced first, and to absence of the authors from home when the announcement was finally made, there was no opportunity for the intended withdrawal before the award of the Cartwright Prize was published. The award of the Cartwright Prize has consequently been reconsidered, and the prize has been granted to Dr. Ira Van Gieson, assistant instructor in normal histology in the College of Physicians and Surgeons of New York, for his essay entitled "Studies in Neural Pathology, embracing (1) a Report of a Case of Syringomyelia, and (2) a Contribution to the Pathology of the Laryngeal and other Crises in Tabes Dorsalis."

[Signed.] Charles McBurney, M. D., *President of the Council of the Alumni of the College of Physicians and Surgeons, New York,*
George C. Freeborn, M. D.,
W. P. Northrup, M. D.,
B. Farquhar Curtis, M. D.,
Prize Committee.

Mortality in Cities in the United States.—The following table represents the mortality in the cities named, as reported to Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, and published in the abstract of sanitary reports received by him during the week ending July 12th:

Cities.	Week ending—	Estimated population.	Total deaths from all causes.	Deaths from— Cholera.	Yellow fever.	Small-pox.	Varioloid.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y.	July 6.	1,572,199	956	..	..	..	..	..	..	5	7	18	3	11
Philadelphia, Pa.	July 6.	1,040,245	422	..	..	..	..	..	..	4	..	4	..	3
Brooklyn, N. Y.	July 6.	834,607	484	..	..	..	..	..	..	1	1	12	1	5
Baltimore, Md.	July 6.	500,343	280	..	..	..	..	..	..	3	..	..	..	..
St. Louis, Mo.	July 8.	440,000	165	..	..	..	..	..	..	1	1	..	..	..
Cincinnati, Ohio.	July 6.	325,000	151	..	..	..	..	..	..	1	1	6	9	..
New Orleans, La.	June 29.	254,000	108	..	..	..	..	..	..	2	..	2	3	..
Louisville, Ky.	July 6.	227,000	69	..	..	..	..	..	..	1	..	..	1	..
Washington, D. C.	July 6.	225,000	120	..	..	..	..	..	..	4	..	1	..	1
Kansas City, Mo.	July 6.	180,000	42	..	..	..	..	..	..	1	..	..	2	..
Rochester, N. Y.	July 5.	130,000	24	..	..	..	..	..	..	..	..	1	..	2
Providence, R. I.	July 6.	127,000	50	..	..	..	..	..	..	..	1	4	1	2
Richmond, Va.	July 6.	100,000	48	..	..	..	..	..	..	1	..	..	..	1
Denver, Col.	July 5.	100,000	24	..	..	..	..	..	..	1	..	1	1	..
Toledo, Ohio	July 5.	83,500	17	..	..	..	..	..	..	..	..	1	..	..
Fall River, Mass.	July 6.	69,000	32	..	..	..	..	..	..	..	..	..	..	..
Nashville, Tenn.	July 6.	65,153	21	..	..	..	..	..	..	..	..	1	..	..
Charleston, S. C.	July 6.	60,145	37	..	..	..	..	..	..	1	..	..	..	..
Lynn, Mass.	July 6.	50,000	14	..	..	..	..	..	..	2	..	..	..	..
Manchester, N. H.	June 29.	42,000	24	..	..	..	..	..	..	1	..	..	..	..
Galveston, Texas.	June 28.	40,000	13	..	..	..	..	..	..	2	..	..	..	1
San Diego, Cal.	June 29.	32,000	1	..	..	..	..	..	..	..	..	..	..	..
Binghamton, N. Y.	July 6.	30,000	9	..	..	..	..	..	..	1	..	..	..	..
Altoona, Pa.	June 29.	30,000	13	..	..	..	..	..	..	1	..	1	..	..
Altoona, Pa.	July 6.	30,000	5	..	..	..	..	..	..	..	..	..	..	..
Auburn, N. Y.	July 6.	26,000	7	..	..	..	..	..	..	..	..	1	..	..
Haverhill, Mass.	July 5.	25,000	11	..	..	..	..	..	..	..	..	..	..	..
Newport, R. I.	July 4.	22,000	5	..	..	..	..	..	..	..	..	..	..	..
Newton, Mass.	July 6.	21,553	8	..	..	..	..	..	..	..	..	..	..	..
Keokuk, Iowa.	July 6.	16,000	3	..	..	..	..	..	..	..	..	1	..	..
Rock Island, Ill.	July 7.	16,000	1	..	..	..	..	..	..	..	..	1	..	..
Pensacola, Fla.	July 6.	15,000	7	..	..	..	..	..	..	..	..	..	1	..

The Soden Springs.—Sir Morell Mackenzie writes, in his "Journal of Laryngology and Rhinology," as follows: "Most of the German saline springs are situated on the range of the Taunus Hills. Of these, unquestionably, one of the very best is Soden. Containing, as it does, some twenty-three springs with a temperature varying between 12° to 18° C., and with one thermal spring of the temperature of 30° C., the waters of which are charged with chloride of sodium in varying degrees up to 116 grammes to the litre, and some of which are further charged with carbonic acid (notably the Champagnerbrunn), the health resort of Soden is, though at present one of the less known of the German spas, unquestionably one of the very best places for the treatment of pulmonary and catarrhal complaints. Additional advantages are the complete protection of the village from north winds, the comparatively great altitude, and the equable climate, which make it, of all others in Germany, the resort most suitable for the treatment of phthisis, either of the throat or lungs, and catarrhal conditions generally. No spa possesses the peculiar and distinctive advantages of Soden. Though a small amount of iron is present in the waters, they are not on that account contra-indicated in the treatment of incipient phthisis. Compressed pastilles of Soden water are now an article of commerce, as well as the mineral waters. These are made from two of the well-waters, and, containing a large amount of chloride of sodium, are particularly serviceable in pharyngeal catarrhs, and may even in some degree be used where it is desired to obtain the effect of the Soden treatment in persons who are unable to make the necessary journey to the spa itself."

ANSWERS TO CORRESPONDENTS.

No. 276.—The region about Tannersville, which is the name of the town you indicate.

No. 277.—Your patient had probably swallowed the ova of some variety of fly, and passed the larvæ. The occurrence is not very rare. It sometimes gives rise to considerable irritation.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

PERSONAL OBSERVATIONS OF LEPROSY IN MEXICO AND THE SANDWICH ISLANDS.*

BY PRINCE A. MORROW, A.M., M.D.

MR. PRESIDENT AND FELLOWS OF THE ACADEMY: I should, perhaps, apologize for not having prepared a systematic paper upon the subject of the evening. I have thought, however, that the result of my personal observations of leprosy, at least so far as its clinical features are concerned, might be more effectively, and at the same time attractively, presented by means of photographic illustrations taken from life. I shall therefore, after a few general remarks, have the pleasure of exhibiting before you lantern slides illustrating not only the typical forms of the disease, but also the various phases which these different forms assume in the process of their evolution.

In the first place, I may remark that by the great majority of the profession leprosy is looked upon as possessing at the present day only a historical interest. It is classed in the same category as the pestilences and plagues which formerly swept away entire populations and devastated countries, but which are now practically extinct. Unfortunately, leprosy can not be relegated to the past; it is still a living, actual reality, and to-day prevails over more than one fourth the habitable surface of the globe. By reference to the map, the red shadings of which indicate the present geographical distribution of leprosy, it will be seen that it extends from the tropics to the arctic regions, embracing every variety of soil and climate and the most diverse races and nationalities. While it affects principally maritime populations, inland countries are by no means exempt; it prevails in both marshy and mountainous regions, in the lowlands of Louisiana as well as in the elevated tablelands of Mexico.

I would call attention to the fact that this extensive distribution of leprosy has a most important bearing upon its ætiology. As is well known, racial peculiarities, conditions of soil, of climate, and especially of food, have been assigned as ætiological factors. It is evident, however, that the widespread and diversified distribution of the disease precludes the possibility of any of these agencies being invoked as efficient causes.

It would not be possible to give an accurate compilation of the number of lepers upon the face of the earth at the present day. In India it has been estimated that there are over two hundred and fifty thousand; in China, Japan, Africa, and Egypt there are large numbers. In Europe the most important center of the disease in the present century is in Norway and Sweden.

The development of leprosy in a country previously exempt from the disease can always be traced to its importation from an infected center. The spread of leprosy throughout a great portion of Europe early in our present era may be traced along the routes of the Roman armies, and its general diffusion throughout Christendom in the eleventh, twelfth, and thirteenth centuries was materially influenced by the return of the Crusaders. In the Western Hemisphere leprosy was first introduced into Central and South America by Portuguese traders, in Mexico probably by the Spanish, and in Canada by the French *émigrés*. It persists in New Brunswick at the present day, the most important center being at Tracadie.

In our own country the introduction of leprosy may be traced to at least four separate and distinct sources. In Louisiana it was carried by the Acadians, in the northwestern States of Iowa, Illinois, Wisconsin, and Minnesota by the Scandinavian colonists, along the Pacific coast in California and Oregon by the Chinese, and along the southern Atlantic coast it was brought from the West Indies. In Salt Lake City the disease was imported by a colony of Kanaka women brought by the Mormons from the Sandwich Islands.

My own observation of leprosy during the past winter began at New Orleans, where, it will be remembered, Dr. Blanc has recently reported the existence of forty-two cases. I also visited the Têsche River district, where there have long existed two leprous centers—one at St. Martinsville, the other at Bayou Lafourche. I had no opportunity of examining the subjects at St. Martinsville, as they had been subjected to a disagreeable newspaper notoriety and kept themselves secluded from observation. Along the line of the Southern Pacific Railroad, at San Antonio and other points, I learned of the existence of scattered cases. In Mexico I saw a number of cases at the San Pablo Hospital and in the streets of the city. In California I received reports of about twenty cases, but only had the opportunity of examining six which were in the pest-house of San Francisco.

The Hawaiian or Sandwich Islands afford to-day, perhaps, the best field for the observation and study of leprosy of any leprous center in the world. The disease is of comparatively recent introduction. Certain elements of confusion which have surrounded its ætiology in other countries may here be eliminated: the influence of contagion, of heredity, of racial peculiarities, and of certain conditions which have contributed to the rapid diffusion of the disease may be traced with precision. Thanks to the rigid system of segregation enforced by the board of health, the leper settlement of Molokai, in which eleven hundred lepers are gathered, affords abundant opportunities for the clinical study of every possible form and phase of the disease.

Before entering into an exposition of the clinical features of leprosy it may be well to briefly indicate the present status of our knowledge of the disease. It is the reproach of medical science that a disease which has been characterized as the most ancient and the most exclusively human of all diseases should, after centuries of observation, be so imperfectly understood. We know something of its nature, its clinical features and course, its diagnosis and prognosis; but there are many essential points connected with its ætiology, the degree and conditions of its contagiousness, its

* Remarks made before the New York Academy of Medicine, June 6, 1889, in connection with the exhibition of fifty lantern slides of typical forms of leprosy.

modes of propagation, concerning which our knowledge is incomplete and indefinite.

The facts of our positive knowledge of leprosy may be thus formulated:

Leprosy is a parasitic disease; the bacillus of leprosy has a definite form, a slow rate of development, and is endowed with an extraordinary vital resistance, presenting many analogies with the bacillus of tuberculosis.

Like all specific microbes, it has an elective affinity or predilection for certain tissues and fluids of the organism. The bacilli occur in all forms and stages of leprosy; they are found in both the diffuse and nodular infiltrations of the skin and mucous membranes, in the connective tissue of the peripheral nerves, in the cornea, in the cartilages, and in the liver, spleen, spermatic tubes, and testicles. They are found abundantly in the lymphatic glands and spaces. They are absent from the blood and the physiological secretions, such as the tears, saliva, milk, semen, urine, etc. It is worthy of note, however, that when the nasal, pharyngeal, and intestinal mucous membranes are the seat of leprous lesions the secretions from these surfaces swarm with bacilli.

Leprosy has an exclusive origin; it is invariably derived from the lesions or secretions of a person similarly diseased; it never originates spontaneously, nor does its virulent principle attach to the soil, the water, or the food. Its origin and spread can always be traced to human contact. It is not inoculable to the lower animals, as is abundantly proved by the negative results of numerous experiments. The question of its inoculability to man has until now always been decided in the negative, as the inoculation experiments made by Campana and others have invariably failed, the only result being a septic lymphangeitis. In September, 1884, Dr. Arning inoculated a Hawaiian convict, Keanu, previously free from all leprous taint. This man had been condemned to penal servitude for life, and special care was taken that he should not be exposed to contagion by contact with other lepers. For a long time this experiment was regarded as a failure, but a few months ago Keanu developed unmistakable signs of tubercular leprosy and was sent to the leper settlement at Molokai. Upon the occasion of my recent visit I excised a small subcutaneous tubercle and a portion of the overlying skin. Numerous sections of this specimen were made by my associate, Dr. Fordyce, and in all, the presence of bacilli was demonstrated. (These specimens were shown under the microscope.)

We know, further, that leprosy has a prolonged but somewhat indefinite period of incubation, a slow and irregular course of development, a characteristic and well-defined symptomatology rendering its diagnosis easy, and that its prognostic significance is most grave: it progresses almost invariably to a fatal termination. The period of incubation of leprosy is generally placed at from three to five years. Examples have been recorded in which this period has been materially lessened or prolonged to seven, ten, and even fifteen years or longer; it depends largely upon individual capacity of resistance. It will be readily appreciated that, since the disease has no initial lesion and the early symptoms are quite indefinite and equivocal, it is difficult, if not impossible, to determine the exact interval between contagious exposure and the first outbreak of undoubted symptoms.

As there is some confusion in the terms used in designating the different forms of the disease, I may say that by modern authorities three types of the disease are recognized which, while pathologically similar, are clinically distinct. When the morbid deposits occur upon the skin and mucous membranes in the shape of macules and nodules, the form of the disease is termed tegumentary or *tubercular;* when they are centered upon the peripheral nerves, it is termed tropho-neurotic or *anæsthetic.* There is, in a certain proportion of cases, an admixture of both forms in the same individual, the lesions peculiar to one or the other predominating; this combination constitutes what is known as the *mixed type* of leprosy.

In addition to these two typical forms of leprosy and the series of symptoms common to both which make up the mixed form, certain writers have described a macular form. There is, however, no good basis for this further division; macular lesions may be met with in any of the forms of leprosy; they do not constitute a type, but simply represent a phase in the evolution of the disease.

The relative frequency of these three types varies in different countries and under different conditions. In the Sandwich Islands about one half the cases are of the tubercular type, about one third are anæsthetic, and the remaining one sixth represent the mixed form. The tubercular form is most progressive and rapidly fatal, the anæsthetic the least so, and the mixed form intermediate between the two.

As the clinical appearances of the different forms of leprosy will be fully illustrated in the lantern slides presently to be shown, I shall not occupy your time with a verbal description.

Having thus summarized the facts of our positive knowledge, I may briefly refer to certain moot points connected with leprosy. When we come to the consideration of the question of its contagiousness, the precise conditions under which contagion takes place, the various modes of infection, the influence of heredity, etc., it must be confessed that the teachings of science are by no means fixed and definite.

As regards the first point, it may be said that a belief in the contagiousness of leprosy has been universally held from the earliest ages until within recent times. All the prophylactic measures contained in the Levitical regulations, as well as those enforced in mediæval times, for the suppression of the disease, were based upon the recognition of the fact that every leper was a possible source of danger to all with whom he came in contact.

About thirty years ago the contagiousness of leprosy began to be questioned, and in 1867 the Royal College of Physicians of London formulated the dogma that leprosy was not a contagious disease. This opinion was generally accepted by the profession in Europe, although it may be said that the dermatologists of this country have never subscribed to this doctrine. In 1885, when the famous discussion upon the contagiousness of leprosy took place before

the French Academy of Medicine, it transpired that only three physicians in France upheld the doctrine of contagion. In 1888, when this discussion was again reopened, the partisans of contagion were much more numerous, but among the non-contagionists were numbered some of the most distinguished members of the French Academy.

It will, of course, be impossible, within the brief time at my disposal this evening, to enter into a consideration of the various arguments *pro* and *con* which have been advanced toward the determination of this question. As I propose to submit only the results of my personal observations, I may say that the facts of the development and spread of leprosy in the Sandwich Islands furnish the most abundant and conclusive proof of its eminent contagiousness. Upon no other possible ground can be explained the remarkable and rapid dissemination of the disease which, within the short space of a single generation, has decimated the population of these islands. At the present day from five to ten per cent. of the entire native population are affected with leprosy, while many foreigners coming from countries where leprosy is not endemic, and in whom no hereditary taint can possibly be alleged, have fallen victims to the disease.

In my examinations of numerous cases there was afforded in almost every instance a history of known exposure by sexual or other intimate relations with lepers. Another proof of contagion may be found in the fact that of the Kokuas who go to the leper settlement at Molokai as helpers or nurses, a large percentage contract the disease. To take only the statistics of the past two years, the president of the board of health in his report for 1888 states: Of sixty-six Kokuas who went to the settlement presumably healthy and free from all manifestations of the disease, twenty-three were found to present unmistakable signs of leprosy, and eleven more presented symptoms which caused us to declare them "suspected lepers."

On the other hand, it must be admitted that there are numerous instances of Kokuas living in prolonged and intimate contact with lepers who have not developed the disease. In Dr. Mouritz's report for 1886, forty-eight cases are cited, giving an average exposure of fifteen years to intimate contact, in which the subjects remain entirely exempt from all manifestations. This prolonged exemption does not, however, guarantee an absolute immunity for the future. One of the cases cited was that of the washerwoman of the hospital, who had washed the soiled clothing of the worst patients for seventeen years. In addition, she had lived with two leper husbands in succession, and yet in 1886 she was hale, hearty, and apparently healthy. Upon the occasion of my recent visit to the settlement this woman was suffering from undoubted manifestations of the disease.

The negative proofs of contagion are, however, so overshadowed by the immense mass of positive clinical testimony that they fall to the ground. They simply prove that there is nothing constant in contagion; that infection is not inevitable; that, in order that contagion may operate, a susceptibility or receptivity on the part of the individual is essential; and, further, that, owing to individual peculiarities, some persons are endowed with a capacity of resistance which renders them absolutely refractory to its contagious activity.

As regards the modes of infection, our knowledge is by no means definite. It is probable that in the immense majority of cases the disease is propagated through sexual intercourse. This mode of infection is rendered almost certain by the observed fact that healthy individuals having sexual relations with lepers almost invariably become contaminated. The liability to the disease from exposure of this kind is so generally recognized that the husband or wife of a leper, though apparently sound, is readily admitted to the leper settlement as a Kokua, on the presumption that the germs of the disease have already been implanted in his or her system.

It is also probable that the virulent principle of leprosy may find entrance to a healthy organism through cracks, fissures, or abrasions of the integument or mucous membranes. It may possibly be inoculated by means of the bites of insects, such as flies or mosquitoes, or by animal parasites, such as the *Acarus scabiei*. This mode of infection is well attested in the case of elephantiasis Arabum. It is worthy of note that the latter disease prevails extensively in the Samoan Islands, while it is unknown in the Sandwich Islands.

Inhalation is another assumed mode of contagion, but it rests upon presumptive rather than positive proof.

Vaccination is believed by the natives as well as by many intelligent physicians to be a potent agency in the rapid diffusion of leprosy through the islands. It must be remembered that until recently vaccination was performed by unskillful persons, human virus was used, and no distinction was made between a healthy person and a leper as the vaccinifer. The fact is incontestable that, after the general vaccination of the natives, numerous leprous centers developed in various parts of the islands where the disease had previously been unknown. Arning demonstrated the plentiful presence of bacilli in the lymph and crusts of vaccine pustules in lepers.

There are many other interesting points in connection with contagion to which I might refer did time permit; thus, for example:

At what period in the evolution of leprosy does the system become endowed with contagious activity? Is it during the prodromal stage or during the eruptive stage, or is it delayed until the tubercles have softened and broken down?

Are the lesions of the anæsthetic form contagious? The bacillus is not found in the chronic sores or the necrosed tissues and bones of the anæsthetic leper. Numerous and repeated examinations of sections of an amputated finger showed no bacilli.

Another point of interest: A woman may have several husbands in succession who become lepers and she remains apparently exempt. Is the disease latent in this woman, powerless to produce general accidents, yet sufficiently active to contaminate others?

Finally, there remains to be considered the question of heredity. The traditional belief in the hereditary transmission of leprosy has rarely been questioned. It has gen-

erally been regarded as the principal mode of the propagation and perpetuation of the disease. In all ages and in all countries marriage has been prohibited between lepers, and its development in one partner has been accepted, not only as a sufficient pretext, but an urgent argument, for the dissolution of the marriage tie.

The history of the development of leprosy in the Hawaiian Islands would seem to show that here at least heredity has played an insignificant if not an inappreciable role in the propagation of the disease. The following facts may be stated: There is no authentic record of a congenital case of leprosy. I secured the placenta, cord, and portions of the body of a child still-born at full term, of leprous parents. Repeated examinations of these specimens made by Dr. Fordyce showed the absence of bacilli. Leprosy never develops until the third or fifth year, a period which corresponds to the classic period of incubation of the acquired disease. In the immense majority of cases the first manifestations of leprosy occur from the thirtieth to the fiftieth year. In the next place, lepers are almost always sterile. Only two children were born in the leper settlement in the first five years after its establishment; in the next five years only three children were born of parents both leprous. In 1886 Dr. Mouritz collected statistics of twenty-six children born in the settlement, whose ages ranged from three to fourteen years. Of these, nine had become lepers, while seventeen showed no signs of the disease. Considering the multitudinous chances of post-natal contagion from intimate contact with their leprous parents, it seems altogether probable that if these nine children had been immediately removed they might have escaped the disease.

The exemption of the offspring of leprous parents from the parental disease was so frequently observed that in 1885 the Kapiolani Home was established at Honolulu, where these children might be cared for and kept under surveillance as "suspects" until evidences of the disease might be manifest. I am unable to give the statistics of this Home, but they are sufficiently favorable to justify the wisdom of this step.

My observations would seem to justify the conclusion that the influence of heredity in the transmission of leprosy must be regarded as an open question. It is probable that, as in tuberculosis, with which leprosy presents certain analogies, a predisposition to the disease rather than the actual germ is transmitted from parent to offspring.

Finally, there remains to be considered the practical question of the danger of the spread of leprosy in this country. As my remarks have already extended much beyond their proposed limit, I shall refer to this important subject but briefly.

In the determination of this question the facts of the development and spread of leprosy in other countries can not be ignored. The teachings of observation and experience show that in all countries invaded by leprosy its first approaches have been slow and insidious. To take the Sandwich Islands, for example, we find that for twenty years after the first case of leprosy was identified the disease spread slowly, without making sufficient advance to attract the attention of the health authorities. When they awakened to the realization of the danger which threatened the public health, the disease had already gained such headway that they found it impossible to arrest its progress even by the most rigid system of segregation. It has continued to spread until now it threatens the ultimate extinction of the Hawaiian race.

Can any one doubt that if the disease had been promptly dealt with upon its first appearance, every leper removed or isolated from contact with the healthy, it might have been easily eradicated?

Its development may be aptly compared to a slow conflagration, easily extinguished at first, but which, neglected, gains such force and headway that it becomes uncontrollable and can not be checked until it exhausts the materials upon which it feeds.

Unquestionably, leprosy is slowly gaining ground in this country. The existence of forty-two cases in New Orleans, unearthed by Dr. Blanc, was a revelation and a surprise to the entire profession. It is quite significant that a large proportion of these cases were in natives of Louisiana who had never been outside the State. The report by Dr. Berger (in the "New York Medical Journal" of Jan. 5, 1889) of one hundred cases at Key West, where the existence of the disease was scarcely suspected, is no less significant. A rigid investigation would doubtless disclose numerous cases outside the several leprous centers I have located, but which, for obvious reasons, are concealed, or their true nature unrecognized.

Do these facts portend the spread of leprosy in this country? The seeds of the disease are sufficiently abundant; the only question is whether the conditions of soil are suitable for their germination. Either we must admit that this danger exists, or we must assume that, owing to the better physical stamina of our people and the improved hygienic conditions under which we live, the soil is sterile and the seed will fail to propagate. We are not justified in the assumption that susceptibility to leprosy is extinguished by civilization, or that its potentiality for mischief is enfeebled or destroyed by improved modes of living. It is to be remembered that the spread of leprosy in the Sandwich Islands has been coincident with an advanced civilization of the natives. The average Hawaiian of to-day is more cleanly in his person, better fed, and better housed than the majority of the tenement-house population in our large cities.

After all, the danger of the spread of leprosy in the United States resolves itself into a question of the contagiousness of the disease. If leprosy is a communicable disease, then it follows that every leper must be regarded as a possible source of danger to every one with whom he may come into intimate contact. The question to be decided is not the fact, but the degree of danger—whether it rises to the magnitude of a serious menace to the public health and demands State legislation for its suppression.

My own personal belief is that the extensive spread of leprosy in this country must be regarded as a possibility, rather than a strong probability. Still, in dealing with a disease with which medical science has shown its utter inability to cope, except by prophylactic measures, it becomes

the manifest duty of the medical profession, in their capacity as guardians of the public health, to enlighten our legislative authorities as to this possible danger, and urge them to adopt measures for the isolation of every leper in our midst, and especially to prevent the immigration from foreign countries of those who bear in their systems the seeds of this frightful malady.

NERVOUS SYMPTOMS CAUSED BY FUNCTIONAL GASTRO-INTESTINAL DISORDERS.

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The following clinical history is, in many respects, a good illustration of a group of cases characterized by gastro-intestinal disturbance and marked nervous symptoms. It tends to show in an interesting manner how imperfect digestion may, in a neurotic patient, cause most persistent and alarming manifestations. As will be seen, these symptoms and nervous phenomena may be very numerous and, in aggravated cases, may display themselves throughout the entire system. This is possible because of the intricate relations and the mysterious sympathies existing between the processes of organic life, the nervous system, and the mind. Hence it is not uncommon to meet with cases in which a large number of nervous symptoms, as well as a perverted state of the emotions and mind, are chiefly due to irritation by improper foods and the effects of gastro-intestinal disease. These cases are most common among city business men who, by improper food, irregular and hurried eating, and intense and prolonged mental strain, bring on nervous excitability, indigestion, and subsequent exhaustion of vital power.

These preliminary remarks will be largely confirmed by the history of a case in which functional gastro-intestinal disorder and many forms of reflex nervous irritation prevailed for a long time, and were finally brought under control by a proper regulation of diet and treatment of the organs of digestion.

Mr. C., aged forty-six, of a bilious nervous temperament, of good habits of life, and a lawyer by profession. His father suffered from catarrh of the stomach and bowels for many years, and then died of consumption. His mother is still living, about sixty-five years of age, and in fair health. The patient himself was healthy during childhood, but subject to pain in the limbs. When about fifteen years old he had diphtheria, which was followed by measles, and then very poor health, emaciation, and debility. He gradually recovered and worked on the farm, taught school, and attended college. About this period he experienced his first occasional suffering from indigestion, which seemed to be due to overeating or improper food. When twenty-two years of age he went into the army, and there suffered still more from indigestion, characterized by intestinal flatulence and pain. Two years later, while still in the army, he had typhoid pneumonia, which left him in poor health and with great weakness of the nervous system for nearly five months. Within six months he had another attack of typhoid pneumonia, and it was six months more before he completely recovered. These attacks left him with a greatly enlarged liver, and it was nearly three years before the organ returned to its normal size. After the war he returned to civil life, his health improved very much, he engaged in the study of the law, and subsequently became a lecturer on that subject. After two years of hard work his nervous system broke down, and he suffered from general weakness, loss of appetite, and indigestion. Hoping that a change of climate would be beneficial, he moved to Cheyenne, Wyoming, and engaged in the practice of law. From 1867 to 1875 he had very good health, excepting for some indigestion and occasional temporary nervous "breakdowns" from overwork. During this time he was subject to frequent colds and bronchitis, which made him sick for a few days, and finally left him with naso-pharyngeal catarrh. In the year 1876 he was elected to Congress, and the circumstances incident thereto proved to be a great strain upon his nervous system. Indigestion, flatulence, and pain became more marked, and he suffered greatly from insomnia and various nervous manifestations. In 1877 he experienced a general breaking-down, characterized by indigestion, prostration, extreme insomnia, nervous irritability, inability to concentrate his mind, and pain and burning in the limbs. These symptoms continued to grow worse even under a more regulated life and medical treatment. Subsequently he took a trip to Europe, and this afforded temporary improvement. Returning to Washington, he soon grew worse, suffered greatly from indigestion, insomnia, pain in his limbs, and a sense of burning or heat in his feet, and finally became unable to attend to his official duties. At the expiration of his term in Congress he went to Hot Springs, Arkansas, where he remained two months and was again temporarily benefited. From there he returned to Cheyenne and resumed his professional work, but soon broke down, suffering from the same conditions and symptoms, but in a still more aggravated form. Hoping to find relief in rest and change, he traveled in California, and subsequently made a second trip to Europe. In addition to travel, he passed months at a time under systematic treatment at the hands of celebrated specialists for the treatment of nervous diseases; but during the last four years there has been but little, if any, cessation from suffering in his bowels and the manifold nervous conditions repeatedly referred to. When he came under treatment he had a tired, worn, and haggard look. He was suffering from aggravated indigestion, great distension and pain in his bowels, burning and lancinating pain in his legs and feet, and most persistent insomnia. As a rule, he was unable to sleep more than from two to four hours out of twenty-four unless under the influence of a hypnotic. Indeed, he had been obliged to resort to almost every form of sedative, including bromides, chloral, sulphonal, and morphine, in order to obtain even a moderate amount of sleep.

In concluding the history of this interesting case it is worth while to note again that, in the first place, there were the usual symptoms of indigestion beginning in childhood and lasting more or less for thirty years. From first to last the patient suffered from distress after taking food, acidity, flatulence, pain, great abdominal disturbance, grinding sensations in the stomach and bowels, constipation, and all the lesser symptoms of indigestion.

In the second place, going hand in hand with the above-described condition, there was a history of "leg-ache" in boyhood, gradually developing into neuralgic pains in the head, persistent insomnia, excessive nervous irritability, inability to concentrate the mind, numbness and tingling of the limbs, lancinating pains in the limbs, and localized burning sensations in the ankles and feet. From first to last he had been conscious of indigestion with its associated symptoms and miseries, and added thereto had been almost every form of suffering due to

reflex irritation of the nerve filaments of the gastro intestinal tract. All of these conditions and symptoms steadily grew worse despite medical treatment and travel, until the patient became a constant sufferer and utterly unfitted for business or the enjoyment of life.

In these mixed cases of indigestion accompanied by marked nervous symptoms it is frequently difficult to decide just what condition one has to deal with. Indeed, it is often a problem calculated to perplex a careful diagnostician and make him appreciate more than ever the mysteries and complications of disease. That doubts should prevail and mistakes should occur is not strange when one considers what a host of symptoms may result from intestinal disorders and from an irritated, excited, impaired, and perverted state of the nervous system. In the majority of such instances, where the above-named conditions are mixed together, the diagnosis is made in favor of some nervous disorder and styled "nervous dyspepsia," "nervous irritation," or "nervous exhaustion." In fact, the prominence, urgency, and distressing character of the nervous symptoms are allowed to overshadow those that really point to the underlying cause. This was well illustrated in the case under consideration, for the nervous symptoms were so prominent and persistent that they misled both the patient and his many different physicians. One of the latter, a neurologist of national repute, treated him for many months for nervous exhaustion and nervous irritability, never giving more than passing attention to the symptoms of persistent functional disorders of digestion. These latter were called "nervous dyspepsia," and the assurance was given that they would pass away with the return of nerve force.

These facts hint at the difficulties attending this line of cases, and plainly indicate the paramount importance of first establishing an accurate diagnosis. This can be done in most instances by a careful analysis of the history of the case by following out certain general principles, and by a frequent study of the products of the system. The utility of such procedure will be seen as we advance in our study of the case under consideration.

1. The history in this case revealed the fact that indigestion had prevailed more or less for many years—indeed, from boyhood. It was the primary functional disturbance, and had always preceded or existed in concurrence with nervous manifestations. Latterly it had become so marked that there were persistent acidity, flatulent disturbance, griping pains, and undefinable abdominal distress. These facts and symptoms were, to say the least, highly suggestive and merited thorough investigation. Moreover, the patient was of a nervous or neurotic family and had a highly sensitive nervous organization. He was therefore, by virtue of hereditary tendency, predisposed to suffer from either direct or reflex irritation. All that was needed was an abnormal state of the secretions, improper food, acidity, and fermentation to irritate the nerve filaments of the stomach and bowels, and to cause pain and general nervous disturbance. Besides, to these inherent tendencies he had added that irritability frequently caused by hard work, constant anxiety, a great amount of care, professional strife, and business reverses. In such manner, predisposing and exciting causes prevailed which would, beyond doubt, point to the probability that the seat of his troubles was in the gastro-intestinal tract.

2. In the second place, it is a general principle that a constant cause underlies a constant effect. It was rational to believe that constant disorder of digestion, accompanied by continual abdominal pains, burning sensations and lancinating pains in the legs, irritability of the nervous system, mental confusion, and intolerable wakefulness had a constant cause somewhere. It was equally rational to assign the cause to improper food and imperfect digestion, because the symptoms of each prevailed, and also because it is well known that gastro-intestinal irritation may be reflected to all parts of the body, causing most alarming symptoms. Moreover, it is established that constant acidity and fermentation in the stomach and bowels invariably give rise to lithæmia, oxaluria, or phosphaturia. The presence of either of these conditions of the system may so affect a susceptible nervous system as to cause neuralgias, twitching of groups of muscles, shooting and burning pains in the limbs, numbness and coldness in different parts of the body, imitative locomotor ataxia and paralysis, vertigo, violent headaches, and functional derangement of the mind. This fact has been elaborated in a masterly manner by Ralffe in his immensely valuable work on "morbid urine." He shows conclusively that there is a wonderful relation between an acid state of the system and a host of the most common and alarming nervous symptoms and functional nervous affections. It is also proper to add in this place that it is believed by many investigators at the present time that intestinal fermentation produces certain chemical gases and alkaloids which, when absorbed into the blood, make a profound impression upon the nervous system. It is maintained that their absorption practically introduces a poison into the blood, followed by symptoms of disease which are vaguely attributed to various conditions. Brunton well said that "perhaps we are not yet sufficiently alive to the important results produced by the absorption from the intestinal canal of substances generated in it by fermentation or imperfect digestion. We recognize the danger of breathing gas from a sewer, but probably we do not sufficiently realize that noxious gases may be produced in the intestine, and, being absorbed into the circulation, may produce symptoms of poisoning."

3. The prevalence of these general conditions and probabilities pointed to the necessity of adopting all the usual methods of diagnosis—such as inspection, palpation, percussion, and, in addition, an analytical study of the blood, urine, and fæces. Inspection revealed in this case that the abdomen was greatly distended and abnormally prominent. Palpation and percussion disclosed that the stomach and bowels were full of gas and that there were points of tenderness over them. These marked evidences of gastro-intestinal disturbance, together with signs and symptoms of lesser importance, were verified by repeated microscopic studies of the blood. Such method showed the presence of mycoderma aceti, or what are better known as yeast ferments, or the absorbed products of acidity and fermentation. When these are found in the blood they are proof

positive that improper food is being taken, and that digestion is imperfect. In addition to careful and repeated study of the blood there was a thorough and daily examination of the urine. At first its specific gravity was about 1·030, and it contained an excess of phosphates and bile. The microscope showed uric-acid crystals, but no evidence of degeneration of tissue. It is the rule in these cases for the urine to be very dense with phosphates and bile, and to show more or less crystals of either uric acid or oxalate of lime. In this case constipation prevailed and the fæcal discharges were variable.

Turning now from this rapid view of the history, causation, and diagnosis of this case, a few remarks will be made regarding the treatment it received.

In the first place, an effort was made to place the patient under the most favorable hygienic and moral conditions. He was located in a large airy room, and attended and accompanied by his wife and child. The help and encouragement of the wife were utilized as far as possible, with a view of steadying and maintaining a healthful mental condition. It was necessary to meet the tendency to mental irritability and depression in every possible way. With the favorable surroundings went the strictest injunctions as to complete relaxation from work, care, anxiety, and physical fatigue. It is useless to attempt to treat such patients unless the mind can rest and be diverted from the corroding worries incident to domestic and business life. It is safe to say that gastro-intestinal indigestion, accompanied by excessive nervous irritability, will never yield to any form of treatment unless these conditions obtain. The processes of digestion must be allowed all opportunity that is possible, and what nerve power there is must be saved for the promotion of organic functions. The law that rest and sleep, mental relaxation, and composure are absolutely essential to restoration needs to be imbedded in the mind of the patient. The patient must yield to this law in a cheerful, obedient, and helpful manner, as a condition precedent to recovery. In this instance mental and bodily rest was insisted upon, until the system was rested and refreshed. With a view to promoting nutrition, baths, friction, and daily massage were adopted, and served a useful purpose. These methods tended not only to work the nutriment into the system, but also to divert the blood and nerve currents from the brain to the functions of organic life. Afterward the invigorating effects of unobstructed fresh air and sunlight were sought, and the patient was advised to sit out of doors, and to take short walks and an occasional ride whenever the weather would admit. He was always enjoined, however, never to allow diversion and exercise to overtax his nervous system, and thus cause fatigue. It is believed that the attention given to these common-sense moral and hygienic regulations did much to bring about the improvement that soon supervened. In other words, they afforded the conditions that made still other efforts operative and helpful.

The next step in the management of this case was to place the patient on a suitable diet. The indications were for one that was light, palatable, easily digested, non-fermentable, and nutritious. These were cardinal conditions that had to be met before any progress could be expected. It was not reasonable to try to cure with fermentable foods a case in which acidity, fermentation, and flatulence were sources of intolerable misery. Consequently, all sweet, starchy, and greasy foods, all fruits and vegetables, as well as everything containing acids, were displaced from his diet at the outset. The great object was not only to carefully eschew every indigestible substance, but to avoid the causes of acidity and fermentation. It was believed that the rigid exclusion of such causes would enable the stomach and bowels to regain their normal state, would favor the processes of digestion, and would avoid an immense amount of discomfort. With these definite ends in view, the patient was placed upon a carefully regulated animal diet, composed mostly of beefsteak, and the muscle pulp of beef prepared by a machine made for the purpose. The latter afforded him a simple, concentrated, digestible, and non-fermentable diet, yielding the maximum nourishment from the minimum effort. Of this he was allowed every four or five hours as much as his stomach would easily tolerate and digest. At times, as he became tired of this single preparation, he was allowed choice beefsteaks, which answered much the same purpose but were not so digestible. Besides directing this diet, every effort was made to know that it was completely digested from day to day. In these cases it is not enough to order a particular food, but it must be known that it is being entirely digested. This information should be obtained from day to day by careful inquiry, thorough examination of physical signs, and an analytical test of the blood, urine, and fæces.

As soon as the machinery of the system gets to doing its work well, the physical signs of disease will disappear and the organic products will show good work. On the contrary, if it does not get to working well, physical signs of disease will prevail, the blood will show abnormal elements, the urine will be highly colored and heavy with excrementitious products, and the fæces will show undigested food. It is wonderful how accurately and promptly physical signs and abnormal products will show whether the processes of digestion, absorption, and assimilation are going on as they should. In this case these conditions were watched more or less from day to day until it was found that the food was agreeing with the patient and the organs were doing their work well. Subsequently, as the patient improved, a larger amount and a wider range of food were allowed. At first he was given a small piece of stale bread, then from two to four ounces of milk, then a little game, and ultimately some vegetables. The effect of these additions was carefully watched, and they were continued or dispensed with as he was able or unable to digest and utilize them. As a result of this carefully selected and well-regulated diet, relief from gastro-intestinal pain soon ensued, and the host of secondary nervous symptoms grew beautifully less. In a single month he passed from constant wretchedness to a state of entire comfort. In other words, just as soon as the cause was removed, the miserable effects which had tormented him for years vanished.

The same degree of attention that was given to the regulation of his food was applied also to the regulation of his

drinks. He was at once deprived of such drinks as tea, coffee, milk, and stimulants, and placed upon the regulated use of hot water. He was directed to take a pint of hot water systematically by the clock an hour before each meal and the same length of time before going to bed. Or, in other words, the rule was for him to take his food every five hours and the hot water four hours after taking food. This allowed four hours for digestion without the presence and interference of a great quantity of liquid. Moreover, the use of a large amount of hot water tended to dissolve and wash downward any accumulation of tough, stringy acid and fermented mucus that was left in the stomach, thus preparing the way for the next meal. It also maintained the volume of the blood, stimulated the secretions, and favored a freer action of the liver, kidneys, and bowels. In short, the object was to quench thirst, keep the stomach cleansed of catarrhal mucus, aid downward action of the bowels, "flush out" the liver and kidneys, and maintain the specific gravity of the urine at about 1·015. The great utility of the internal use of hot water in the treatment of gastro-intestinal disease can not be overstated, but, like every other remedial agent, it must be used systematically, persistently, and for a definite purpose.

As regards medicinal treatment in this case, it is to be said that only simple remedies were used, being employed as the need was indicated. No effort was made to cure (?) the patient with medicines, but rather to put him in a condition to receive cure from the great and only sources of health—proper food, pure water, abundance of sunlight, and fresh air. Consequently only such remedies were used as tended to tone up the nervous system, stimulate the organs of digestion to better action, aid the digestion of food, and induce composure and rest of the nervous system. These were the four chief indications, and they were met as demanded from day to day. They pointed to the use of chinchona, nux vomica, damiana, salicin, cascara, pepsin, bromides, and sulphonal, which were about all the remedies required.

In conjunction with medicinal remedies went what may be styled thorough mental and moral treatment. The patient was seen daily, and great and constant effort was made to overcome the tendency to doubt, delusion, morbid imaginings, mental depression, and discouragement, so common to patients suffering from indigestion and nervous exhaustion. He was not only thoroughly examined each day, but also cheered, aroused, encouraged, reassured, advised, and rigidly held to the carefully systematized treatment now found useful in so many instances. The great object was to steady his mind, to appeal to his reason, to explain away doubts and morbid fancies, to insure co-operation in carrying out details, and to inspire hope. In this form of chronic cases, above all others, it is of the highest importance to thus gain control of the patients' emotions and mind, to lift them out of depression and evil apprehensions, and to give them a determinate action toward health. Indeed, satisfactory results are almost impossible unless persistent mental and moral suasion enters largely into the general management of the case.

In conclusion, it can be said that, as a result of this line of treatment, the patient improved from the very first, and in three months felt able to pass from observation and return to his home, there to continue this treatment. He was not discharged cured, for in a case of such severity and long-standing the patient can not get entirely well in three months. A weakened and unreliable state of the organs of digestion lasts for a long time after the signs and symptoms of indigestion and nervous irritation have been relieved by a regulated diet and various remedies. There needs to be constant watching and judicious caution as to the quality and quantity of food taken, for many months elapse before the stomach and bowels become so strengthened as to manage a liberal mixed diet. Although not cured, he was so well started in that direction that his digestion was vastly improved, he was entirely free from gastro-intestinal pain and nervous irritability, the burning sensations in the feet and limbs had passed away, neuralgic pains in various parts of his body had all gone, mental confusion and depression were things of the past, and he was able to sleep from six to seven hours out of the twenty-four. In other words, removal of the cause, together with well-directed hygienic, moral, and medical treatment, had resulted in producing a satisfactory and comfortable effect.

NASAL BACTERIA IN HEALTH.*

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The position which micro-organisms will ultimately take in their relation to the morbid processes of disease has not been determined as yet. Indeed, we seem now only at the beginning of an unknown region in which possibly lies hidden the mystery of the ætiology of many pathological changes. Encouragement in the region of preventive medicine, under which head we must include all that Listerism has done for surgery, lends zest to the attempts to follow the microbe into the human organism and there annihilate it. The almost complete failure thus far has given professional cynics an opportunity for a somewhat galling criticism. These failures are, no doubt, in a large measure due to our as yet very incomplete knowledge of the varying conditions and influences which complicate the relations of microbes to the human organism. Whatever opinion the clinician may have of the part played by them in the ætiology of the diseases he observes, even the most skeptical must admit that the burden of disproof has been thrown upon the doubters.

With the increased probability that many pulmonary and nasal diseases owe their origin, in a large degree, to micro-organisms, it becomes important that the bacterial contents of the respiratory tract in a state of health should be known. Before we are in a position to investigate a pathological process we must have a firm physiological basis on which to stand. Before we seek for a pathogenic micro-organism in disease we should know what exists in the situation in a condition of health. The ingress of all infective agents must, in the vast majority of cases, be through the

* Read before the Laryngological Section of the American Medical Association at its fortieth annual meeting.

nose or the mouth; those of the respiratory tract, as a rule, through the former; those of the alimentary tract, as a rule, through the latter. The bacterial contents of the mouth in health have been so thoroughly investigated by Biondi (1), Vignal (2), Netter (3), Fraenkel (4), and others that further researches would seem superfluous when our knowledge of the nasal micro-organisms in health is so slight. As laryngologists we are becoming more and more impressed with the necessity of normal nasal respiration and the harm of mouth breathing. In the further advance of nasal bacteriology we may find another reason to urge the importance of purely nasal respiration. When we remember the apparatus of Hesse (5) for air analysis, the configuration of the internal nose would seem admirably adapted to arrest the progress of microbes carried into it by the air current; and, still further, it has been conclusively proved that bacteria never rise from a damp surface, however strong the blast may be over it, unless carried along by some particle of water or mucus or solid matter. Hence we should expect to find innumerable varieties of bacterial forms derived from the air, and might well despair of reaching any definite conclusions in the matter. Besides the bacteria of phthisis and pneumonia and the microbe of diphtheria, whether it be the bacillus of Löffler or the streptococcus of Prudden, there seems good evidence that some purely intranasal diseases depend upon micro-organisms for their origin or their subsequent course. A perusal of the researches of Löwenberg (6), Klammann (7), Thost (8), Seifert (9), Strauch (10), Valentin (11), Hajek (12), Reimann (13), and others into the ætiology of ozæna and coryza must convince us of the truth of what Walb (14) says of ozæna.

"I am convinced," he says, "that the way opened by Löwenberg will lead to the discovery of the nature of ozæna. Whether the Löwenberg coccus or some other is the cause of ozæna is of no consequence; it must exist, and it is to be hoped that it will be found."

Whether there is a bacterial connection between coryza and pneumonia, as maintained by Thost (8), and further urged by Cardone (15), it is impossible, with our present knowledge, to form any opinion.

Notwithstanding the abundance of the literature to be found on the bacteria of nasal diseases, there is very little, in fact no systematic examination of the normal nasal secretions for bacteria recorded in the somewhat extended range of literature to which I have had access. However instructive the staining of nasal secretions for bacilli and cocci as a matter of technique may be, there is little or nothing else to be learned from it without the aid of the improved methods of cultivation tests. I have therefore omitted extended reference to this class of work. The mere presence of micro-organisms in nasal secretions was established many years ago. Bernard Fraenkel, in von Ziemssen's "Encyclopædia" in 1876, in his article on acute coryza, says:

"A large number of these little structures, recently so much spoken of and called micrococci, may generally be seen also covering the cells."

And he refers to Hueter (16) as maintaining these bodies to be the source of irritation in coryza. Herzog (17) in 1881 found many bacilli and cocci in normal and abnormal nasal secretions, more abundant in the latter, and especially in fœtid nasal catarrh. Eugen Fraenkel (18), on the other hand, in 1882 stated that he could find no bacteria in the normal nose, and his work on ozæna, in the secretions of which he found four kinds of bacteria, has been widely quoted, but, in the light of our present bacterial knowledge, possesses on this point only historical interest. Later observations have all been made incidentally in connection with bacterial investigations of disease. Bernard Fraenkel (19) in 1886 found in the normal pharynx, besides the *Staphylococcus pyogenes aureus* and the *Staphylococcus pyogenes albus*, a micrococcus which often appeared as a diplococcus and did not liquefy gelatin. Probably the same coccus was found in the normal retro-pharynx by Hack (20), and fully described by his pupil Strauch (20). The latter asserts that it is also found in the nose, but less frequently and in smaller numbers. Both Löwenberg (6) and Hajek (12) failed to find micro-organisms at all constant or abundant in normal nasal secretions. Reimann (13), on the other hand, described two forms as nearly always found—one a plump round-ended bacillus, and the other a little coccus which occurred usually in pairs but often in longer chains. Considering the extensive and very thorough work done upon the bacterial contents of the mouth in health, it is singular that there should be such a lack of it in the nose.*

My own observations have been made during the last two years in the laboratory of the Alumni Association of the College of Physicians and Surgeons under the direction of Dr. T. M. Prudden, to whose kindness and careful oversight the little which may be of value in them is due. The material was drawn from the Dispensary of the Roosevelt Hospital. Although a number of other cases were examined, it is my purpose to record here only those investigations made in fairly normal cases, leaving the examinations in the other cases for further amplification and another occasion. The method of work was as follows: Portions of the nasal secretion were removed from the mucous membrane covering the turbinated bones and adjacent portions of the septum, in the loop of a long platinum needle previously sterilized in the flame. This was immediately plunged into two gelatin tubes, and streak cultivations were made upon two agar-agar plates. Thus, four inoculations were made from different portions of the nasal chambers in each case. Besides this, a number of dry cover-glass preparations were made of the nasal secretion in each case and stained by Gram's method and by simple double staining. These last frequently showed no bacteria when the cultivation tests proved their presence in great abundance. The gelatin tubes were plated according to Koch's method and pure cultivations obtained

* At the last meeting of the Russian congress in St. Petersburg, Besser reported having examined the nasal secretions of 81 patients, the bronchial secretions of 10, and the secretions of the frontal sinuses in 5. Out of the nasal and bronchial secretions he cultivated the Fraenkel-Weichselbaum diplococcus of pneumonia in 14 cases, the *Staphylococcus pyogenes aureus* in 14 cases, and the *Streptococcus pyogenes* in 7 cases. Unfortunately, I have not been able to procure the original article, and the reference in the "Centralblatt für Bacteriologie," Bd. v, No. 21, is incomplete, not giving the conditions under which they were found.

and transferred to cultivation-media tubes of agar agar, five-per-cent. glycerin agar, gelatin, bouillon, milk, and potatoes. The same was done with pure cultivations obtained from the streak cultivations on the agar plates. The growth characteristics were noted and compared with descriptions in the works of Flugge, Fraenkel, Eisenberg, and others, and where close correspondence was observed their denominations were accepted. Those forms found not to correspond to any descriptions were, as a rule, carefully worked out and the records preserved, but it is unnecessary to describe them here, as they were only found in isolated cases. All the usual precautions were taken against contaminations and, in addition, only those colonies selected from the plates which were in sufficient numbers to preclude the possibility of contamination and to eliminate, as far as possible, those microbes which had only recently become nasal inhabitants and had not yet grown in the nasal secretions to any considerable numbers.

When one remembers the multitude of air bacteria which would naturally lodge against the nasal mucous membrane, and be only accidental visitors to a soil unsuited to them, this precaution will not seem uncalled for. In all cases care was taken to ascertain that no nasal douches of any kind had been previously used. Any one, even those unfamiliar with the technique of bacterial analysis, will appreciate the amount of work required where so many different forms had to be carefully worked out, and that may be pleaded as an excuse for the limited number of cases brought forward. In the ten cases mentioned, the condition of the mucous membrane was as nearly normal as possible, and even where insignificant changes were observed they are noted. The class of cases was not so diversified as would be desirable, as they were all in dispensary patients. I made several bacterial analyses of the air of the dispensary from time to time by Petri's and Sedgwick's methods and by exposure of agar plates. At no time was there any growth but those of simple air bacteria noted. The nasal bacterial forms were found to vary markedly with the state of the weather and of the streets. High winds and dry and dusty streets were sure to fill the noses with air bacteria. In rainy weather, or after several days of calm, or when snow was on the ground, aerial forms were much more rare. It seems to me there can be only one cause for this—viz., they tend to disappear because they have found a soil unfitted for their growth, and, according to the universal law of natural selection, give way to microbial forms more favored by the conditions. It certainly is not because they flow away in the secretions, because it is not only their absolute frequency which varies, but their frequency relative to other forms. The reaction of the secretion of the normal nose was found to be neutral or slightly alkaline.

Case I.—A young man in fair health, with the exception of slight cough. No pulmonary lesion; slight hypertrophy of one turbinated bone; nose otherwise normal. A short, plump bacillus looking at times like a diplococcus; slow white growth on gelatin which it does not liquefy. Same on agar, spreading slightly on surface.

Case II.—A young girl with slight tonsillar enlargement; nose normal; general health good. Bacterial analyses were made on three separate occasions, and twice was found a nearly pure cultivation of the *Staphylococcus pyogenes aureus*. The tonsils were examined and the same growth was found there. Inoculations of pure bouillon cultivations in the jugular of rabbits set up purulent pericarditis and endocarditis, of which the animals died. The pus swarmed with the cocci.

Case III.—A boy of seventeen who had a perforation of the septum and hard palate from a syphilitic process. All ulceration had long healed and the mucous membrane was normal in appearance. The *Staphylococcus pyogenes aureus* was found in large numbers and a moderate growth corresponding to the *Bacillus lactis aerogenes*.

Case IV.—A man of thirty-five, who a few weeks previously had been discharged from Roosevelt Hospital after a severe operation for the removal of a thyreoid tumor. The wound had healed by first intention. Left laryngeal paralysis resulted. The nose was perfectly normal in every way. The *Staphylococcus pyogenes aureus* and *albus* were both found, and abscesses were caused by the injections of pure bouillon cultivations of each beneath the skin of rabbits. From these abscesses new cultivations of the same growths were obtained in each case.

Case V.—A child ten years old. No subjective nasal symptoms, but the mucous membrane of the nose was slightly hyperæmic. In this case also both the *Staphylococcus aureus* and *albus* were found, and positive results obtained from animal inoculations.

Case VI.—A seamstress, aged sixteen. She had had considerable post-nasal catarrh, but no purulent secretion. Nose normal and health good. Two examinations six weeks apart were made. Each time in the nares there was found an abundant growth of the ordinary mold, the *Penicillum glaucum*. Each time pure cultivations of the *Streptococcus pyogenes* were obtained from the post-nasal space. A pure bouillon cultivation was injected beneath the skin of rabbits' ears and an erysipelatous inflammation produced, from the sanious pus of which cover-glass preparations were made showing abundant cocci in chains. At the second examination a cultivation of a gas-producing bacillus was also made from the tonsils. The most careful questioning could elicit no history of exposure to contagion of any kind. She herself was in the best of health except for the discomfort from her post-nasal catarrh.

Case VII.—A girl, aged sixteen, cigarette-maker. There was slight hypertrophy of the nasal mucous membrane with some tonsillar injection. The *Staphylococcus pyogenes citreus* was found in the nose.

Case VIII.—A child, aged four. Slight post-nasal catarrh and slightly enlarged tonsils. Nose normal. In it was found the *Micrococcus flavus desidens*.

Case IX.—A man, aged nineteen, with follicular amygdalitis and post-nasal catarrh. This case presented considerable structural change, and I insert the record here because, in spite of the large amount of secretion present, only aerial forms were found. They were the *Micrococcus flavus desidens* and *Micrococcus cereus flavus*, and an undetermined coccus with a curious growth on agar and gelatin, a description of which would be out of place here.

Case X.—A woman, aged twenty, with a slight attack of laryngitis. She was recovering from coryza and there was some mucous secretion in the nose. The bacterial contents were as follows:

1. *Staphylococcus pyogenes aureus.*
2. *Micrococcus flavus desidens.*
3. A tetrad resembling closely the descriptions of the *Micrococcus tetragenus.*
4. An undetermined coccus, with a white non-liquefying growth on gelatin and agar.

The three last cases were examined during windy, dusty weather, and illustrate well, especially in the last case, the unreliability of cover-glass preparations alone of the nasal secretions in determining bacterial species, as the morphological appearance in four out of the five organisms was the same.

To summarize: In six cases, the *Staphylococcus pyogenes;* in three cases, the *Micrococcus flavus desidens;* in one case, the *Bacillus lactis aerogenes;* in one case, the *Penicillum glaucum;* in one case, the *Micrococcus cereus flavus;* in one case, the *Micrococcus tetragenus;* once in each of three cases, different undescribed forms.

CASES.	Staphylococcus pyogenes aureus, albus, and citreus.	Micrococcus flavus desidens.	Bacillus lactis aerogenes.	Penicillium glaucum.	Micrococcus cereus flavus.	Micrococcus tetragenus.	Different undescribed forms.
I	.....	.....	.....	.....	.....	.....	1
II	1						
III	1	.....	1				
IV	1						
V	1						
VI	.....	.....	.....	1			
VII	1	1					
VIII	.....	1					
IX	.....	.....	.....	.....	1	.....	1
X	1	1	.....	.....	.....	1	1
Total	6	3	1	1	1	1	3

The air forms may be dismissed without further consideration. The *Micrococcus tetragenus*, found in only one case and in small numbers, need only receive a passing mention. In Case VI the only organism in the nasal chambers proper which was made out by two careful examinations at different periods was the ordinary mold—the *Penicillum glaucum.* It was in such great numbers that it possibly may have overshadowed the growth of other forms. Considering its great aerial frequency, it is singular that it was not oftener found. In this case the *Streptococcus pyogenes* was twice found in the naso-pharynx, which was the seat of a chronic catarrhal inflammation, but which showed few changes in the mucous membrane besides the reddening of the surface and the increased secretion of mucus. For its pathogenic significance in the air-passages the works of Netter (3 and 22), Prudden (21), and others may be referred to.

Our attention is therefore directed to the *Staphylococcus pyogenes;* the three varieties *aureus*, *albus*, and *citreus* need only be considered as one in their pathogenic significance. We know as yet too little concerning the conditions under which this organism exerts its characteristic influence to draw conclusions. It may be well, however, to refer to the statements of a few of the various workers in this field.

Ullmann (23) found the staphylococcus in the air in different situations and under varying conditions, as well as in the water of the river Spree. He and others found it in the earth, on the streets, and on the walls of various rooms and buildings. As to man, he says: "Fürbringer found it in the dirt under finger-nails, and Bumm in the folds of the nipples. Biondi obtained cultures of it from the saliva, and Fraenkel from the tonsils. I have found it not only on the buccal mucous membrane, in the saliva, the tonsils, the pharynx, and vagina of healthy people and of animals, but in the œsophagus, intestinal tract, and bladders of recently killed animals. Lustgarten and Mannaberg found it constantly in the urethra. These investigations show that the staphylococcus is very widely distributed, and that it is found wherever living beings are."

From this we see that its very frequent occurrence in the nose forms no exception to the rule. It will require investigation of many more cases than those here cited to prove that it is the most frequent and abundant micro-organism in the nasal chambers. Netter (22), speaking of the influence of pathogenic micro-organisms in the mouth, nose, and ears, says: "The presence of the microbes is not enough. It is necessary that they should be present in sufficient quantity to triumph over the resistance which healthy anatomical structures offer them. It is necessary that their virulence should be sufficiently great, and we know that their virulence is not always the same."

He might have also said that the resistance offered them was not always the same. On this head the work of Bujwid (24) is suggestive. He found that, in round numbers, a billion *Staphylococci aurei* for a rabbit, a hundred millions to a billion for a rat, and a hundred millions for a mouse, could be injected beneath the skin of a healthy animal without result, no abscess forming. When, however, grape-sugar had been previously introduced into the animals' systems, they succumbed.*

Ribbert (25) and his pupils, Fleck (26) and Laehr (27), caused a catarrhal inflammation of the bronchi, with more or less broncho-pneumonia, by injections of pure cultivations of the staphylococcus into the trachea. Their investigations, as well as those of Wyssokowitsch (29), tend to show that the lungs or the adjacent bronchial lymphatic glands act as a sort of filter or as a place of destruction for the microbes, preventing their further penetration into the human organism.

Prudden (21) repeated the experiments of Fleck and Laehr, with like results. He also succeeded in causing broncho-pneumonia by injections of pure cultivations of the *Streptococcus diphtheriæ* and by injections of ammonia.

Lübbert (28) caused fibrino-purulent tracheitis and bronchitis by injections of a pure cultivation of the staphylococcus into the trachea. It is asserted by many investigators, and their assertions are based upon extensive experiments, that it is the pavement epithelium which prevents the entrance of various microbes into the subjacent structures and thence into the general system. The very general experience of laryngologists would hardly bear this out as regards the staphylococcus, since tonsils and uvulæ are cut without a fear of septic invasion, and in all the operations upon the mucous membranes of the mouth and nose this is the least danger we fear. If, however, a patient bites the operator's finger so as to break the skin, unless the wound is thoroughly washed out with an antiseptic, local suppura-

* Since this paper was written, the very valuable papers of Buchner ("Ctrlbl. f. Bact.," iv, 25, v, 1) and Nissen ("Ztschr. f. Hygiene," vi, 3) have come under my observation. They give convincing proof that it is the albumin in the blood plasma that exercises the destructive influence on bacteria in the circulation.

tion often follows, and, occasionally, from this general sepsis.

I have mentioned these facts and observations in order to show how little we know as yet and how vastly much more we have to learn about this comparatively well-known microbe so often found in the upper air-tract of healthy people.

Before closing I wish to make mention of some investigations, as yet very incomplete, which I have been engaged upon during the last two months, more in the hope that others with more leisure and better opportunities will continue them, than from an expectation of adding much to our knowledge. I refer to the nasal chambers as a bacterial filter of the air passing through them.

It has been definitely proved by the investigations of Grehant (30), Paulsen (31), Aschenbrandt (32), and Bloch (33) that the nasal chambers not only are warmers and moisteners of the inspired air, but act also as a filter for dust particles. The latter observer experimented with many substances in fine powder, and came to the following conclusion, as did Grehant and Aschenbrandt:

"A certain part of all kinds of dust, even the finest, is held back; the larger part of the formed substances which float in the air do not reach the entrance of the larynx or even the choanæ; but it is impossible for the nose, even with the help of the naso-pharynx, to *completely* free the air even from the coarser kinds of dust."

Now, a bacterium, whatever its relative proportions to other divisions of matter with which we are familiar, is a ponderable substance, heavier than air, water, or any of the animal fluids. It is therefore subject to the same physical laws. It is yet an unsolved mystery how the *Bacillus tuberculosis* reaches the most frequently chosen seat of its selective action in the apices of the lungs, and how the pneumococcus usually reaches the lower lobes before a lobar pneumonia occurs. To a bacteriologist it is almost inconceivable how a microbe entering the anterior nasal meatus with the tidal air should go through the tortuous, moist passage of the nose, past the broad surface of the palate and the post-pharyngeal wall, into the larynx between the false and true vocal cords, down the long tubes of the trachea and bronchi, and finally find a lodging place on the walls of the bronchioles and air cells. The chances of its being arrested before it reaches them seem almost infinite, especially since the tidal air must stop at a comparatively high point in the respiratory channel in inspiration, and flow upward again on expiration. Neither does it seem probable that, becoming arrested at some higher point, it flows downward with the bronchial secretions, when we remember the ciliated epithelium and its function. The lymph channels have been strongly urged as an explanation; but, although our knowledge of the pulmonary lymphatics is very limited, there are many objections to this vague theory which will occur to every one. The day for theorizing has gone by. A theory nowadays should be considered as little better than confession of ignorance.

However small and insignificant an addition to our knowledge the ascertaining of the capacity of the nose as a place of arrest for microbes may be, it seemed so easy of demonstration that I have attempted it. The technical difficulties were many, but have been fairly overcome, though it needs a much more extended and varied research than I have yet made to draw conclusions. The task is easily stated: Ascertain the bacterial contents of the air before and after it has passed through the nose. Glass tubing, of a caliber of one eighth to one fourth of an inch and six inches long, was filled with granulated sugar for three inches and a half of its length, held in place at the bottom by a piece of rolled copper gauze, tightly fitting the tube, leaving enough space at each end for the insertion of a cotton plug. The sugar grains were of a uniform size of forty to the inch. This part of the apparatus was copied from that of Professor Sedgwick and G. R. Tucker, of Boston, to whom I am greatly obliged for a description of their method of air analysis kindly sent to the college laboratory some time before it was communicated to the Society of Arts, in whose proceedings for 1887–'88 it may be found. Their rules for sterilization of the sugar and the apparatus were also followed. For reasons which I need not stop to explain here, it was found best to vary their procedure considerably and adopt, to some extent, the method of Petri (34) with sand. After proper sterilization, the glass tubing was attached by means of stiff rubber tubing to an air-exhaust apparatus. As there was a good head of water in the laboratory, a Sprengel's air-pump was principally used, by means of which one litre of air could be drawn through the three inches and a half of sugar in from forty seconds to a minute. Usually, however, a very perfect air-exhausting apparatus may be obtained by making use of the Allen surgical pump, of the size used for veterinary purposes. About a hundred revolutions of the handle of this instrument, which can be made in forty-five seconds or a minute, will exhaust one litre of air. With either contrivance it is perfectly easy to ascertain the rate at which air will pass by means of a litre flask inverted in water.

It has been proved by Sedgwick, and I have verified the statement, that air passing at about this rate will deposit all its bacterial contents in the sugar.

With this apparatus, then, ten litres of air are drawn through the filter after the cotton plugs used during sterilization have been withdrawn. Then ten litres of air at the same time and in the same locality are drawn through the nose and also through the filter. This is accomplished as follows: The glass tubing with its load of granulated sugar, all thoroughly sterilized, is inclosed by means of a perforated rubber cork in a larger piece of glass tubing and the space between the two loosely packed with absorbent cotton. The end of the smaller tube does not reach to the end of the larger. The filter thus protected from the buccal secretions is put into the mouth and the lips are closed firmly around the outside tubing. If it is held in a horizontal position in the mouth, nothing but air can enter the filter when the suction is begun. During alternate periods of fifteen seconds each the person is directed to hold his breath, making the thoracic walls rigid. Thus practically all the air drawn through the filter must have first passed through the nasal chambers and the post-nasal space. During the fifteen seconds of respiration the air current is shut off by compressing the rubber

tube between the filter and the suction apparatus; consequently the time consumed in the examination of the nasal air is twice that consumed in the control examination. The plan adopted by Aschenbrandt and others of drawing the air up one nostril and down the other before examination, besides other faults, permits the entrance of mucus into the air filter, which it is impossible to protect from contact with the walls of the nasal chambers.

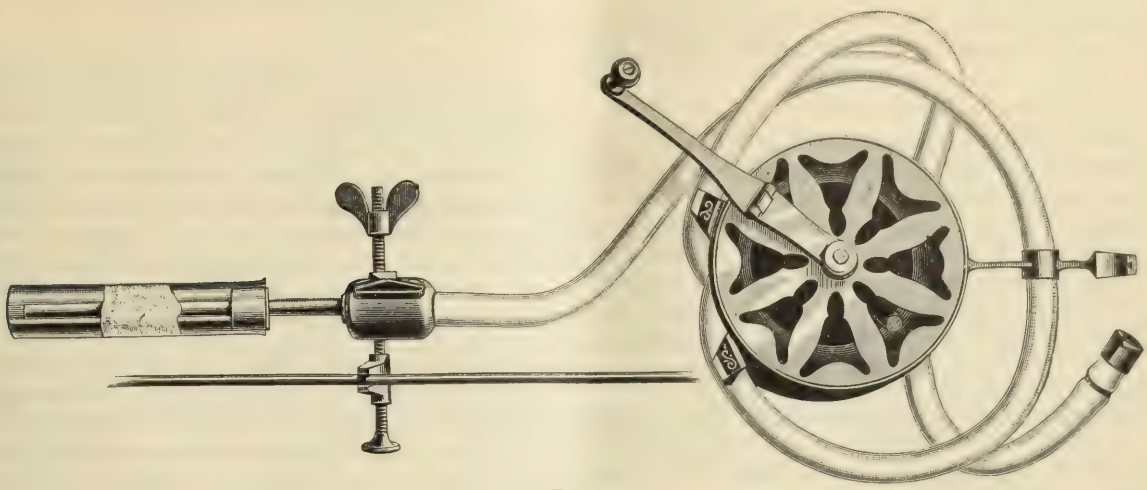


Fig. 1.

After the ten litres of air are drawn through in each case the sugar is dampened and partly dissolved with a few drops of carefully sterilized water to facilitate its removal from the glass tubing. By means of a sterilized stiff brass rod the wire gauze is pushed along the tubing, forcing the wet and partly dissolved sugar out into shallow glass dishes, where it is thoroughly dissolved and mixed with ten-per-cent. nutrient gelatin. The glass tubing is filled with gelatin and stopped at both ends with cotton. The gelatin in the dishes is allowed to solidify slowly so as to insure the complete dissolving of the sugar. It was found that very few, in many cases no, colonies developed in the glass tubing, so completely did the sugar carry along its bacterial contents with it when pushed out. I have described the process hurriedly and omitted descriptions of the routine precautions taken in sterilizing, controlling, and guarding against aerial contaminations, which belong to the technique of careful bacterial analysis.

The colonies developed after several days in the two sets of dishes were counted and compared. As I said before, too few examinations were made to arrive at hard and fast conclusions. I only experimented on my own nose, and have succeeded only recently in getting results free from errors of technique. Speaking in a general way, the nasal chambers in my own case seem capable of filtering out about three fourths to four fifths of the bacterial contents of the air passing at the rate of one litre a minute. The photographs of an examination made during the presence of a considerable quantity of mold in the air illustrate this fairly well. This particular experiment was photographed because the white molds show the difference in a more striking manner than bacterial colonies, but the same proportion seems to hold good with them, as, for instance, in an examination made on April 25th of this year.

Ten litres of laboratory air contained four molds and a hundred and twenty-five bacteria. Ten litres of laboratory air, after passing through the nose, contained one mold and twenty-four bacteria. Of course noses must differ in this respect as much as in other ways, and the rapidity of the current we know makes a difference in the number of both molds and bacteria deposited in Hesse's apparatus. Counting 500 c. c. as the tidal air with each inspiration, we have about nine litres a minute passing through the nasal chambers in normal respiration. In the experiments just mentioned the rate was only a little over one litre a minute. In spite, then, of the apparently well-adapted arrangement of the nasal chambers for a bacterial filter, even at this rate a really large number of bacterial forms are carried at least into

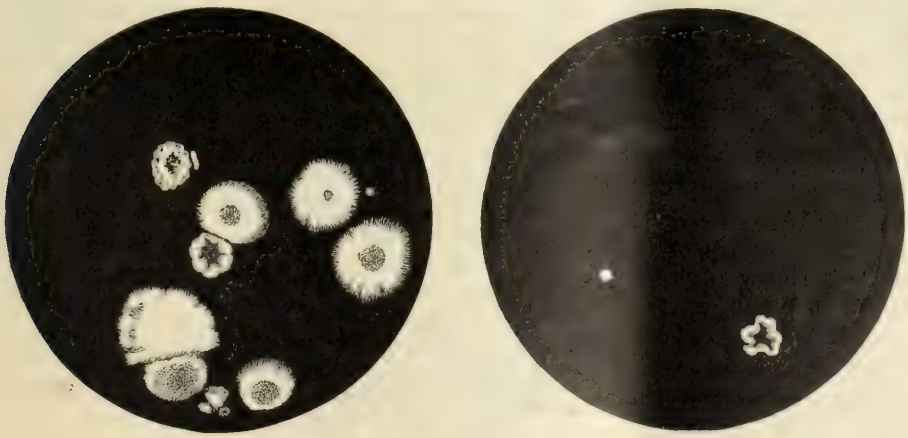


Fig. 2.

Bacterial contents of ten litres of laboratory air.

Bacterial contents of ten litres of laboratory air after passing through the nose and the postnasal space.

the larynx. It is to be hoped that further and more complete and reliable investigations will confirm or refute this somewhat premature assertion. Unless we are to throw aside the very numerous and careful observations made by bacteriologists in pulmonary diseases as useless, it is surely of the greatest importance that we should know something of the mode of ingress of microbes into the deeper pulmonary tracts.

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THE CONSTITUTIONAL TREATMENT OF CARIES AND NECROSIS.

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The surgical aspects of these distinct maladies have been the subject of discussion by surgical writers from the earliest times. Good surgical treatment implies constitutional treatment as well as operative methods. My purpose in submitting this paper is not so much to show any particular method of operative interference as to indicate the great value of judiciously selected constitutional treatment in these particular diseases.

A glance at the minute anatomy of bone, and a consideration of the conditions under which the repair of damage takes place, shows that bone, like the softer tissues of the body, requires good food and pure air, essential factors in the production of good blood, for its normal sustenance. The relation of the digestive process to the maintenance of vigorous and nutritious bodily fluids is apparent to those most inexperienced in the management of disease. Any derangement or impairment of the digestive process, or ferments, produces a consequent impairment of blood supply delivered to the bones. The days and nights of pain incident to the usual course of caries or necrosis disorganize the digestive functions. The shock and fear, and chloroform narcosis incident to the operative procedures, frequently necessitated by these diseases, also undermine the digestive functions.

Children are the most frequent sufferers by these diseases. The impaired digestive functions in children yield more readily to properly selected treatment than is the case with adults. The conversion of starch into sugar by the digestive ferments is more frequently impaired in children suffering from caries and necrosis than is the conversion of albuminoids into assimilable substances. The use of artificial diastase is, therefore, indicated on the best of physiological grounds. Hip-joint disease, caries of the spine, chronic inflammation of the knee, and caries of the long bones are for some reason constantly accompanied by malassimilation and indigestion of the starches. When such cases proceed to a good, sound recovery it is through a thorough restoration of this particular digestive power, or a compensatory increase of the digestive power for hydrocarbons. In no case of hip-joint disease, were the operative methods ever so carefully or skillfully performed, has there been a repair of lesions until the digestive ferments have handled the starches perfectly. The same fact applies to the other varieties of bone diseases above mentioned.

My experience in the treatment of hip-joint and spinal cases, necrosis and caries of the various bones, embraces large numbers of cases, probably because my professional brethren have lacked the patience and perseverance and rigid attention to the digestive power essential to the cure of these long-time maladies. The Trommer extract of malt has been of great service in enabling me to bring numbers of these cases to a happy termination, and in a space of time of shorter duration than is accomplished by the use of cod-liver oil or hypophosphites.

From my case-book I quote the following cases:

Case I.—W. S., aged eight years; parents, farmers; residence, Lenawee County, Mich. Double hip-joint disease; sinuses in the right gluteal fold over the right trochanter near the base of the left Scarpa's triangle, on the inner aspect of the left thigh; could drink milk, but ate no bread or potatoes; was ordered teaspoonful of Trommer's extract of malt every three

hours; was put on a diet of corn meal, bread, potatoes, milk, and eggs. Sinuses were laid open, drainage effected by maintaining free openings with oakum tent; plaster of Paris applied to the thighs and pelvis to limit mobility of hip joints. Sinuses closed at the end of five months; ankylosis of left hip; limited motion of right. Came under treatment in May, 1877; has had no return of the disease to date.

Case II.—Miss F., aged sixteen years. Consulted me on account of a constant, dull, uneasy feeling in the epigastric region; emaciation and pallor; poor appetite; movements awkward; pain in riding; could walk easier than sit; examination of the spine revealed small fluctuating tumor about two inches to the left of the spinous processes, between the eighth and ninth ribs.

Diagnosis.—Caries of the dorsal vertebra, with abscess pointing between eighth and ninth ribs. Put upon the extract of malt, tablespoonful every four hours. Abscess was opened by incision and double drainage-tube inserted to the depth of four inches. Abscess cavity washed out daily with one-per-cent. solution of carbolic acid. Profuse discharge of pus for two weeks; plaster-of-Paris jacket applied; discharge of pus was succeeded by a thin serous fluid; pain disappeared from epigastrium; progressing favorably for two months. Passed into the hands of another practitioner; plaster of Paris removed; drainage-tube withdrawn; sinus closed. So-called blood medicines administered; pain returned in a couple of weeks; sinus reopened; angular curvature developed suddenly. Came into my hands again. Marked angular curvature, gibbosity; abdomen distended and lower part compressed, narrowed in upper portion; severe epigastric pains; tongue white, pasty. Sleepless, feverish. Reapplied plaster of Paris; enlarged sinus and introduced drainage-tube; washed out cavities as before and readministered Trommer's extract of malt, tablespoonful doses every four hours for a year and a half. Drainage-tube came away spontaneously; sinus is healed; plaster was reapplied four times; patient at date has no return. Has married and is the mother of one child, healthy.

Case III.—J. R., aged thirteen years; Monroe County, Mich.; large, raw-boned boy. Had been sick four months; left thigh flexed upon the abdomen; toe inverted; fluctuation in obliterated left gluteal fold; pain in the knee; sleepless; no appetite; temperature 101°. Abscess opened and drainage-tube inserted. Plaster of Paris applied to the leg, thigh, and pelvis; limb and thigh extended under chloroform, one inch added to the right sole; used crutch. Took extract of malt in tablespoonful doses every four hours, and six months after coming under treatment all sinuses closed; injury repaired by ankylosis.

Case IV.—W. R., aged fourteen; residence, Fulton County, Ohio; German parentage; was robust farmer's lad until attacked two months before I saw him with phlegmonous erysipelas of the right leg and left thigh and knee; sinus had opened on the outer aspect of the right leg and behind the external malleolus. Probe passed along the whole length of the right fibula gave the rough feeling indicative of necrosis; left thigh and knee joint swollen; fluctuation in the left ham; fever, chills, hectic; left leg laid open by incision along the course of the fibula, and whole of that bone removed from the malleolus upward. Abscess in the left ham opened by free incision; treated by drainage by means of tent. Knee, left leg, and thigh put in plaster to immobilize left knee. Took Trommer's extract of malt, tablespoonful every three hours. Wound in right leg healed promptly; fever disappeared; abscess in left thigh healed, and knee joint healed by ankylosis in two months after treatment began.

Case V.—German boy, aged nine years; residence, Lenawee County, Mich.; good general health; was lost in woods over night while searching for cattle; fall of snow same night. Boots were ragged; feet suffered terribly from frost. Came under my treatment three weeks after the exposure; had been sick ever since; fever and chills; sinus had opened about the left heel; foot and ankle swollen and œdematous; probe showed the os calcis carious and necrosed. Incision across the heel below the insertion of the tendo Achillis; os calcis removed with forceps; wound washed daily with weak carbolic-acid solution. Took teaspoonful of extract of malt every three hours. Cured in four months, but foot not of much use.

These cases occurred so long ago that plenty of time has elapsed for return of the disease if the cures had not been perfect. They are sufficient to show the value of the treatment employed. Other cases have occurred since and have recovered. Many other cases are still under treatment and will recover.

I attribute the good results in the cases mentioned fully as much to the artificial digestion of starchy foods craved by these patients as to the operative methods employed, and believe that in many instances the cases would have progressed to the same happy ending had the rigid attention to the diet only been employed, but more time would have been necessary.

Correspondence.

LETTER FROM PARIS.

M. Budin on Hæmorrhoids during Pregnancy.—The Use of Chloroform in Obstetrics.—The Employment of Drainage in Large Surgical Wounds.—Caffeine as a Tonic.

Paris, *May 30, 1889.*

M. Budin has just published a handsome volume of his clinical lectures on obstetrics* that met with such success when the author was in charge of the *Clinique d'accouchements*. The opening lecture details the new method of teaching obstetrics, which was devised and first put in force by Professor Budin. This system I referred to at the time, and I can now say that it has met with wonderful success. It is difficult to pick out the most interesting parts of a work that has so much important matter in it, but the lecture on hæmorrhoids during pregnancy, and the one on the use of chloroform in obstetrics, present practical points that will be of interest to the general practitioner. As to the first, M. Budin showed a case of a woman who, up to that confinement, had had no varicose veins or hæmorrhoids, but on this occasion a large hæmorrhoidal tumor persisted after the expulsion of the fœtus. The next day the patient was very ill with pain, that had prevented her sleeping all the night before, and, on examination, there was seen a mass of piles as large as a small orange. A pomade of vaseline and cocaine (one to twenty) was ordered to be applied, and a purgative (sulphate of sodium) was given, but the next day the patient was as bad as ever. Reduction was then made under the influence of a few inhalations of chloroform; all pain seemed to leave the patient at once, and, the sphincter ceasing to contract, the tumor disappeared very rapidly under slight pressure. Afterward a cotton tampon, covered with vaseline and iodoform, was applied, and the case ended satisfactorily. The important fact brought out by this observation is that there is a complete analgesia in painful piles under extremely small doses of chloroform. The patient was conscious all the time, and felt no pain during the reduction. Hæmorrhoids

* "Leçons de clinique obstétricale," par M. Budin, professeur agrégé à la Faculté de médecine de Paris.

have been considered frequent during pregnancy by some authors, while others deny their presence; it is probable that this divergence of opinion arises from the class of patients under observation. M. Budin found only eighteen cases in some three hundred women at the Maternity, but in private practice the number is much greater, owing, no doubt, to the fact that the hygienic conditions are different. The better class of people follow a sedentary course of life during pregnancy, at least in the last months, and they also partake of a rich form of alimentation, so that there is a predisposition in their cases that does not exist in the laboring classes who are confined in the hospitals. The direct cause of hæmorrhoids exists in the increase of volume of the uterus, which acts by compression on the rectal veins; besides this, there is a vascular tension in the organs of the pelvic region which is much increased during pregnancy, and the ano-rectal veins permit of easy dilatation through this extra fluxion.

Constipation then is also usual, and the consequent distension of the rectal ampulla irritates the mucous membrane and causes increased effort during defecation. As to the symptoms and complications, they are the same as in any hæmorrhoidal cases, and the diagnosis of vegetations is not difficult, owing to the bright-red color of the latter. It is essential to remember that hæmorrhage may occur from internal piles during pregnancy, and not to mistake it for some other and more serious bleeding. M. Budin gives Tarnier's method* of turning the rectal mucous membrane inside out in such cases, and it is the most certain way of avoiding a mistake in diagnosis. It is practiced as follows: The index finger is passed into the vagina along the posterior wall, and when it has gone beyond the anal sphincter it is turned forward, like a hook, and continuous pressure is made from above downward on the rectal membrane until it is turned inside out and appears at the anus little by little; then, if there is an internal pile, a smaller or larger black tumor will be seen on the membrane. (It need hardly be said that the finger nail must be cut close before doing this operation.) As to treatment, M. Budin says that one should not fear to purge pregnant women and to advise moderate exercise and baths; but there is a difference of opinion as to the kind of evacuant to be used. Tarnier and others think well of castor-oil, but Fordyce Barker accuses it of causing irritation of the rectum and congestion of the pelvic organs. M. Budin finds that sulphate of sodium (in three- to six-drachm doses) acts very well. Leeches are not applied now to hæmorrhoids, as it is feared that they may open the door to infection. All such patients should use lotions of water for cleanliness, as the use of paper after defecation may bring about hæmorrhage by rubbing too hard and irritating the piles. This small hygienic point is well known to the natives of India, who go out into the fields and proceed after the directions of that great hygienist Moses, who instructed his people to go into the fields, dig a hole, and after covering it over, to wash the part. The Indian natives can be seen to this day carrying a small bowl of water with them on such occasions.

In regard to the use of chloroform in obstetrics, M. Budin gives numerous cases to prove that labor pain can be lessened by quite small doses of chloroform in most cases. It is given here in the manner called "*Queen's chloroforming*"; that is to say, just enough to dull sensibility. In a few cases, however, it is necessary to proceed to complete anæsthesia, which does not prevent labor going on to a successful issue. The principal indication for the use of chloroform in labor is found in extreme pain. Often it is only during the period of expulsion that it is needed, but when the pains are intense during dilatation it may also be used. Rigidity of the os uteri is an important indication. There is an extraordinary degree of tolerance in parturient women for chloroform, so that the contra-indications are extremely few.

The question of suppression of drainage in large surgical wounds, and that of washing out the same, has been before the *Société de chirurgie* for several weeks, and at first thought the idea of giving up drainage seems a backward step. M. Nicaise said he had remarked that the washing out of large wounds favored exudation and retarded cicatrization, so that he had reduced the number of washings and contented himself with drying out the wound and putting in a drain which he could take out on the second day. He would not say as yet suppress the drains, but reduce the washing out and thus do away with the need of much draining. M. Kirmisson seemed to think that the use of drains had been abused, but that there should be defined and regular rules laid down for their use. Whenever the tissues could be brought in close contact by the dressings used there was no need of putting in a drain, but in vast wounds covering a great surface they were needed. M. Terrier thought that to drain or not to drain depended on two important points. The first was as to whether the tissues cut were healthy or not; if not, then drains must be used, and where there was considerable effusion to be feared, they should be used. M. Jules Bœckel (of Strassburg) said that he had first of all used a drain one day only, and then had given them up altogether, and at the present moment he *considered them as a surgical error*. He then gave details of thirty-three grave successful surgical operations in which he had not used drainage. These operations had been castrations, amputations of the limbs and of the cancerous breast, resection of the knee, etc. M. Bœckel related the details of some extensive operations for secondary cancer where he had had to remove the axillary ganglions and do an osteotomy of the clavicle, and yet the wounds had healed without drains and with his single dressing in a week. He depended on perfect antiseptic dressings and careful washing of instruments, with drying the wounds with iodoform gauze, and a small number of ligatures. The dressing was made to act by compression.

Dr. Henri Huchard has some good observations to present on the use of caffeine as a tonic or excitant in adynamic states. He considers it much superior to ether, which may be more exciting but is much less tonic in its action. The diuretic action of caffeine is now admitted by everybody, but its cardiac action is still contested. One point in the use of caffeine in adynamic states is that it can be given in considerable quantities without danger. In one case of extreme weakness (with from forty to fifty stools a day) as many as ninety-five hypodermatic injections of caffeine were given in a month. Dr. Huchard uses these injections with great freedom in typhoid fever at the Bichat Hospital, as well as in cases of serous pneumonia, and reports a number of cures in very grave cases. In experiments that M. Huchard made on animals, he found that the drug acted on the nervous system, and Semmola (of Naples) states that its principal action is on the medulla oblongata. In any case two important facts are evolved from Huchard's experiments: First, that caffeine has a remarkable efficacy in large hypodermatic injections in all adynamic cases. Secondly, it can be given in large doses without danger. M. Huchard employs the following formulas: ℞ Caffeine, 2 grammes; benzoate of sodium, 3 grammes; and distilled water, 6 grammes. The solution must be made while hot. Each syringeful contains 20 centigrammes of caffeine. Sig.: Inject 6 to 10 syringefuls *per diem*. The second formula is: Caffeine, 4 grammes; salicylate of sodium, 3 grammes; distilled water, 5 grammes. Here the syringe contains 40 centigrammes of caffeine, and from four to five injections are given each day.

* Well known in this country as Storer's method.—Editor.

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THE FUNCTION OF THE RENAL GLOMERULI.

IN his "Lectures on Important Symptoms," in treating of albuminuria, Professor Grainger Stewart considers the glomeruli of the kidney as mere filters, leaving out of consideration the possibility that their epithelium may be of a secretory nature. In a recent thesis on "The Functions of the Glomeruli of the Kidneys; a Contribution to the Study of Albuminuria," Mr. J. G. Adami, demonstrator of pathology in the University of Cambridge, discusses the various theories of renal activity at some length, especially with reference to the part played by the glomeruli.

The mechanical theory, based upon the researches of Ludwig and his school, broke down when Bowman, by injecting sulphindigotate of sodium, demonstrated the passage of substances through the cells of the tubuli contorti, and showed that these cells, instead of absorbing, excreted into the lumen of the tubules. Notwithstanding this, there are still able men that hold, with Professor Grainger Stewart, that the general blood pressure is the determining factor in the production of the fluid part of the urine. Adami shows, however ("Practitioner," April, 1889), that blood pressure plays a secondary *rôle*. This becomes evident, says Adami, when we study the cases in which, the general arterial pressure remaining constant, the outflow through the renal veins is obstructed. Ludwig pointed out, a quarter of a century ago, that narrowing or temporary closure of the renal veins was accompanied by a rapid slowing or stoppage of the flow of urine, notwithstanding the undiminished general arterial pressure, which is accompanied by increased pressure in the glomerular loops. Ludwig's explanation of this, that the dilated capillaries so pressed upon the tubules as to constrict them, close their lumen, and prevent any passage through them, was combated by Heidenhain, who propounded the theory that it was the rate of flow through the glomeruli, rather than the blood pressure, that governed the passage of water through the kidney. This theory, however, does not imply that the blood pressure is not a factor in the process, and the recent work of Paneth has confirmed and established Heidenhain's contention. And Munk cites experiments to show that the rate of blood flow, and not simply the blood pressure, determines the glomerular excretion, though he did not in his experiments entirely eliminate the factor of blood pressure.

It is now generally conceded by physiologists that it is the velocity of the flow through the glomeruli, and not solely the blood pressure in them, that governs the excretion of the fluid of the urine. This being admitted, the question now arises: What is the nature of this excretion? Is it simply a process of filtration, or is it more of a process of secretion? These questions are of great importance in the interpretation of albuminuria. Both Heidenhain and Cohnheim have insisted upon the secretionary view, but Senator, Runeberg, and Grainger Stewart hold to the theory that the glomeruli act simply by transudation. Of course the composition of a secretion entirely precludes the idea that it is a filtrate, nor can a secretion be explained by the laws of filtration; its quality is determined by the specific characteristics of the gland cells. Given a membrane that, while the blood pressure remains constant, at one time permits and at another time prevents the passage of fluid from the blood, such membrane must have specific properties, too complex to be accounted for by the laws of a simple form of physical action. Senator's theory is that the fluid portion of the urine is derived in part from the glomeruli by transudation, and in part from the epithelium; and he considers that the cells of the tubules, like other cells, in secreting any substance always excrete with it a certain amount of watery fluid. Grainger Stewart thinks that we may hold with certainty that the water is mainly eliminated by filtration through the Malpighian bodies; but the urea and other urinary solids are not discharged by filtration, but by a secretive process performed by the cells of the tubules; and that along with this secretion, as in the case of other glands, a certain amount of watery fluid passes.

But the supporters of the filtration theory have a great obstacle to contend with; they must explain how it is that a filtrate from the albumin-containing blood serum is normally free, or almost entirely free, from albumin. If the capillary loops of the glomeruli with their epithelial covering form but a passive filtering membrane, then the loops must obey the same law as, and correspond in general action to, other animal membranes. All other transudations contain albumin, and fresh animal membranes, when used as filters, always allow the passage of albumin. Why does not the normal glomerular membrane permit the passage of albumin always in the normal state? Grainger Stewart himself admits that, even after considerable concentration, albumin is not to be discovered in what he rightly terms normal urine. It may be said that the cells of the tubules reabsorb the albumin transuded through the glomeruli. But Senator has shown that the cells of the tubuli, so far from absorbing, may actually excrete albumin under certain conditions. Grainger Stewart inclines to the opinion that "the blood pressure in the capillary loops, and the walls of these vessels with their epithelial coverings, are so balanced as to permit of the transudation of fluid, and yet completely to prevent the passage of albumin . . . and at all events we may hold with certainty that water is mainly eliminated by filtration through these structures."

There is certainly a definite blood pressure in the glomerular loops. But a high pressure does not prevent the passage of albumin through simple animal membranes. With a pressure below that which in the dog and in man is accompanied by a total cessation of urinary excretion, albumin continues to transude through membranes outside the body. Where, then, asks

Adami, occurs the balance of which Grainger Stewart speaks? If we say that such a comparison between dead and living membranes is unjust, we must acknowledge that the living membrane has some factor that the dead one has not; that the glomerular walls have specific properties and actions unaccounted for by the laws of filtration and transudation; in other words, we are on the verge of asserting that the glomerular epithelium may exercise a selective function; which is the position in which Stewart finds himself.

There are other grave objections to the filtration hypothesis. Runeberg has shown that, at a mean pressure of 73 mm. of mercury, as much as 95 per cent. of the albumin in solution may pass through an animal membrane; even at a pressure of 7·3 mm. there is still a high percentage. At the ordinary blood pressure of 120 to 150 mm. of mercury there should be no great diminution in the amount of albumin filtered. What is the fact? The picric-acid test shows that in the normal state there is less than 0·00015 per cent. of albumin passed! According to Hammersten, normal blood serum contains 4·516 parts of serum albumin; so that, even if normal urine contained 0·2 instead of less than 0·00015 per cent. of albumin, the theory of urinary filtration is still at fault, even if we admit that the greater portion of the urinary fluid is excreted through the tubules. Again, says Adami, we know that blood serum contains large amounts of two proteids—serum albumin and serum globulin. Both transude through fresh animal membranes, and, serum globulin being the more diffusible of the two, it should appear in the urine in cases of albuminuria. The two proteids should be present together in the urine, and in fairly constant proportions. But such is by no means the case. The theory that glomerular activity is of the nature of simple filtration or transudation fails absolutely. We must consider the glomeruli as possessing functions of a selective or secretory nature, permitting the passage of some substances and preventing the passage of others. In favor of this view there are the following facts: The glomeruli are not solely blood capillaries; each capillary loop is covered with a fine membrane with a single layer of epithelium the cells of which must be considered as having actively vital properties, one of which is contractility, as shown by Hedinger. The histology of the tubular epithelium, of which the glomerular epithelium is but a part or a continuation, shows that it is of a selective and secretory nature. Experimental physiology shows the same thing. The investigations of Afanassiew and Hunter in regard to hæmoglobinuria confirm this view. Adami does not allege for the glomerular epithelium any synthetic power; his argument is that it has a selective power, active and not passive, producing a secretion and not a transudation.

What, then, are the factors that determine the appearance of albuminuria? It is admitted that albumin, when it appears in the urine, passes through the glomeruli. Senator's experiments seem to prove that some of the albumin has its origin in the uriniferous tubules, "and it is not improbable that in parenchymatous nephritis and in venous engorgement of the kidney a certain, and it may be a large, proportion of the albumin originates from the affected cells of the tubuli." There is no denying that infinitesimal amounts of albumin may be present in normal urine. The absence of ascertainable quantities is probably due to the healthy state of the tubular cells and to the normal functional activity of the glomerular epithelium, which prevents the passage of albumin and globulin, provided they are not in the blood in excessive quantities. Aside from this excess, the amount of albumin passed is mainly determined by the state of the glomerular epithelium, which in a condition of lowered vitality permits the egress of a fluid more of the nature of a transudation; the lower the vitality of the epithelium, the more is the fluid passed of the nature of a filtration, the epithelium having to a certain extent lost its selective and controlling power. In this way the proteids of the blood serum sink to a percentage below the normal. Reasoning on these lines, we can, says Adami, explain the graver forms of Bright's disease, and also many cases of transient albuminuria. The factors that, singly or in combination, temporarily lessen the rate of blood flow through the glomeruli, and thus cause imperfect nutrition of their delicate walls, or directly lead to imperfect nutrition and lowered vitality, will probably explain most cases of transient albuminuria, febrile, toxic, puerperal, and functional.

MINOR PARAGRAPHS.

THE EXTERMINATION OF HYDROPHOBIA IN ENGLAND.

In "Nature" for July 4th we find an account of a meeting at the Mansion House, London, held July 1st, to discuss the prevention of hydrophobia. The increase of rabies, on the one hand, and, on the other, the efforts of certain coteries to resist the introduction of the Pasteurian methods into England, have caused this rally of the friends of Pasteur. Two letters, among others, were read at the meeting, written by Professor Huxley and M. Pasteur. Huxley's letter characterizes very pungently the opposition of the anti-vivisectionists as coming from a class of people "who prefer that men should suffer rather than rabbits and dogs." His opinion of the value of M. Pasteur's work is positive. He says: "Medicine, surgery, and hygiene have all been powerfully affected by the labors of Pasteur, which have culminated in his method of treating hydrophobic victims." The letter of M. Pasteur, dated as late as June 27th, was read by Sir Henry Roscoe, M. P. It is interesting as giving his latest figures, amounting to nearly seven thousand patients treated. The number, to June 1st, was 6,950, and the deaths were 71. In short, the general mortality has been 1 per cent., but, if an exception is made of the cases in which hydrophobia had "burst out" before the curative process could be complete, the general mortality is reduced to 0·68 per cent. M. Pasteur assures the English people that they can "stamp out" rabies in their country if the proper measures, which are entirely feasible, are carried out, and he cites to them the fact that Norway, Sweden, and Australia are countries where the disease is not known.

THE ANTIPARASITIC TREATMENT OF CHOLERA.

Herr Loewenthal has been at work at the Cornil laboratory in Paris, studying the relations of salol to the bacilli of cholera. He is convinced that he has found the specific antiparasitic for that disease, and he has so far convinced the French Govern-

ment that they have issued to him a remarkable commission to enable him to pursue, with dignity and independence, his inquiries at Tonquin, where the disease exists. His commission gives him high rank in the regular French service, without exacting any alienation of his allegiance to the country of his birth. The necessary funds have been appropriated by the Government to pay the expenses of these researches. Herr Loewenthal regards salol as perfectly harmless—that is, as much as five drachms may be taken in a day. In experimenting upon himself, he has taken as much as seventy-five grains night and morning. The morning dose, taken fasting, caused a passing vertigo only, while the evening dose produced no appreciable symptoms. He proposes to use thirty grains three times a day as a prophylactic in the case of those exposed. For a patient showing the first symptoms of cholera he would begin, according to an abstract in the "Medical News," with sixty grains for the first dose, and then follow with fifteen grains hourly.

FOREIGN STUDENTS AT VIENNA.

The "Progrès médical" states that a society has been formed in Vienna to provide hospital accommodations for the students, medical and others, who fall ill. In May last, one sixth of the medical students at the University were foreigners, and one thirtieth were Americans; or, more exactly, of 3,185 of all nations, 530 were foreigners and 105 cisatlantic students. The "Vienna Weekly News," printed in English, for the benefit of the Americans and others conversant with that tongue, has opened an inquiry office, near the General Hospital, for the free use of English-speaking students seeking information as to lodgings, lectures, and other matters.

FAITHFUL SERVICES RECOGNIZED.

Dr. James F. Hartigan, of Washington, has been appointed to an important Austrian consulate, and it is reported that the office has been given to him, in preference to many others, on account of an impairment of his health incurred in governmental service. While the fever prevailed in Florida, he undertook some special medical duty in that State for one of the departments at Washington, in the course of which he became ill and has been disqualified for active practice ever since. It is pleasing to make mention of this, both as a preferment won by faithful medical work and as an unusual and honorable act on the part of the authorities.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending July 23, 1889:

DISEASES.	Week ending July 16.		Week ending July 23.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	23	0	24	6
Scarlet fever	50	9	41	11
Cerebro-spinal meningitis	1	1	3	3
Measles	55	3	67	5
Diphtheria	76	26	98	23

The White Mountains Medical Society will hold its semi-annual meeting at Hanover, N. H., on the 1st and 2d of August, in conjunction with the Connecticut River Valley Medical Society and the White River Medical Society. Dr. G. W. McGregor will preside, and members of the faculty of Dartmouth Medical College will take part in the proceedings. The subjects announced are as follows: "The Radical Cure of Hernia," by Dr. Conner; "Acute Glaucoma," by Dr. Webster; "Modern Surgical Methods of treating Obstructive Diseases of the Nose and Naso-pharynx," by Dr. Hooper; "The Symptoms and Treatment of Fibroids of the Uterus," by Dr. Mundé; "Antiseptic Obstetrics," by Dr. Parish; "The Mechanism of Insanity," by Dr. Cowles; and "Sulphonal," by Dr. Field. Clinics will be held by Dr. Conner, Dr. Webster, and Dr. Hooper.

The College of Physicians and Surgeons.—The new catalogue, which has just appeared, shows that the number of students in attendance last year was 701, a smaller number than usual. This decrease was due, very naturally, to the more rigid requirements of the new curriculum. Dr. James W. McLane is publicly announced as president of the college, but still retains the professorship of obstetrics. Dr. Richard J. Hall, professor of anatomy, has resigned and his place has been given to Dr. George S. Huntington, for some years demonstrator of anatomy. Dr. Charles T. Parker is made assistant demonstrator of anatomy. The incoming class already numbers 220, a hundred more than entered last year.

Recent Deaths.—Dr. Alvin Ava Austin, of the navy, has died at New London, Conn., after an illness of two weeks. He was a native of Missouri, studied medicine at the Jefferson College, Philadelphia, and graduated there in 1873. In 1874 he was commissioned assistant surgeon, and five years later was promoted one grade higher. He was ordered to the New London station in 1879, and of late had been on duty on the steamer Gedney in the Coast Survey. His home was in Philadelphia.

Dr. Harris H. Beecher, of Norwich, N. Y., died on July 14th, at the age of sixty-nine years. He was a native of Coventry, N. Y., and a graduate, in 1847, from the Castleton Medical College. He was a member and officer of the Chenango County society. He was assistant surgeon, and afterward historian, of the 104th Regiment. During his service in the war he received a disabling injury. He was a platform speaker of more than local repute, and was a member of the Assembly in 1874.

Dr. Edwin De Witt Nooney, of Stratford, Conn., died on the 18th inst. He was forty years of age. He was an alumnus of the College of Physicians and Surgeons, in the class of 1871. He was medical examiner for his district.

The "Medical and Surgical College of the State of New Jersey."—An officer of this institution, referring to our article entitled "The Transplantation of a Medical Fraud," published in the issue for July 6th, has written us a letter in which he states that his institution has no connection with the late "United States Medical College" of New York, and never had any; and that it was chartered by the New Jersey Legislature in 1870.

The late Dr. Stephen Wickes.—At a special meeting of the staff of the Orange Memorial Hospital, held on Tuesday, July 9, 1889, all the members being present, the following action was taken upon the death of Dr. Stephen Wickes:

Whereas, In His infinite wisdom, our Heavenly Father has taken to himself our beloved colleague, Dr. Stephen Wickes.

Resolved, That this staff has lost a faithful co-laborer. He was zealous and devoted to all the duties pertaining to his office as a medical attendant of this institution. He was an earnest Christian gentleman, whose character and disposition were molded by Christian grace. He was modest, retiring and considerate, charitable, and always ready to give of his time and strength to those in need. He was beloved by those to whom he ministered, and by those with whom he was associated in relieving the sufferings of the sick. Words do not truly express the veneration, respect, and esteem which were accorded to our

deceased friend and professional brother by all who knew him, within medical circles and by the general community. His literary labors have resulted in the production of much valuable matter, especially of a historical nature, that will serve as a memorial of a useful life. To his family we offer our heartfelt sympathy in their great sorrow, but they still will share with us a joy and comfort that Dr. Wickes was ripe in years, rich in honors, and sure of reward for a helpful and blameless life.

[Signed.] T. R. Chambers, T. W. Harvey, George Bayles, } *Committee.*

The American Rhinological Association will hold its seventh annual meeting in Chicago, on the 28th, 29th, and 30th of August. A committee will report on the relation of nasal inflammations to affections of the mind.

Change of Address.—Dr. Horace T. Hanks, to No. 766 Madison Avenue.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from July 14 to July 20, 1889:*

Brechemin, Louis, Captain and Assistant Surgeon. By Par. 1, S. O. 159, A. G. O., July 12, 1889, ordered to Illinois National Guard, near Springfield, Illinois, during remaining portion of encampment.

Ball, R. R., Lieutenant and Assistant Surgeon, is granted leave of absence for fifteen days. Par. 3, S. O. 87, Department of the Missouri, July 9, 1889.

Burton, H. G., Captain and Assistant Surgeon. By direction of the Secretary of War, the extension of leave of absence on surgeon's certificate of disability granted in S. O. 22, January 26, 1889, from this office, is further extended two months on account of sickness. Par. 1, S. O. 162, A. G. O., July 16, 1889.

Ines, F. J., Assistant Surgeon, now at Fort Lyon, California, will proceed to camp near Oklahoma City, Indian Territory, and report to the commanding officer for duty, relieving Captain W. C. Gorgas, Assistant Surgeon, who, when so relieved, is authorized to avail himself of the leave of absence granted him in Par. 2, S. O. 84, c. s., Department of the Missouri. Par. 1, S. O. 87, Department of the Missouri, July 9, 1889.

Society Meetings for the Coming Week:

Wednesday, *July 29th:* Gloucester, N. J., County Medical Society (quarterly); Middlesex, Mass., North District Medical Society (Lowell).

Letters to the Editor.

DR. TRACY'S MORTALITY STATISTICS.

New York, *July 23, 1889.*

To the Editor of the New York Medical Journal:

Sir: I have waited, before answering your somewhat offhand criticism of my report on death-rates for 1888, until I should be able to send you a pamphlet copy of the report, which I inclose. In his airy condemnation of the tables as worthless, your critic shows that he has not read the text of the report, and does not know what the figures purport to represent. There are four ways in which they may be incorrect:

1. The census of the tenements may have been incorrectly taken. But the police officers inspect each tenement from top to bottom twice a year. During the last inspection they also took the census. As each man was obliged to visit only five or six houses a day, to complete his district within the given time, the added duty was not onerous, and there is no reason to suppose that the figures obtained were not as accurate as those taken by the enumerators of the United States census. Moreover, in several cases, taken at random, other officers or clerks were sent to verify the census of houses, and the second report practically tallied with the first. When it did not there was found to be a good reason for it—a family had moved out or in, or some one had died or been born, or the like. In this way the population of 32,390 tenements was obtained, by street and number, comprising 1,093,701 persons. Can your critic suggest any way of getting a more accurate census?

2. The number of deaths given may not be correct. We have reason to believe that all the deaths in the city are reported at this office. No dead body, too large to be carried in a cigar-box, can be taken out of the city, or buried in any cemetery within it, without our knowledge. Each death was copied on a small card, giving the street and number, cause of death, age, date of death, and the number of the doctor's certificate. These cards are filed alphabetically and numerically, so that the deaths during the year in any house in the city can be ascertained within a few seconds. Deaths in institutions, when the previous residence of the patient was given on the certificate, were referred to such residence in the card catalogue. Can your critic suggest any more accurate method of determining the number of deaths in each house?

3. The total population of the city may be underestimated. I have made the estimate in the only way I know of that promises to give a result which is not wholly guesswork, but has a foundation to start from. The method is stated in the report. Can your critic suggest one which is likely to give a more accurate result? If he can, I should be glad to adopt it.

4. The figures from which the tables are made may have been added incorrectly. I used in all computations a mechanical adder of unvarying accuracy, and the results all correspond.

The work of compilation was enormous. Every house was taken singly, the deaths and population combined carefully by myself alone, in lack of sufficient clerical assistance, and it took me nearly six months to do it. Both the census, house by house, and the deaths, each one certified, are in such shape that any skeptic who chooses to do so can verify them for himself in the case of any particular house or houses. Under these circumstances I must plead, in my own justification, that any critic, instead of dismissing the tables with a wave of the hand, ought to show what precautions have been neglected in their preparation.

The figures quoted by your critic are not contained in the body of the report, but in a sort of addendum, thrown in with a deprecatory remark, as slightly corroborative of the report. Perhaps it had better have been left out, but not for the reason your critic suggests, for that is based upon an entire misunderstanding of the figures. He says:

	1869.	1888.
Total population	894,419	1,526,081
Tenement "	468,492	1,093,701
Other "	425,927	432,380

showing that while the tenement population has increased more than 600,000 in the twenty years, the population of the dwellings has increased only 6,500, which is preposterous. And so it is.

If he had read a few lines below, he would have seen that in 1869 the tenement-house was one containing four or more families, and in 1888 one with three or more—*i. e.*, the tene-

ment-house population in 1888 includes all persons living in houses occupied by three families, which were included in the other part of the population in 1869. The exact population of these houses I can not give just now, but it probably constitutes the greater part of the class included in my tables as living in houses containing less than twenty tenants. These amounted to 121,815, a certain proportion of which, say 100,000, is to be deducted from one class and added to the other in order to make the comparison your critic desires to make. This would give, instead of his figures, a tenement population in 1888 of 993,701, and a dwelling population of 532,380, or, as compared with 1869, an increase of 535,209 in the tenements and of 106,453 in other dwellings, which is probably not far from the true proportion. ROGER S. TRACY, M. D.

*** Whether or not our remarks on Dr. Tracy's figures were "offhand" and "airy," our readers can determine for themselves by reference to the article, which was published in our issue for June 29th, on page 718. The article opened with the intimation that it dealt with Dr. Tracy's statistics "as given in the newspapers." So long as the results of scientific investigations are given to the newspapers in advance of their publication in a complete form, the inadequate versions given in the newspapers will necessarily be taken as the basis of criticism.

A GUNSHOT WOUND DISGUISED BY A STAB.

BRADFORD, PA., *July 12, 1889.*

To the Editor of the New York Medical Journal:

SIR: An interesting case of murder has just occurred here. I wish to call your attention to it, to see if it has a parallel. A dissolute woman shot her lover in a drunken quarrel. The ball (·32 caliber) entered the left thigh at the middle of Scarpa's triangle; the man was sitting in a chair about ten feet from her at the time. She was alone with him in the room for some little time after, and, evidently to cover the shot wound, stabbed him to the bone. The external wound presented nothing different in appearance from a knife thrust, and the first autopsy revealed nothing more. During the progress of the coroner's investigation she changed her first story—that he had stabbed himself—stating that she had shot him in self-defense, and afterward "gone after" the ball with a case-knife, to get it out and save him. A second examination resulted in finding the ball.

JAMES JOHNSTON, M. D.

Proceedings of Societies.

MASSACHUSETTS MEDICAL SOCIETY.

One Hundred and Eighth Annual Meeting, held at Boston, Tuesday, Wednesday, and Thursday, June 11, 12, and 13, 1889.

The President, Dr. DAVID W. CHEEVER, of Boston, in the Chair.

Aseptic and Antiseptic Surgery.—Dr. H. L. BURRILL, of Boston, read a paper on this subject, in the Section in Surgery, in which, remarking upon the great value which the new science of bacteriology was destined to have with reference to the department of practical surgery, he proceeded to describe in detail a number of experiments conducted by himself and Grenville R. Tucker, which were intended to show by what methods and by the use of what chemical agents the various instruments and the separate steps in operative surgery might be rendered practically aseptic.

1. As to the preparation of the room for an operation, he said that all movable objects should be removed; then the room should be carefully swept and dusted, and the walls sponged over with a sublimate solution (1 to 1,000). In emergency cases nothing should be disturbed.

2. As to the toilet of the surgeon and his assistants, their hands should be washed according to the usual methods—viz., soap, nail-brush, etc., then immersed in ether, then in corrosive-sublimate solution (1 to 1,000).

3. As to the preparation of the operative field, it should be shaved if necessary, scrubbed with soap and water, and then washed with ether and corrosive sublimate (1 to 1,000).

4. As to the sterilization of instruments, Dr. Burrill concluded that of all methods, that of baking the instruments in an oven at a temperature of from 140° to 160° C. was the best. A higher temperature injured them. Needles should be subjected to a similar process.

5. As to the disinfection of sponges, steaming caused great shrinking; the most satisfactory method, attaining at the same time to well-nigh perfect sterilization, consisted in washing sponges in running water again and again, then placing them in a solution of permanganate of potassium for twelve hours, then washing them in oxalic acid, then washing, then placing in carbolic acid (1 to 40) in jars, and storing for future use.

6. As to ligatures, they should be taken from original bottles, wound upon glass spools, and placed in a solution of corrosive sublimate (1 to 1,000) in a bottle specially designed by Mr. Tucker.

7. As to irrigation, corrosive sublimate (1 to 4,000) was most satisfactory.

8. As to the dressings, to render them aseptic they should be taken in the shape of bleached gauze, and subjected to a temperature of 150° C., then saturated with a ten-per-cent. solution of glycerin, then dried. Thus treated, they were possessed of marked absorbent properties, excelling in this respect all other dressings.

In conclusion, the author urged the importance of putting these methods into practice, and, though he admitted the difficulty of absolute sterilization, yet it was possible to approach very closely thereto. Every surgeon, he thought, should operate with thoroughly cleansed hands, with thoroughly cleansed instruments, upon a thoroughly cleansed patient.

In the discussion, Dr. J. C. WARREN, of Boston, remarked upon the ill effects oftentimes arising from a too free use of the so-called germicides in efforts to procure asepsis. The safety of drugs in this respect was inversely proportional to their power as germicides. Boric acid, for instance, was perfectly safe, yet had no antiseptic action whatever, as it was used in ordinary wounds. He could not advise too strongly against a too lavish use of antiseptics in the dressing of wounds. He cited a case of carbolic-acid poisoning in a patient suffering from slight burns of the hands and face, which had been treated with carbolized vaseline (1 to 40). Since having a patient suffer from high temperature, insomnia, and then delirium, because of a too generous use of iodoform in powder after an operation for proctocele, he had ceased using it, preferring the gauze instead. He did not mean to convey the idea that he looked with disfavor upon antisepsis. He would always use germicides with a view of equalizing the equation of personal cleanliness, and of counteracting the general tendency to dirt in patients. Something more was needed than simple soap and water.

The speaker referred to the series of experiments by Watson Cheyne, which tended to prove that different portions of the body were possessed of different powers of resistance to the influence of infection by bacteria and micrococci: for example, the peritoneal cavity was remarkably tolerant of the action of

bacteria or septic materials, and did this not explain the success attending surgeons in their operations in this region, where no antiseptic precautions whatever were taken? Other places more cellular in structure were less tolerant, and disregard in taking antiseptic precautions would show correspondingly bad results in operations.

Dr. A. T. Cabot, of Boston, remarked that the chief use to be made of antiseptics was in the way of preparation—preparation of the hands, sponges, instruments, and surface to be operated on. This being done, we could proceed much as surgeons used to—with care that the instruments did not come in contact with objects not previously disinfected. He said that the two agents most promotive of putrefaction, and thus of poor results in operations, were (1) moisture and (2) heat. The former could be largely done away with by proper attention in applying the dressings. All blood should be scrupulously sponged out before closing the wound; a drainage-tube should be properly introduced, and then firm pressure made and kept up while the outside bandages were being arranged, and in this manner prevent the filling up of the wound with blood and serum. It was often desirable to sew the deeper parts of a wound together, so that healing by first intention might result. As to the use of iodoform, boric-acid powder, etc., he believed that the explanation of their favorable action on wounds and suppurating surfaces was to be found in their drying qualities. Dressings should always be dry and have great absorbent power. When impregnated with these powders, they possessed these qualities to a marked degree, and so kept the wound dry and promoted rapid healing. If he were compelled to abandon either antiseptic washes or dry dressings, he would unhesitatingly give up the former.

Antipyretics.—In the Section in Medicine, Dr. E. N. Whittier, of Boston, read a paper on this subject, which began with a definition of normal temperature and allusion to the methods by which it was maintained. It was contended that heat production and heat dispersion, occurring under the controlling influence of the thermotaxic mechanism, determined a condition which in health prevailed, and was called *normal temperature*. The subjects of the various papers which had of late appeared on the topic of fever were next brought up, and it was maintained that it was needful to set forth the prevailing views concerning the nature and origin of fever before an intelligent discussion could be held on the subject of the treatment of fever. This the reader proceeded to do, and cited various authorities to prove that bacteriology, as well as experimental pathology and physiology, were all agreed as to the nervous theory or doctrine deserving all the prominence that it had obtained. He defined fever as a symptom complex in which disordered heat occupied the dominant position and was necessarily the essential feature, and associated therewith, so intimately as to be a part of the process, were the derangements in the functions of the circulatory, respiratory, muscular, digestive, glandular, and other structures.

Papers by Dr. McAllister, Dr. Maclegan, Dr. Austin Flint, Professor Welch, Professor H. C. Wood, and prominent physicians of the German school, were summarized, and a synopsis was given to substantiate the prevailing beliefs as to the nervous origin of fever.

Antipyresis was defined to include all measures taken to reduce temperature and to resist the noxious influence of the various infectious and toxic fever-producing agents. Antipyretics were divided into antifebrile and antithermic remedies.

Antifebriles included the false antipyretics so called which acted on the vaso-motor system, and all measures which were conducive to the abstraction of heat and at the same time to the impartment of tone to the nervous system or to the energizing nerve centers. Under the head of antithermics were classified the modern synthetical compounds which belonged to the aromatics. The remaining portion of the paper was devoted to the discussion of the qualities and properties of those antithermics whose physiological, therapeutical, and toxicological attributes had been, by careful experiment both at the bedside and in the laboratory, proved to be of value in controlling high temperatures. They included antipyrine, acetanilide, phenacetine, and methacetine or pyrodine. The most valuable feature of the whole paper was the phenomenal showing by the author of the powerful influence in the control of infectious diseases of the reduction of temperature in the energizing nerve centers through the means of cold baths as antifebrile agents. A careful review of the various papers that had been written on the subject, particularly of the results obtained by Brand, of Stettin, and his followers, both German and French, showed that results of treatment by all previous and present methods for the control of infectious disease (chiefly typhoid) and the reduction of the mortality rate were insignificant as compared with the results obtained by cold baths and antifebrile remedies. Statistics furnished by Ziemssen, by Brand himself, by Glenard, and the summary recently published by Baruch, were collocated and reduced to tables to likewise show that no other method had ever shown any results approaching this in the reduction of the mortality rate. The paper was brought to a close in giving utterance to the wish that this method should find more frequent use, and that we should no longer ignore its claims to our approval. The paper was discussed by Dr. F. C. Shattuck and Dr. F. H. Williams, of Boston.

On Pain in the Small of the Back and Hips.—Dr. J. A. Jeffries, of Boston, read a paper on this subject before the general session of the society.

Modern Methods in Teaching Clinical Obstetrics.—Dr. Edward Reynolds, of Boston, read a paper on this subject in which he spoke of the larger amount of material now at the command of the department of obstetrics at the Harvard Medical School, and said that systemization now enabled them to make the fullest use of the same for clinical teaching, and thus the student was now enabled to enter practice better equipped than ever before for his work. He proceeded to give in detail the steps in the management of patients from the time of their first placing themselves in charge till their subsequent discharge, and mentioned the duties which thereby devolved upon the students detailed to manage the cases. In conclusion, he gave a summary of the cases of persons treated for the past year as out-patients at their homes, and surrounded as they were by the most unfavorable sanitary conditions, and showed how the mortality rate had been less than one tenth of one per cent.

The Treatment of Malignant Disease by Escharotics.—Dr. J. C. Munro read a paper with this title in which he emphasized the fact that only in a small number of cases was treatment by escharotics advisable, and then only when treatment with the knife or sharp spoon was impossible. Next to the actual cautery, he considered nitric acid to be the strongest of caustics, then sulphuric, hydrochloric, glacial acetic, chromic, and carbolic acids in the order named. The two most convenient forms of escharotics were chloride of zinc and arsenic in the form of pastes; the latter to be preferred, since it was far less painful. The best paste was one consisting of acacia, one part; arsenic, two parts. This should be applied over the diseased area for about three days—*i. e.*, till a line of demarkation formed—then a poultice should be applied. The author then gave a short review of methods of treatment by caustics, by famous men of more or less questionable repute, from the earliest recorded times down to our own day. He brought his paper to a close by earnestly advocating an intelligent

and skillful use of escharotics, since they were oftentimes eminently indicated, and their use was attended by an extremely small risk to life. He knew that a prejudice existed against their use, partly due to their being employed by quacks, but also to a lack of familiarity in employing them; but should we not seek to rescue patients who, from fear of the knife, fell into the hands of quacks? Should we not, to this end, strive to make their treatment our own?

The Annual Address was delivered by Dr. HENRY P. WALCOTT, who spoke of the little attention which was paid in Massachusetts to matters relative to the practice of medicine, so far, at least, as the prevention of disease was concerned. He called attention to the necessity of a pure water supply and urged the thorough policing of the whole water-shed. He referred to the possible contamination of the milk supply, also to the need of further investigation as to how far it was possible that milk could serve as a vehicle of contagion from the cow to man through the agency of the tubercle bacillus discovered by Koch. He further touched upon the methods of disposal of sewage, and the possibility of sterilization of the products and their use upon lands. In the province of prevention of infectious diseases, he asked whether, since the discoveries by Pasteur, there was not here a very attractive field for original research, and was it not with boards of health alone that such investigations were possible? He concluded by referring to the immense progress made in the last twenty years as to our knowledge of diseases and the means of their prevention. There was still much need of expert work in many departments for the protection of health, and physicians were alone the agents to be employed. We should educate the people in sanitary matters in many directions. We had arrived at a stage in our progress where our knowledge of certain conditions essential to the state of health should become the property of all, and we should heartily join our forces with those of the city and State to further the dissemination of such knowledge.

NEW YORK ACADEMY OF MEDICINE.

Meeting of June 6, 1889.

The President, Dr. ALFRED L. LOOMIS, in the Chair.

On the Dangers of the Spread of Leprosy in the United States.—Dr. P. A. MORROW read a paper on this subject (see page 85).

Dr. C. W. ALLEN remarked that, since listening to this paper and looking at the illustrations, he was more convinced than ever of the desirability of such legislation as should tend to prevent the further spread of this disease. The whole number of cases in this country two years ago had been estimated to be one hundred and fifty. He thought this number now far too small. Dr. Morrow had, in his paper, reported forty-two cases in New Orleans alone. So long as a single leper existed in the United States, so long did the speaker consider the possibility of dissemination of this disease an imminent one.

Dr. L. D. BULKLEY considered this the most important question that had ever come before the Academy. It was possible that the conditions of civilization might so change as to lessen the liability to the disease, but he was certain that wherever the disease had been allowed freedom it had always spread. Formerly he had not feared the spreading of the disease, but latterly he had changed his views, till now he was keenly alive to such a danger. He thought the health authorities should be urged to make careful investigations and report upon the true and exact state of the disease in this country.

Dr. G. H. Fox doubted seriously whether leprosy had really increased in the United States. He admitted that the number of cases had increased, but these were mostly imported ones, coming from the Sandwich Islands and the West Indies. He believed that liability to increase through contagion was very slight, for, although many lepers lived without restraint in crowded cities, yet there had never been an authentic case of contagion. There were surely other much more dangerous contagious diseases still flourishing among us without restraint, which ought to be first dealt with.

Dr. H. G. PIFFARD reminded the meeting that this very question had been discussed ten years previously, and that at that time a committee had been appointed by the Academy to investigate as to the true status of the disease. At that time they had found between forty and fifty lepers in the United States, chiefly in Louisiana, Wisconsin, Minnesota, and South Carolina, yet now in these same States their numbers had largely increased. He believed that the strictest segregation was necessary, for, wherever this method had been enforced, there had been a marked diminution; as a noted instance of this, Norway was cited. The general Government ought to prevent the entrance of lepers into this country by rigid enforcement of the quarantine laws; yet, once in, such lepers should be compelled by the separate State governments to enter lazarettos.

Dr. F. R. STURGIS did not think the danger an imminent one, and yet he was in favor of steps being taken for calling the attention of the proper authorities to it. This same question had occupied the attention of the Dermatological Society several years ago, and certainly the weight of evidence had then been in favor of contagion. There had always been a lack of evidence to prove this, but the case cited by Dr. Morrow was more valuable in substantiation thereof than the whole number of negative cases cited in support of the theory of non-contagion. He believed the early stage of the disease to be the more contagious. As to the presence of the bacillus as a cause of the disease, he was still a little skeptical. Perhaps, as in syphilis, the presence of this bacillus was adventitious, although many had maintained that it was the cause of that disease. Whatever the origin of leprosy might be, he was convinced of the importance of bringing to the notice of the national authorities the necessity of actively recognizing the possible danger of its increasing. In regard to the suggestion by a previous speaker that syphilis was equally dangerous to the public health, he did not think so, since syphilis was curable, while leprosy, though it may be alleviated by treatment, ended by killing its victim.

Dr. R. W. TAYLOR remarked that the facts presented by Dr. Morrow showed that there was a possible danger of leprosy becoming endemic in this country, and thus destructive to life. In the last fifteen years he had seen on the average from two to three cases a year at the Islands, and, although the patients slept and lived with others unrestrainedly, yet there had never been a known case of contagion. He was not inclined to disregard the danger, nor would he, on the other hand, exaggerate it, feeling convinced that the disease would not prove so terrible as some of the previous speakers thought. Legislation would surely and at the proper time correct the evil. His motto was that "Sufficient unto the day was the leprosy thereof."

Dr. MORROW closed the discussion by asserting that leprosy in the Sandwich Islands had developed under the existing conditions of civilization. The Hawaiian partook largely of animal food and lived under infinitely better conditions than the larger majority of the poorer classes in this country, and yet, under such improved sanitary conditions, the disease had advanced and attained to such fearful proportions. He had not read his paper with a view of inducing legislation on the subject, but only with the purpose of bringing clearly before the medical profession the true condition and status of the disease in Mexico and the Sandwich Islands. He thought, however, that if only

one hundred cases of any other infectious disease existed in the United States and could be stamped out, it would surely be done, and yet this was practically the position of leprosy and no action was taken to do so.

Reports on the Progress of Medicine.

OPHTHALMOLOGY.

By CHARLES STEDMAN BULL, M. D.

The Nature of Light-percipient Organs and of Light Perception and Color Perception.—Gunn ("Roy. Lon. Ophth. Hosp. Rep.," xii, 2) draws the following conclusions from the main facts regarding light-percipient organs. 1. All light-percipient cells are modifications of epithelial cells, or developed from the same embryonic layer which forms them. 2. The ends of these cells corresponding to the cuticle have generally cuticular structures formed in the shape of rods. 3. The opposite ends of these cells are either directly continued as nerve-fibers, or are connected with ganglion cells, and ultimately with nerve-fibers. 4. Pigment is practically always present, either in the light-percipient cells or in close connection with them. Exceptions exist where a tapetum is present and in the rare albino individuals having eyes of high types; but then non-pigmented cells always exist, which are evidently capable of performing similar functions to those of the pigmented cells, though in a minor degree. 5. All forms of vegetable and animal protoplasm sensitive to light are acted on by the shorter waves corresponding to the violet end of the spectrum, and the same holds good in a marked degree in the case of all those light-percipient cells as yet known to act to light. 6. The property of *phototaxis* is universally influential in the manner in which these cells arrange themselves and in the direction in which they contract on exposure. When the cell is free, this effect exhibits itself in free phototactic motion, while in the case of attached retinal cells it shows itself in contraction toward the incident light. 7. The pigment cells have the property of secreting chemical fluids according to their exposure to light and shade, and the pigment contained in them is doubtless of service as being light-absorbent, and thus aiding a rapid transformation of light-energy into protoplasmic action. 8. The result of the action of the secretion of the pigment cells on the segments of the light-percipient cells may be demonstrated by the electrical current produced. 9. The strength of this current depends upon two factors—viz., (*a*) The activity developed in the pigment cell under the action of light, and (*b*) the depth to which the cone is imbedded in it. 10. In the case of vertebrates this resultant current is greatest on exposure to yellow light. 11. Differences in the action thus produced, and consequently in the nerve-current transmitted to the visual center, are associated in our minds with sensations of differences in color. 12. In regard to the stationary rods, the action induced will probably depend upon the amount of destruction of retinal purple, and the consequent demand upon the pigment cell. As this action is known to depend more on intensity of wave-height than on wave-length, it is improbable that the rods have any higher function than that of transmitting impressions which will be appreciated in our conscious centers as variations in light intensity. 13. The function of the retinal purple is probably mainly to protect the pigment epithelium from too great exposure, and thus to modify its secretion and its action on the end organs imbedded in it. If the peripheral area of the retina were not defended in this manner, strong lateral illumination would have an unnecessarily great and confusing effect. The retinal purple is constantly being regenerated in the living retina during exposure to *diffused* light.

Concomitant Convergent Strabismus.—Lang and Barrett (*ibid.*) draw the following conclusions from their investigations upon this subject: All evidence tends to show that in cases of concomitant convergent strabismus, treatment is of value chiefly for cosmetic purposes. There is no definite evidence to show that valuable improvement in the vision of the amblyopic eye ever takes place under any circumstances. Good vision in the squinting eye is retained usually in cases of strabismus in which the disease appears later in life than usual—*i. e.*, after five years of age. Many of the cases which begin late in life are cases of alternating strabismus in which excellent vision exists in each eye. In a fair number of these cases of late origin the extinction of vision by nebulæ seems to cause the strabismus to appear. In the great majority of cases of concomitant strabismus (excluding alternating cases) the amblyopia is irremediable. Correction with glasses, prolonged monocular use of the amblyopic eye, cure of the squint, and even the re-establishment of binocular vision, all fail to produce any valuable improvement in vision. It is only at a very early period of life that the amblyopia is capable of being produced; we should regard the amblyopia as being due not to a deterioration of vision but to a failure of development. It is probable that in these amblyopic cases there is failure to educate the visual sense at the only time in life when the education is possible—viz., when the sense in the other eye is being acquired. A minority of cases of amblyopia are probably congenital in origin, and the amblyopia in these cases probably determines the development of the strabismus. It seems that the existence of hypermetropia is almost essential for the development of squint; and astigmatism or irregularities of refraction frequently exist in the squinting eye. These latter conditions are found so early in life that the explanation of their presence on the ground of arrested development from disuse must be rejected, and we must believe that in many cases they are causally related to the strabismus. After the enumeration of every possible cause, however, there remains something which can not be explained—a "further something" which determines the presence of strabismus in one case, and the absence of which negatives the presence of the strabismus in an exactly similar case in all other respects. That this something is transmissible seems probable from the records of our cases.

The Prognosis and Treatment of Chronic Glaucoma.—Nettleship (*ibid.*) considers that one obstacle to the formation of a trustworthy decision on any of the clinical features of glaucoma is found in the long duration of some cases even when left entirely untreated; another in the doubt which occasionally surrounds the diagnosis of the disease in the earlier stages; another in the optical inconvenience which a large iridectomy often occasions; another in the common belief that if iridectomy be done when the field is already contracted, the operation is apt to be quickly followed by a further loss of visual area. In most cases of chronic glaucoma the changes and the symptoms progress steadily to total blindness within a period varying from some months to a couple of years. In a great many cases the second eye suffers before very long; and when the stage of blindness has been reached, the eyes usually remain quiet. Several of the factors in the glaucomatous process may vary considerably in relation to each other. The degree of tension in the quietest forms is sometimes never perceptibly increased. The pupil and anterior chamber may be almost, if not quite, natural. The depth of the excavation in the optic nerve bears no constant relation either to the atrophic pallor of the disc or to the degree of tension of the eye. We sometimes meet with appearances in the disc which are very suggestive of glaucoma though without any symptoms or results of the disease. This shows the importance of any facts which tend to prove that chronic glaucoma begins rather in the optic nerve than in the ciliary region. We should be very cautious in inferring that a person whose discs show changes resembling those of glaucoma is really safe, however free he may be from the symptoms or other signs of the disease. Glaucoma is sometimes markedly hereditary. The occasional extreme chronicity of glaucoma precludes us from saying with certainty whether the disease ever really stops short of blindness. Nettleship regards it as fair to infer that where one eye has been operated on and the other not, a permanent or prolonged arrest of downward progress in the operated eye is attributable to the operation. As regards the question of symmetry, it is probably safe to infer that in something like two thirds of the cases the disease is sooner or later symmetrical in the two eyes. It is not probable that eserine is effective in stopping the progress of chronic glaucoma, except in rare instances, though it may help to keep the disease at bay for some time. As regards the stage of the disease, an operation is much more likely to succeed if performed early in the disease than late. The state of the field

affords no constant guide. Acuteness of vision has no necessary relation to success or failure. The degree of cupping and pallor of the disc afford no constant guide to the future. The state of the pupil seems to furnish the best prognostic guide. Health and age seem to exert a decided influence on success. Senile cachexia in its various forms is distinctly unfavorable to operation. Absence of senility and an active pupil are favorable points. Nettleship regards it as our clear duty to operate in chronic progressive glaucoma, and the earlier the better, and that even in advanced cases an operation should be performed unless there are special reasons rendering it undesirable. Many of the cases which fail unexpectedly do so owing to some unfavorable process going on at or near the wound. Some of these come under the heading of "malignant glaucoma." Displacement of the lens, caused by the suddenly reduced tension at the operation, probably accounts for some of these. But it would seem that when the suspensory ligament is unsound, the intra-ocular blood-vessels are often unsound also, and the eye may subsequently be lost by hæmorrhage. In other cases a chronic inflammation is set up in the wound, leading to slowly progressive haziness of the cornea, or to permanent thickening and irritability of the scar. Nettleship prefers iridectomy to sclerotomy in chronic glaucoma.

The Harmonious Non-symmetrical Action of the Oblique Muscles explains Binocular Astigmatism.—Savage ("Amer. Jour. of Ophth.," Sept., 1888) believes that the cause of "binocular astigmatism" is the harmonious non-symmetrical action of the oblique muscles—that is, the superior oblique of one eye acts with the inferior oblique of the other in such a way as to rotate the eyeballs so as to always keep the naturally vertical meridians parallel, thus preventing double vision. This habit of rotation is formed early, and continues throughout the life of the individual, unless a pair of correcting lenses are given. At first, even with the glasses, the old habit of rotation may continue, and, if so, some of the phenomena of binocular astigmatism will appear.

Disturbance in the Nutrition of the Cornea of both Eyes in consequence of Gastric Fever.—Despagnet ("Rec. d'ophthal.," Sept., 1888) reports a case of this kind occurring in a man aged forty-three. For two years he had suffered from a general malaise, vertigo, and indigestion, and, about three weeks before Despagnet saw him, he had been seized with a violent headache, which was followed in a few days by fever with gastric complications. When Despagnet saw him there was marked circumcorneal injection and slight obscuration of vision, due to a central infiltration of the cornea. The patient's condition was always better in the afternoon. The ocular complication became better as the patient's gastric troubles were ameliorated.

Suture of the Cornea.—Gillet de Grandmont (*ibid.*) reports the case of a child, aged three, who received an irregularly triangular wound of the cornea from a sharp stone. Twenty-four hours later there was a perceptible diminution in volume of the eye, and the vitreous presented through the wound in the cornea. The child was etherized and the entire *cul-de-sac* carefully washed out with an antiseptic solution. The prolapsed vitreous was cut off, the lips of the wound brought into coaptation, and held in place by the introduction of three very fine silk sutures, which had been sterilized and left untied. The operation succeeded perfectly, and two years later the eye, though one third smaller than the other, was not misshapen. The cornea showed a central leucoma, but was not staphylomatous, and there was a small anterior chamber.

Naphthol in the Treatment of Purulent Ophthalmia.—Valude (*ibid.*) regards antiseptic applications as of great importance in the treatment of purulent ophthalmia, and advises strongly the use of naphthol for this purpose. He employs the variety known as *naphthol α*, in a solution composed of distilled water, 1,000 grammes; naphthol *α*, 0·50 gramme; and alcohol, 25 grammes. These applications of naphthol in solution are especially valuable in causing a disappearance of the swelling of the lids, and may be used as often during the day as may seem desirable.

Infectious Keratitis and its Treatment with Creolin.—Galezowski (*ibid.*) strongly recommends creolin in the treatment of this disease on account of its superior parasiticidal qualities. He employs a solution of ten centigrammes of creolin dissolved in ten grammes of water, and touches the ulcers once or twice a day with this solution. He also employs a spray of half this strength directly upon the naked cornea, for one or two minutes, five or six times a day.

The Notation or Designation of Astigmatism.—Suarez de Mendoza (*ibid.*) thinks that by modifying the disc of Javal's apparatus the symmetrical designation will give satisfaction both to those who only make a subjective examination and to those who employ the ophthalmometer. The symmetrical designation with regard to the axis of the body should be preferred to the designation with reference to the median plane of the eye, as it is easier to express and fully as easy to understand. In the dissymmetrical designation proposed by the Committee of the Ophthalmological Society the numbering of the test-lens must start from the same point as that of the other apparatus, in order to refer all the angles to the same line. In both systems Mendoza proposes to describe myopia by M. and hypermetropia by H.; myopic astigmatism by Am. and hypermetropic astigmatism by Ah. He also proposes to retain the sign ± of Javal for describing the result of the ophthalmometrical examination, or indicating which meridian is of the highest refraction without being always the defective meridian. He also proposes to retain the signs + and — in prescribing glasses which are to be filled by the opticians, writing first the number which indicates the degree of the angle, next that of the cylinder, and finally that of the glass.

Metastatic Carcinoma of the Chorioid.—Schapringer ("Amer. Jour. Ophthal.," Oct., 1888) reports a case of this kind occurring in a woman aged fifty-one. In October, 1885, the right breast and axillary glands were amputated for scirrhus; the wound healed by first intention, and there was no subsequent return of the disease *in loco*. In August, 1887, she accidentally discovered that the sight of the left eye was almost gone, though she could still see objects situated at the side. Her health also began to fail and she became cachectic. In October there was a large quantity of fluid in the pleural cavity. The left pupil was dilated and immovable. The central and upper part of field was gone. The media were clear and the outlines of the disc were well defined. In the region of the yellow spot and outward there was a reddish-white discoloration about four times the size of the disc, the refraction of which was +D. 3·50, the rest of the fundus being emmetropic. This was traversed by a few thin blood-vessels. Below this there was a serous detachment of the retina. The patient died two months later. The autopsy showed a large number of round cancer nodules in both lungs and the liver. An examination of the eye showed numerous epithelial cells in the chorioid, similar to those found in the scirrhous tumor of the breast.

Is Astigmatism a Factor in the Causation of Glaucoma?—Theobald (*ibid.*, Oct. 1888) thinks that in astigmatism the direction of the meridians of greatest and least refraction determines, to a marked degree, the amount of the asthenopia and other ill consequences which usually attend this form of asthenopia. An astigmatism in which the meridian of least refraction is vertical, or nearly so, will, as a rule, give rise to much more trouble than will one of equal or even greater degree in which the meridian of least refraction is horizontal or nearly so. The eye seems to be capable of rendering this form of error latent through the action of the ciliary muscle upon the lens. By far the greater number of pronounced cases of chorio-retinitis from accommodative strain which Theobald has met with have been associated with this variety of astigmatism. In most cases there are two factors which aid in bringing about the glaucomatous condition: first, a defect or inadequacy in the drainage apparatus of the eye; and, second, an excessive formation of fluid in the posterior chamber of the eye. Among the conditions which have been suggested as capable of producing such an undue formation of fluid in the vitreous chamber, hyperæmia of the ciliary body and chorioid occupies a prominent position. Astigmatism is particularly qualified to produce such a hyperæmia, and thus acts as a factor in the causation of glaucoma. There was well-marked cystoid degeneration at the ora serrata, but the several layers of the retina were well preserved, except at the region of the macula lutea. Here the retina was infiltrated with small cells. The chorioid on the temporal side of the optic disc was markedly thickened and entirely transformed into carcinomatous tissue. The new growth replacing the chorioid is composed of a firm groundwork of fibrillar connective tissue, containing numerous nests of large epithelial cells.

The Pathology of Albuminuric Retinitis.—Weeks's ("Arch. of Ophth.," xvii, 3) observations are based upon the histological examination of six eyeballs removed from as many patients who had suffered

from or had died with disease of the kidneys. He concludes that two classes of retinal disease are included under the present name of albuminuric retinitis. One depends almost entirely on the condition of the blood brought about by an acute disease of the kidneys, the renal symptoms preceding the change in the retina; the other on a general (systemic) diseased condition of the arteries, capillaries, and, to a less extent, the veins, in which the ocular changes and symptoms may and not infrequently do precede the kidney symptoms. To the first class belongs the retinitis of pregnancy, scarlatina, diphtheria, etc., and all forms of acute diffuse nephritis. In these cases the œdema and white plaques are the first evidence; hæmorrhages, more or less numerous, often follow. To the second class belong the cases in which the first retinal change is a hæmorrhage or a few small hæmorrhages, usually in the vicinity of the macula. The œdema and white plaques appear later. Contemporary with, preceding, or following the hæmorrhages in the retina, we may find evidences of capillary hæmorrhages in other parts of the system. The first variety may be termed an irritation nephritis, due to the effect of a morbific element on the kidney tissue, in which the kidney usually becomes enlarged and the circulation interfered with by pressure on the vessels from the swollen tissue. The latter variety is rather a strangulation nephritis, in which the blood-supply is cut off by arterial stenosis, the kidney being always found contracted, and in which the morbific element contained in the blood causes a thickening and degeneration of the walls of the vessels with a diminution of their caliber. Both conditions may exist at the same time in varying degree. A large percentage of the cases of retinitis accompanying albuminuria undoubtedly belong to the latter category.

A High Degree of Astigmatism after Cataract Extraction improved by Operation.—Schiötz (*ibid.*) reports an interesting case occurring in a man aged thirty-three with zonular cataract in both eyes. An iridectomy was made upward on the left eyes and the lens was extracted. A portion of the lens matter remained in the anterior chamber. During the healing process a piece of the lens mass was pressed against the inner side of the wound so as to push the corneal flap forward, and this was probably the principal cause of a considerable alteration in the corneal curvature that remained. The eye showed a corneal astigmatism of one dioptre, the vertical meridian being that of maximum refraction. The radius of curvature in the meridian of weakest refraction was 8·26 mm, and in that of maximum refraction was 8·16 mm. About four months after the extraction there was found a corneal astigmatism of 19·50 dioptres. Fifteen months after the operation, the astigmatism having remained about the same, an incision was made upward with a Graefe knife through the base of the most bulging part, and a small flap cut away with scissors. After the wound had healed the eye was again examined, but no change was noticed in the astigmatism. Three weeks later an attempt was made to cut a small flap from the upper lip of the wound, and this operation reduced the astigmatism by 3·75 dioptres. Three weeks later a third operation was done with a Graefe knife, the incision being made upward and inward in such manner that the incision made an obtuse angle with the original corneal section at the time of the extraction. The ultimate result was a reduction of the astigmatism from 19·50 to 7 dioptres. The partial excision of the cicatrix proper exerted only a proportionally trifling effect on the curvature of the cornea; on the other hand, the division of the normal parts adjoining the cicatrix proved very efficacious.

Sixfold Paralysis of the Left Cerebral Nerves.—Grossmann (*ibid.*) reports an interesting case occurring in a woman, aged forty-four, who had always been delicate, and had suffered from diplopia, vertigo, deafness, and tinnitus in the left ear for some time. An examination showed paralysis of the left abducens, slight myopia, left lagophthalmus, deafness of the internal ear on the left side; anæsthesia of left side of forehead and cornea, face and lips; stuttering and slowness of speech. Loss of smell in left nostril and of taste on left side of tongue; tip of tongue directed to the left. There was difficulty of deglutition, weakness in the left extremities, and inability to stand on the feet. The sound-perceiving apparatus appeared diseased, because the drum membrane was normal and the deafness was not relieved by catheterization. The trigeminus was paralyzed in both motor and sensory branches. The left-sided anosmia was partly due to trigeminal anæsthesia and partly to facial paralysis, but the olfactory nerve may also have been paralyzed. The dysphagia indicated glosso-pharyngeal paralysis, although the same disease in the hypoglossus may have contributed to the difficulty. The poor articulation indicated hypoglossal paresis. The lack of taste arose partly from anæsthesia of the lingual branch of the trigeminus, and partly from disease of the glosso-pharyngeus. There must have been a lesion at the base of the brain to excite so extensive a paralysis of the fifth, sixth, seventh, eighth, ninth, and twelfth pairs, or at the pons. The only support for such a disease in this case was cerebral motor-nerve paralysis. Yet the absence of alternating paralysis of the extremities rendered this diagnosis doubtful. Other symptoms, favoring the seat of the lesion in the pons were paralysis of the facial and abducens, the excessive trigeminal anæsthesia with anæsthesia of the left extremities, and finally the dysphagia and paralysis of the hypoglossus, as manifested in the disturbance of articulation and defective motion of the tongue. The history seemed to indicate syphilitic gummatous periostitis at the base of the brain, terminating in pressure on the basal surface of the pons. Grossmann administered one gramme of potassium iodide daily, and in ten days the dysphagia began to yield, and in ten more it had disappeared. The tongue also moved more rapidly, and the eye could be voluntarily rotated beyond the median line. The effect of the administration of the iodide seemed to justify the belief that the lesion in the pons depended on bone disease at the base of the skull. In the course of the treatment a sequestrum of bone was exfoliated from the root of the left pterygoid process. This was apparently due to osteitis syphilitica, and proved that a gumma can originate from the embryonal connective tissue in the medullary space as well as under the periosteum. The patient died from a sudden and profuse epistaxis, and, from the manner in which the blood gushed from the nostrils, some large artery, either the carotid or basilar, must have burst from erosion. Although the paralysis decreased and the general health improved, the bone disease continued to progress.

Dyslexia or Dysanagrosia with Autopsy.—Nieden (*ibid.*) reports a very interesting case of this kind occurring in a man, aged thirty-nine, who, for some weeks after a sudden convulsive attack, had suffered from a great loss of strength. The attack lasted about twenty minutes, and was followed by severe pain in the head and nape of the neck on the left side, which was increased by pressure upon a corresponding portion of the vertebral column. Eight days later there was a similar attack, which chiefly involved the upper extremities and lasted half an hour. The patient claimed that he could not read; there was no blurring or swimming of the letters, but an unconquerable inclination to turn away the head. Vision was normal with his hypermetropia corrected. In testing the near vision the patient read correctly the first four lines of No. 1, and then suddenly turned away the book, declaring that he could read no further, and, if persuaded to try again, the mental exertion was followed by a sort of fainting attack, and he complained that he perceived a peculiar foul odor. The visual fields and color sense were normal. Fourteen years before, the patient had had a similar convulsive attack. About a month after the second attack an acute gastro-enteritis set in without any assignable cause. The patient complained of general headache and drowsiness, and gradually sank into a soporific condition. The pupil of the left eye became dilated, but reacted normally. Two weeks later there was retention of urine, and three days after this, paresis of the facial muscles and extremities of the right side was noticed, which on the next morning had disappeared. The patient slept almost continuously, and died comatose three days later. The autopsy showed a discoloration of the parts in and around the corpus striatum. A section through this region showed three apoplectic foci, each in a different stage of transformation. The largest focus, the size of a walnut, situated in the anterior portion of the corpus striatum, was surrounded by a delicate sheath of connective tissue. All the white substance anterior to the inferior frontal convolution was involved in a state of yellow softening. The second focus, situated above and behind the first, was smaller, and its consistence and color indicated a more recent origin. It was also surrounded by a well-marked capsule. The third focus, about the size of a pea, was the most recent. It occupied the center of the lenticular nucleus and consisted of two fresh blood-clots. The central portion of the nucleus was destroyed, and the surrounding tissues were œdematous. There was at

no time in the course of the disease any amnesic or ataxic aphasia, agraphia, or a loss of the ability to understand spoken language.

The Magnet Operation.—Neese (*ibid.*), from his observations, thinks that the magnet is especially adapted for the removal of foreign bodies from the lens, from the fact that the loose and swollen tissue of the latter offers very little mechanical resistance to the action of the magnet, while it is easier to find the fragment in the cloudy mass, and there is less danger of penetration into the vitreous. Extraction of foreign bodies in the anterior segment of the eye is usually successful, and with fairly good results as regards sight. The electro-magnet in a certain number of cases is not necessarily indispensable; in others it is positively contra-indicated; in a third class it does not fulfill the end in view. For the successful extraction of foreign bodies situated in the posterior portion of the globe, viz., (1) the foreign body must be freely movable; (2) the distance to it must be short. When surrounded by exudative masses, firmly imbedded in the membranes of the eyeball, or inclosed in a capsule of connective tissue, the foreign body is immovable and therefore inaccessible to the magnet. The advantages of early operation are therefore quite obvious.

The Pathological Anatomy and Pathology of Optic Neuritis.—Picqué (*ibid.*, Sept.–Oct., 1888) insists upon the necessity of establishing the line of demarkation between the retina and the intra-ocular expansion of the layer of optic nerve-fibers in the eye. The independent circulation of the retina and of the ocular expansion of the optic nerve, the functional integrity of the retina coinciding with the most advanced alterations in the optic nerve, sufficiently justify this claim. For example, retinitis albuminurica presents in its principal alterations the type of the neuritis of the intra-ocular expansion of the optic nerve; apoplectiform retinitis, at least in one of its most important varieties, becomes a complication and a symptom of atheromatous changes in the vascular system of the optic nerve. From the point of view of the relations of stasis to papillitis, it may be said that it is impossible to establish a precise limit between papillitis and papillary stasis, so that we are authorized in considering the stasis, not as the first stage of a condition which may or may not lead to papillitis, b t as a very frequent variety of papillitis. In the present state of our knowledge we can no longer preserve the distinction between papillary stasis and papillitis, a distinction based on the deduction of an erroneous clinical fact and on a pathogenetic theory which subsequently we shall prove to be false. The œdema here present must be regarded as of inflammatory origin, the result and not the cause of the papillitis. The walls of the arteries are thickened and the vessels are varicose and diminished in caliber, and this diminution is especially marked in the small vessels and capillaries. It is a variety of endarteritis obliterans resembling the syphilitic endarteritis of Lancereaux and Heubner.

The Value of the Cautery in the Treatment of Ulceration of the Cornea.—Renton ("Ophth. Rev.," Oct., 1888) recommends strongly the galvano-cautery in the treatment of ulceration of the cornea. The cautery is to be applied lightly, and, where necessary, the corneal layers are penetrated into the anterior chamber. Renton considers traumatic ulcers at all stages and idiopathic ulcers of all kinds as suitable cases for the cautery. These may often be benefited, especially when recurring in strumous children and weakly women, rheumatic and gouty subjects, or those suffering from granular ophthalmia; the granulations may also be cauterized with great advantage.

Conical Cornea treated with the Actual Cautery.—Williams (*ibid.*) advocates the treatment of conical cornea by cauterization. One application to the apex of the cone immediately reduces the conicity and leaves a deep pit. This heals as an ulcer, and leaves a small, firm scar, rendering further ectasia practically impossible. He advises against the opening of the anterior chamber. He recommends this plan of treatment on the following grounds: 1. Its extreme simplicity. 2. Its freedom from danger and ease of performance. 3. Its good results, both visually and as regards the arrest of the morbid process.

The Treatment of Symblepharon by Transplantation of Mucous Membrane from the Lip.—Meighan (*ibid.*) prefers to transplant the mucosa of the patient's lip rather than the conjunctiva of the rabbit. After having repaired the original defect as well as possible by the surrounding conjunctiva, the remaining defect is to be mapped out on the inside of the patient's lower lip, and the mucous membrane is then to be dissected off, making ample allowance for subsequent shrinking. The mucosa must be carefully cleaned of the labial glands and of any fat, washed with a 0·2-per-cent. solution of corrosive sublimate, and stitched in its new position with a sufficient number of sutures. The eye is then to remain bandaged for twenty-four hours.

Hyalitis Punctata.—Benson (*ibid.*) proposes to designate by this name a condition observed on or in the neighborhood of the anterior portion of the hyaloid membrane, exactly similar in appearance to that observed so commonly on the posterior surface of the cornea in cases of serous iritis. There appear a number of punctate opacities in the position of the posterior capsule of the lens, exactly similar in arrangement and appearance to those on the cornea. These can only be seen when a strong lens (+ D. 26) is used in the ophthalmoscope. They extend over a considerable area and seem to lie on a plane at right angles to the corneal axis. They do not extend to any depth in the vitreous, but lie on or close to the posterior capsule. These spots are not to be mistaken for the dust-like opacities seen in specific disease. There is usually evidence of old chorioiditis.

The Relation of the Orbital Opening to Myopia.—Weiss ("Kl. Mon. f. Aug.," Sept., 1888) formulates his views as follows: It is theoretically doubtless correct that when the entrance to the orbit is low, the anterior insertion of the inferior oblique and the trochlea are nearer each other, and that consequently both muscles surround the globe to a greater extent. The form and size of the orbital opening are therefore of some consequence in relation to the insertions of the muscles, and the latter is also of importance in relation to the course of the ocular muscles and their consequent pressure on the globe. It can not be denied that these may be important factors in the causation of myopia, in so far as a certain portion of the pressure exerted on the eyeball by the muscles depends upon them. The orbital index is actually smaller in myopes than in emmetropes or hypermetropes. Weiss advises a very careful examination of the shape of the skull and opening of the orbits on both sides in all cases of anisometropia, as a possible means of elucidating this question. Usually in these cases the two sides of the skull and face will be found asymmetrical.

The Pupillary Reaction.—Heddaeus (*ibid.*, Oct., 1888) calls attention to Magnus's scheme for recognizing the disturbances of the movements of the pupil caused by diseases in various parts of the reflex tract which presides over the pupillary reaction to light. He proposes a modification of this scheme by designating by the single expression "reflex sensibility" the power of the eye or retina to carry or conduct a light-wave or irritation to the centers of the oculomotorius. The course for the light-reflex consists of a centripetal part (the centripetal pupillary fibers) and a centrifugal part (the pupillary branch of the third nerve), and of the nucleus which represents the union of the two (pupillary nucleus of the third nerve). Anomalies in the centripetal portion cause disturbances of the reflex sensibility (retina); anomalies of the centrifugal portion cause disturbances in the motility of the pupil; anomalies in the nucleus cause disturbances in both as follows: I—1. Destruction of the right optic nerve causes reflex dullness or blindness of the right eye. 2. Destruction of the right optic tract (or of the tubercula quadrigemina, or of the fibers of Meynert on the right side) causes reflex blindness of both right halves of the retinæ. 3. Median sagittal section of the chiasm causes reflex blindness of the nasal half of both retinæ. II—Destruction of the right pupillary branch of the third nerve causes mydriasis and immobility of the right pupil. III—Destruction of the right pupillary nucleus causes mydriasis and immobility of the right pupil.

Stereoscopy by Difference of Colors for the Normal and the Color-blind Eye.—Grossmann ("Ophth. Rev.," Nov., 1888) refers to the investigations of Einthoven upon this subject, who considered that the real reason why some colors seem to stand out more prominently than others consisted in the eccentricity of the eye and the symmetrical arrangement in the fellow-eye, whereby the red rays are united on a more temporal part of the retina than the blue rays. He considered also that the position of the pupil was of great influence, but that there was very little accessory help on the part of the accommodation. Grossmann considered that the phenomenon, at least in his own case, is attributable principally to accommodation. In testing, he arranges the two colors, red and blue, in a simple way, so that they form a perspective

drawing, and the stereoscopic effect is thereby greatly facilitated. If this figure be shown to some color blind (red green blind) individuals, they also perceive the red nearer than the blue, which proves that with them also the act is principally one of accommodation.

Partial Hyperostosis of the Frontal Bone.—Silcock (*ibid.*) reports a case of the above nature in a woman aged twenty. When first seen she presented a swelling over the left eyebrow, round in outline, with smooth surface, and hard and bony to the touch. The left eyeball was displaced forward, downward, and outward. The swelling had existed for two years, and was said to be increasing in size. There was a history of a blow on the eyebrow. Five years later the swelling had become considerably larger. At this time much of the frontal bone was removed with trephine and bone forceps, but it was found impossible to extirpate the growth. Microscopically there was seen a richly cellular and ill-developed connective-tissue growth undergoing ossification.

Miscellany.

Mortality in Cities in the United States.—The following table represents the mortality in the cities named, as reported to Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, and published in the abstract of sanitary reports received by him during the week ending July 19th:

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—										
				Cholera.	Yellow fever.	Small-pox.	Varioloid.	Variella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y.	July 13.	1,573,097	1,187	..	..	..	..	..	..	4	10	28	4	12
Philadelphia, Pa.	July 13.	1,040,245	607	..	..	..	..	..	..	11	1	5	6	6
Chicago, Ill.	July 13.	830,000	433	..	..	..	..	..	..	3	14	14	3	....
Baltimore, Md.	July 13.	500,343	276	..	..	..	..	..	..	2	1	..	..	....
San Francisco, Cal.	June 28.	330,000	85	..	..	..	..	..	..	..	..	2	..	....
San Francisco, Cal.	July 5.	330,000	106	..	..	..	..	..	..	5	..	1	..	....
Cincinnati, Ohio.	July 13.	325,000	138	..	..	..	..	..	..	1	..	1	11	....
New Orleans, La.	July 6.	254,000	122	..	..	..	..	..	..	..	..	1	2	2
Cleveland, Ohio	June 1.	235,000	58	..	..	..	..	..	..	5	..	..	3	....
Cleveland, Ohio	June 8.	235,000	73	..	..	..	..	..	..	3	..	2	..	....
Pittsburgh, Pa.	July 13.	230,000	122	..	..	..	..	..	..	7	..	1	3	2
Detroit, Mich.	July 6.	230,000	78	..	..	..	..	..	..	..	..	..	..	1
Louisville, Ky.	July 13.	227,000	82	..	..	..	..	..	..	1	..	..	1	....
Washington, D. C.	July 13.	225,000	141	..	..	..	..	..	..	4	3	..	..	1
Milwaukee, Wis.	July 6.	210,000	41	..	..	..	..	..	..	2	2	1	..	....
Kansas City, Mo.	July 13.	180,000	59	..	..	..	..	..	..	..	..	..	..	....
Rochester, N. Y.	July 13.	130,000	66	..	..	..	..	..	..	2	..	..	..	....
Providence, R. I.	July 13.	127,000	63	..	..	..	..	..	..	..	3	1	1	....
Denver, Col.	July 12.	100,000	42	..	..	..	..	..	..	1	1	..	1	....
Toledo, Ohio	July 12.	83,500	23	..	..	..	..	..	..	..	..	1	..	....
Fall River, Mass.	July 13.	69,000	44	..	..	..	..	..	..	..	..	..	..	....
Nashville, Tenn.	July 13.	65,153	21	..	..	..	..	..	..	4	..	..	..	....
Lynn, Mass.	July 13.	50,000	12	..	..	..	..	..	..	..	..	1	..	....
Portland, Me	July 13.	42,000	16	..	..	..	..	..	..	..	..	..	1	....
Manchester, N. H.	July 6.	42,000	19	..	..	..	..	..	..	..	..	..	..	....
Council Bluffs, Iowa.	June 24.	35,000	8	..	..	..	..	..	..	..	..	..	..	....
Council Bluffs, Iowa.	July 6.	35,000	2	..	..	..	..	..	..	..	..	..	..	....
San Diego, Cal.	July 6.	32,000	6	..	..	..	..	..	..	..	..	..	..	....
Binghamton, N. Y.	July 13.	30,000	7	..	..	..	..	..	..	..	..	..	..	....
Auburn, N. Y.	July 13.	26,000	6	..	..	..	..	..	..	..	..	..	..	....
Haverhill, Mass.	July 13.	25,000	8	..	..	..	..	..	..	..	..	..	..	....
Newport, R. I.	July 11.	22,000	6	..	..	..	..	..	..	..	..	..	..	....
Newton, Mass.	July 13.	21,553	6	..	..	..	..	..	..	..	..	..	..	....
Keokuk, Iowa.	July 13.	16,000	6	..	..	..	..	..	..	..	..	..	..	....

Scientific Uses of the Eiffel Tower.—M. Janssen, of the Institute of France, is of opinion that the Eiffel Tower will have many scientific uses. One of the greatest difficulties of meteorological observations is the disturbing influences of the station of observation itself. How, for example, can a true deviation of the wind be observed if a purely local obstacle causes it to deviate? And how can a true temperature of the air be determined by a thermometer influenced by radiation from surrounding objects? Thus, the meteorological elements of great centers of habitation have to be taken outside those centers and at a certain height above the soil. The tower, since it rises to a great height, and from the nature of its construction does not modify in any way the meteorological elements to be observed, will get over this difficulty. A height of three hundred yards is in itself not a negligible quantity from the point of view of rainfall, temperature, and pressure, but these circumstances give all the more interest to the institution of comparative experiments on variations due to altitude; the electrical interchanges between the soil and the atmosphere can also be studied to advantage. Special arrangements can be made for avoiding accidents, and results of great interest should be obtained. M. Janssen recommends also the institution of a service of meteorological photography. A good series of photographs would give forms, movements, modifications which the clouds and atmospheric conditions undergo from sunrise to sunset. Thus a history of the skies would be written on a radius not hitherto dealt with. In physical astronomy various other observations might be taken, especially in relation to the study of the telluric spectrum. M. Eiffel announces that three laboratories have already been arranged on the tower. One will be devoted to astronomy, and the second will contain registering apparatus from the central bureau of meteorology, and will be devoted to physics and meteorology. MM. Mascart and Cornu expect to draw great advantages from its use in the study of the atmosphere. The third is reserved for biology and micrographic study of the air, to be organized by M. Henocque. M. Cailletet is arranging a great mercurial manometer, with which he expects to obtain pressure as high as four hundred atmospheres.—*British Medical Journal.*

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

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Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

SOME NEW TESTS FOR INSUFFICIENCIES OF THE OCULAR MUSCLES, TOGETHER WITH A SYSTEM OF ABBREVIATIONS SUITABLE FOR NOTE-TAKING.

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THE important part played in the causation of all sorts of nervous diseases by anomalies of the oculo-motor apparatus is becoming daily more and more apparent. Since the epoch-making labors of Dr. George T. Stevens, the proposition that disorders of the muscular mechanism of the eye are a more potent and constant cause of functional nervous affections than any other source of reflex irritation may be considered as established on a firm foundation. Epilepsy, chorea, hysteria, neuralgia, and those aggregations of symptoms which have been vaguely lumped together under the names of neurasthenia, spinal irritation, etc.—in a word, the great concourse of nervous diseases which arise without the production of lesions of the nervous substance—are to a great extent dependent upon eye-strain, and, of the varieties of eye-strain, those which spring from anomalies of the muscular apparatus are the most distressing and the most severe. Nor is this wonderful when the matter is closely considered. Indeed, the wonder is rather that, in view of the obvious facts of the case, anomalies of this sort should hitherto have received such scant attention. It is true that there are many other sources of reflex irritation, all more or less distressing and all capable of producing serious nervous symptoms. The nasal, the oral, and the genital apparatus may each be the seat of some affection capable of giving rise by its presence to asthma, epilepsy, neuralgia, etc. The unfortunate who suffers from hypermetropia or astigmatism is still more liable to reflex troubles, for he is compelled during every minute of his waking existence to exert great and most tormenting strain so as to see with a distinctness sufficient for his daily needs. But he who has a faulty direction of the visual axes or a relative weakness of any of the ocular muscles is in a still worse case. A man, for example, who has a hyperphoria of two or three degrees must, during every minute that he uses his eyes, exert an enormous force, not merely to see distinctly, but even to see at all. Let any one who wishes to realize what a strain this means take a two-degree prism, place it base down before one of his eyes, and then try to read. The sense of confusion will soon become so maddening that few will venture to prolong the experiment beyond ten minutes. And yet this strain is not as great as many of us have to undergo during the whole time that our eyes are open. No one who has not himself suffered from this burden can realize how intolerable it is, how it dissipates the vital forces, how it renders inert and inactive a man of otherwise sound constitution and good mental capacity.

From the frequency of these sources of irritation and the great part they play in the causation of nervous troubles, their consideration is no longer confined to the ophthalmic or to the neurological specialist, but interests all members of the profession alike. It is true that for their accurate determination and their cure the most painstaking and delicate manipulation is required, such as requires the aid of a special apparatus and a special professional training which the oculist alone can supply. But their recognition does not always or often imply the need of apparatus or of particular skill, and the tests which establish the existence of heterophoria are no more mysterious or complex than the tests of the reflexes in determining the presence of locomotor ataxia.

The object of the present article is to exhibit briefly the methods and limitations of certain simple tests which do not require instruments, and which therefore can be employed by those who do not possess or who have not the skill to use an oculist's armamentarium. The usefulness of such tests is not, however, confined to this application of them. In all cases they will be found serviceable as adjuncts to the instrumental tests, serving to check and confirm the latter, and in some cases are available where other tests fail or are uncertain.

It may be well, before entering into a description of these tests, to set clearly before our minds what we intend to determine by their aid. The problem for solution—that of the condition of the oculo-motor apparatus—is one both of statics and of dynamics; in other words, what we wish to ascertain is, first, the normal balance and the individual tendencies of the different muscles when the eye is in a state of repose, and the muscles themselves are placed as far as possible in a condition of equilibrium; and, second, the relative power of the individual muscles when set in action, and the resulting capacity of the eye for motion in different directions. Defects in the former regard—that is, in the static condition of the eye—constitute the various forms of strabismus and of heterophoria. Without going into a description of the latter condition, which has already been amply considered in the works of Dr. Stevens, we may say in brief that one or more of the following conditions may exist: Esophoria, or a tendency of the visual axes inward; exophoria, or a tendency of the visual axes outward; and hyperphoria, or a tendency to vertical divergence of the axes. The determination of the direction and the amount of these deviations requires the eye to be placed in a state of complete repose, and, as this condition of absolute equilibrium can never be perfectly attained, repeated and carefully conducted examinations must be made in order to approximate as nearly as can be to the ideal state and to eliminate accidental errors. Defects in the dynamic condition of the eye are constituted by such insufficiencies or such excessive actions of the ocular muscles as cause one or both eyes to perform either too greatly or to too slight a degree the movements of abduction, adduction, and sursumduction. These defects usually coexist with heterophoria, but do not necessarily do so, and their determination requires equally careful and repeated testings. In this case, moreover, the examination can also be made to do service as an exercise for the weaker muscles.

The whole problem, however, whether viewed from the

side of statics or dynamics, resolves itself into this query: How far and in what sense do the visual axes deviate or tend to deviate from parallelism both in a state of repose and during the various associated movements of the eyes? With the proposition stated in these terms, it is easy to see that the perfectly acting eye, whether at rest or in motion, will be so directed that its visual axis * is parallel with that of its fellow, while the heterophoric eye will in some position exhibit a deviation of the axis, to overcome which demands an extra muscular effort and a consequent overstrain of nervous energy.

By keeping this preliminary proposition in mind, the consideration of the tests themselves becomes greatly simplified. Like the problem which they are designed to solve, the tests themselves may be either static or dynamic. Of the former kind, which are concerned with the tendency to deviation exhibited by the eyes when in a state of rest, the most obvious—*i. e.*, that afforded by the mere inspection of the eye—is rarely of any service, because the manifest variations constituting heterophoria are often so slight as to be unrecognizable by this means, and also because, when a variation is appreciable, it is often impossible to tell its direction from inspection alone. This is especially the case in hyperphoria, in which the tilting of one eye above the other is often masked by simulated turning in or out (apparent esophoria or exophoria). Corresponding to this rough objective test is the more delicate subjective one furnished by the patient's perception of diplopia when the eyes are in a position of equilibrium—*i. e.*, when the head is in the normal erect position and the visual axes are directed straight forward at an object twenty feet or more distant. † This diplopia is, of course, usually recognized only when the red glass is employed to differentiate the images; and it is quite important to distinguish the cases in which diplopia occurs spontaneously (or can be produced spontaneously by the patient's will ‡) and those in which it is apparent only upon using the red glass. The diplopia may be lateral (being then either homonymous or crossed) or vertical, and in the latter case may be designated as right or left according as the right or left image is below (indicating that the right or left eye is the higher). If prisms are available, the amount of diplopia can be measured by the degree of the prism which, placed before either eye, causes fusion of the images.

The second set of tests for determining the static condition of the ocular muscles is afforded by the use of the screen. This procedure—mentioned by Landolt ("Examination of the Eyes"), but only in connection with the accommodative movements of the eye, *i. e.*, with the visual axes converging, and employed by Stevens and others when the visual axes are in parallelism—is conducted by placing a screen (such as a card or the hand) before one eye and, while the other eye remains fixed upon one object, observing the direction which the covered eye tends to assume. By shifting the screen from one eye to the other, the eyes being steadily directed toward one object, the eye which is uncovered will, in order to see the object, move in a direction contrary to that which it had assumed behind the screen. For example, with both eyes looking straight forward at a candle twenty feet distant, and with the card placed alternately before either eye, the left eye on being uncovered moves down. The inference is that behind the screen it was standing higher than its fellow—*i. e.*, there is a condition of left hyperphoria.

The screen test as thus performed is a very useful adjunct to the prismatic tests for heterophoria, and if the latter exceeds in amount a couple of degrees, the movement of the eye on shifting the screen is usually quite perceptible. On the other hand, when the manifest heterophoria is less than two degrees, it is difficult to detect any deviation behind the screen. When, therefore, this deviation exists, it is a strong confirmatory evidence of heterophoria; but its absencce is not conclusive as to the non-existence of the latter condition, and in some cases—*e. g.*, in such a one as that mentioned in a preceding foot-note—even its presence is not absolute proof either of the presence or of the character of the pathological condition. It can not, therefore, be implicitly relied upon unless checked and confirmed by other methods of examination, and yet it is of great value and should always be called into requisition in testing for muscular insufficiencies.

A modification of the screen test—which, as giving subjective instead of objective indications of the presence of deviation, bears the same relation to the ordinary screen test that the detection of diplopia by the red glass does to the estimation of heterophoria by the mere inspection of the eyes—is the *parallax* test. This, as far as I know, has not yet been employed in ocular examination; I am therefore inclined to regard it as original with myself. It consists in shifting the screen from one eye to the other and making the patient observe if the image moves, and, if so, in what direction. If the patient is in the standard position—head and shoulders erect and eyes looking straight forward at an object twenty feet or more distant—there should, if orthophoria exists, be no movement of the image when the screen is shifted. If, accordingly, under these conditions and after repeated trials, the object observed appears to the patient to always occupy the same position, it may be assumed that, as far as this test goes, there is no tendency to deviation from parallelism of the visual axis.

* The visual axis in some very rare cases seems to be widely different from the optical axis. Thus, in one case in which there was well-marked deviation of the eyes out, both behind the screen and also when any attempt was made at fixation, there were homonymous diplopia and an esophoria of twelve degrees or more. Such a condition can scarcely be explained on any other hypothesis than that the region of most distinct vision was not situated at the normal position of the macula, but at a point considerably external to the latter, so that even when the eyes deviated outward the visual axes were still convergent.

† Or more. In testing for muscular anomalies, twenty feet do not constitute infinite distance. This is seen especially in testing the abduction, which at a distance of twenty feet will often be found to be quite a little greater than at fifty feet and less than at ten feet.

‡ It may be here remarked that in testing the static condition of the eyes, voluntarily produced diplopia does not afford such trustworthy indications as diplopia spontaneously existing. The very act of separating the images by voluntary effort implies a muscular strain which disturbs the relations of the eyes, and which may alter the direction of their axes in a vertical as well as in a horizontal plane. I have once or twice observed this in practice.

If, on the contrary, the image appears to shift its position with the alternate withdrawal and replacement of the screen, there exists what may be appropriately denominated a parallax, and it may be taken for granted that heterophoria exists. The parallax is in reality only a form of diplopia, being produced, as diplopia is, by lack of parallelism of the visual axes; and, like diplopia, it may be homonymous, heteronymous, or vertical. In other words, if, when the left eye is uncovered and the right concealed, the patient sees the test object—*e. g.*, a candle—moved to the left, the parallax is homonymous and the visual axes tend to cross; if the candle-image moves to the right, the parallax is heteronymous (or crossed) and the visual axes diverge; if it moves down, there is vertical parallax (left parallax), indicative of left hyperphoria; if it moves up, there is right (vertical) parallax, indicative of right hyperphoria. Of course, we may have both lateral and vertical parallax combined, in which case both a lateral and a vertical movement of the image will be observed.

The test so performed is exceedingly simple, and yet, from a somewhat extensive trial of it, I am led to believe that it is a very delicate one. The degree of shifting of the images is a measure, approximately at least, of the amount of heterophoria, and, if it is desired to measure the latter precisely, this can be done by placing prisms before the eyes until the images no longer change their position with the movements of the screen. The strength and axial direction of the prisms will obviously indicate the amount and character of the correction to be employed for the heterophoria. Thus, suppose that the image moves down when the right eye is uncovered, a prism of one degree is placed, base down, before the right eye, thus elevating the image. The shifting of the screen still shows a parallax, but now in the opposite sense—that is, the left image moves down. The prism is now revolved until its apex points to 30°, at which point no vertical movement is observed on displacement of the screen. The test therefore indicates a right hyperphoria of about $\frac{1}{2}°$, or, as I prefer to put it, there is a right parallax of $\frac{1}{2}°$. Differences in the level of the eyes of one tenth to one fifth of a degree can usually be detected by the parallax test, and it is thus quite as delicate as the ordinary test for hyperphoria (*i. e.*, the production of artificial diplopia by the use of strong prisms with their bases directed in, and the estimation by the patient of the difference of level existing between the two images), and it has the advantage that one source of error—namely, the failure to perfectly adjust the diverging prisms—is eliminated. Moreover, in all tests performed upon the eyes, the nearer we approximate to the natural state the better; and I think there can be no question but that the use of prisms to produce diplopia introduces an artificial condition, and so tends to disturb the natural relations of the eye and to produce more or less involuntary muscular effort, when what we desire is the completest muscular relaxation possible. Hence I have lately been in the habit of regularly employing, first, the screen and parallax tests, which introduce conditions least removed from the natural; then using prisms to make the ordinary examination for hyperphoria and for lateral insufficiency; and, last of all, testing the dynamic capacity of the eye by finding the abduction, adduction, etc. This last examination, by calling into play the different recti, tends to temporarily destroy the balance of these muscles, and should therefore be always deferred till the static tests, which presuppose the recti to be as far as possible in equilibrium, have been performed.

Another example of the usefulness of the parallax test in examining for hyperphoria is found in those cases in which we have had the patient wear a trial prism in order to detect the amount of this condition. If, for example, we have suspected right hyperphoria, and, in order to test the matter, have had the patient wear a prism of 1°, base down, before the right eye for a day or so, and, on coming back, he has shown, with his prismatic glasses on, no parallax or ever so slight a tendency to left parallax, we infer that the glass is overcorrecting, and that our suspicions were probably erroneous. For, after wearing such a glass, a patient who really has right hyperphoria of any appreciable amount would show more than 1° of it, and hence would, with his glasses on, exhibit a right parallax. I have found this application of the parallax test very useful, and by its aid have succeeded in measuring very precisely even minute degrees of hyperphoria.

In examining for lateral insufficiency, the parallax test is equally useful and equally delicate, an exophoria or an esophoria of one degree or more being usually evidenced by a distinct movement of the images from side to side. The amount of lateral deviation may be quite accurately measured by the degree of excursion of the images, or, if desired, by the strength of the prism which, placed base in or out, abrogates the parallax.

The parallax test is further of service when we wish to ascertain whether a glass, designed for the correction of refractive errors only, exerts a prismatic effect. For instance, suppose that a patient with hypermetropia shows, when his refractive error is corrected by properly centered lenses set in a trial-frame, no parallax, but that, when he puts on spectacles made for him by the optician, a distinct parallax is obtained, it is evident that the spectacle-glasses are either improperly adjusted or, from some defect in construction, contain a prismatic element. They should now be adjusted upon the face till the parallax disappears or becomes as small as possible, when the error due to the former cause will have been eliminated. Then any error due to improper construction can be measured by noting the strength and direction of the prism which, placed before the glasses, causes the residual parallax to disappear.

The results of the parallax and of the screen tests should always be congruous; and even in such a rare case as that before mentioned—in which, with deviation of the eye outward, there were homonymous diplopia and an esophoria of 12° or more—the parallax was necessarily heteronymous.

All the tests which have been hitherto described are arranged for determining the static condition of the eyes. The dynamic tests, or those which aim to determine the power of the different muscles, are various. Besides the estimation of the abduction, adduction, and sursumduction, by placing prisms before the eyes with the bases in, out, up,

and down, the diplopia produced by which the patient is required to overcome, there is one rough test that I have lately employed with, I think, considerable advantage in estimating the excursion of the eyes inward and outward. It is analogous to the expedient ordinarily employed in examining for weakness of either of the lateral recti—an expedient which consists in moving before the patient's eyes a small object as a pen-point or the finger and watching the behavior of the eyeballs as they follow the latter from side to side. In the modified test, which, for want of a better name, I call the *excursion test*, the object looked upon is stationary and twenty feet or more distant, and the patient's head is slowly turned from side to side while his eyes remain fixed upon the object. The test is both objective and subjective, the physician observing any tendency to deviation which the eyes may exhibit during their excursion, and at the same time requiring the patient to notice any diplopia or other subjective evidence of heterophoria. For the latter purpose, the use of the red glass placed before either eye is almost always necessary. Starting with the standard position, which, borrowing military phraseology, may be designated as "eyes front," the head is successively moved to the right (giving the position of "eyes left") and to the left (giving the position of "eyes right"), and in each position the presence and direction of any obvious deviation of the eye, of diplopia, and of parallax are noted. A case from actual practice will illustrate the applicability of the method. In a patient, previously operated upon by partial tenotomies of both internal and external recti, there were in the "eyes-front" position an esophoria of 1° combined with an abducting power of only 3° and an adducting power of 50°, a tendency to spontaneous homonymous diplopia, and a homonymous parallax. In the "eyes-right" position the homonymous diplopia and parallax were still more marked, increasing progressively till the former could not be overcome by voluntary effort. In the "eyes-left" position the conditions were reversed, the homonymous diplopia and parallax diminishing to zero and then becoming heteronymous. In other words, as the eyes moved in association to the right, there was a progressively increasing tendency to convergence, and, as they moved to the left, an increasing tendency to divergence of the visual axes. Moreover, the position of equilibrium for the eyes was not in the position of "eyes front," but in a slightly "eyes-left" direction. To explain these phenomena, any one of the following hypotheses may be advanced:

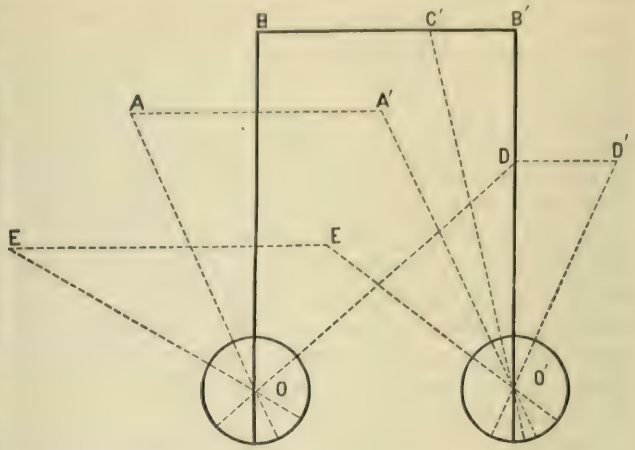
1. The movements of the left eye are excessive both in abduction and adduction, without impairment of the functions of the muscles of the right eye. This hypothesis is scarcely tenable, especially in view of the restricted adduction (only 3° instead of the normal 8°).

2. The movements of the right eye are restricted in both abduction and adduction.

3. A combination of restriction of movement of the right eye with excessive latitude of motion of the left eye exists.

4. There is a tendency to associated deviation of both eyes to the left, together with excessive abduction of the left eye and restricted abduction of the right, the adduction of the latter being normal or more probably diminished.*

This last hypothesis seems most probable. It is indicated in the accompanying figure, in which, when the eyes



are directed slightly to the left, the axes OA and O′A′ are parallel without there being any extra tension upon the muscles. On moving to "eyes front," the axes OB and O′B′ are still parallel, but are maintained so by an effort of the weak external rectus of O′, which has had to pull the eye through the angle A′O′B′, while the strong internal rectus of O has no difficulty in carrying it through the angle AOB. Hence, while O is maintained in its position there is a constant tendency of the axis O′B′ to fall into O′C′, producing homonymous diplopia and parallax. As the eyes are carried still further to the right, this tendency becomes more and more marked, and in extreme "eyes right" the axes OD and O′D′ make a distinct angle with each other, producing well-marked and invincible homonymous diplopia. On the other hand, as the eyes sweep to the left, the strongly preponderant abduction of O carries the eye readily through the angle AOE, while, the adducting power of O′ being comparatively feeble, this eye is carried through the less angle A′O′E′, and a condition of divergence of the axes with crossed diplopia and parallax exists. The indication for operation in such case will be tenotomy of the right internal rectus, in order to prevent the tendency of O′ to look toward A′ and in order to give the eye with feebler muscular action (and especially with feebler abducting power) the easier task to perform. The operation being performed in such a way that O′ now looks straight forward to B′, we would have now in "eyes front" a slight tendency to exophoria (readily overcome by the strong adduction of O), and, as the relative abducting power of O′ is increased by the weakening of its internal rectus, a much smaller tend-

* In the statement of these hypotheses, abduction does not necessarily mean absolute abducting power, but rather the net capacity of the eye for turning out—*i. e.*, the maximum power of the external rectus minus the minimum power of the internal rectus. Accepting this definition of abduction with the complementary one of adduction, all the above hypotheses may be reduced to the general statement that in the case under consideration both the abduction and the adduction of the right eye are below the normal, while the abduction and the adduction of the left are in excess.

ency to homonymous diplopia and parallax on rotating the eye to the right.

A number of other cases might be cited in which this test has shown itself useful in determining the dynamic relations of the two eyes and furnishing indications for treatment. It is sufficient to say that in my own practice I have found it a serviceable procedure and one which I would never omit when making an examination for heterophoria.

The corresponding test for the dynamic condition of the superior and the inferior recti—*i. e.*, by placing the eyes in the position "eyes up" and "eyes down"—may be employed, but is difficult of application and is usually conducted only with the visual axes in convergence. The ordinary excursion-test ("eyes left" and "eyes right") can likewise be employed with the visual axes convergent.

The recording of the results obtained by these various tests is much simplified by the use of the following abbreviations, which I have lately employed and have found of advantage as saving both time and space and as rendering it easy to exhibit in tabular form, suitable for ready comparison, the records of the examinations from day to day. Many of these abbreviations are already in use and are only given here for the sake of completeness; others have been used by Dr. Stevens and other investigators in this special field; while others still are my own invention, designed to represent the new terms introduced in this paper.

Table of Abbreviations.

Ab.—abduction.
Acc.—accommodation.
Ad.—adduction.
As.—astigmatism.
As. C.—astigmatism corrected.
As. h.—hypermetropic astigmatism.
As. m.—myopic astigmatism.
As. h. m.—mixed astigmatism with predominating hypermetropia.
As. m. h.—mixed astigmatism with predominating myopia.
At.—atropine, or under atropine.
b.—base.
b. d.—base down.
b. i.—base in.
b. o.—base out.
b. u.—base up.
C.—corrected, correction, or with correction.
Conv., Cv.—convergence.
D.—dioptre.
D. or Di.—diplopia.
Div.—divergence.
D′—diplopia in accommodation.
D″—diplopia with the red glass.
D‖—homonymous diplopia.
DX—crossed diplopia.
D. v.—vertical diplopia.
D. L.—left diplopia; vertical diplopia with the image seen by left eye below.
D. R.—right diplopia; vertical diplopia with image seen by right eye below.
E.—eye.
E. d.—eyes down; position (of deorsumversion) in which visual axes are parallel and both directed down.
E. d′—eyes down in convergence; position in which visual axes converge and are both directed down.
E. f.—eyes front; position in which visual axes are parallel and both directed horizontally forward.
E. f′—eyes front in convergence; position in which visual axes converge and are directed horizontally forward.
E. l.—eyes left; position (of sinistroversion) in which visual axes are parallel and both directed to the left.
E. l′—eyes left in convergence; position in which visual axes converge and are both directed to the left.
E. r.—eyes right; position (of dextroversion) in which visual axes are parallel and are both directed to the right.
E. r′—eyes right in convergence; position in which visual axes converge and are both directed to the right.
E. u.—eyes up; position (of sursumversion) in which visual axes are parallel and are both directed up.
E. u′—eyes up in convergence; position in which visual axes converge and are both directed up.
Exc.—excursion.
Exc. T.—excursion test.
Exc. T′—excursion test in accommodation.
H.—hyperphoria.*
H′—hyperphoria in accommodation.
H. C.—hyperphoria corrected or correction of hyperphoria.
Hm.—hypermetropia.
Hm. C.—hypermetropia corrected or hypermetropia-correction.
Ins.—insufficiency.
Ins′—insufficiency in accommodation.
L.—left.
L. E.—left eye.
L. H.—left hyperphoria.*
M.—myopia.
M. C.—myopia corrected, or myopia-correction.
n.—normal.
Op.—ophthalmoscope.
P.—parallax.
p.—prism; near point.
P. lat.—lateral parallax.
P. L.—left parallax; image moves down when left eye is uncovered.
P. R.—right parallax; image moves down when right eye is uncovered.
P. v.—vertical parallax.
P.X—crossed parallax.
P‖—homonymous parallax.
R.—right.
r.—far point.
R. E.—right eye.
Rf.—refraction.
Rf. C.—refraction-correction, or with refraction corrected.
R. g.—red glass.
R. H.—right hyperphoria.*
S—esophoria.†
S′—esophoria in accommodation.
Sc.—behind screen eyes move.
Sd.—sursumduction.
Sd. L.—left sursumduction.
Sd. R.—right sursumduction.
T.—tension.
T. n.—normal tension.
Ten.—tenotomy.
Unc.—uncorrected.
V.—vision.
V. M.—monocular vision.
V. S.—single vision.
V. S′—single vision in convergence.
VV.—binocular vision.
v.—vertical.
X—crossed; exophoria.†
X′—exophoria in accommodation.
‖—homonymous.
<—less than; after a number, denotes an indefinite amount more than this number.*
<<—growing steadily less than.
>—more than; after a number, denotes an indefinite amount less this number.
>>—growing steadily greater than.
+—before a number or symbol, denotes positive; after a number, denotes this number plus a fraction less than one.*
−—before a number or symbol, denotes negative; after a number, denotes this number minus a fraction less than one.*
∼—indefinite.

The use of these abbreviations is illustrated by the tabular excerpt from my note-books, given on page 118, describing a case which I was permitted to examine through the courtesy of Dr. A. C. Palmer, of Norfolk, Va.

I lay some stress upon the form here employed, because it exhibits the proper order in which the tests should be made. In the columns headed "E. f." we have the record of the tests made in the "eyes-front" position, or that in which the eyes are in a state of equilibrium and in a condition least removed from the natural. The first column, headed "D., &c.," gives the result of an examination made without introducing any artificial element other than that due to the interposition of a red glass. The second and third columns show the record of the parallax and screen tests which are made simultaneously, and which, as before remarked, are to be performed before the prismatic tests for insufficiency. The latter are recorded in the fourth and fifth columns, the test for hyperphoria being made first and that for lateral insufficiency afterward, according to the

* Symbol used by Dr. G. T. Stevens.
† Suggested by Dr. A. L. Ranney.

Date.	Ef					Ef′	ExcT.		ExcT′.	Ab.	Ad.	Sd. R L.	Remarks and treatment.
	D &c.	Sc	P	H	Ins	D′&c.	Ins′ & H′.	Er.	El.				
May 24			1; no v.	0 or R⅓	X = 0 1		X′.	D″ | .	D″ | .		5°	29°		All tests Rf. Unc.
May 28			X & R* & R†	R. 1	X, 1 .			D″ & R.	D″ & R		3°			*Rf. Unc. †Rf. C
May 29	D X & R	O	& R.	R. 1	X, ½		H′ 0 or R.	In both D″ X = Ef, and finally SV.			4°* 6°†		1°, 1°	*Rf. Unc. †Rf. C.
June 7	D X*; D = 0 or tendency to D ‡.		& R§.	R† trace. S = 1 ½.	S = 0.1 ¶.			In extreme position, D″ |.			6°†			* with H. C. = R. 1°. †Rf. C. ‡Rf. Unc. To use temporarily p. 1° b. d. R. E.

principles laid down by Dr. Stevens. After these static tests have been performed there can be made, if desired, the tests with the axes in convergence. These are recorded under the heading "E. f'," the column "D' &c." noting the existence of diplopia or parallax on convergence, and the next column the degree of insufficiency and hyperphoria in accommodation. Then the excursion test is made and the result recorded in the column "E. r. and E. l.," and, if desired, the same test can be made with the axes in convergence, the record being placed in the column "Er' and El'." Last of all are placed the columns "Ab.," "Ad.," and "Sd.," in which the prismatic tests for the abduction, adduction, and sursumduction are entered. For the reasons before given, these last tests should be made after all the others.

Without going into a detail of explanation of all the entries, it will be sufficient to amplify one bearing the date of May 29th. Here the record shows that with the red glass there was crossed and right diplopia—that is, the image perceived by the right eye was below and to the left. No movements of the eyes were detected behind the screen, but the patient exhibited a homonymous and right parallax—that is, on removing the screen from the right eye, the candle-image moved down and to the right. The prismatic tests showed a right hyperphoria of 1° and an exophoria of ½°. In accommodation there was either no hyperphoria or a tendency to right hyperphoria. On performing the excursion test, both in the position of "eyes right" and "eyes left," the crossed diplopia with the red glass became progressively less, and finally changed to single vision. The abduction was 4° with the refraction uncorrected and 6° with the refraction corrected, and the right and left sursumduction were each 1°.

It will be seen that by employing a tabular form of this sort, which a physician can read at a glance, the results of a long series of observations and trials can be very speedily recorded and most succinctly displayed.

Note.—Owing to the lack of distinctive terms to express the different ideas involved, the nomenclature of the motor conditions of the eye is somewhat confused. Abduction, for example, is used to denote (*a*) the absolute power of movement inherent in the external rectus (*i. e.*, the total capacity for movement outward of the eye without any deduction for the opposing tension of the internal rectus), (*b*) the net actual capacity for movement outward of one eye (*i. e.*, the difference between the maximum power of movement of the external rectus and the minimum power of movement of the internal rectus), and (*c*) the net amount of outward movement of both eyes conjoined (*i. e.*, the degree by which they can diverge from each other). The last is properly designated by the term *diverging capacity* or *divergence* [G. T. Stevens]. For the second the word *abduction* may properly be retained. For the first there is no word existing, and therefore I would propose as its equivalent the term *exokinesis*. The corresponding terms for the inward movements of the eye are *esokinesis*, *adduction*, and *convergence*; for the upward movements, *anokinesis*, *sursumvergence*, and *sursumduction*; and for the downward movements, *catokinesis*, *deorsumvergence*, and *deorsumduction*. Or, arranging in tabular form:

Capacity for movement.	In.	Out.	Up.	Down.
Absolute capacity of a single eye, supposing there to be no opposing tension.	Eso-kinesis.	Exo-kinesis.	Ano-kinesis.	Cato-kinesis.
Net capacity of single eye.	Adduc-tion.	Abduc-tion.	Sursum-duction.	Deorsum-duction.*
Capacity of separation of the eyes from each other.	Conver-gence.	Diver-gence.	Sursum-vergence.	Deorsum-vergence.*

There also seems to be required some word to express the general condition in which the various muscular tensions and movements are so adjusted that the visual axes are directed without difficulty at any desired point, or are maintained in parallelism during distant vision; the condition, in other words, in which the individual movements of each eye are properly performed and are properly co-ordinated with the movements of its fellow. This state of perfect dynamic adjustment, which corresponds to the ideal static condition of orthophoria, is appropriately designated as *isokinesis*. The contrary condition, in which one eye fails to move with the other so that there is difficulty in directing one or both visual axes at an object, may be termed *anisokinesis*.

FIVE CASES OF DISLOCATION OF THE HIP.†

By LEWIS A. STIMSON, M. D.,
SURGEON TO THE NEW YORK, CHAMBERS STREET, AND BELLEVUE HOSPITALS.

The importance of traumatic dislocations of the hip joint and the remarkably constant and definite results obtained by experimental study of them upon the cadaver, along the lines indicated by Professor Bigelow, have combined, notwithstanding the comparative infrequency of their occurrence, to make the knowledge of their mode of production and pathology apparently complete, and to give the methods of reduction an exceptional definiteness of plan and execution. On the other hand, the injury so rarely comes under the observation of the practitioner, even of the hospital

* In practice, the terms deorsumduction and deorsumvergence are not employed, it being found more convenient to speak of the conditions opposed to right sursumduction and right sursumvergence as left sursumduction and left sursumvergence rather than as right deorsumduction and right deorsumvergence.

† Read before the New York Surgical Society, May 8, 1889.

surgeons of large cities, that our knowledge of it is, as a rule, rather theoretical than practical and personal, and it seems desirable that from time to time, as occasion serves, the subject should be reviewed, to the end that the scattered results of individual experience may be brought together to refresh our appreciation and perhaps to improve our treatment. The subject has been recently brought prominently to my mind by five cases that have come under my care during the last year, three of them within the last month, and it is to the record of these cases that I ask your attention. Three were dorsal, two obturator, dislocations.

Case I.—F., forty-eight years old, a spare, muscular man, was brought to the Chambers Street Hospital, June 8, 1888, having just been knocked down and run over by a wagon. He had suffered a dorsal dislocation of the right hip and a compound intra-articular fracture of the left tibia and fibula. As he lay on his back, the right thigh lay in a posture of flexion, adduction, and inward rotation, its knee resting upon the front of the other thigh, about a hand's-breadth above the left knee. The right trochanter was very prominent, the muscles between it and the anterior superior spinous process of the ilium were raised in a longitudinal swelling, and the muscles of the posterior portion of the thigh were thickened by the shortening of the limb. But little motion could be communicated to the limb, except in the direction of further flexion, and even that was resisted and painful. There was an abrasion on the outer side of the upper part of the leg.

Ether was administered, and a number of attempts to reduce were made by flexing the limb to or beyond a right angle while preserving the adduction and inward rotation, then abducting, rotating outward, and lifting the limb by means of a bandage passed under the flexed knee and over the shoulders of the operator, but without success; the head was firmly fixed behind the acetabulum, and did not move forward in the least. I then sought to enlarge the opening in the capsule by circumduction and rotation, and repeated the effort, but still in vain. Finally, traction was made by Dr. Kimball, the house surgeon, in the direction of the axis of the limb as it lay in its first position of flexion and adduction, while I made pressure inward against the trochanter, and the bone slipped into place.

During the long confinement to bed made necessary by the fracture of the leg the patient recovered entirely from the injury to the hip.

Case II.—J. S., twenty-two years of age, a large, muscular man, was admitted to the Chambers Street Hospital, February 3, 1889, with a dorsal dislocation of the right hip caused by the overturning of a cab which he was driving. The cab fell upon him, but he was unable to describe the attitude of the limb in the fall, or the direction in which the violence acted upon it. No recognizable bruises.

When I saw him, shortly after the accident, he manifested considerable shock, moaned constantly, and complained loudly whenever the limb was touched. He lay on his back, with the right thigh flexed and adducted, so that its knee lay upon the lower part of the other thigh. The right trochanter was very prominent, and the upper part of the thigh widened.

I drew him toward the foot of the bed until the pelvis projected beyond it, and then turned him upon his face; the left thigh was held horizontally by an assistant; the right thigh hung directly down, the knee flexed at a right angle, and I supported the ankle. After a few moments the muscles of the thigh began to relax, the patient complaining loudly all the time and asking for water. I shook the limb gently from side to side, and, when the muscles appeared to be freely relaxed, gave a slight push downward with my fingers at the hollow of the knee, and the bone slipped into place with a snap.

Case III.—G., fifty-six years of age, was admitted to Chambers Street Hospital, April 1, 1889, having just fallen down a hatchway and received a dorsal dislocation of the right hip and a comminuted fracture of the left patella. He presented no appearance of shock, and made no complaint of pain. As he lay on his back, the lower extremities were nearly parallel, the left being slightly abducted, the right rather more adducted and rotated inward. The pelvis was tilted about its transverse axis, so that the thighs were actually flexed upon it, although their full length rested upon the bed, and there was a well-marked anterior curve of the lumbar spine. The upper part of the right thigh presented the fullness and change of appearance noted in the two other cases; it could not be abducted.

He was drawn to the foot of the bed and turned upon his face, with the right thigh hanging down, as in the preceding case. He made no complaint, but kept the muscles of the thigh tense. After waiting two minutes, I placed a five-pound sandbag upon the upper part of the leg, in the hollow of the knee, and asked him to describe his accident. As he talked the muscles could be seen to relax, and on the expiration of two minutes and a half I found, to my surprise, that the head of the bone had returned to its place without jar or sound. The limb could be freely abducted, everted, and extended. He was returned to bed, and a long side-splint applied.

As the fragments of the broken left patella showed no tendency to separate, that limb was simply secured upon a straight posterior splint.

He slept but little during the first two nights, and became very nervous, and finally so delirious that restraint was necessary. The urine was loaded with albumin. He grew better for a time, then worse, and died April 10th, without having shown any noticeable inflammatory reaction at the injured parts. The autopsy showed chronic parenchymatous nephritis, and pulmonary phthisis at both apices.

The rent in the capsule ran along the edge of the posterior part of the cartilaginous rim of the acetabulum for about two inches from the notch, and from its upper part a prolongation ran for a short distance parallel to and in close relations with the tendon of the obturator internus. On the anterior surface of the head of the femur was a broad, shallow contusion caused by contact after dislocation with a piece of bone of new formation developed in the soft parts close against the outer surface of the cartilaginous rim of the acetabulum adjoining the rent in the capsule. This specimen was shown to the society at the meeting of April 24th.

In respect of the symptoms, the first two cases presented the classical ones of flexion, adduction, and inward rotation, but in the third the two limbs lay almost parallel to each other and flat upon the bed; and yet in the latter, flexion of the joint was actually present, but was masked by the tilting of the pelvis, which was itself shown by the anterior curve of the lumbar portion of the spine. This lordosis was a feature better known, I think, to the surgeons of a generation ago than to those of the present time; at least, I have not found it noted in cases reported of late years, and one of the surgeons of this city, forty years ago, was accustomed to say that he could recognize a dislocation of the hip by passing his hand under the small of the back. It seems to be worth bearing in mind, to avoid being misled by an apparent absence of flexion.

Very few specimens of recent dislocation have been re-

ported, and the one obtained from the third case differs from most others in the position and shape of the rent in the capsule, which lies much closer than usual to the rim of the acetabulum. It is entirely unique in the bruise upon the anterior portion of the head of the femur—a bruise resembling that sometimes produced upon the head of the humerus by impact upon the anterior edge of the glenoid fossa in anterior dislocations. Its production in this case appears to have been due to the presence of the abnormal piece of bone developed behind the labrum cartilagineum.

The feature of most practical importance appears to me to be the method by which reduction was effected in the last two cases. It is one which I had once previously employed with success, and which is briefly referred to in Bigelow's monograph upon the hip. Its advantages are that it does not require anæsthetization or the exercise of any force. Although the opposition of the untorn portion of the capsule is an element of prime importance, that of the spasmodically contracted muscles is equally so, and this contraction, when not annulled by anæsthetization, has often proved sufficient to defeat well devised and executed measures to reduce by manipulation. Indeed, the possibility of completely relaxing the muscles by the aid of ether or chloroform has made the reduction of most recent dislocations an extremely simple and easy matter, and has greatly reduced the importance of considerations drawn from the position and influence of the capsule. But, even when the muscles are completely relaxed and the patient is lying upon his back, the surgeon has to overcome the opposition of the weight of the limb; he must not only move it successively into various positions, but he must also lift it, and this, if the patient is large, means the lifting of a weight of forty or fifty pounds while standing in a disadvantageous position and occupied with the necessary manipulations. It was after having become hot and tired in thus reducing a dislocation, one summer day, that the thought occurred to me of making the patient himself do this work, or rather of making the weight of the limb a coadjutor in the reduction instead of an opponent. When, three years ago, the first opportunity to try it came, the attempt succeeded in less than a minute, and the success of the same plan in the second and third cases here reported indicates that it is one likely to succeed in many cases, and that, as it can be employed without anæsthesia or special apparatus, it may save both patient and surgeon much inconvenience and delay. All the apparatus it requires is a support for the body of the patient sufficiently high above the ground to permit the thigh to hang down vertically while the leg is horizontal, and for this a couple of stout planks or the bottom of a farm wagon would be sufficient. Two of the three patients upon whom it was used complained greatly of feeling faint while they were lying prone, but I thought this was to be deemed an advantage, as favoring prompt relaxation of the muscles. The third patient was so entirely at his ease in this position that he was able to give a detailed account of the manner in which he received his injury.

The remaining two cases are *obturator dislocations* of the perineal variety—the only ones I have seen.

Case IV.—Charles F., aged thirty-two, a large, muscular man, was admitted to the Chambers Street Hospital, April 11, 1889, with a dislocation of the left hip produced in the following manner: While he was reaching up to aid the descent of a box weighing about 1,000 pounds, it slipped and fell upon his back, flexing his trunk upon his thighs and crushing him to the floor; his right thigh was in front, its hip and knee flexed; the left thigh was widely abducted. I found him lying on his back in bed, with the left thigh flexed and abducted so that it stood out almost at right angles from the side of the body, the knee resting on a cushion and pillow, the leg flexed at a right angle with the thigh, and secured by a band at the ankle to prevent involuntary movements. The flexion and abduction of the thigh were each between 60° and 70° from the frontal and sagittal planes, respectively. The distance from the anterior superior spinous process of the ilium to the lower edge of the condyle of the femur was one centimetre and a half less on the injured than on the opposite side when the right thigh was placed as nearly as possible in the same position as the other. The right thigh could not be abducted quite as widely as the left was. The soft parts on the upper inner side of the injured thigh were prominent, and a rounded mass could be felt beginning one inch from the rhaphe of the perinæum, extending forward to the line of the adductor longus and backward nearly to a transverse line drawn through the anus. This was not depressible, contrasting strongly in this respect with the easy depressibility on the other thigh between the flexors of the leg arising from the tuber ischii and the adductors. The adductors were rather tense. The leg could not be freely extended at the knee, lacking 20°. The finger in the rectum, when pressed against the inner surface of the obturator internus covering the obturator foramen, could recognize rotatory movements communicated to the thigh. The region of the great trochanter was deeply depressed. Passive movements of the hip could not be made, except slight additional flexion and rotation.

The prominence of the head of the femur near the perinæum makes it proper, I think, to classify this case in the perineal variety of obturator dislocations.

After an unsuccessful attempt to reduce without anæsthesia by manipulation in the prone position, ether was administered; the previous attempt had made the head less prominent, and reduction was readily effected by increasing the flexion with outward rotation, making traction in the axis of the limb, adducting, and then lowering the limb beside the other. There was no recognizable jar or sound as the bone returned to its place.

The patient was kept in bed with a long side-splint for nearly two weeks, and was discharged May 2d.

Case V.—William B., aged forty-three, a strongly built, muscular man, was admitted to the Chambers Street Hospital, April 22, 1889, with an obturator dislocation of the right hip. He was engaged in moving a heavy piece of machinery from a truck and was kneeling upon the ground on his right knee, beside its projecting end, when it overturned sidewise upon him, striking him first upon the left shoulder. As it was falling he threw his body backward and to the right to save his head, and it was probably during this movement, aided by the pressure upon his left shoulder, that the dislocation took place. His only contusions were at the left shoulder and on the inner side of the right knee, where it had been struck by the machinery as the limb rested on its outer side upon the ground. I was at the hospital when he was brought in by the ambulance.

The right thigh was flexed and widely abducted, so far that when the left thigh was placed as nearly as possible in a similar position, the distance between the knees was thirty inches. The position of the limb closely resembled that in the preced-

ing case. The upper adductor region was abnormally full, the trochanter depressed. The finger in the rectum, pressed against the obturator foramen, could indistinctly feel rotatory movements communicated to the thigh. Measurement from the anterior superior spine of the ilium to the knee showed shortening of two centimetres on the injured side. Adduction and extension painful and opposed.

After an unsuccessful attempt to reduce by manipulation in the prone position, ether was administered and reduction effected on the second attempt by the method employed in the preceding case, the head slipping into place with a distinct snap while the limb was being lowered.

The patient was kept in bed for twelve days with a long side-splint, and is now walking about the ward.

The mode of production in the first case, and probably also in the second, was wide abduction of the flexed thigh, and this explains the attitude of the dislocated limb, which differs strikingly in the extent of the abduction and flexion from that found in most obturator dislocations. In several reported cases of the common form the patients have been able to walk immediately after the accident, and in one the patient sought advice only because he found he could not adduct the limb freely. This wide abduction with flexion beyond the normal limit is constant in the perineal variety, and possibly it would be advisable to class all cases presenting that symptom in that variety, even if the head of the femur, as in my second case, should not noticeably impinge upon the perinæum.

The ease with which reduction can be effected is gratifying: flexion and outward rotation to disengage the head from the projecting rim of the acetabulum, traction in the axis of the limb to bring it opposite the cotyloid cavity, adduction and extension to turn it into the socket.

In both cases I tried, as in two of the dorsal dislocations, but unsuccessfully, to make the unsupported weight of the limb take the place of anæsthesia to relax the muscles. The patient was laid upon his face with an inclination toward the injured side, so that the abducted limb should hang vertically downward, and then, after the muscles had relaxed, I attempted the same manipulation which subsequently succeeded under ether. But in each case, and although in one the effort was prolonged for fifteen minutes, at the first movement of the limb the muscles contracted powerfully and the limb became fixed. It is true that both patients were exceptionally muscular and their strength was not diminished by shock. Possibly in feebler patients, or if the pelvis was so raised that the thigh would hang nearer to the abdomen, the attempt might succeed.

[Dr. Cole, of the house staff of the Chambers Street Hospital, has recently extended this method of obtaining muscular relaxation to the reduction of anterior dislocations of the shoulder, and it has proved successful in the three cases in which it has been tried. The arm is allowed to hang by the side, with the wrist lightly supported in the surgeon's hand and the elbow flexed at a right angle, and is gently shaken until the muscles are seen to relax; then a smart blow is struck downward with the hand at the fold of the elbow, and at the same time the arm is rotated outward. In each case the head of the humerus instantly returned to its socket.]

THE SURGICAL TREATMENT OF INVETERATE TIC DOULOUREUX.*

By ROBERT ABBE, M. D.

The procedure to which I invite your attention is not a new one entirely, but so rarely advocated and yet so important that it impresses me as fully worthy of our time tonight.

Fortunately, cases of obstinate tic douloureux are not very common. When they become chronic there are few diseases that produce the agonizing distress of the constantly recurring shocks of acute pain in the cheek, jaw, and often half the head. It distracts the mind from work. It seizes the victim every few moments in the midst of conversation, forces tears and exclamations, produces salivary flow in excessive amount, prevents eating and sometimes sleeping, and brings him to the verge of despair. The time of its continuance is often measured by years, and, while it does not usually wreck the patient's physique, it exhausts his powers of endurance and work.

The store-house of medicinal remedies has been exhausted without reaching most of the cases, and it has not been until recent years that surgery has been able to rescue these sufferers.

In 1851 Dr. J. M. Carnochan operated in the first case for complete resection of the second branch of the fifth pair from the foramen rotundum to the infra-orbital foramen—with the removal of Meckel's ganglion—with complete success. This marked an era which has been proved by numerous other successful cases.

Prior to his publication in 1858 the simple subcutaneous section of the infra-orbital nerve in the cheek had had many ardent advocates and as many opponents, but no one dared nor cared to go back of this point to extract the nerve.

In the early part of the century Brodie speaks of the "*notorious failure of simple nerve section in tic douloureux*," and Velpeax, Stromeyer, and others speak of the momentary relief only that comes from it.

The weight of opinion had led to its practical abandonment. The discovery of the value of resection of portions of nerves in obstinate neuralgias led to the delicate operation of Langenbeck to remove a considerable portion of this nerve from the floor of the orbit. He isolated the bundle of nerves at the infra-orbital foramen in a small incision, and then passed a narrow curved bistoury into the outer side of the orbit below the lid, inward toward the posterior part an inch and a half, when, on turning it down, he cut the nerve in its groove and pulled it out by the infra-orbital end. This method prolongs the period of relief from pain, but recurrence follows.

Nothing so bold as Dr. Carnochan's operation had been previously tried. He operated as follows: A V-incision was first made below the eye, and from its apex a straight cut was extended downward through the entire cheek and lip half way between the nose and the corner of the mouth. The nerve ends were then gathered up at the foramen of exit and a trephine was applied to the front of the jaw, removing the front

* Read before the New York Clinical Society, May 24, 1889.

bony wall of the antrum. The roof of this cavity, being of thin bone, is readily broken in and the nerve drawn down from the orbital cavity. The back wall of the antrum is next broken away and removed, which exposes the spheno-maxillary fossa, which at this point is little more than half an inch deep. The nerve can now be cleaned away from its cellular surroundings and traced to the foramen rotundum, which is on a line with the inner wall of the antrum. Here it is readily cut square off. The posterior dental nerves and Meckel's ganglion connect in front of this, and thus all communication of the jaw with the nerve centers is cut off beyond the chance of repair.

This method he followed in all his patients. A few years later Dr. James R. Wood added several cases to the list and modified the operation only in not making the cut clear through the lip. Their work, as was usual in those days, was followed by what they called "healthy suppuration" and excellent healing, the antrum being syringed out if needed during the cure.

In 1879 Dr. F. S. Dennis, of this city, collected twenty-one cases of this operation ("N. Y. Med. Journal," June, 1879), and the report made a most admirable showing in favor of this operation so creditable to American surgery. The method is probably the best one for approaching the foramen rotundum, but other methods by Gerster, Luecke, and others of going from the side of the cheek, cutting the malar bone and the zygoma, and working in the narrow fossa from the side, have been tried. They are apt to be more bloody and perhaps less certain of exact feeling of the foramen.

The simplifying of dressings and attainment of primary union in the wounds now possible make certain valuable modifications of the operation practicable, which I have adopted in three cases. The best point is the small skin incision, which leaves a small scar. One inch and a quarter, either horizontally, vertically, or obliquely, over the infra-orbital foramen gives ample room for operating. I have found a gouge better than a trephine for penetrating the antrum, front and back. A narrow, forked, blunt instrument to straddle the nerve and assist in dragging it down into the antrum saves it from laceration.

No bleeding occurs that is not readily checked by sponge-pressure, even the sharp welling-up that occurs when the nerve and its companion vessel are cut. The dressing of the wound is of special importance, and the most perfect result is obtained by packing iodoform gauze lightly into the antrum, the end of a long strip being folded into a small pad to be placed deep in the wound against the foramen rotundum and the rest lightly added on top, and allowed to keep the wound apart on the cheek. After thirty-six or forty-eight hours this gauze is entirely removed and the wound sutured with care.

The anæsthesia of the cheek allows of secondary suturing without pain to the patient. What little exudation may follow this dressing is retained and needs no drainage, primary union invariably resulting if the dressing is made with care. The depressed scar becomes flattened after a few weeks.

Of the three cases coming under my care in the last year I have reported one only ("N. Y. Med. Journal," Feb. 16, 1889):

Case I.—The man had a unique history, a rod piercing his neck and ascending to the base of the skull, where it injured the fifth nerve and produced hemianæsthesia of his left half face, neck, and scalp. Tic-douloureux ensued in the second branch of the fifth and had continued unabated. He found no encouragement to hope for relief by operation, though he sought it not only here but in Germany. It was so severe that he attempted his life by shooting, but only wounded his chest.

Dr. Hammond treated him by medicines without relief, and referred him to me.

I operated, October 20, 1888, by the method just detailed. Meckel's ganglion was broken up by lacerating the tissues in which it was imbedded. The neuralgia was at once and permanently relieved. I have lately seen him, and he has had no return of pain, seven months after operation.

The man was undoubtedly a sufferer, and was scarcely ever seen without his handkerchief pressed into his cheek and brooding over his infirmity. Now his actions are entirely changed.

The next case was more severe in the character of the pain.

Case II.—John T., aged sixty-five years, a man of rather heavy build and well preserved, who had followed the out-of-door life of a gardener, began, four years ago, to have neuralgic pain of the right upper jaw, first felt in the premolar teeth and radiating from a painful point on the cheek, near the ala nasi, up to the temple and back of the ear and through the jaw. It was paroxysmal at first. He had a tooth extracted one year later, and subsequently others, until all were removed one year ago. A temporary relief occurred for a fortnight, but for the past year pain has been incessant and unbearable. The slightest excitement, or biting on any substance, sucking in ever so little air or cold drink, touching the gum or the roof of the mouth, even talking, brings on an intense paroxysm of pain, causing him to dodge with his head as if to get away from it, and inducing a profuse flow of saliva and often of tears.

Even independent of irritation and occurring at night, the paroxysms come on with equal severity every few minutes, and sleep has only been by short naps. Stormy weather makes the pain worse. He has had to abandon his work. External applications have given a little relief, especially dilute spirit. of chloroform, which he has applied so constantly, at night especially, that his cheek has been kept irritated almost to blistering. Internal medication has uniformly failed, and he has come to use opium, in one-grain doses, five times daily for a year or more.

In order to test aconitine, I referred him to Dr. Dana for a while before operating. He returned him to me in two weeks as a typical sufferer with tic douloureux adapted to surgical relief, and on which medicine was useless.

January 9, 1889.—I operated before a large class of physicians at the Post-graduate Hospital by Carnochan's method, through a small vertical incision an inch and a quarter in length. The superior maxillary bone was extraordinarily hard in this man, and I chiseled a circle, three quarters of an inch in diameter, with the foramen in the center.

I had some difficulty in breaking through the posterior wall of the antrum on account of the hardness of the bone, but finally drew the nerve well out of the canal and exposed it to the foramen rotundum, where I cut it, and broke up Meckel's ganglion as thoroughly as possible. The wound healed without suppuration, but he had considerable of his old pain for two or

three days. Anæsthesia of the cheek, however, showed the satisfactory removal of the nerve, and in less than three weeks his pain had absolutely gone, leaving him happier than for years. He stopped the use of opium at once. At present, four months and a half since the operation, he remains perfectly well, and nothing that he does can induce the slightest pain. The scar, which was indented, is coming to the surface and is of no importance.

Case III.—Edward Condon, aged forty-five years. Patient has always been a healthy man until he was taken unaccountably with tic douloureux in the right upper jaw eleven years ago. He had all the teeth of the right upper jaw removed one after another with relief only for a few months. It returned and has continued with more or less severity for ten years past. The punctum dolorosum is near the ala nasi, but the agonizing spasmodic tic radiates through the jaw and the side of his head. For six months past it has been nearly constant, night as well as day. Sometimes he gets five or six hours' consecutive sleep, but if he is suddenly roused the pain is brought on. In eating, speaking, expectorating, breathing cold air, drinking, or jarring the body, spasms are sure to occur. In eating meals he has everything prepared finely chopped and arranged on his plate so that he devours it in the shortest possible time so as to hurry through the agony of it. The flow of saliva is very free and constant.

His treatment has been very varied, and for two years he has been cared for assiduously by Dr. Hammond, who referred him to me, hoping that surgery might do what medicine had failed in.

January 18, 1889.—I operated by Carnochan's method, before a large number of physicians, using a short (one-and-a-quarter-inch) incision.

The antrum was packed lightly with iodoform gauze.

20th.—Forty-eight hours later. Packing removed and the wound stitched with fine silk. Antrum closed; no drainage.

24th.—Fourth day. Primary union has occurred; stitches removed. The patient has been absolutely free from pain since the operation, for the first time so completely in eleven years.

At the present date, after four months and a half, he is still without pain and correspondingly happy.

These three cases afford corroborative proof of the value of deep nerve resection in facial neuralgia. The resection or section of the anterior portion of the infra-orbital is of little use, and, as Brodie and others found, practically worthless, producing at best in a few cases a temporary relief, and in most no relief at all.

Langenbeck's clever and attractive operation on the anterior portion of the nerve is a marked improvement over the simple section at the foramen.

In a most intractable case under Dr. Seguin's care in 1881 he did Langenbeck's delicate procedure with relief for some months, but, on the pain recurring—with all its former fury—he referred the man to Dr. Weir, who operated by Carnochan's method through the antrum, removing the posterior part of the nerve to the foramen rotundum and destroying Meckel's ganglion. The man remained perfectly cured when last seen, three years later.

The inferior dental nerve is much more easily removed. I operated on March 8th on a lady referred to me by Dr. W. C. Campbell, for neuralgia of the right inferior maxillary nerve of two years' duration. The paroxysms were like those of the cases narrated, and quite as distracting and discouraging. I made a one-inch incision only, parallel with the edge of the jaw, and near its angle. On reaching the bone, I chiseled a long furrow so as to expose the nerve in its canal, and resected an inch of it. The wound closed by primary union. Anæsthesia of the anterior half of the lower lip ensued, but the pain continued for two or three days, when it entirely disappeared and has not returned.

A CASE OF FOREIGN BODY IN THE ORBIT.*

By JAMES P. MARSH, M. D.,
TROY, N. Y.

The patient who is the subject of this report is thirty-two years old and a blacksmith by trade. On January 16, 1888, he was struck in the left eye by a chip, which flew off from the hammer he was using. However, at this time it was impossible to ascertain any facts appertaining to the size or weight of this fragment. He came to my office immediately after the reception of the injury, as he was bleeding profusely and was slightly shocked.

Examination of the injured eye revealed a lacerated wound of the conjunctiva, situated in the fold or sulcus formed by this membrane between the ball of the eye and the external canthus. The general contour of this wound was V-shaped. There was no corneal injury, but there existed a rent in the iris, extending obliquely from below upward, running across that part of the iris just below the pupil, but not entering it. I did not at once make an ophthalmoscopical examination, but washed out the conjunctival wound with an antiseptic solution, and proceeded to probe for a foreign body, which I thought must be in the orbit. After as careful and extensive probing as I deemed safe, I could not find anything. At this juncture a professional friend happened to call upon me, and, as he is one of our foremost surgeons, I asked him to try the probe. This he did as thoroughly and skillfully as it could be done, but with negative results. Together we made an ophthalmoscopical examination, finding that the retina had become detached over the greater portion of the external half of its attachment. The patient's vision was about an eighth of the field, and limited entirely to the extreme left side. The macula lutea was involved in the retinal detachment, and hence his remaining sight was of but little use to him. We again probed the wound, with negative results.

The injured eye was placed under the influence of atropine, and cold wet cloths, together with a light bandage, were applied. The patient was placed in a darkened room, and complete mental and bodily rest enjoined. After two days of this treatment the case passed into the hands of one of our leading specialists, who continued the same treatment that I had adopted. The wound also was probed several times without the foreign body being discovered, and finally we were forced to believe that it had in some unaccountable way passed out of the orbit. The conjunctival wound healed promptly. The patient possessed all the movements of the ball, and suffered neither pain nor discomfort, excepting as regarded his defective vision.

On May 2, 1889, the patient again presented himself at my office, and stated that, although there was no pain in his injured eye, something was growing between the lids on that side, and he wished to have it attended to. On examination of the original wound, it was found that it had reopened, and that the V-shaped conjunctival flap had become doubled over in such a

* Read before the fifth annual meeting of the Second District Branch of the New York State Medical Association, held at Saratoga Springs June 18, 1889.

way as to project between the lids at the external canthus. In the wound nothing appeared, but with a probe I could detect a hard body in apposition with the posterior wall of the eye. With a fixation forceps it could be seized and brought into sight at the bottom of the wound, but, when additional traction was applied, it would slip out from the grasp of the forceps and fall back out of sight. However, under cocaine, I enlarged the wound, and with two forceps succeeded in extracting this piece of steel. The specimen weighs fifty one grains. It measures five eighths of an inch in its longest diameter, nine sixteenths of an inch in its shortest, and is five sixteenths of an inch in thickness. An ophthalmoscopic examination of the eye, made a few days after the extraction of the foreign body, showed that the retina of almost the whole lower external quadrant and of the lower half of the upper external quadrant had been detached, and was now in a state of atrophy. This process involved the macula lutea. The field of vision remains about the same as we found it immediately after the reception of the injury. Although the patient is confident that his sight is improving, I fear that the original prognosis of almost complete loss of useful vision will be borne out.

From the dates given, it will be observed that this bit of steel was carried in the orbit, without the knowledge of the patient, for nearly sixteen months. Although it was probed for at least a dozen times by three different operators, at the time of the extraction there were no evidences of suppuration. This certainly speaks well for the antiseptic precautions employed. Evidently this foreign body was in an absolutely aseptic condition at the time of its entrance into the orbit. This condition, in my mind, was owing to such a degree of heat being generated in the hammer by the repeated blows which had been struck with it as to thoroughly destroy all microbes and spores which might have been adhering to it.

It will, perhaps, seem to some that I should back up this remarkable case by duly attested affidavits, but, not being a newspaper man, and as misery seeks company, I refer the curious to a case mentioned by Carter, wherein a portion of an iron hat-peg, three inches and three tenths in length, remained for twenty days in the orbit without the knowledge of the patient.

Generally speaking, any foreign body which becomes lodged in the orbit induces extensive cellulitis unless promptly removed, but the above-described case is a notable exception to the rule. Dr. Noyes justly remarks that foreign bodies in the orbit are at times very difficult of detection, and narrates a case in which a twig, an inch and an eighth long and as large as a No. 8 Theobald's lacrymal probe, became lodged in the orbit, and that, failing to find it with the probe, he used his little finger as an explorer, yet met with considerable difficulty in locating it. Speaking as regards my own case, I have come to think that I should have enlarged the conjunctival wound and explored the orbit with my little finger.

57 Fourth Street.

Iodized Glycerin.—"Dr. G. Hammond ('London Med. Recorder') points out that a mixture of tincture of iodine and glycerin produces a greater effect on the skin than the pure tincture, possibly because the glycerin tends to prevent the evaporation of the iodine, and thus enables the whole of its powers to be utilized."—*Druggists' Circular and Chemical Gazette.*

THE
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SUMMER DIARRHŒA.

The town of Leicester, England, has for many years had an unenviable prominence in the English bills of health as a "diarrhœal town." It stands at the head, more frequently than any other English town, of the lists of mortality-rates by diarrhœal disease. Local effort to discover and remove the causes of the trouble having failed, the Local Government Board voted to lend its aid, and designated its eminent inspector, Dr. Edward Ballard, to institute an inquiry into the existing conditions in Leicester and other diarrhœal towns. Dr. Ballard's report, termed by himself "provisional," has recently appeared. As will be seen from a brief analysis, given below, his work has not been crowned with very great success; he has been content to give a summary of the best results obtained in England and Germany. His chief conclusion is that the temperature of the soil air is the key-note to the ætiology; for until the mean temperature of the soil at the depth of four feet has risen to 56° F., summer diarrhœa does not become prevalent. The quality of the soil also enters into the account; a town that is founded upon rock, with a thin superjacent soil, will not suffer so much from this disease as a town built upon a loose, porous soil capable of retaining much moisture. A soil containing organic matter from soakage of refuse will favor the occurrence of diarrhœa. So, too, overcrowding in tenements, the occupation of mothers in factories, bad water-supply, and bad sanitation generally will promote the disorder. Improper food does the same; but it is not in the food and drink, he thinks, whether they are proper or improper, that the real causation rests. It is something which, added to them, infects them, and thus the disease arises. Dr. Ballard points to the fact, frequently observed in this country regarding cholera infantum, that breast-fed infants are peculiarly exempt from fatal intestinal troubles when compared with those that are bottle-fed. He finds that the immunity vanishes exactly in proportion as artificial feeding takes the place of the use of breast milk, and that of all the forms of feeding, that with the bottle is the worst. Dr. Ballard believes that this extraneous agent is a micro-organism, not yet detected and isolated, whose habitat is ordinarily in the superficial soil, and which escapes into the atmosphere under certain seasonal influences and, attaching itself to the various food substances, especially to milk, may, by virtue of some of its life processes, produce in them a virulent chemical poison; and that this poisonous substance is the material cause of epidemic diarrhœa. His remedy for epidemic summer complaint is of the nature of a general admonition in favor of wholesome living, of pure drink and food, of a pure atmosphere, and of an avoidance of contaminations from in-

fected persons, from soil, and from sewers. He advises the disinfection of the discharges, as in typhoid fever; also attention to the condition of the sewers by the health authorities.

This report is not in itself a great gain to the subject, since it is admittedly "provisional"; it is a report of progress. But it is valuable, since it commits the great Local Government Board to a continued pursuit of these vastly important inquiries. It means that the subject will be exhaustively studied by experts of the first rank. Dr. Klein, the well-known pathologist to the Brown Institution, was associated with Dr. Ballard, and made numerous autopsies and microscopical investigations. His report concerning the search for a micro-organism is negative. He examined the blood, tissues, and excreta, but could discover nothing that tallied with Dr. Ballard's theory. One fact in Dr. Klein's report has an important bearing on the prognosis of summer complaint—namely, almost invariably the kidneys were found inflamed, even in cases where the duration of the attack had been only a few hours. It will be well to have this discovery tested in this country, by those having opportunities so to do, during the present season. The avoidance of opiates, the use of aseptic foods—breast milk being one of them—and the resort to the seaside and mountain atmospheres of purity, have been suggested many times before; now they are weightily confirmed by Dr. Ballard.

THE THEORY OF SUPPURATION.

The bacteriological theory of suppuration as it is at present accepted will doubtless admit of many modifications before it can reasonably be held to be perfect. Future researches may demonstrate the relative unimportance of the micrococcus as a pus-producing agent, and overthrow all the present theories, even as the theories of the past generation have been overthrown. Professor Paul Grawitz, of Greifswald ("Archiv für pathologische Anatomie und Physiologie und für klinische Medicin," cxvi, 1), by proving that suppuration may be caused by the injection of irritating substances unaccompanied by any micrococcus or ptomaine, has perhaps taken a step in this direction. The experiments were performed mainly on dogs. With the most careful aseptic and antiseptic precautions, a certain quantity of oil of turpentine was injected subcutaneously, and the wound was closed with collodion. Over this a dressing was placed. A swelling with the external characteristics of an abscess was produced which, when opened, was found to contain a pus-like fluid smelling decidedly of turpentine and perfectly free from pus cocci.

This demonstration is interesting because it indicates a possible danger which may arise from the subcutaneous injection of irritant fluids even under the strictest aseptic precautions, but we do not see how it can have great weight regarding suppuration as it is commonly met with, because practically we do not find abscesses of this nature. It proves that substances exist, in addition to the ptomaines of the micrococci, which when introduced into the tissues will produce inflammation with the formation of pus, but it does not in the least intimate that the ptomaines do not usually occupy the position held by the turpentine in the experiments as exciters of suppuration.

Grawitz also calls attention to the fact that the resisting power of the tissues of different genera of animals to the action of a given micro-organism differs widely, and insists that more attention should be paid to this when deductions regarding suppuration in man are drawn from observations on the lower animals. His remarks would be much more apposite if the question were, "What is the action of a certain micro-organism on the tissues of man?" But this is not the question. If we grant what he says to be true, still the fact remains that in all animals the destructive process known as suppuration is found accompanied by some micrococcus. That the particular micro-organism differs in the different genera does not preclude the possibility of arriving at a very close approximation to the truth regarding the action of the micro-organism constantly present in human pus, by careful observations of the actions of the various micro-organisms that are constant in similar conditions in various genera of the lower animals. Still, analogy is not always a safe guide, and Professor Grawitz may be right in his caution. His work bears the mark of much labor, and, though his results are decidedly theoretical rather than practical, they are worthy of notice.

MINOR PARAGRAPHS.

THE DIAGNOSIS OF THE SITUATION OF THE PLACENTA BY PALPATION.

On the occasion of a paper being read by Dr. Herbert Spencer before the Obstetrical Society of London, at a meeting reported in the "British Medical Journal," there took place a most interesting discussion on the possibility of diagnosticating the position of the placenta by abdominal palpation. Dr. Spencer reported two cases of placenta situated in the upper segment and seven others of placenta prævia of which he had thus been able to determine the position. In three of the seven cases the exact site of the placenta on the front wall of the lower segment had been determined by abdominal palpation, and in two of these the placenta was felt at a time when it was impossible to feel it by the vagina. In the remaining four cases the placenta was shown by abdominal palpation to be absent from the front wall. Dr. Hicks and Dr. Barnes had also been able to locate the placenta by abdominal palpation, but Dr. Matthews Duncan, Dr. Boxall, and Dr. Champneys did not believe in the possibility of so doing. Dr. John Phillips, in a Cæsarean section, and Dr. William Duncan, in a Porro's operation, had taken every precaution to avoid the placenta, and yet had cut into it. They, moreover, believed that the presence of the abdominal wall would still further increase the difficulties. In Dr. Spencer's cases the placenta was "felt as an elastic mass of the consistence of a wetted bath sponge," with defined edges, obtruding itself between the hand and the fœtal part, of which latter it interrupted the contour and lessened the shock of communicated movements. Barnes had found that, when the placenta was placed in the upper zones and in front, "the uterine wall was thickened and raised at the area of placental attachment, forming a hillock which rose above the level of the smooth surface of the uterus." That this position could further be proved by auscultation, as maintained by Barnes, was doubted by Champneys, Duncan, and Spencer. Dr. Spencer's comparison of the placenta to an elastic mass was felt to be in-

accurate by several of those present. Matthews Duncan had found that, whereas the expelled placenta was a thrombosed cake, the living one was felt to be ill-defined, soft, with a fretted, vesicular surface. Hermann also believed it to be an exception to find the placenta with defined edges. Barnes had seen one that enveloped the fœtus like a sac, while Hicks had noted a case where the structure occupied the whole inner surface of the uterus.

POISONING WITH ACETANILIDE.

Before the Baltimore Medical Association Dr. J. E. Gibbons recently read a paper on the results of a mistaken dispensing and administration of a one-drachm dose of acetanilide where five grains of antipyrine had been intended. The "Maryland Medical Journal" for July 6th contains a brief account of the symptoms, which were those of cardiac depression, cyanosis, and nausea. The treatment, which removed the threatening prostration, consisted of the use of tincture of belladonna and brandy. The headache, for which the dose was taken, was not relieved, and Dr. Gibbons holds that if the second dose had been repeated in two hours, as the mistaken directions ordered, death would have been the result. There was an error on the part of an apothecary, it is alleged, in writing out the copy of a prescription, causing the substitution of three drachms of acetanilide for half a drachm of antipyrine. It was a case of unauthorized "borrowing" of a prescription by a neuralgic person who had not been prescribed for by a physician. The antidotal doses of belladonna consisted of four drops of the tincture, every half-hour, for four hours, and at wider intervals afterward.

ASYLUM CHANGES IN CHICAGO.

The outcome of the prolonged investigation into the asylum troubles at Chicago has been made public by the action of the County Board of Cook County. This action removes Dr. James G. Kiernan from the position of medical superintendent and appoints Dr. W. L. Noble as acting superintendent. It was in consequence of these troubles and investigations that one of the judges who have participated in them recorded his memorable expression about the malign influence of politics over asylum government, when he urged that the institution must be removed to some other site, "so that the sweet waters of charity shall not be polluted by politics."

THE ELECTRICAL TREATMENT OF UTERINE FIBROIDS.

Dr. Thomas Keith, in the "British Medical Journal," pleads for the treatment of uterine tumors by electricity. His opinion is of value, being that of "one who was the first to lower to a minimum the mortality that so long followed abdominal surgery, and who by the best results yet obtained in hysterectomy —results that Dr. Playfair is pleased to call phenomenal—still retains the position." It is stated that more than a quarter of all women over fifty years of age have fibrous tumors, of which, if operated upon, one in every four or five dies, and of the survivors one tenth become insane. These tumors may in many instances never declare themselves during life, and only be discovered after death. Dr. Keith recalls two such cases in which, in spite of his remonstrance, operations were performed that resulted fatally. On the other hand, in but one case did harm result from the treatment by electricity. Hæmorrhage had been brought about by exposure, as a result of which the patient died. Dr. Keith deduces from this the conclusion that, although great care must be used during the time of electrical treatment, and with the negative electrode more especially, Apostoli's treatment as practiced by him should have a fair trial. Apostoli, as it is well known, uses the constant current, introducing his gold or platinum electrode into the uterus, the vaginal portion being inclosed in a celluloid sheath. His choice of electrode is influenced by the state of the patient. In hæmorrhagic or chronic leucorrhœal conditions the positive electrode is employed, while, when a denutritive effect is desired, as in subperitoneal fibroids, the negative is preferable. Between the external pole and the abdominal wall intervenes moist potter's clay inclosed in tarlatan. By means of this clay Apostoli professes to have entirely done away with the caustic effect of this pole, and thus to have been able to increase the strength of the current used from 50 to 250 milliampères. The results, as given in the thesis of Dr. Carlet (1884), are eminently favorable to the method. It would be well, however, to remember that many fibroids wither spontaneously. According to Sinéty, cases are by no means rare in which there have been fatty degeneration, suppuration, softening, and fragmentation, with subsequent elimination of fibrous tumors, quite independently of intervention, so that when electricity has been used it is as difficult to determine the advantages as the defects that are to be exclusively ascribed to the method.

SUICIDE AND LIFE INSURANCE.

The Washington Life Insurance Company reports a decided tendency to increase of suicides in recent years. Shooting is the means selected in about half the cases. It is more frequent among the young than among the old, and on this account the company's *a priori* expectation had been in the direction of a decrease in this cause. This expectation has been balked, and the writer of the report goes so far as to say that the increase in recent years has not been purely a matter of accident, and that the decisions of the courts have not been such as to discourage suicide among the insured.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending July 30, 1889:

DISEASES.	Week ending July 23.		Week ending July 30.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	24	6	30	10
Scarlet fever	41	11	32	3
Cerebro-spinal meningitis	3	3	4	4
Measles	67	5	40	5
Diphtheria	98	23	82	29

The Philadelphia "Times and Register."—We quote the following articles from advance sheets of the "Druggists' Circular and Chemical Gazette," for August, that have kindly been sent to us by that journal:

"*Justifying a Fraud.*—One of the most striking instances of how low a physician, medical editor, and professor can be debased by the improper influences of unprincipled manufacturers will be found in an article on page 278 of the Philadelphia 'Times and Register' for July 20, 1889. In this article, on 'A New View of a Certain Form of Substitution,' the editor in a labored argument tries to prove that the manufacturers of febriline, which in our May number we showed to be a most pronounced fraud, were justified in deceiving physicians in regard to its composition. Febriline was put on the market as a

tasteless preparation of quinine. Dr. Eccles showed that it had no quinine in it at all. The 'Times and Register' concludes its argument for fraud in the drug business in the following ingenious but dishonest way: 'Now, if it be pardonable to mystify a patient a little by a bit of clap-trap, and no physician can succeed who fails to array the mental forces of his patient on his side, is it not equally justifiable for the druggist to do the same to the physician, if the conditions are alike?' We do not think that the whole history of medical journalism could show an instance similar to this—one in which fraud and deception are advocated in so barefaced and bold a manner by one who poses as a medical teacher and writer, and who ought to know better than to so insult physicians and druggists. It would be interesting to know if the faculty and trustees of the Medico-chirurgical College of Philadelphia indorse this new movement, and if students at that college are to be taught that druggists and manufacturers are justified in using clap-trap and fraud to deceive physicians. It would also be interesting to know if the subscribers and advertisers who are patronizing the 'Times and Register' will approve of this 'new view' to a sufficient extent to continue their support of a journal that openly advocates fraud and deception. Quinidine does not cost as much as quinine, and neither is it worth as much therapeutically grain for grain. It can be bought at a little more than half the price of quinine, but this has nothing whatever to do with the case. It is merely a question of common honesty. The 'Times and Register' chooses to openly take the side of and advocate clap-trap and fraud in pharmacy, and there is no doubt that all respectable manufacturers and physicians will at once take immediate means to let the public know that they do not in any way whatever indorse such dishonest tricks, and that they will consequently refuse to patronize or have anything to do with any journal that advocates practices of that kind."

"*A Medical Journal Trust.*—It is currently rumored that a combination of prominent proprietary and patent medicine houses has been formed to furnish capital to and control what is proposed to be substantially a 'Medical Journal Trust.' These rumors have grown from the announcement sent out a short time ago when several medical journals in Philadelphia were consolidated under the name of the 'Times and Register.' It is said that this combination, which is known as the American Medical Press Association, proposes to gradually absorb all the medical journals of this country. The way this is to be accomplished is for the combination of manufacturers to withdraw their advertisements at the same time from one journal, and use every other means they can to cripple it, so that it can be bought in at a low rate. This plan is to be continued slowly and cautiously, so as to avoid publicity, until all of the journals are gradually taken in. Such a combination, if it should be completed and conducted in accordance with the peculiar honesty and principles that the 'Times and Register' is now advocating, as will be noticed in an article in this issue headed 'Justifying a Fraud,' would certainly make a spectacle that would bring everlasting disgrace on the medical profession of this country and on all who have had anything to do with so unprincipled an undertaking. On any kind of a basis such a 'medical journal trust' would give nostrum mongers a powerful weapon with which to humbug and deceive the medical profession; and its progress will most surely be opposed by all respectable journals, physicians, and druggists, and by the general public."

The American Association of Obstetricians and Gynæcologists will hold its next annual meeting in Cincinnati, on Tuesday, Wednesday, and Thursday, September 17th, 18th, and 19th. No formal invitations will be issued to non-members, but the association invites such members of the profession, wherever resident, as may feel interested to attend the meeting and participate in the proceedings.

The College of Physicians and Surgeons of Baltimore has filled the vacancies created by the death of Dr. John S. Lynch and Dr. Oscar J. Coskery and the retirement of Dr. A. B. Arnold. Dr. Thomas S. Latimer has been transferred to the chair of principles and practice of medicine and clinical medicine; Dr. Charles F. Bevan to the chair of principles and practice of surgery and clinical surgery; Dr. J. W. Chambers to the chair of operative and clinical surgery; and Dr. George H. Rohé to the chair of obstetrics and hygiene. To fill the vacancies created by these transfers new appointments have been as follows: Dr. Henry Sewall, of the University of Michigan, to the professorship of physiology; Dr. George J. Preston to the professorship of anatomy, with the diseases of the nervous system as a clinical branch of instruction. Dr. N. G. Keirle has been elected lecturer on legal medicine; Dr. George Thomas, lecturer on diseases of the throat and chest; Dr. G. A. Liebig, Jr., of Johns Hopkins University, lecturer on medical electricity; and Dr. J. H. Branham, demonstrator of anatomy. Dr. L. F. Ankrim, Dr. Frank C. Bressler, and Dr. F. G. Moyer have been appointed assistant demonstrators, and Dr. R. G. Davis has been made prosector in anatomy.

The American Rhinological Association. — It is announced that the seventh annual meeting has been postponed to October 9th, 10th, and 11th, at which time it will be held in Chicago.

The International Pharmaceutical Congress. — The seventh meeting was to have been held in Milan this year, but it has been postponed to September, 1890.

The Medical Department of the University of Vermont, at Burlington, held its annual commencement on July 15th. The graduating class numbered fifty-eight. The annual address was delivered by the Hon. Edward J. Phelps.

The Mississippi Valley Medical Association.—A change of the time of meeting has been ordered. The association will meet at Evansville, Ind., on September 10th, 11th, and 12th.

The Medical Society of Pennsylvania will hold no meeting this year. On account of the great calamity at Johnstown, and for other reasons, it has been thought expedient to adjourn the convention until June 10, 1890.

Recent Deaths.—Dr. Theodore Dimon, of Auburn, N. Y., died on July 22d, aged seventy-two years. He was a graduate of the University of Pennsylvania in 1838, and for many years a permanent member in the State Medical Society. He was formerly superintendent of the asylum at Auburn, and surgeon to the Auburn prison. During the late war he was for two years a regimental surgeon. He was a forcible writer and speaker, and influential in sanitary and other public movements.

Dr. Isaac Lea died on July 25th, at Stapleton, N. Y., by his own hand. He was seventy-five years of age and broken in health, mentally as well as physically. He retired from practice about a year ago, after over thirty years of practice on Staten Island.

Dr. James W. Kerr, one of the oldest practitioners of York County, Pa., died on June 11th, after an illness of two weeks' duration. He was born in Lancaster County about seventy-six years ago.

Dr. Joshua Lewis Miner, of Wilkesbarre, Pa., died on July 27th, aged thirty-three years. He was a graduate in medicine

in 1881 from the University of Pennsylvania. He was a member of the Luzerne County Medical Society.

Dr. Schmelzkopf, the surgeon in chief of the Wissmann expedition into eastern Africa, was drowned at Zanzibar on or about July 28th.

The Astley Cooper Prize.—The subject announced for competition, under this prize, says the "Medical News," is "The Influence of Micro-organisms upon Inflammation." It is open to all comers, has a value of $1,500, and will remain open until January 1, 1892. The prize will not be given for any competing essay that has more than one author. The essay must be in English or be accompanied by an English translation, and must be sent, before the date given above, to Guy's Hospital, London.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from July 21 to July 27, 1889:*

Gardner, William H., Major and Assistant Surgeon, by direction of the Secretary of War, is detailed to attend the encampment of the National Guard of the District of Columbia, at Fort Washington, Maryland, from July 22 to July 29, 1889, for the purpose of giving instructions to the medical officers and hospital corps in their respective duties. Par. 1, S. O. 164, A. G. O., July 18, 1889.

Steinmetz, William R., Captain and Assistant Surgeon, now at Baltimore, Md., on leave of absence on account of disability, by direction of the Secretary of War, will report in person to the commanding officer of the Watertown Arsenal, Massachusetts, for duty at that station, relieving Lieutenant-Colonel James C. McKee, Surgeon. Par. 3, S. O. 166, A. G. O., July 20, 1889.

McKee, James C., Lieutenant-Colonel, on being relieved at the Watertown Arsenal, will repair to Philadelphia, Pa., and assume the duties of attending surgeon and examiner of recruits in that city. Par. 3, S. O. 166, A. G. O., July 20, 1889.

Robinson, Samuel Q., Captain and Assistant Surgeon, Fort Hamilton, New York Harbor, is hereby granted leave of absence for two weeks. Par. 4, S. O. 165, Headquarters Division of the Atlantic, July 22, 1889.

Ball, R. R., Lieutenant and Assistant Surgeon. Leave of absence granted in S. O. 87, Department of the Missouri, July 9th, is extended five days. Par. 1, S. O. 167, A. G. O., July 22, 1889.

Ball, Robert R., First Lieutenant and Assistant Surgeon. The extension of leave of absence granted in S. O. 167, July 22, 1889, from this office, is further extended ten days. Par. 23, S. O. 169, A. G. O., Washington, July 24, 1889.

By direction of the President, the State of Arkansas, embracing Little Rock Barracks, is transferred to the Department of the Missouri. G. O. 66, Headquarters of the Army, A. G. O., July 19, 1889.

Promotion.

Ewing, Charles B., Assistant Surgeon, to be assistant surgeon with the rank of captain, after five years' service, in accordance with the act of June 23, 1874. July 5, 1889.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service from July 10, 1889, to July 20, 1889:*

Vansant, John, Surgeon. When relieved, to proceed to Mobile, Ala. July 11, 1889.

Mead, F. W., Passed Assistant Surgeon. Relieved from duty as acting chief clerk and attending surgeon; ordered to St. Louis, Mo. July 11, 1889.

Williams, L. L., Passed Assistant Surgeon. Relieved from duty at Cape Charles Quarantine Station; ordered to Baltimore, Md. July 10, 1889.

Kalloch, P. C., Passed Assistant Surgeon. Granted leave of absence for thirty days. July 15, 1889.

Pettus, W. J., Assistant Surgeon. When relieved, to proceed to Marine Hospital, Boston, Mass., for duty. July 18, 1889.

Woodward, R. M., Assistant Surgeon. Granted leave of absence for thirty days. July 15, 1889.

Vaughan, G. T., Assistant Surgeon. Relieved from duty at Boston, Mass.; ordered to Norfolk, Va. July 18, 1889.

Stoner, J. B., Assistant Surgeon. Granted leave of absence for twenty-five days. July 15, 1889.

Geddings, H. D., Assistant Surgeon. Relieved from duty at Baltimore, Md.; ordered to Key West Quarantine Station. July 18, 1889.

Wertenbaker, C. P., Assistant Surgeon. Relieved from duty at Norfolk; ordered to Galveston, Texas. July 18, 1889.

Groenevelt, J. F., commissioned as Assistant Surgeon, July 11, 1889. Ordered to Gulf Quarantine Station for temporary duty. July 20, 1889.

Society Meetings for the Coming Week:

Tuesday, *August 6th:* Hampden, Mass., District Medical Society (Springfield).

Letters to the Editor.

FOREIGN BODIES IN THE EAR.

3211 Lucas Avenue, St. Louis, *July 25, 1889.*

To the Editor of the New York Medical Journal:

Sir: Please allow me to correct an error in your issue of July 13th last, as it may mislead others. On page 41 of that issue, in the history of Case V, it is stated that a forty-eight-inch watch, which had been previously heard at a quarter of an inch distance, each ear, "was then heard an inch distant by each ear, a gain of 300 per cent. in hearing for the watch."

Since "the intensity of sound is inversely as the square of the distance of the sonorous body from the ear,"* we have in this case the following proportion:

Distance, ¼ inch : 1 inch, or 1 : 4 :: hearing 1 : 16, or 100 per cent. : 1,600 per cent., and the sentence should read "a gain of *1,500* per cent. in hearing for the watch."

You will greatly oblige me by publishing this correction.

Robert Barclay, M. D.

NIGHT TERRORS IN CHILDREN.

Correctionville, Iowa, *July 24, 1889.*

To the Editor of the New York Medical Journal:

Sir: In your journal of the 13th you mention an article by Dr. G. L. Ullman on "Night Terrors in Children," in which he condemns severe treatment. We have had a little experience of our own that would lead us to believe that sometimes a little harshness will be of great benefit.

Our little boy, of four years, has a great imagination and is very nervous; if allowed, he will in the day-time work himself into quite a state of terror. One night about eight months ago he awoke screaming "Rats! rats!" and was very much fright-

* Ganot's "Elements of Physics," E. Atkinson's translation, New York, 1872, p. 160.

ened. It was a long time before he would go to sleep, and next morning he refused to take his breakfast in the next room, as he was afraid of the rats in the bedroom. He was carefully taken into the bedroom and all parts were examined to give him to understand that there were no rats there. During the day his nervous state passed off, and he was as well as usual.

In a few nights he had another spell, which was worse than the first.

A visiting relative advised a spanking. She had been forced to do that with one of her own children years before.

Such treatment appeared unreasonable, and we believed it would only add reality to the terror.

A few evenings afterward, when I came home, I found the little fellow sobbing. In reply to my "What is the matter?" he said, "Ma-ma spanked me cause me see rats." He had a spell that had lasted nearly all the afternoon, and the rats refused to disappear until he had been spanked, and that was the last of the rats. J. G. Biller, M. D.

Proceedings of Societies.

NEW YORK SURGICAL SOCIETY.

Meeting of April 10, 1889.

The President, Dr. Lewis A. Stimson, in the Chair.

A Doubtful Case of Fracture of the Femur.—Dr. Fred. Kammerer presented an elderly man who was much disabled in the left lower extremity, and of whom the following history was given: Eight weeks before, the patient had been walking along the street, on a level, and, as he thought, had slipped with the left foot, but without falling to the pavement. Immediately he felt a projecting piece of bone at the hip, and at the same time became completely unable to take another step. He pushed the bone back into position, but, being unable to walk, was taken to a store in the neighborhood, and from thence to a hospital. Little pain was felt, either at the time of the accident or afterward. The patient was under treatment at the hospital for six weeks. When the speaker first saw the patient he decided that the lameness was due to a fracture of the left femur. There was a slight inversion of the left lower limb when the patient lay on his back. On rotating the limb the radius of the curve described was less than on rotation of the other limb. With the patient lying on the right ride and so relaxing the muscles, it was possible to get motion in a portion of bone corresponding to the trochanter without moving the remainder of the femur.

The slight amount of injury which had been suffered when the disability was acquired suggested that the patient might be suffering from locomotor ataxia. Moreover, he had found the patellar reflex absent, the pupils contracted and not reacting to light, and that the patient had for years suffered from lancinating pains in various parts of the body, and from *crises gastriques*. He would not give any opinion as to what changes might have occurred in the joint previous to the injury. The patient said he had been able to walk well up to that time. That would be rather in favor of the supposition that a fracture of the neck of the femur had occurred without former changes in the joint. It seemed safe to say that this was a lesion due to changes in the bone or joint occurring in locomotor ataxia. There was no cutaneous anæsthesia, but, as there had been very little pain at the time the fracture was sustained, it was possible that some of the deeper parts were anæsthetic. There was no inco-ordination.

The President appointed Dr. Lange, Dr. Briddon, and Dr. Pilcher a committee to examine and report on the condition present. Somewhat different opinions were arrived at. Dr. Briddon reported that the committee were not agreed as to whether there was present an absorption of the head and neck of the bone due to the trophic changes belonging to locomotor ataxia, or a fracture of the cervix occurring in a tabetic patient. Dr. Lange believed it a spontaneous fracture, probably intracapsular. There was great relaxation of the capsular ligament in consequence of neurotic changes.

Dr. Pilcher reported that he was not prepared to say that there was not a fracture, but it seemed to him that a fracture alone would not explain the condition present. The head of the bone was probably atrophic and partially absorbed. At the time of the crisis a spontaneous dislocation had probably occurred, being much favored by the relaxation of the ligaments about the joint.

Caries Sicca of the Upper Vertebræ.—Dr. J. A. Wyeth presented a patient probably suffering from this affection, partly to get advice and partly on account of the unique history of the case. The patient was a young man of eighteen and well developed. He had been healthy until twelve or thirteen years old, when he had begun to suffer pain at the back of the neck, which had finally become so violent that he consulted a physician, under whose treatment it had seemed to go away entirely for the time. However, since then it had returned once or twice in slight attacks, and one severe attack two years previous, when the present deformity began to appear. There was no specific complication or tubercular taint. The family history was free from anything which could favor the occurrence of bone disease. He had had the patient under observation for a week, and had discovered no paralysis. He had thrust an aspirating needle into the broad convex swelling at the back of the neck, but only blood had come away. There was only slight stiffness of the neck with a small amount of backward displacement of two or three of the cervical vertebræ.

Sarcoma having easily been excluded, he had decided that the case was one of caries sicca of the upper cervical vertebræ, together with partial displacement. The needle had struck bone at no very great depth. There appeared to be no abnormal condition in the pharynx. At one time the patient had suffered from a spastic action of the left mastoid muscle, with the production of wryneck, and the motions of the neck were quite limited. The patient's friends had noticed an increasing shortening of the neck in front, and creasing of the skin, showing a forward projection of the head. The swelling had improved slightly under potassium iodide. But it was evidently no abscess or other inflammatory process.

Dr. A. G. Gerster, having examined the pharynx with the finger, said that he found there a distinct backward curvature of the cervical vertebræ. It was singular that so much loss of substance and deformity could occur without making pressure on the spinal cord.

Dr. V. P. Gibney thought that such a condition might exist for many years without making such pressure when its progress was so slow, since the nervous tissue was able to accommodate itself in time to much altered conditions. Several years ago Dr. Yale had shown several cases presenting a deformity in this same region—one which had lasted a number of years and was difficult of diagnosis. In several of these, lesions had been found after death similar to those that Dr. Wyeth had ascribed to the present case.

The President remarked that a similar case was presented in a man who had been in Bellevue Hospital for a number of years, at first as a patient and subsequently as a helper in the wards.

Some Disputed Points in the Pathology and Treatment of Perityphlitis.—Dr. R. J. Hall read a paper with this title. (To be published.)

Dr. R. F. Weir referred to an opinion expressed by the late Dr. Sands, shortly before his death, to the effect that, while he yet believed that extraperitoneal cases generally occurred, he was convinced that the intraperitoneal variety was much more common than he at one time had thought it was. The speaker in one hundred autopsies, in as many cases of so-called perityphlitic abscesses, had found general suppurative peritonitis present in fifty-seven instances, circumscribed abscesses inside the peritoneal cavity in thirty-five cases (in thirteen of which general peritonitis had also existed), and extraperitoneal abscesses only four times; but in not one of these four instances had he found a minute perforation through the parietal peritoneal wall leading from the extraperitoneal abscess and surrounded by adhesive matter gluing together the structures contiguous at that point. The openings had been in every instance large and ragged, pointing to the abscess having existed for some time prior to the breaking down of the peritoneal wall by an ordinary necrotic process.

Abscesses had been described which burrowed up in the retroperitoneal tissue as far as the kidney, and Copeland had related one instance in which the abscess had burrowed up along the dorsal gutters not only to the kidney, but to the space between the liver and the diaphragm, and had simulated a pneumothorax in this region. The speaker did not believe that such cases had been truly described; according to his observations, they had more probably been cases of abscess within the peritoneal cavity. Already German anatomists had demonstrated the impossibility of reaching the cæcum without opening the peritoneal cavity. He could not understand the existence of extraperitoneal perityphlitic abscesses when our present anatomical knowledge was taken account of.

The speaker also wished to get opinions as to the usefulness of the aspirating needle in connection wich this disease. He himself had found it of real value only where the friends of a patient objected to an operation, and the needle enabled one to withdraw pus, so as to convince them of the necessity of a radical operation. But failure to get pus did not prove that none was there. He had seen two cases where the needle had been used on the day before operation, and, when the abdomen had been opened, the track of the needle through the abdominal muscles had been marked by dark-brownish pus and the early stages of an inflammatory process. Such a case showed that there was some inconvenience and risk connected with aspiration.

In reply to a query from Dr. Lange as to whether any member could mention a case of successful operation after general peritonitis had begun, Dr. Weir said that he had operated within twenty-four hours after the occurrence of signs of perforation, when the peritonitis was believed to be rapidly spreading, and had a good recovery, but never when suppurative peritonitis had become general had he had recovery follow the operation. The question was a hard one to answer. Cases occurred where peritonitis apparently was general, and yet lateral laparotomy showed a loosely circumscribed abscess which could be discharged without further infection of the peritonæum. At other times a purulent condition might be encountered, and still be associated with a more or less extensive exudative or suppurative peritonitis. He considered, then, that there was a class of cases between the mild and the fulminant in which the result might turn either way—that is, the process might go on and end in death from general peritonitis, or it might become circumscribed and latent after acute symptoms of several hours' duration. However, in the latter event, the patient was liable to another acute and perhaps fatal attack at any moment. Since fifty-seven per cent. of the autopsies made showed general suppurative peritonitis, and thirteen per cent. a circumscribed abscess with general peritonitis, general peritonitis therefore being present in seventy per cent. altogether, the early operation seemed to him called for. He believed that, if practiced within twenty-four or forty-eight hours, the early operation might save a number of those who now died.

There was a lack of experience as to the results of early operation—that is, operation in the first twenty-four hours. If it could be proved that it was really better to wait, and trust to the possibility of a circumscribed abscess being finally formed, he was ready to see the pendulum swing to the opposite side and have expectant treatment given the preference; but before that happened he wished we might have the result (which we now did not have) of prompt operation in at least as many as ten cases. He had recently had such an opportunity in the case of a young physician whom he had operated on fifteen hours after the fourth and severest recurrence of acute symptoms of an appendix perforation. He found a small grumous abscess within the peritoneal cavity at the top of the perforated appendix, and the adjacent coils of intestine were spread over with recent lymph, the whole process apparently in a fair way to spread far and wide. He cleaned out all the morbid material, the appendix (the lumen of which had been narrow) was tied off, and the wound was drained and packed with iodoform gauze. The diseased processes thereupon entirely ceased, and the patient had recovered without an unpleasant symptom.

The variations which occurred in the patency of the appendix probably had something to do with the severity of the peritonitis. Normal variations, as well as those resulting from pelvic disease, would account for this. Possibly also the range of motion or freedom of the appendix modified this. His conclusion was that, if the patient's condition would admit of it, in spreading peritonitis of appendical origin, early interference (or within twenty-four or forty-eight hours) would be found in a series of cases to afford the greatest saving of life. At the same time he felt with others that more experience was required to rightly decide the important question.

Dr. C. K. Briddon said, in reply to the statement of Dr. Weir, that Bardeleben and Luschka had denied the possibility of reaching the cæcum without opening the peritonæum, that the late Dr. Gurdon Buck, in a monograph on iliac abscess, had advised reaching the collection of pus through an incision exposing the tendon of the iliac muscles as it passes over the pubes and below Poupart's ligament, working one's way upward beneath the iliac fascia. Dr. Buck had done this on several occasions in cases that he regarded as those of abscesses due to tubercular ulceration of the cæcum occurring in phthisical subjects. Of course, in the normal condition of the parts, where, according to Treves, the cæcum was surrounded on all sides by peritonæum, the observations made by the German authors referred to by Dr. Weir were correct.

The speaker said that during the last six months he had operated in five cases of perityphlitic abscess, and in two of these cases it had been possible during the operation to demonstrate the intraperitoneal origin of the trouble.

One of these had occurred in a thin, attenuated boy, ten years old, who was admitted into the Presbyterian Hospital on the tenth day of the disease; there had been a large, fluctuating tumor, reaching at least four inches above the fold of the groin and nearly to the median line. After incising and evacuating a large amount of fœtid pus, the retraction of the lips of the incision had permitted a very satisfactory inspection of the interior, and it could be seen that the roof of the cavity was formed by convolutions of intestine matted together by lymph.

The second case had been in an adult woman admitted to the service of the same hospital on the third day of the disease. The invasion, accompanied by chill and vomiting, had been acute in character; there had been pain and tenderness over the whole abdomen, but most severe in the right iliac region, where there was a sense of resistance, but no tumor. He had found it very difficult to determine whether it was a case of diffuse suppurative peritonitis or of circumscribed peritonitis, and had decided to make an exploratory incision. On exposing the peritonæum over the cæcum, the intestine could be seen moving freely under the serous lining of the abdominal wall. On opening the cavity of the peritonæum, the caput coli presented, coated with a layer of recent exudation, and adherent to neighboring coils of intestine. On lifting the caput there was an audible escape of gas which had a fæcal odor, and beneath its posterior surface was seen the appendix, not free, but bound firmly down, and on its exposed surface a perforation from which there was a slight escape of fæcal matter. The general cavity of the peritonæum was at once shut off with a tamponade of iodoform gauze, and the wound leading down to the perforation left open.

This patient died on the sixth day after the operation, and the speaker was firmly convinced that the exploration in this case had interfered with conservative processes by breaking up adhesions that were walling in the gangrenous appendix. He believed that the majority of these cases were intraperitoneal, and that where the inflammatory process was circumscribed it was better to wait several days before interfering; but that in cases in which no conservative or limiting process was set up, and where we had to deal with a diffuse suppurative peritonitis, laparotomy and toilet of the peritonæum was the best procedure.

Dr. McBurney said that his experience had completely satisfied him that all these cases were intraperitoneal. He had operated in the first thirty-six hours of the attack, and had been able to see how an abscess was forming within the peritoneal cavity. It became shut off by adhesions so promptly that it very soon became impossible to say whether it was inside or outside the abdominal cavity. So rapidly did adhesions form, and so soon did the process complete itself, that on the third or fourth day it would be easy to assume and maintain that the abscess was an extraperitoneal one, and this became more and more so as time went on. He himself had never seen a case of perityphlitic abscess formed entirely outside the peritoneal cavity. He had recently seen a fine typical instance of the old extraperitoneal abscess. On the ninth day, as the tumor was large and fluctuating, he opened down upon it by a free incision. From the appearance presented by the interior of the abscess, one would not have said that it had ever communicated with the abdominal cavity. The patient rallied well from the operation, and by the sixth week the wound had closed—all but a small sinus that led down to the seat of the recent abscess, and this it had seemed to him best to leave alone. Shortly afterward, at a time when the patient was feeling quite well and eating regularly, he rolled over in the night somewhat suddenly, immediately felt a violent pain in the iliac region, shortly afterward had a large stool, passed into collapse, and died in twelve hours. At the autopsy the origin of the abscess was found to be intraperitoneal, and a wide opening communicated with the peritoneal cavity. The appendix was found open and ulcerated. It was evident that the adhesions, which for a time had separated the ruptured vermiform appendix from direct connection with the peritoneal cavity, had ruptured and allowed fæces to be poured into it.

As regarded treatment, one might well have to explain himself who took very positive ground on either side of the question which had been raised. He had heard a certain practitioner remark that he had never seen a case of perityphlitis that did not end in recovery. This was evidently because he did not recognize the fatal cases. The speaker had seen good results follow both with and without operation. Some patients did get well, contrary to expectation, who really had inflammation of the appendix. This, however, was no ground on which to base a refusal to operate in certain cases. Some patients got partly well, but they remained in constant danger of a fresh outbreak until operated on. Sometimes a discharge of pus into the bowel took place after an illness of weeks or months, but the chances of this were too small to be depended on. On the contrary, we were bound to get rid of a source of general infection easily reached. The successes in the operation were now very numerous. It was not fair to say of any case of operation without recovery that if it had been left to its own course adhesions would have formed. Where septicæmia had not become established he would operate early, but he would not operate where the pus had penetrated through the whole cavity, and peritonitis was far advanced.

Dr. F. E. Lange did not consider that a spreading of the inflammatory process contra-indicated operation. He had reported a number of cases where he had been obliged to make a counter-opening through the rectum into Douglas's space, and in which recovery had been obtained. It was not very uncommon for suppurative peritonitis to become localized after transient symptoms of general peritonitis. The whole question, so very important as it was, whether we should operate early or not, could not be decided one way or the other and laid out in a schematic way. The facts with which we had to deal were that a large proportion of patients would recover under expectant treatment; that a large majority of the cases in which operation had been resorted to were in the later stages of the disease, and that it was really very difficult to select the cases in which operation was to be done at once, and to recognize the cases where it was better to wait. All were essentially alike in being cases of perforative peritonitis, but the result to the patient would depend upon what became perforated, what was infected, what the malignancy and tendency to spread were, or what predispositions were given by the condition of the surrounding tissues. As these elements varied widely in different cases, it was impossible to lay down a rule which should be good in all cases. There were some cases in which early operation would be the immediate cause of death on account of collapse setting in. On the other hand, some patients had been saved by being operated on early. He himself was still in doubt in each acute and severe case that came under his care as to what he ought to do. He had had charge of a number of cases of perityphlitic abscess, and his impression concerning them, as a whole, was that they were like other abscesses in needing to be opened. The operation was comparatively simple and its prognosis good. He had never seen a case in which general peritonitis had become established where recovery had followed early operative interference. After relating the history of a case in which the appendix, which had been giving rise to a succession of severe attacks, was found outside the ascending colon, and another case which had been supposed to be ovarian disease only in which the operation had revealed the presence of a small abscess and a perforated appendix, besides the expected morbid changes, the speaker referred to a third case in which he had operated very early. The patient, a boy of three years, was attacked about five o'clock in the afternoon, and laparotomy was performed at one o'clock of the following day. He found a diffused peritonitis and a perforation of the appendix following ulceration. The patient died after three days. He had helped other operators in the performance of laparotomy early

in the course of acute attacks, and all the patients had died. He could not say as a matter of experience, though from a rational standpoint he must admit it, that it was a good thing to operate early. On the other hand, he had had cases where general peritonitis had been present, as if from a perforation, and had in time become localized, this being followed by the gathering of pus in various places, and opening, and the recovery of the patient. He believed that in just such cases as these an early operation might have spread the infection wider, or else have disturbed the wholesome efforts which nature was making to close in the damaging exudation by adhesions.

Dr. Hall said he regarded the early operation rather as the opening of an abscess to relieve tension and evacuate pus; for an abscess in which pus was once present was not so likely to cause the formation of adhesions as, directly, to break them down. He believed that adhesions formed during the period of inflammation chiefly, and before the beginning of suppuration.

Dr. Lange thought this was not so. On the contrary, he believed that when perforation took place the escaped matters did not necessarily act on the whole general surface of the peritonæum, but that some coils of the intestines that were near became bound together by adhesions about the foreign matters and checked their further spread. He instanced a case in which ileus besides peritonitis had been present and the patient suffered from stercoraceous vomiting with local signs of suppurative peritonitis apparently due to a perforation. The patient was for a considerable time in a state of collapse, the fever was a marked one, and an operation was out of the question. He accordingly delayed any radical measures; in time there was a gathering of pus at different points, and the patient recovered. He was convinced that death would have followed an operation done during the acute stage of the disease in this case.

Dr. Weir, Dr. Gerster, and Dr. Wyeth next spoke, after which Dr. Lange instanced a case where, the patient being very far gone, at an early stage of the disease, very feeble and also corpulent, delay had been decided on in accordance with a consultation, in which different opinions had been held. He was satisfied that the patient's life had in this way been saved. On the second week an incision was made, and the patient in time recovered. He believed that in this successful case related by Dr. Weir, adhesions had formed by which the spread of the process had been stopped before it had gone beyond the power of the body to recover from or control.

Dr. Gerster thought Dr. Hall's paper had shown that the opening of an abscess within the uninflamed peritoneal cavity was not so dangerous as had been formerly supposed; the escape of pus into the peritoneal cavity had been classed as equally dangerous with perforation, and unnecessary fear had restrained many surgeons from needed operations. Similar experiences had resulted in making gynæcologists much more confident than they had been about operating for pyosalpinx. It had been found that rupture and the escape of pus from a pyosalpinx during operation was comparatively harmless. He considered that if the peritonæum was properly protected, the operation for perityphlitic abscess might be said to have all the elements of safety.

Dr. Wyeth called attention to those cases of general peritonitis which were supposed to have originated from a perityphlitis where the consulting surgeon was called in at so late a stage that no diagnosis was possible on account of the general swelling. He had operated in two cases in which a diagnosis of peritonitis had been made, and had found nothing whatever wrong with the appendix or cæcum. In one of these cases the peritonitis had followed obstruction, and in the other no cause could be found, although a large abscess in Douglas's *cul-de-sac* was discovered.

The President remarked that the opinion of a majority of those who had spoken on the question seemed to be in favor of the surgeon's waiting before operating until the formation of pus, and against the immediate operation as understood by some. Since some doubt had been expressed as to the possibility of the occurrence of really extraperitoneal abscesses, he would remind the meeting that such a case had been reported to the society by himself about a year ago, in which a small abscess had formed in the connective tissue opposite the junction of the cæcum and colon between the reflected layers of peritonæum. A small intraperitoneal abscess had also formed behind the cæcum, communicating with two openings in the appendix.

Abdominal Hysterectomy for Uterine Fibroids.—Dr. R. Abbe presented the uterus and appendages of a woman upon whom he had operated for this condition, complicated by a suppurative inflammation of the ovary and pyosalpinx. The ovary was of the size of an orange, and the whole mass, representing the uterus, its fibroids, and the diseased appendages, weighed two pounds. The uterine tissue had been removed complete, and the patient had made a good recovery.

Book Notices.

De l'hémiplégie dans quelques affections nerveuses (ataxie locomotrice progressive, sclérose en plaques, hystérie, paralysie agitante). Par Mlle. Blanche A. Edwards, Docteur en médecine de la Faculté de Paris, etc. Paris: Lecrosnier et Babé. Pp. 7 to 168. [Publications du "Progrès médical."]

The study of a symptom under the different phases in which it presents itself is always very instructive, but when this symptom is hemiplegia, which is found in so many different diseases, which is often preventable, often capable of amelioration, but always deplorable when it is lasting, its study becomes of the highest importance.

Dr. Edwards, upon a basis of eighty-eight clinical histories of hemiplegia, of which the greater part emanated from that famous source of neurological teaching, the Salpêtrière, makes a good comparative study of this state as it is seen in the four diseases named in the title of her monograph. Her definition of the symptom in question is quite sufficient from a clinical point of view, though necessarily incomplete in an anatomical sense. "By *hemiplegia* is meant a unilateral motor paralysis characterized by functional impotence of the limbs of one side, affecting the upper limb more than the lower, or *vice versa;* accompanied or not by paralysis of the face on the same side, or on the opposite side (alternate paralysis), by paralysis of the muscles of the neck and eyes (conjugate deviation of the head and eyes toward the healthy side), and by paralysis of the tongue with deviation toward the healthy side; complicated or not by paralysis of sensibility, of the muscular sense, and of the special senses, by contractures, by abolition or exaggeration of the reflexes, by tremor, by athetosis, by paralysis of the faculty of language, spoken, seen, written, or heard (aphasia), by paralysis of the pharynx and of the larynx, or by paralysis or contracture of the sphincters."

Forty pages are devoted to clinical histories of hemiplegia occurring in locomotor ataxia and to personal observations and deductions therefrom.

Those histories show, among other things, the frequently short duration of the symptom in these cases. Many localizations of monoplegia and many instances of aphasia occurring in tabes are also shown to be often quite transitory, persisting,

like hemiplegia, only a few days sometimes. In the opinion of Debove and of Stecewitz, this transitory character of hemiplegia is evidence of its tabetic origin.

In the forty pages touching sclerosis multiplex disseminata there are eleven instructive histories of hemiplegia from various sources, some of which show that in this disease also the symptom may be transitory.

The chapter concerning hemiplegia in hysteria is perhaps the best one in the monograph, inasmuch as it sets forth in a striking manner the points of similarity and of dissimilarity of hemiplegia in this great neurosis and in real organic disease. The means of making a diagnosis are given, although not in the most systematic way, and the clinical histories with the author's comments impart a very good idea of hysteria in general.

On the whole, it is a collection of useful observations emanating from the greatest center of neuro-pathological teaching. We here meet again with the phrases and aphorisms of Charcot and his school, which constitute one of the best qualifications of the work.

Studies in Pathological Anatomy. By Francis Delafield, M. D., Professor of Pathology and Practical Medicine, College of Physicians and Surgeons. Volume II. Part 3—Acute Bright's Disease. With Forty-two Plates. New York: William Wood & Co., 1888.

It is safe to say that a more valuable and suggestive paper than this has not been published for many years. For the first time something like a satisfactory classification of acute Bright's disease is proposed. The nomenclature adopted is perhaps a little obscure. The author describes first "acute exudative nephritis," by which is meant an inflammatory process with the exudation of the usual products of inflammation, and with the usual more or less complete destruction of the renal epithelia; second, "acute degeneration of the kidney," which is disease of the epithelia without other demonstrable change; third, "acute diffuse nephritis," in which, in addition to the changes of exudative nephritis, there are from the first "a growth of connective tissue in the stroma" and "a growth of the capsule cells of the Malpighian tuft." These latter features make a lesion necessarily permanent. To each of these forms the author assigns a separate clinical history.

It will be seen that the form called "acute degeneration" may or may not in different cases be regarded as "inflammatory." It is a truly "parenchymatous" lesion. There is no visible change save that in the epithelial elements. There is no exudation into the stroma. Although the epithelial degeneration may be regarded in some cases as an early stage of "inflammatory" disease, it is clear that in many others the process is entirely "degenerative." All quibbling over the definition of "inflammatory" aside, this fact remains: that post mortem we find kidneys showing lesion, and that such kidneys give rise to certain symptoms. These are often slight, but when very extensive degeneration occurs, severe or fatal illness may result.

In "exudative nephritis" there are lesions similar to those caused by inflammation in any part of the body. As in pleurisy, for example, there is an exudation of serum, fibrin, and white cells; so in the kidneys the same exudation is found. The latter organs having no cavity resembling that of the serous sacs, this exudation takes place into the stroma and tubules.

"Acute diffuse nephritis" gives rise to a similar exudation, but, in addition to this, the cells covering the capsules of Bowman proliferate. The lesion has another peculiarity, namely, that the changes are most marked in wedge-shaped areas having their apices directed toward the pelvis. This the author regards as the greatest of all the acute lesions. This also is the "glomerulo-nephritis" of many authors.

The illustrations are microphotographs or reproductions of drawings. The former are probably as good as can be made with existing lenses; the latter are beautiful.

Du lavage de la vessie sans sonde à l'aide de la pression atmosphérique: ses usages—son application au traitement des cystites douloureuses. Par le Docteur J. M. Lavaux, ancien interne des hôpitaux de Paris, etc. Paris: G. Steinheil, 1888. Pp. 5 to 146.

The author of this work has, with some slight modifications, revived a method of irrigating the bladder which has never attracted special attention, though several attempts to establish its merits have previously been made.

The apparatus used by M. Lavaux consists of an ordinary hand irrigator and a conical hard-rubber "obturator" through the center of which runs a hole fitted by a hollow metallic mandril attached to the end of the tubing of the irrigator. The irrigator being placed at a height of from a metre and a half to two metres above the patient, the obturator is placed in the meatus, the mandril run through it, and the water turned on; the atmospheric pressure overcoming the resistance of the compressor urethræ muscle, the bladder is filled until a sense of fullness is felt, when the patient is allowed to empty the bladder in the natural way. The only novelty in this procedure is in the method of estimating and controlling the amount of pressure used. This is done by having mandrils of different calibers, the author using a series of from 1 to 6, the caliber ranging from 1 to 3 mm. in diameter. By taking the height of the irrigator and the caliber of the mandril the amount of pressure may be estimated. It is difficult to perceive how this possesses any advantage over simply elevating or depressing the irrigator, especially as it is impossible to estimate the amount of resistance to be encountered. The rest of the method is practically identical with that of the late Professor Ultzmann, so that the excellent results obtained by this author (details of which comprise a large portion of the work) are a matter of no surprise.

A Manual of Diseases of the Ear, for the Use of Students and Practitioners of Medicine. By Albert H. Buck, M. D., Clinical Professor of the Diseases of the Ear in the College of Physicians and Surgeons, New York, etc. New York: William Wood & Co., 1889. Pp. ix–420. [Price, $2.50.]

This manual may be regarded as a revised and much improved edition of Dr. Buck's text-book, published in 1880. Some of the chapters have been but slightly altered, but others have been entirely rewritten, and much new matter has been added. Many of the illustrations are also new, and the present edition is much superior to the first. The book consists of fifteen chapters and an appendix, the latter containing an anatomical and physiological sketch of the ear.

In the chapter on diseases of the auricle we think the author errs in not drawing a sharper distinction between pure perichondritis and othæmatoma. In the chapter on diseases of the external auditory canal the author underestimates the frequency with which the operation of displacing the auricle forward, for the purpose of removing a foreign body from the canal, has been done, though it is a rare operation. In the chapters on the diagnosis and treatment of diseases of the middle ear we do not think sufficient importance is given to the necessity of a careful rhinoscopic examination. We think that such an examination should be done in every case. Masses of hypertrophied and adenoid tissue are almost always present in cases of middle-ear deafness associated with chronic naso-pharyngeal disease, and very often are the sole cause of the accompanying deafness. These cases should not be turned over by

the aurist to the rhinologist or laryngologist, as is too often the case. A knowledge of the operative procedures necessary in disease of the naso pharyngeal region should form part of the equipment of every otologist, and skill in operating in the cavity comes only from practice and experience.

The chapter on diseases of the mastoid is admirable, and the cases cited are of great interest and value.

The chapter on syphilitic and tubercular disease of the deeper parts of the ear is very brief, but contains some points of interest.

Chapter XV, on disease of the labyrinth, is much too brief for the importance of the subject, but the author perhaps errs on the right side in saying that "there are good reasons for believing that the convenient designation 'disease of the labyrinth' can not rightfully be applied to many of the cases of aural disturbances which have been classified under this heading." The book closes with an index.

It is to be hoped that the present manual will have a larger circulation among practicing aurists than was possible for the first edition of the work.

Diseases and Injuries of the Ear; their Prevention and Cure. By Charles Henry Burnett, A. M., M. D., Aural Surgeon to the Presbyterian Hospital, etc. Philadelphia: J. B. Lippincott & Co., 1889. Pp. 6–7 to 154. [Price, $1.]

This little book forms one of the series of manuals on "Practical Lessons in Nursing," and was written for the purpose of "enabling many to avoid ear diseases by care," and to show the inexpert what to avoid in the treatment of ear diseases, and thus to escape the evils of improper treatment. It consists of three parts, divided into seven chapters. The first part, divided into two chapters, treats of the gross anatomy and the physiology of the ear. The second part, which treats of the common diseases and injuries of the ear, is divided into three chapters—one confined to the external ear, the second to the middle ear, and the third to the internal ear. The third part, consisting of two chapters, considers the very important subject of aural hygiene and the education of partially deaf children and that of the deaf and dumb. In such a small volume these various subjects must of necessity be very briefly treated of, but the style is clear, and what is said can be readily understood by the general reader, and certainly answers the intention of the author. The value of the simplification of any branch of medical science for the benefit of the laity is, however, open to question.

Handbuch der physiologischen Optik. Von H. von Helmholtz. Zweite umgearbeitete Auflage, mit zahlreichen in den Text eingedruckten Holzschnitten. Fünfte Lieferung. Hamburg und Leipzig: Leopold Voss, 1889. Pp. 321 to 400.

Nearly two years have elapsed since the fourth fasciculus of the second edition of this great work made its appearance. The fifth fasciculus continues the subject of color-sensations, and much space is devoted to the geometric presentation of the color-system. Much new matter has been interpolated, particularly in the discussion upon the subject of principal colors. Pages 335 to 346 have been entirely rewritten, and much of the old matter has been left out. Pages 351 to 384 are almost entirely new matter, and contain several new illustrations. This fasciculus contains the consideration of the entire subject of composite colors, and is a monument of erudition and research. It is to be hoped that the remaining fasciculi will appear more promptly, and that we shall not be obliged to wait too long for the completion of the entire work. The labor already expended upon the parts that have appeared is sufficient evidence of the thoroughness of the author in the matter of revision. The book when complete will practically be a new work on the science of physiological optics.

Lectures on the Errors of Refraction and their Correction with Glasses. Delivered at the New York Post graduate Medical School, with Illustrative Cases from Practice, both Private and Clinical. By Francis Valk, M. D., Lecturer on Diseases of the Eye, New York Post-graduate Medical School, etc. New York and London: G. P. Putnam's Sons, 1889. Pp. xii–241. [Price, $3.]

This is a well-printed volume of 241 pages, which is rather better supplied with illustrations than text-books of this kind usually are. The lectures are eleven in number, and the subjects embraced in them are the anatomy of the eye, refraction, emmetropia, hypermetropia, myopia, ophthalmoscopy, muscular asthenopia, astigmatism, retinoscopy, and presbyopia. The book is avowedly elementary, but is sufficiently clear to the student or general practitioner who feels enough interest in a comparatively abstruse subject to devote more attention to it than is usually possible in the ordinary college course. It is provided with a copy of Snellen's test-types and a fairly good index.

The Illustrated Optical Manual; or, Hand-book of Instructions for the Guidance of Surgeons in testing Quality and Range of Vision, and in distinguishing and dealing with Optical Defects in General. By Surgeon General Sir T. Longmore, C. B., F. R. C. S., Honorary Surgeon to the Queen, etc. Fourth Edition. Enlarged and illustrated by Seventy-four Figures from Drawings and Diagrams by Inspector-General Dr. Macdonald, R. N., F. R. S., etc. London and New York: Longmans, Green, & Co., 1888. Pp. xxii–239. [Price, $4.50.]

This is a most valuable manual for all surgeons of the army or navy who are called upon to test the quality and range of vision among soldiers or sailors, and in its peculiar scope we believe it to be the only manual of the kind in existence. It is divided into ten chapters, and is quite fully indexed.

The first chapter contains a mass of information, much of it not found in ordinary works on optics, and contains also directions for sight exercises at musketry instruction.

The second chapter considers the subject of errors of refraction, myopia, hypermetropia, and astigmatism, and their influence upon military service.

The third chapter is devoted to a discussion of the subjective and objective methods of examination employed in determining the refraction, particular attention being given to ophthalmoscopy and keratoscopy.

The fourth chapter is entirely taken up with a consideration of the power of accommodation of the eye, including presbyopia.

The fifth chapter is devoted to a consideration of impaired vision connected with strabismus, but, inasmuch as the author goes into the theory of strabismus and a description of the various kinds of squint, the chapter is much too brief for any proper presentation of the subject. The same remark may apply to the sixth chapter, in which color-blindness is considered.

The seventh chapter, on visual acuteness and particular varieties of weak and impaired vision, is very good, though it seems unnecessary to coin a new word, "nephelopia," to signify an impairment of vision due to some opacity of the media of the eye.

The ninth and tenth chapters are of peculiar interest to army surgeons. Here we find a very full consideration of the power of sight required for recruits, with a description of the test-

dots employed for testing it; and a description of the manner of conducting the visual examination of recruits and soldiers, together with an account of the qualities of sight which determine the selection of officers and men for the army, navy, and Indian Government service.

The tenth chapter is practically an appendix, which contains extracts from musketry and other regulations concerning eyesight which affect medical officers.

The book is well written in a plain, readable style, and is sufficiently illustrated for the purpose, and we commend it to the careful perusal of all army surgeons and to every ophthalmic surgeon who wishes to know everything in his specialty.

BOOKS AND PAMPHLETS RECEIVED.

A Treatise on Surgery, its Principles and Practice. By T. Holmes, M. A. Cantab., Consulting Surgeon to St. George's Hospital, etc. With Four Hundred and Twenty-eight Illustrations. Fifth Edition. Edited by T. Pickering Pick, Surgeon to and Lecturer on Surgery at St. George's Hospital, etc. Philadelphia: Lea Brothers & Co., 1889. Pp. xxiii–33 to 1008. [Price, $6.]

The Physiology of the Domestic Animals. A Text-book for Veterinary and Medical Students and Practitioners. By Robert Meade Smith, A. M., M. D., Professor of Comparative Physiology in the University of Pennsylvania, etc. With over Four Hundred Illustrations. Philadelphia and London: F. A. Davis, 1889. Pp. xiii–938. [Price, $6.]

Diseases of Women: A Manual of Non-surgical Gynæcology designed especially for the Use of Students and General Practitioners. By F. H. Davenport, A. B., M. D., Assistant in Gynæcology, Harvard Medical School, etc. With Numerous Illustrations. Philadelphia: Lea Brothers & Co., 1889. Pp. xiv–25 to 317. [Price, $1.50.]

Transactions of the New York State Medical Association, for the Year 1888. Volume V. Edited for the Association by Alfred Ludlow Carroll, M. D., of Richmond County. New York: J. H. Vail & Co., 1889.

Transactions of the Medical Society of the State of New York. For the Year 1889. Published by the Society.

Cancer and Cancerous Diseases. By Sir Spencer Wells, Bart., F. R. C. S. Cardiac Dyspnœa and Cardiac Asthma. By Dr. S. von Basch. The Influence of Menstruation and of the Pathological Condition of the Uterus in Cutaneous Diseases. By Dr. L. Grellety. Tension as met with in Surgical Practice; Inflammation of Bone; Cranial and Intracranial Injuries. By T. Bryant, F. R. C. S. Antisepsis and its Relation to Bacteriology. By Dr. J. Neudorfer. Volume III. Number 1. New York: William Wood and Company, 1889. ["Wood's Medical and Surgical Monographs."]

Therapeutische Notizen der deutschen Medizinal-Zeitung. Herausgegeber, Dr. Julius Grosser, 1880–1889. Heft II. Bogen 6–10 (Gelenkentzündung—Pharyngitis). Berlin: Deutschen Medizinal-Zeitung, 1889. Pp. 81–160. [Preis, 1 Mark.]

The Treatment of Nævus by the Intra-injection of Alcohol. By Thomas H. Holgate, M. D. [Reprinted from the "Archives of Pædiatrics."]

Fifty-ninth Annual Report of the Inspectors of the State Penitentiary for the Eastern District of Pennsylvania.

Twenty-fifth Report of the Trustees of the City Hospital, Boston, with Reports of the Superintendent and Medical and Surgical Staff, Rules for Admissions and Discharges, Prospectus of Training-school for Nurses, etc., 1888.

A Manual of Instruction for giving Swedish Movement and Massage Treatment. By Professor Hartvig Nissen, Director of the Swedish Health Institute, Washington, D. C., etc. With Twenty-nine Original Wood Engravings. Philadelphia and London: F. A. Davis, 1889. Pp. vii–128. [Price, $1.]

Atlas of Venereal and Skin Diseases. Comprising Illustrations and Selections from the Plates of Professor M. Kaposi, of Vienna; Dr. J. Hutchinson, of London; Professor I. Neumann, of Vienna; Professors A. Fournier and A. Hardy, and Drs. Ricord, Cullerier, Besnier, and Vidal, of Paris; Professor Leloir, of Lille; Dr. P. A. Morrow, of New York; Dr. E. L. Keyes, of New York; Dr. Fessenden N. Otis, of New York; Dr. J. Nevins Hyde, of Chicago; Dr. Henry G. Piffard, of New York; and others. With Original Text by Prince A. Morrow, A. M., M. D., etc. Fasciculi XIV and XV. New York: William Wood & Co., 1889.

The Old Hospital and other Papers. By D. B. St. John Roosa, M. D., LL. D. Second revised and enlarged Edition of "A Doctor's Suggestions." New York: William Wood & Company, 1889. Pp. 320.

A Clinical Study of Paraldehyde and Sulphonal. By C. M. Hay, M. D., Morris Plains, N. J. [Reprinted from the "American Journal of the Medical Sciences."]

A Year's Work in Abdominal Surgery. By Clinton Cushing, M. D., San Francisco, Cal. [Reprinted from the "Pacific Medical Journal."]

Proceedings of the Academy of Natural Sciences of Philadelphia. Part I. January–April, 1889.

Cerebral Localization in its Practical Relations. By Charles K. Mills, M. D., Philadelphia. (Read before the Congress of American Physicians and Surgeons, September 19, 1888.)

Reports on the Progress of Medicine.

CUTANEOUS AND VENEREAL DISEASES.

By GEORGE THOMAS JACKSON, M. D.

New Lanolin Ointments.—Dr. Stern, of Mannheim, has found to be useful three preparations with lanolin, which he names ("Therap. Monatshft.," February, 1889): (1) Sapolanolin; (2) lanolin wax-paste; and (3) fluid lanolin injection. The first is a mixture, usually, of two parts of green soap and two parts and a half of lanolin. With this he incorporates all the ordinary medicaments excepting salicylic acid. He has found it specially valuable in the treatment of infiltrated eczema, parasitic diseases, and seborrhœa with thick crusts. With the addition of 10 per cent. of white precipitate it renders excellent service in psoriasis capitis, usually clearing up the disease in from three to eight days' time, and needing only the application of an indifferent ointment to complete the cure. It never discolors the hair. The second preparation is exceedingly useful for an adhesive dressing, and is composed of forty parts each of yellow wax and lanolin and twenty parts of olive oil, melted together and shaken while cooling. It is of a bright-yellow color, and of the thickness of the wax used by the hair-dresser. It can be spread upon the skin, where it sticks. With this can be incorporated nearly all sorts of medicaments, only, when tar is added, a little more wax must be used. It is very useful in eczema of the face when oxide of zinc or boric acid is added to it. In squamous and vesicular eczema the following leaves little to be desired: Salicylic acid, in fine powder, 3 parts; olive oil, 17 parts; yellow wax and lanolin, each 40 parts. For the third preparation the basis is formed by lanolin, 25 parts; oil of almonds, 75 parts. To this can be added various medicaments, for instance: ℞ Zinc sulphate, 0·5 per cent.; water, 4·5 per cent.; lanolin, 20 per cent.; and oil of almonds, 75 per cent.

Exfoliatio Areata Linguæ.—This disease has been designated by many names, such as pityriasis of the tongue, chronic excoriation, desquamative syphilide, exfoliative marginate glossitis, and sundry other terms. Exfoliatio areata linguæ seems to be the name given to it by Unna, and is the one adopted by Dr. Mibelli ("Giorn. ital. del. mal. ven.," 1888, xxiii, 383). The disease is very manifold in its appearance, so that a description that fits one case would not necessarily apply to another. From the observation of four personal cases the author would give the symptomatology as follows: Upon an otherwise perfectly healthy tongue there will appear red spots with smooth surfaces from which the upper layers of epithelium have evidently fallen. Around them will be a whitish ring which is more or less raised. These spots are continually changing their location in a most capricious manner from day to day, and even from hour to hour, and their appearance and exfoliation take place very rapidly. So they come and go, return-

ing again and again to places previously affected which have healed. There are no subjective phenomena, and the course of the disease is benign but most chronic. Its superficiality, its seat upon the tongue exclusively, the entire absence of ulceration and infiltration—these will suffice to distinguish it from aphthæ and from catarrhal ulceration. Leucoplakia buccalis differs from exfoliatio areata linguæ in the lesion being stationary. Syphilis of the tongue might offer some difficulty in diagnosis to a superficial observer. But the erosions of the tongue in early syphilis are more profound, often dry, sharply limited, fixed in their seat, and not surrounded by a raised whitish margin. In syphilis there is also an inflammatory tumefaction of the connective tissue of the filiform papillæ. In the exanthems, and in recovery from grave illnesses, transient exfoliation of the tongue takes place. But these exfoliations do not assume the typical "area" form, and disappear completely with the recovery from the disease with which they occur. Should the exfoliation continue for some time after recovery from the constitutional disease, the lesion will be single and of irregular, indefinite shape, will occupy a large part of the surface of the tongue, and will not migrate from place to place. The ætiology of the disease is obscure. Some have endeavored to establish a connection between it and menstruation, anæmia, dentition, and catarrhal conditions, but, with the exception of the first of these, the author has been unable to establish any such relation. It has no relation to syphilis. No treatment is necessary.

Ulerythema Ophryogenes is the latest creation of the fertile brain of Unna, or at least of his pupil, Taenzer ("Mntshft. f. prakt. Derm.," 1889, No. 5). In the course of three years Taenzer had the good fortune to observe six cases of this "hitherto undescribed disease of the skin." It begins in earliest childhood with a reddening of the skin of the eyebrows, a feature that continues throughout the disease, and afterward that of the face, the scalp, and, more rarely, the upper arm. The disease at first resembles lichen pilaris upon a reddened skin, but subsequently in some places, and in bad cases everywhere, the skin is highly inflamed, though the inflammation is superficial. Wherever the hairy parts are affected the growth of the hair is interfered with; they come through late and, as it were, in isolated bundles or groups, with here and there evidences of pustular inflammation of the follicles. The skin between the bundles of hair sinks in and becomes atrophied. Eventually total alopecia and atrophy of the scalp may result. In most cases the disease reaches only the first stage, the lichen pilaris stage, in some places, and the second stage in other places, and so remains throughout life. Three of his cases occurred in members of the same family, suggesting the question of heredity or infection from parasites. In one case the eyelids were affected, causing incurving of the lashes and conjunctivitis. Four of the patients had eczema in their younger days. The disease may be considered as presenting itself in two forms, a mild one and a severe one. In the mild form the disease begins on the outer part of the eyebrows, proceeds over the malar process, down in front of the ear, and to the side of the neck, ending upon the extensor surface of the upper arm, and seldom passing over upon the forearm. It begins as a hyperkeratosis with accompanying erythema; the follicles of the skin are occluded by corneous covers, the lanugo hairs and many of the stronger hairs are prevented from growing, and this gives rise to the appearance of a lichen pilaris. The severe form is marked by an implication of the inner part of the eyebrows, the upper lip and a few contiguous regions of the skin of the face, the scalp, and the extensor surfaces of the arms. The formation of cicatricial tissue is now active, always attacking the skin between the hairs, giving rise on the upper lip and eyebrows to a fine linear atrophic network, and on the scalp to a system of confluent bald rings, and ultimately complete baldness. It runs a slow course, with occasional outbreaks of suppurative follicular inflammation. The disease differs from lichen pilaris in its inflammatory character, its permanent erythema, and the final atrophy of the skin. Unna names affections of the skin attended with erythema and the formation of scars "*Ulerythema*" (meaning cicatrization with redness). In this group falls lupus erythematosus. Taenzer adds "*ophryogenes*," because the affection has a predilection for the eyebrows. In the treatment of the disease sulphur and resorcin are said to be efficient for the cure of the milder form, and the bettering of the more severe form. [We can not praise this new dermatological term on account of its euphony; and we can not forbear protesting against the introduction of new terms into our already burdened nomenclature.]

The Treatment of Acne.—Dr. Isaac ("Berl. klin. Woch.," 1889, No. 3) believes that this disease is so far hereditary that in certain families there may exist an anatomical patulousness of the sebaceous glands, allowing of their clogging with extraneous particles. This clogging he regards as the chief cause of the disease. Beer, cheese, and coffee are regarded as specially harmful ingesta, and the latter is supposed to produce acne upon the same principle that bromine and iodine do. In the treatment, naphthol is recommended after Lassar's formula: Naphthol, 10 per cent.; precipitated sulphur, 50 per cent.; green soap and vaseline, each 20 per cent.; which is to be spread on the face and left on from half an hour to an hour. This is followed by some redness of the face and scaling. It is to be repeated till all the skin peels off. If too much reaction takes place the use of the paste is to be discontinued and the face powdered or anointed with a mild ointment. In obstinate cases the following is commended: Powdered chalk, 5 per cent.; β-naphthol, camphor, vaseline, each 10 per cent.; green soap, 15 per cent.; precipitated sulphur, 50 per cent. Resorcin also is excellent, and is used in twenty per cent. strength in Lassar's paste.

The Treatment of Squamous Eczema of the Back of the Hand.—This disease is believed by Unna ("Montshft. f. p. Derm.," 1889, No. 4) to be a seborrhœal form of eczema, in common with those forms of eczema known previously as "baker's itch," "bricklayer's itch," and the like. In most cases, he says, seborrhœal affection of other regions will be present at the same time—pityriasis capitis, an oily condition of the face, an intertriginous eczema, and so on. In the way of treatment it is recommended to cover the affected part with a thin layer of cotton batting soaked in the following solution: Resorcin and glycerin, each 10 parts; dilute alcohol, 180 parts. This is to be diluted with equal parts of water when used, and is to be applied in the evening. Over it is to be bound a large piece of gutta-percha tissue, so as to envelop the whole hand and keep the batting moist all night. In the morning a zinc-oxide paste, either with or without sulphur, tar, or resorcin, is to be applied, and renewed once or twice during the day. For washing the hands, the patient should use only warm water and avoid fatty soap. While caring for the eczema, the seborrhœal affection of other parts must be treated.

Herpes as an Infectious Disease.—The only form of herpes that heretofore has been generally recognized as infectious is that improperly named herpes tonsurans or circinatus—that is, ringworm. But it has been suggested from time to time that zoster (herpes zoster) might be an eruptive fever similar in many ways to the other exanthems. Now, Török ("Montshft. f. prakt. Derm.," 1889, viii, 54), who writes from Unna's clinic, and who, it is fair to surmise, represents Unna's idea in this matter, maintains for all varieties of herpes an infectious character. He cites the following series of cases: On November 14, 1888, a zoster patient with constitutional disturbance was admitted into Unna's wards. Toward the end of the month two women in the same ward had herpes labialis, with fever, headache, and weakness as prodromal symptoms. Then a boy and a girl broke out with herpes. Five weeks intervened between the first and last case, all being herpes vulgaris, excepting in the boy's case, where, besides the herpes facialis, there was a group of vesicles on the abdomen, just below the ribs, which might have been taken for a zoster. The author even indulges in fancies of a virus in doses of varying strength, the milder producing herpes febrilis, and the stronger zoster, and explains the usual single attack of the latter by the thorough saturation of the system by the virus. He also holds that zoster and herpes are only varieties of the same disease. [According to this, when zoster arises from injury, the part must have been inoculated with the virus at the time of the injury!]

Pityriasis Pilaris.—Dr. Boeck, of Christiania, gives us a study of this disease ("Montshft. f. p. Dermat.," 1889, viii, 97) founded upon a case. The disease occurs with special frequency and markedly developed upon the dorsal surfaces of the fingers, the hands, and forearms, which is probably due to the strongly developed lanugo hairs of these regions, whose root-sheaths are specially affected in this disease. Around each of the lanugo hairs is formed a solid corneous mass, which presses both down into the hair follicle and up above the level of the skin. The skin is usually of normal color, but very rough, and feeling

like "goose-skin" from contact with cold. It may be paler than normal. After a time hyperæmia may set in about the hair follicles and spread over the entire skin. If this takes place, the "goose-skin" appearance will be less marked. Besides the regions named, any part of the body may be affected, excepting the palms and soles, where there are no lanugo hairs. It occurs on the usual hairy portions of the body. It may begin also as red macules and patches with a smooth skin, but even then it will be easy to see evidences of corneous formations about the lanugo hairs. The whole body may be affected with this form of the disease. Usually the general health is not disturbed, but, if the disease becomes universal, there are malaise and nervousness. Itching may be present, and the lymphatic glands may swell. The disease may last indefinitely, and is subject to relapses. The hyperæmic cases, when they become general, bear a close resemblance to pityriasis rubra, and end by desquamation. For treatment, arsenic in large doses and cod-liver oil are recommended for internal administration, and Unna's "Zinkleim" locally.

Alopecia Areata following an Operation on the Neck.—In the light of Max Joseph's experiments in producing alopecia areata by cutting out the second cervical ganglia in cats, the report by Pontoppidan ("Monatshft. f. prkt. Derm.," 1889, viii, 51) of a case of the same disease occurring in a child following an operation in the neck is of special interest. The operation was for the removal of an enlarged cervical gland in the left carotid region. The external jugular vein was wounded in the operation so that a tampon had to be applied to check the bleeding. On the second day following the operation there was discovered a paralysis of the left sympathetic shown by ptosis and contracted pupil; there were also choreic movements of the left arm during sleep. Three weeks after the operation, when the bandages were first removed, there were discovered a number of symmetrical spots of alopecia areata. These subsequently increased in size till the occipital region was entirely bald, the area being bounded above by a sharp horizontal line running from the crown of the head forward around the head so that there was only a strip of hair on the temples before the ear, and only a narrow line of hair on the neck. This distribution corresponded to the regions supplied by the occipitalis major and minor, and by the posterior branches of the auricularis magnus. In this case there was a nerve injury in a region corresponding to that operated on by Joseph, and the case is instructive as showing the nervous origin of some cases, at least, of alopecia areata.

The Pathogenesis of Alopecia Areata.—This vexed question is once again discussed; this time by Mibelli ("Giorn. ital. del. mal. ven.," 1888, xxiii, 416). He shows how little dependence can be put upon the results of the microscopic investigations into the pathology of the affection thus far made, as the findings of the most able of the investigators do not agree among themselves as to either the parasite or the lesion of the hair. Experimentally, it has not been possible to convey the disease directly from man to man, or from man to animal; and the results obtained by section of nerves are of uncertain value. Joseph's experiments in the production of hair-fall by resection of the second cervical nerve led Mibelli to a series of investigations in this direction. In the first series, in 1887, he obtained in three cats a fall of hair in circumscribed areas by following Joseph's method, which was evidently due to nervous influence. A second series of experiments led him to uncertain conclusions, so he undertook a third series. His subjects were cats, as he found that they were the easiest to operate upon, and full-grown ones were preferred. The operations were done under chloroform. An account of fifteen out of thirty experiments is given. Microscopical examination of pieces of sound skin as well as skin from which the hair had fallen, both taken from the same animal, showed, in two cases, no difference in structure except the absence of hair from the bald places. In no case were changes found sufficient to justify a diagnosis of atrophy of the hair follicle or papilla. In one animal there was a marked alteration of the epidermis from the bald patch, the rete being notably swollen, having many cells with circumnuclear dropsy, the interspinous spaces being much dilated. In numerous places there were appearances similar to those presented by vesicles in rapidly spreading dermatitis or acute eczema. As to the results of the experiments upon the hair-fall, one of the most striking was the disparity of the effects obtained. In some animals extirpation of the second cervical ganglion produced a fall of hair in circumscribed areas, both in the region of distribution of the cutaneous branches of the affected nerves (six cases) and also in parts more or less distant (three cases). In other animals the same operation was followed by hair-fall from regions outside of those supplied by the nerve operated upon (four cases). In yet other animals the operation was completely without result (five cases). The date of the hair-fall varied greatly; it occurred at any time from the ninth to the forty-seventh day after the operation. In most of the cases there was no change in the skin of the bald spot; in one case there was a superficial abrasion; in another there were soft crusts in the center of the bald spot; and in another a true eczema appeared along with the fall of the hair. These differences can not be explained by differences in the animals themselves or in the operations. The fact that the hair is regenerated after a time in the bald areas disproves Joseph's hypothesis that its fall is due to destruction of the trophic nerves going to the part, because when a peripheral nerve is separated from its ganglion it falls at once into degeneration, and can not be brought to life again; nor could the atrophied hair papillæ renew their functions. On account of such inflammatory alterations in the skin as he met with in his experiments, he is inclined to attribute the hair-fall to a lesion of nutrition of the skin, but not to a pure tropho-neurosis; rather an alteration in the vascular system. Inflammatory changes in the skin following the removal of the anterior lobes of the brain of a dog have been observed by Goltz. The same result has followed the cutting away of the occipital lobes. This has been noted by other experimenters. It is probable that excision of the second cervical ganglion may produce disturbance of the nerve centers, and this last produce the changes in the skin and the hair-fall. That the skin recovers shows that the disturbance is a passing, functional disorder of the nerve, interfering with the blood-supply to the affected part.

Piedra.—This, to us, rare disease has been studied by Dr. Juhel-Renay ("Annal. de derm. et de syph.," 1888, ix, 777). The affected hairs when they are of a certain length appear like lanugo hairs, and curl up upon themselves. At unequal distances along the shaft there are little elevations, more readily perceptible to the touch than to the sight, of a dark chestnut color, and easily cut through with the scalpel. They resemble the nits of pediculi, but are very much smaller. The microscope shows them to form a more or less complete annular sheath to the hair, and they are often transparent enough to allow of the hair being seen through them. They appear greenish-yellow in glycerin. As many as twenty-three were found upon a hair two feet long. They are composed of an agglomeration of spores compacted together by the solidifying of a fatty substance. The spores are larger than those of the trichophyton, of nearly double the size, and of very varying shape. Through them run little staff-like columns. He has not been able to find mycelia in any of the cases examined. The parasite does not penetrate the hair, but is stuck on the surface. It bears no relation to trichophytosis or favus.

The Treatment of Favus with Oleate of Copper.—Mibelli recommends ("Boll. dei cult. del. sc. med.," 1888; "Giorn. ital. del. mal. ven.," etc., 1888, fasc. iii, p. 329) the daily rubbing into the scalp, deprived of crusts, of twenty-per-cent. oleate of copper, then covering the head with a light protective covering, and every two or three days washing with tincture of green soap. He has cured some cases by this method without epilating.

The Treatment of Tinea Tonsurans.—In 1885 Harrison, of Bristol, Eng., first advocated the treatment of this disease by means of two solutions, one of liquor potassæ and potass. iodide, and the other of mercuric chloride. This was said to yield good results, but was troublesome to use. Now ("Brit. Med. Jour.," 1889, i, 465) the same physician gives us a modified procedure as follows: Every night and morning there is to be rubbed into the diseased parts a little of an ointment composed of caustic potash, gr. ix; carbolic acid, gr. xxiv; lanolin and oil of cocoanut, each ℥ ss. The hair is not to be shaved, and a cure is to be looked for in from one to three months. During the treatment the whole head is to be anointed with an ointment composed of boric-acid ointment and eucalyptus ointment, each ℥ ij; oil of cloves, ʒ ss.; oil of cocoanut up to ℥ vj. The other children of the family are to have their heads anointed with the same ointment. Favus may be treated on the same plan.

Syringo-cystadenoma is the name given by Unna to a variety of tumor of the skin described by his assistant, Touk, in the "Monatshefte für prakt. Dermat.," 1889, No. 3. The study is founded upon a case of some seventeen years' standing occurring upon the chest and abdomen of a man thirty-three years of age. It began in the neighborhood of the axilla and spread forward and downward. The eruption consisted of a number of small, round, hard, raised papules of the color of the skin. These papules tended to grow larger and to become of a blue-red color. It was unattended by subjective symptoms. Histological examination showed the tumors to consist of spaces, tubules, and epithelial nests, which in a more advanced stage changed into cysts and canals, on account of which the name cystadenoma was given. The build of these bodies, especially the configuration of the tubules, and the appearances of the epithelium of a portion of them, point to the sweat glands as their probable origin. It is probable, also, that they originate in embryonal sweat glands, as no connection could be found between them and glands already formed.

Xeroderma Pigmentosum.—A case of this rare cutaneous disease is reported by Brigidi and Marcacci in the "Giorn. ital. del. mal. ven. e della pelle," 1888, xxiii, 281. The patient was a girl, eight years old, in whom the disease began in the fourteenth month of her life, and without apparent cause. It was located upon the face, the neck, a part of the back, and the arms. The eruption consisted of a great number of macules of a black or brown color like lentigines, and of various shapes. Between these macules were sown, as it were, linear or stellate, more or less bright-red macules, which were true teleangeiectases. Upon the face were some corneous growths, and near the nose and upon the cheeks were slight ulcerations. The affected skin was dry and scaly. Various attempts at treatment were without effect. A list of forty-one monographs and journal articles is appended to the article, which will be useful to any one studying the subject.

The Treatment of Sarcoma Cutis.—Funk, of Warschau, at the close of a clinical study of sarcoma ("Montshft. f. prakt. Derm.," 1889, Nos. 1 and 2), recommends arsenic energetically administered in the treatment of multiple sarcomata. When the tumor is solitary, it should be excised. When ulceration has taken place, a ten-per-cent. iodoform ointment will render good service.

Purpura and Malignant Growths.—Dr. Harris, of Manchester, reports ("Med. Chron.," Feb., 1889) some interesting cases of hæmorrhages into the skin and mucous membranes taking place in connection with sarcomatous growths occurring in various parts of the body, and explains their occurrence upon the theory that they are due to emboli from the growth lodging in the capillaries of the skin.

Leprosy and its Contagiousness.—While living in Africa, Dr. Daubler visited what he calls "Robben" Island. This small island lies off the coast of South Africa, and contains eighty-four lepers, and it is upon these as well as those of South Africa that this study ("Monatsheft f. p. Dermat.," 1889, No. 3) is made. Fifty-eight of them were men. The men and women lived in different parts of the island. There were only three Europeans affected with the disease, and all of these were men. The first cases were brought to Africa by the Chinese. On the island the accommodations in the hospital are not sufficient to accommodate the lepers of the neighboring Cape Colony, and so there are many lepers at large spreading the disease. From Cape Colony leprosy is spreading into the heart of Africa. On the island most of the cases are of the tubercular variety, only a quarter of them showing the anæsthetic form. In two cases the evidence pointed conclusively to the inoculation of the disease by vaccination, the lymph having been taken from a person who subsequently died of leprosy. The resident physician, Dr. Wynne, has succeeded several times in inoculating mice and rabbits with anæsthetic leprosy.

Syphilitic Deposits in the Human Tongue followed by Epithelioma.—Dr. Wheeler reports ("Med. Press," Jan. 23, 1889) a case of epithelioma of the tongue of a man forty-eight years old. Ten years before its appearance he contracted syphilis that left a deposit in his tongue which had been brought nearly to a disappearance five times by antisyphilitic treatment, but finally became epitheliomatous, as proved by microscopical examination.

Hereditary Syphilis.—A study by Neumann runs through Nos. 4 to 9 of the "Wien. klin. Wochnshft." for this year. It is founded upon a hundred and twelve carefully observed cases. This valuable contribution is too long for abstracting, and we must content ourselves with giving the author's conclusions as follows: 1. A syphilitic mother may infect her unborn child in every period of her disease, whether she has acquired it before or after conception. 2. While it is possible for the fœtus to inherit syphilis when the mother becomes infected after conception, it is rare; and very rare when the infection takes place late in the period of pregnancy. 3. If the infection of the mother occurs after conception, the father at that time being syphilitic, the influence upon the child is intense, as it either dies *in utero* or is born with some specific manifestation. 4. When syphilis is acquired by the mother late in pregnancy, the child usually escapes. 5. When infection and conception occur at the same time, in half the cases the fœtus dies. Nevertheless, quite a large number of the children escape entirely, in spite of both the parents being syphilitic. This is contrary to the opinion generally entertained. 6. The further removed the time of infection is from the time of conception (antedates it), the better chance there is for the child, provided the mother undergoes an active course of treatment. 8. The best chance for the child is when the mother has acquired the disease late during the pregnancy, and the father was not syphilitic at the time of the conception. The poorest chance for the child is when conception and infection occur at the same time, or the father at the time of conception has recent syphilis. 9. A child may acquire syphilis from the father. 10. It is not advisable to bring on an abortion in a case of late infection of the mother. 11. Tertiary syphilis does not produce sterility in the woman. 12. A protracted mercurial treatment is favorable to the child. Of the hundred and twelve cases studied, in but forty-four were the children born alive, and most of these died soon after.

Syphilitic Reinfection.—Dr. Ducrey, of Naples, reports in the December number of the "Giornale italiano delle malattie veneree e della pelle" for 1888 a case of syphilitic reinfection in a woman forty-six years of age, married, and without children. She gave a clear history of her first attack of syphilis and of a subsequent infection with soft chancres acquired from her husband. Ten years after marriage, and some eleven or twelve years after primary infection, she had intense headache and an eruption of circumscribed nodules and pustules upon the scalp, which ulcerated and became serpiginous. At this time the husband contracted syphilis from another woman. His symptoms made the wife suspicious, and, experiencing discomfort in the genital region herself, she went with the husband to the clinic, and was found to have an initial lesion, inguinal gland enlargement, a macular syphilide over the body, and other signs of fresh infection. The course of the freshly acquired disease was a stormy one, with a great deal of constitutional disturbance, a general outbreak of pustular lesions, and intense osteocopic pains.

New Inventions, etc.

EXPRESSION IN THE TREATMENT OF TRACHOMA.*

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It is my pleasure in this paper to call your attention to a method employed in the treatment of chronic follicular trachoma which has found its way into few of the journals and none of the text-books, but which, in my opinion, takes the lead among the remedies employed against this intractable disease. This process is the expression or enucleation of the follicular contents.

The first reference to this subject which is to be found in literature occurs in Graefe's "Archiv für Ophthalmologie," 1883, in which Mandelstamm, a Russian oculist, speaks of the efficacy of squeezing, in the treatment of trachoma, by means of the thumbs. "The lid being everted and held by the thumb of the left hand, the nail of the right thumb is placed in the retrotarsal fold. The two thumbs are now

* Read before the Illinois State Medical Society, May 23, 1889.

pressed against one another, including the lid and part of the reflected mucous membrane, thereby squeezing out the follicular contents and breaking down their walls." This announcement of Mandelstamm's made little if any impression, and the idea might still have remained dormant but for an accidental discovery made by Dr. F. C. Hotz, of Chicago, two years before the appearance of the publication of Mandelstamm. He published his observation in the following words, in Knapp's "Archives of Ophthalmology," June, 1886: "At this time," he says, "an exceedingly nervous patient with follicular trachoma and acute pannus came under my care. A violent spasm of the orbicularis set in when I turned the upper eyelid, and, as I pushed the everted lid upward in order to obtain a better view of the retrotarsal portion, I observed that the contents of the numerous trachoma follicles were squeezed out by the pressure of the orbicularis, in the form of gelatinous plugs, and, by assisting this pressure a little with the thumb, I succeeded in thoroughly emptying all the follicles. The next day I was actually surprised by the remarkable improvement. All acute irritation was gone, the photophobia and the heavy pressure of the lids had disappeared, the eyes were opened without discomfort, and in a few weeks the patient was discharged as cured."

This article appealed so forcibly, as both rational and practical, that I was led to adopt the method at once, and have subjected it to three years of almost daily trial and in the various stages of trachoma.

To appreciate the indications for squeezing in the treatment of trachoma, it will be well to bear in mind the natural history of the disease. Though the lines are not closely drawn, in the course of the disease three overlapping stages may be recognized:

1. The inflammatory.
2. The follicular.
3. The cicatricial.

In the first the epithelial structures are principally affected and the enlargement of the papillæ has led to the term papillary hypertrophy.

In this stage, in my opinion, squeezing is contra-indicated. The inflammation is acute, and the treatment has not been found to shorten the disease. With the subsidence of the acute process, which may be shortened by scarification and astringents, one is able to observe the characteristic of the *second* stage.

The hypertrophied papillæ may be seen interspersed with the follicles, which, by their color and increasing prominence, lead to no possible mistake in the diagnosis. With the further progress of the disease they become the ruling factor of the process. They infiltrate the hypertrophied papillæ and may be seen in masses or folds corresponding to those of the conjunctiva. They may be more or less extensive, in one case being limited to a few follicles and in another omnipresent with the conjunctival area, resembling the ovary of a fish. Lying beneath the epithelial surface, they are by it protected against the irrational caustic treatment which has so often been seen to result in the deplorable destruction of the tarsal and retrotarsal mucous surface, resulting in ptosis, entropion, and blepharo-phimosis. The poisonous contents of these follicles, rather than the roughened surface, are to be held accountable for the recurrent ulcers of the cornea, which result from the corneal invasion of septic agents.

The presence of the follicles in the tissue stimulates the secretion of a protective exudate, the organization of which results in the cicatrization which characterizes the *third* stage.

So long as the follicles remain to excite irritation, the cicatrization continues. The *second* stage may thus be seen to lap over the *third*, which is often prolonged months or years by the presence of more or fewer follicles which, being situated deep in the tarsus or concealed in the retrotarsal fold, resist the efforts of nature or elude the vigilance of art. The curative method of nature is that of siege, and many cases of trachoma result in spontaneous recovery, but with a loss of a large portion of the mucous surface which has been transformed into cicatricial tissue. The *caustic* method of the past has imitated the method of nature and secured the end in a shorter time by artificially destroying the epithelium and hastening the cicatrization. This irrational procedure has been pushed still further by some of the prominent French surgeons, who have advocated the excision of the retrotarsal folds, maintaining that the disease is not cured until the whole area of trachoma development is destroyed.

The mycological development of the last decade has changed all this. After the primary stage of epithelial inflammation, the diseased germs infest the follicles, and the problem is, therefore, to remove them as they develop with the least possible destruction of the mucous membrane.

By mechanically squeezing the area, underlying which the follicles may be seen, the pressure causes a rupture of the surface permitting the extrusion of the follicular contents, and is followed by healing with no loss of tissue. In the secondary stage this may require repetition one or more times, because there are often numerous small follicles which are not sufficiently developed to permit of their removal. But if the case is seen in the cicatricial stage, when the battle of supremacy is being waged by the two contending forces, a single squeezing is often sufficient to reverse the balance of power and effect a permanent cure.

The method of effecting this deserves some comment.

The failure of Mandelstamm's suggestion to obtain recognition was probably due to its narrow limit of availability. Squeezing between the thumbs is not applicable to the lower lid, and is available in the treatment of the upper lid in only a small proportion of very chronic cases. Hotz, in his article, speaks of having used an old-fashioned iris forceps.

For the first two years of my experience with the method a curved clot forceps was employed, but so often was it found ineffectual in removing the concealed follicle that an attempt has been made to supply a need which it is believed exists.

In the construction of an efficient trachoma forceps three qualities have been deemed essential: First, that the shape should render every point of the conjunctival surface accessible; second, that sufficient strength should be possessed to express the follicular contents when occurring beneath the tarsus; third, that the terminal extremity should be of round or oval wire to prevent laceration of the mucous membrane, which is always delicate and often atrophied.



These requirements were communicated to George Tiemann & Co., who have produced this forceps, which has been found to meet the demand. Since receiving it a few months ago I have effected a cure in a number of chronic cases which had resisted treatment, in which the follicles were wholly inaccessible by means of the thumbs or any forceps in my possession. By means of this instrument it has been found possible to reach the commissural angles of the retrotarsal folds, the caruncle, and the plica semilunaris, and, besides, to remove the granulations from under the bulbar conjunctiva though extending to the limbus corneæ.

The hæmorrhage in these operations is generally slight and believed to exert a favorable influence on the disease. The pain, in considerable measure, may be controlled by an eight-per-cent. solution of cocaine hydrochloride, and still more effectually by the use of bromide of ethyl, which, when properly administered, secures anæsthesia in from thirty to sixty seconds, which lasts but from one to two minutes, and seldom leaves so much as a headache.

It must not be understood that squeezing is considered a substitute for all other treatment. Many cases of this persistent disease will test the patience of the patient and the tact of the physician in conducting the disease through the second stage until there are no new crops of follicles to be squeezed out. It will be found necessary to exercise intelligence in the selection of agents to control the inflammatory conditions of the lids as well as the complications of the cornea and iris which may exist.

Attention to the general health must not be overlooked; neither must the condition of the lacrymal drainage be ignored. The surgical indications furnished by entropion and blepharo-phimosis must also receive efficient and prompt attention, for the eye is but an organ of the physical economy and is dependent upon the general condition as well as the local environment for the successful operation of its special function.

Miscellany.

Mortality in Cities in the United States.—The following table represents the mortality in the cities named, as reported to Dr. John B. Hamilton, Surgeon-General of the Marine Hospital Service, and published in the abstract of sanitary reports received by him during the week ending July 26th:

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM— Cholera.	Yellow fever.	Small-pox.	Varioloid.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y.	July 20.	1,573,995	964	..	..	..	..	..	5	7	20	4	15
Philadelphia, Pa.	July 20.	1,040,245	536	..	..	..	..	..	17	4	2	5	5
Brooklyn, N. Y.	July 20.	834,607	412	..	..	..	..	..	2	2	12	..	4
Baltimore, Md.	July 20.	500,343	240	..	..	..	..	..	2	2	..	..	2
San Francisco, Cal.	July 12.	350,000	101	..	..	..	..	..	2	..	1	..	..
Cincinnati, Ohio.	July 20.	325,000	138	..	..	..	..	..	1	..	5	7	1
New Orleans, La.	July 13.	254,000	121	..	..	..	..	..	..	..	1	1	..
Cleveland, Ohio	June 15.	235,000	86	..	..	..	..	..	3	4	4	1	1
Cleveland, Ohio	June 22.	235,000	64	..	..	..	..	..	2	1	3	..	..
Detroit, Mich.	July 13.	230,000	107	..	..	..	..	..	..	1	1	..	..
Pittsburgh, Pa.	July 20.	230,000	104	..	..	1	..	..	2	..	2	..	1
Washington, D. C.	July 20.	225,000	133	..	..	..	..	..	8	..	4	..	3
Minneapolis, Minn.	July 13.	200,000	75	..	..	..	..	..	1	..	3	..	..
Minneapolis, Minn.	July 20.	200,000	50	..	..	..	..	..	..	..	..	..	..
Newark, N. J.	July 2.	184,669	95	..	..	..	..	..	3	1	4	..	3
Newark, N. J.	July 9.	184,669	124	..	..	..	..	..	..	..	7	1	1
Newark, N. J.	July 16.	184,669	128	..	..	..	..	..	2	..	2	2	..
Kansas City, Mo.	July 20.	180,000	58	..	..	..	..	..	3	..	..	..	..
Rochester, N. Y.	July 20.	130,000	55	..	..	..	..	..	..	..	..	1	..
Providence, R. I.	July 20.	127,000	59	..	..	..	..	..	..	..	1	1	3
Denver, Col.	July 19.	100,000	31	..	..	..	..	..	3	1	2	..	..
Richmond, Va.	July 15.	100,000	59	..	..	..	..	..	2	..	..	..	..
Richmond, Va.	July 22.	100,000	55	..	..	..	..	..	1	..	..	..	..
Toledo, Ohio	July 19.	83,500	20	..	..	..	..	..	1	..	..	..	2
Fall River, Mass.	July 20.	69,000	44	..	..	..	..	..	..	..	..	..	..
Nashville, Tenn.	July 20.	65,153	21	..	..	..	..	..	2	..	..	..	..
Charleston, S. C.	July 13.	60,145	46	..	..	..	..	..	..	..	..	1	..
Charleston, S. C.	July 20.	60,145	47	..	..	..	..	..	1	..	..	..	..
Lynn, Mass.	July 20.	50,000	13	..	..	..	..	..	..	..	..	..	..
Portland, Me.	July 20.	42,000	19	..	..	..	..	..	..	..	..	..	..
Manchester, N. H.	July 13.	42,000	16	..	..	..	..	..	..	1	..	..	..
Galveston, Texas.	July 5.	40,000	14	..	..	..	..	..	..	..	..	..	..
Council Bluffs, Iowa.	July 13.	35,000	6	..	..	..	..	..	..	..	..	..	..
San Diego, Cal.	July 13.	32,000	2	..	..	..	..	..	..	..	..	..	..
Binghamton, N. Y.	July 20.	30,000	16	..	..	..	..	..	..	..	..	..	..
Altoona, Pa.	July 13.	30,000	9	..	..	..	..	..	..	..	..	..	..
Altoona, Pa.	July 20.	30,000	15	..	..	..	..	..	..	..	1	..	..
Auburn, N. Y.	July 20.	26,000	15	..	..	..	..	..	..	..	1	..	..
Haverhill, Mass.	July 20.	25,000	10	..	..	..	..	..	..	..	..	..	..
Newport, R. I.	July 18.	22,000	3	..	..	..	..	..	..	..	..	..	..
Newton, Mass.	July 20.	21,553	7	..	..	..	..	..	1	..	..	..	..
Rock Island, Ill.	July 15.	16,000	1	..	..	..	..	..	..	..	..	..	..
Keokuk, Iowa.	July 20.	16,000	7	..	..	..	..	..	..	..	..	..	..
Pensacola, Fla.	July 13.	15,000	8	..	..	..	..	..	1	..	..	2	..
Pensacola, Fla.	July 20.	15,000	8	..	..	..	..	..	..	..	..	..	..

Diagnosis of Brain Cysts.—"Professor Edmond Souchon, of New Orleans, has suggested that in cases in which the diagnosis of cyst or abscess of the brain is doubtful, the brain may be explored with a fine aspirating needle introduced through a small hole made in the skull with a watchmaker's drill, furnished with a gauge and screw so adjusted as to prevent the 'bit' from penetrating too deeply after working through the bone. He has performed the operation several times on dogs, and these animals, after recovering from the chloroform, did not seem to have been in any way affected by the operation, and remained afterward in perfect health. In an animal killed before recovering from the chloroform there were seen only small extravasations under the scalp and under the pia mater. Professor Souchon thinks that the 'bit' used should be large enough to make a hole in the skull to admit a needle twice the size of an ordinary hypodermic needle."—*British Medical Journal.*

Propeptonuria or Hemialbumosuria in Measles.—"Propeptone, or hemialbumose, is known to exist in the urine in many diseases in addition to osteomalacia, in which it was first found by Dr. Bence Jones. Thus it has been detected in abscess of the liver, septicæmia, hip disease, peritonitis, endocarditis, parametritis, spinal curvature, Bright's disease, and in the puerperal state. Dr. Loeb, of Frankfort, now writes that he has found it in the urine of nine patients with measles out of twelve cases of the kind in which he examined the urine for it. The method of testing employed by him is as follows: Sulphuric acid added to the urine drop by drop causes, if propeptone is present, a copious, white, flocculent precipitate, which disappears on heating, but reforms if the liquid is allowed to cool. Acetic and hydrochloric acids will give a similar reaction. It must be remembered that an excess of acid will redissolve the precipitate; therefore it is necessary to be careful to add it slowly. As a rule, in the cases of measles examined the reaction was obtained for about two days at the beginning of the affection after the temperature had begun to go down, but before the rash had disappeared. Dr. Loeb found in several of his cases some enlargement of the liver, which he thinks may have some connection with the change in the urine. He also suggests that perhaps the skin affection is connected with the formation of propeptone, as it has been found in patients suffering from various affections in which the skin is implicated; thus Leube found it in urticaria, Ter-Gregoriantz in diffuse dermatitis, and Lassar was able to produce it in animals by rubbing petroleum ointment into the skin. Regarding the relation of propeptonuria to the condition which gives the so-called dinitro-benzolic acid reaction which is frequently found in typhoid, scarlatina, advanced phthisis, and other febrile diseases, Dr. Loeb has found that its presence does not always imply the existence of propeptonuria, though in many cases the former condition coexists with it."—*Lancet.*

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Lectures and Addresses.

A CLINICAL LECTURE ON IRRIGATION OF THE STOMACH.

DELIVERED AT THE NEW YORK POST-GRADUATE MEDICAL SCHOOL, JULY 2, 1889.

By JAMES K. CROOK, M. D.,
INSTRUCTOR IN CLINICAL MEDICINE AND PHYSICAL DIAGNOSIS.

THIS morning, gentlemen, I wish to call your attention to a therapeutic procedure in the management of certain gastric diseases which, I have reason to believe, is not resorted to as often as it should be. I refer to irrigation of the stomach, or, as it is sometimes called, lavage. A careful examination of our principal medical journals for several years back, in addition to conversations on the subject with a considerable number of physicians in active practice, convinces me that this method of treatment is suffering from an undue neglect. It was introduced, about twenty years ago, by Kussmaul, who employed it in cases of gastrectasis, or dilatation of the stomach, and a majority of those who have since adopted it have limited its use to that particular affection. There is no doubt, however, that its range of application is capable of much greater extension. Indeed, I have no hesitation in saying that it should be given a trial in every case of chronic dyspepsia in which medicines have failed, provided there is no contra-indication to its use. We are safe in assuming that most of these patients have more or less gastric catarrh, and, at any rate, we can do no harm by the exceedingly safe and simple operation which I will show you presently. The chief advantages of lavage are as follows: 1. Owing to a loss of peristaltic power, often present in simple dyspepsia and always in dilatation, the stomach is unable to rid itself properly of ingested material until long after the period of normal digestion. This condition has been termed by Rosenbach insufficiency of the stomach. This stagnating and fermenting material, in some instances, will remain in the stomach for days at a time, as shown by the vomiting of substances known to have been ingested a long time previously. The stomach is liable to become greatly irritated in this way, and inflammation may even be developed. By the timely employment of the tube all this material may be washed out, and the stomach thoroughly cleansed and allowed a period of perfect repose. We may thus in many cases restore the lost elasticity and muscular contractility of the organ. 2. In cases of simple gastric catarrh it relieves the stomach of the superabundant mucus, and perchance bile, that may be present. 3. By reason of its safety and simplicity, an intelligent patient may be readily taught to use the tube himself. Washing of the stomach should be performed at least six or eight hours after eating, when the organ is supposed to be empty. For this reason an early morning hour before the first meal is commonly chosen. It should be performed every day at first, then every other day, dropping to once a week, and finally discontinuing altogether. Tepid water should be used, to which, if desired, may be added certain medicaments—bicarbonate of sodium, carbolic acid, creasote, hyposulphite of sodium, Lugol's solution, etc. The prognosis is, of course, most favorable in cases of simple dyspepsia and early dilatation. In old cases of gastrectasis we can expect palliation only. The best results are seen in cases of gastric insufficiency, the criteria of which I have mentioned.

With these preliminary remarks, we will now devote ourselves to the patient who presents himself. He informs us that he is thirty-four years of age and a brass-molder by occupation. On February 21st he came under my observation, giving a history as follows: For about a year past he had been suffering from flatulence, pyrosis, obstinate constipation, and cardiac palpitation. The latter symptom especially was so severe and constant that the patient was firmly fixed in the belief that he had heart disease. He had applied to several physicians, but had failed to obtain relief. I found him in a very melancholy frame of mind, as he had begun to lose hope of ever getting well. He was put under treatment, and various remedies prescribed for the relief of his symptoms. There was no improvement, however, and at the end of two months he was rather worse than at the beginning of my treatment. On April 24th I resorted to irrigation of the stomach, and have continued it at gradually increasing intervals since that time. For the past month it has been performed at intervals of two weeks, and to-day I think is about the last time it will be required. If you will question the patient, you will learn that the symptoms began to abate immediately after the first washing, and his improvement has continued steadily ever since. He has gained in weight, his appetite is greatly improved, and he has a regular daily evacuation from his bowels. He has not been troubled for three weeks with cardiac palpitation, and the pyrosis has disappeared entirely. This improvement I attribute to the periodical irrigations of his stomach, although certain dietetic and hygienic precautions have doubtless had some influence. His nourishment has consisted chiefly of fresh milk and tender beefsteak, broiled underdone, chopped fine, and thoroughly masticated, with stale or toasted bread. Latterly he has been allowed a mutton-chop, the white meat of fowls, and an occasional lightly cooked, poached egg. Saccharine, amylaceous, and fatty substances have been excluded as far as possible. Such notorious dyspepsia breeders as boiled cabbage, rich cake, pies, strong tea, fat pork, etc., have been given a wide berth. The patient has been allowed a glass of claret for dinner, but no other stimulant whatever. The only medicines taken since employing lavage have been a little bismuth and pepsin, with a few grains of aromatic powder to correct occasional spells of flatulence occurring in the intervals of the irrigations. I may say that the patient has been exceedingly tractable, and, I believe, has obeyed my instructions to the letter.

The instrument I employ is a large-sized soft-rubber tube about thirty inches in length, and having two eyelet holes in the distal extremity. It is exactly similar to a large-sized Jacques urethral catheter, being of the size marked 19 A. (American scale) by Tiemann, of this city. Some employ a longer tube, having a funnel connected with

its proximal extremity, known as the Faucher tube, but I prefer the one I have here, attaching it by means of a short glass cylinder to the hose of an ordinary fountain syringe, which I hang on a convenient hook in the wall above the level of the patient's head. After anointing about twenty inches of the distal portion of the tube with vaseline I pass it back to the patient's pharynx, instructing him at the same time to swallow. The end of the tube readily engages in the upper extremity of the œsophagus, and by a little gentle, continuous pressure it gradually passes down into the stomach. When I first passed the tube in this case there was considerable retching, and even a little vomiting, but by repeated use the patient has acquired a toleration for it, and you will notice now that it produces no sign of annoyance or discomfort. In some cases we will have to exercise no little patience and perseverance at the first attempt at introduction. Sometimes the patient will vomit the tube as quickly as it is placed in position. Such cases are not common, however, and tolerance is usually quickly acquired. In obstinate cases a four-per-cent. solution of cocaine may be applied to the pharynx and fauces by an atomizer before introducing the stomach-tube. Having the tube *in situ*, I now connect it with the syringe, at the same time filling the latter with simple tepid water, which, as you see, passes rapidly from the bag into the stomach. After I allow about two pints to run in, the patient expresses a sensation of fullness in the region of the epigastrium, so I cut off the flow by means of a stop-cock on the hose of the syringe. I now disconnect the hose from the syringe and depress the former, holding it over a vessel placed ready to receive the fluid from the stomach. A reverse current is immediately established on the principle of the siphon, and the contents of the stomach pass very readily through the tube into the receiver. There is no solid matter in the stomach, as the patient informs us that he took nothing for his breakfast except a cup of chocolate with a little milk. You will notice that the flow is occasionally interrupted and stops altogether at times. This is due to flocculi of phlegm and mucus in the stomach, which engage in the tube and arrest the current. This mucus was very abundant at first, but has progressively diminished until now it amounts to very little. It may be driven through or disengaged from the tube by instructing the patient to bear down; by gentle but firm pressure over the epigastrium with the hands; by shifting the position of the tube, withdrawing it slightly, and returning it; or, finally, by connecting it with the syringe again and allowing more water to enter the stomach. While the water is flowing into the stomach it is a good plan to walk about the room with the patient, holding the syringe on a high level and instructing him to lie down a little while and to agitate his body in such a way that the fluid reaches every portion of the gastric mucous membrane. I continue to replenish the water and allow it to flow out again until six or eight pints have been consumed. You will see that it now returns from the stomach perfectly clear and contains no mucus whatever. In the last installment of water I dissolve fifteen or twenty grains of salicylate of sodium as a safeguard against renewed fermentation. Just here I will mention another application for irrigation. We now know this man's stomach to be perfectly empty. By percussion of the epigastrium we may, if we desire, ascertain the condition of affairs in that region, carefully noting the areas of tympanitic resonance, dullness, etc. Now, if we introduce another pint or two of water and percuss again, we shall find a new area of dullness which corresponds to the lower border of the stomach. If we find this line persistently an inch or two below the level of the umbilicus, it is fair presumptive evidence of gastric dilatation. By repeated examinations we can make out any changes occurring in this level and thus estimate to some extent the value of treatment. If the stomach is regaining its lost muscular power and elasticity, the lower border will gradually return to its normal position just above the umbilicus.

Feeling convinced that this patient's stomach is thoroughly cleansed, I withdraw the tube gently, and the operation is completed. In the present case, as in others I have treated by lavage, the operation is followed within a few minutes or half an hour by two or three watery evacuations. This has occurred even in cases of obstinate constipation. It is doubtless caused by a certain quantity of water escaping from the stomach into the duodenum and passing through. It is probable also that in some cases the lower end of the tube passes through the pylorus if we introduce it too far, so that the duodenum receives a considerable proportion of the fluid. At any rate, this watery evacuation of the bowel is probably a favorable occurrence, and is usually regarded in that light by the patient. A gentleman of the class asks whether the dietary precautions in this case may not be responsible for the favorable result. While by no means underestimating this part of the treatment, I think a sufficient answer to the question is found in the fact that the same restrictions were observed for weeks before employing lavage, but with no improvement whatever in the symptoms. Before dismissing the subject, I should state that there are certain contra-indications to the use of the tube. It should not be used: 1. In cases of aneurysm of any of the great thoracic vessels. 2. In cancer of the œsophagus or cardia. 3. In cases of recent hæmatemesis, hæmoptysis, or gastric ulcer. 4. In very nervous or hysterical patients, and in cases of great debility and prostration with a tendency to syncope. Of course, in cases where we wished to secure an immediate evacuation of the stomach, as in cases of poisoning, we should have recourse to the pump.

Induction of Premature Labor.—"Dr. Chenevière, in the 'Revue médicale de la Suisse Romande,' gives an account of a simple method which he has employed for inducing premature labor. The cervix is brought into view with a speculum, and about twenty small iodoform tampons are passed through the os uteri by means of a thick sound. The plug reaches rather above the internal os. A larger plug is then placed against the vaginal portion to keep the cervical plug in position. Three cases are given in which the method was adopted. In the first, pains came on in two hours, and the labor was terminated in fourteen hours; in the others, more than one plugging of the cervix was necessary, labor taking place on the following day. In one case some of the tampons were only passed several hours after the expulsion of the fœtus and placenta; and the author therefore thinks it well to have the tampons counted to avoid the possibility of any being left behind."—*British Medical Journal.*

Original Communications.

AN ANALYSIS OF NINETY CASES OF SIMPLE CHRONIC GLAUCOMA,

WITH SPECIAL REFERENCE TO THE EFFECTS OF IRIDECTOMY ON THE ACUITY OF VISION AND THE VISUAL FIELD.*

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The remarks embodied in this paper are based upon a careful analysis of ninety cases of simple chronic glaucoma which the writer was enabled to follow out for a varying length of time subsequent to operation. They embrace all the facts in regard to each case which have any bearing upon the subject of the effects of iridectomy upon the acuity of vision and the state of the visual field. The cases extend over a period of about seventeen years, were all examined and treated by the reporter, and the conclusions drawn are therefore derived merely from his own personal experience.

Of the ninety cases under consideration, forty-four were in males and forty-six in females, the cases being nearly equally divided between the sexes. The age of the patients varied between twenty-four and eighty-six years.

In the decade between twenty and thirty there were two cases; between thirty and forty, seven cases; between forty and fifty, sixteen cases; between fifty and sixty, twenty-four cases; between sixty and seventy, thirty-three cases; between seventy and eighty, four cases; and between eighty and ninety, four cases.

Of the ninety patients, seventy-seven were Christians and only thirteen were Hebrews. This is contrary to the usually accepted belief that the Hebrew race is peculiarly prone to this disease.

The refraction of the one hundred and eighty eyes of these ninety patients varied as follows: Simple hypermetropia existed in one hundred and five eyes, simple myopia was found in ten eyes, and emmetropia existed in six eyes. Simple hypermetropic astigmatism was found in ten eyes. Compound hypermetropic astigmatism was met with in twenty-four eyes, and compound myopic astigmatism in two eyes. In two eyes a condition of phthisis bulbi prevented any measure of the refractive condition, and in eighteen eyes the advanced state of the cataract present was an obstacle to the same end.

The cornea was more or less cloudy in the right eye in five cases and in the left eye in five cases.

The anterior chamber was shallow in one eye in thirty-four cases and in both eyes in forty-one cases. It was of normal depth in twenty-five eyes, and was entirely abolished in twenty-eight eyes.

The iris was more or less movable in all the cases except in those eyes in which the condition was that of absolute glaucoma.

The lenses were entirely clear in one hundred and twenty-two eyes—sixty-three on the right side and fifty-nine on the left side. There were slight peripheral opacities in the lens in thirty-five eyes—nineteen on the right side and sixteen on the left side. There was cataract in an advanced stage in eighteen eyes—in six cases in the right eye and in twelve cases in the left eye.

Phthisis bulbi existed in one eye in two cases. In one of these cases the eye had been lost in childhood from purulent conjunctivitis, and in the other case the loss of the eye was due to traumatism, and occurred in childhood or early youth.

The glaucomatous excavation of the optic disc was very deep in one hundred and six eyes, moderate in depth in forty-eight eyes, and in seven eyes there was no excavation demonstrable, though there were both diminution of vision and narrowing of the visual field.

The condition of the field of vision varied greatly, and is worthy of close and attentive study. In five cases it was contracted in one eye and normal in the other. In eighteen cases it was contracted in one eye, and either telescopic or entirely absent in the other. In thirty-nine cases it was contracted in both eyes. In seven cases there was no measurable field in one eye, and in the other there was absolute glaucoma. In twelve cases it was contracted in one eye moderately, and there was absolute glaucoma in the other. In six cases there was no measurable field in either eye. In three cases there was no limitation of the field in either eye. In one case there was absolute glaucoma in one eye and a perfectly normal field in the other.

Among the ninety cases, or one hundred and eighty eyes, there were twenty-two eyes afflicted with absolute glaucoma—nine on the right side and thirteen on the left side. In each of these cases the other eye was the seat of simple chronic glaucoma.

The intra-ocular tension was increased in both eyes in seventy-five cases. It was increased in the right eye alone in eight cases and in the left eye alone in six cases. The tension was normal in both eyes in three cases, in the right eye alone in four cases, and in the left eye alone in eight cases. The tension was diminished in the right eye in two cases.

One of the most doubtful points in the history of the development of simple chronic glaucoma is the determination of the interval between the outbreak of the disease in the two eyes. In the majority of the cases the patients are unable to determine how long an interval existed between the beginning of the attack in the two eyes, and in many instances the statement of a simultaneous attack in both eyes is of very doubtful value. Among the ninety patients under consideration, sixty-four were unable to give any opinion as to the length of interval between the attacks in the two eyes, and many of these stated vaguely that the disease began simultaneously in both eyes. In twenty-six cases the interval was known with tolerable accuracy, and varied between two months and twelve years. In twenty-eight cases the right eye was the first attacked, and in twenty-two cases the disease began in the left eye.

In all the ninety cases the only operation done was an iridectomy, always broad and usually upward, and in the majority of cases the instrument used was the ordinary

* Read before the American Ophthalmological Society at its twenty-fifth annual meeting.

lance-knife. In no case was the operation followed by an extraordinary amount of hæmorrhage, nor by any symptom pointing to malignant complication. In forty five cases a simultaneous iridectomy was done on both eyes. In seventeen cases an iridectomy was done on one eye, and was followed at a varying interval by an iridectomy on the fellow-eye. In eight cases an iridectomy was done on one eye only, the other eye remaining normal as long as the patient was under observation, which, in many instances, extended over a period of years. In two cases two iridectomies were done upon one eye, with an interval between them. In one case an immature cataract was extracted at the time of the operation of iridectomy. In one case a sensitive atrophied stump was enucleated, preliminary to an iridectomy on the other eye. In twenty cases an iridectomy was done on one eye, the other eye being blind from absolute glaucoma.

In all these cases of simple chronic glaucoma the chief interest centers in the state of the acuity of vision and the *prognosis* as to the results of an operation. To this end an accurate history was kept of each case, with special reference to vision and the visual field, before and after the operation for a varying length of time, which, in some cases, extended over a period of years, and the result is very far from encouraging, as the cases show a condition of the vision and visual field worse than had been anticipated.

One hundred and fifty-four operations were done on the one hundred and eighty eyes under consideration. Vision was temporarily improved by the iridectomy in both eyes in two cases and in one eye in six cases; but in all eight cases, after a few months, a steady loss of vision and narrowing of the field set in, and continued progressively as long as the patients were under observation. Vision remained unchanged, neither better nor worse, after the operation for a period of one year or longer, in both eyes in eight cases and in one eye in twenty cases. Vision grew slowly and steadily worse after the operation in both eyes in forty-one cases and in one eye in twenty-nine cases. Vision grew rapidly worse after the operation in both eyes in two cases and in one eye in eight cases.

One point in connection with the effect of the operation upon the resultant vision is of some importance, and sufficient attention does not seem to have hitherto been called to it. In those cases in which the lens shows peripheral opacities, whether due to the natural senile change or directly to the interference with the nutrition of the lens induced by the glaucoma, the question would naturally arise, What effect has the iridectomy upon the lenticular opacities? Peripheral opacities of the lens existed in thirty-five of the one hundred and eighty eyes considered, and repeated examinations showed that the operation had materially hastened the growth of the cataract in twenty eyes, or more than fifty per cent.

Another point elucidated by a study of these cases is that the effect of the operation varies as to vision according to the stage of the disease at the time of the operation. If we limit arbitrarily the early stage of the disease to the first six months, and regard everything beyond this as belonging to the later stages of the disease, it will be seen that the earlier the operation is done the more likely are we to obtain a good result; but to this there are not a few marked exceptions. It will be well in this comparison to regard every case where the existing vision has been maintained after the operation as a good result. A comparison of the results of operation in these cases shows that an early operation gave a good result in both eyes in four cases and in one eye in eight cases. But the reverse of this is somewhat significant—viz., an early operation gave a bad result in both eyes in four cases and in one eye in twelve cases. Now, when we come to consider the later stages of the disease, we find that a late operation gave bad results in both eyes in thirty four cases and in one eye in twenty-six cases. The reverse of this is, however, significant—viz., a late operation gave a good result in both eyes in three cases and in one eye in eleven cases.

In analyzing the histories of these cases, both individually and collectively, it will be found a difficult matter to draw any satisfactory conclusions as to prognosis after operation. Many of the cases of simple chronic glaucoma are of long duration, even when left entirely untreated. Experience has taught most operators that a large iridectomy often causes serious optical inconvenience, even when the vision is fairly good, and that in many instances, when the field is much contracted, an iridectomy causes a still further diminution in the size of the field. Furthermore, the state of tension is no reliable guide in forming a prognosis, and bears no constant relation to the condition of the iris or anterior chamber, or to the acuity of vision and state of the visual field. The depth of the excavation in the optic disc bears a very inconstant relation to both the degree of vision and the state of the field, and is almost equally at variance with the condition of intra-ocular tension. It is no uncommon experience to find an almost typical glaucomatous excavation in an eye with perfectly normal vision and visual field, and without another symptom of glaucoma. Yet in these cases Nettleship hints that such an excavation may be of importance, as tending to prove that chronic glaucoma may begin rather in the optic nerve than in the ciliary region, and argues that such suspicious appearances may precede the outbreak of rapid glaucoma. (See "Royal London Ophthalmic Hospital Reports," xii, 2.)

There are several known causes for the failure of the operation to stay the progress of the disease. One of these is some unfavorable process going on in the vicinity of the wound, especially in aged patients or in those in a bad state of health. Another is a more or less marked displacement of the lens by the operation, owing to undue violence or to a weak suspensory ligament, which in its turn leads to the development of cataract, especially in eyes with peripheral opacities already existing in the lens. Another cause, not infrequently seen after an iridectomy done simply for optical purposes, is a slowly progressive haziness of the cornea, extending usually from the site of the wound. This I have not myself met with in any case of glaucoma. Another not infrequent cause, resulting directly from the operation, is the continued contraction of the field of vision.

The opinion is held by some authors that when glaucoma occurs in a myopic eye, it does so early in the patient's life. This has not been my experience. Among the one hundred

and eighty eyes under consideration, myopia or myopic astigmatism, or both, was met with in fifteen eyes, occurring among nine patients, and of these nine patients only two were under sixty years of age. This result is directly at variance with the latest statistics published by Nettleship. With regard to the opinion that the prognosis in such cases is especially bad, my experience is not sufficient to justify any conclusion.

The prognosis after operation is also influenced by the condition of the patient's health, and probably also by the location and size of the wound. The farther back from the corneal margin the wound is made, the larger will be the segment of iris removed, and the less the liability of the formation of anterior synechiæ. There are certain opinions held by most ophthalmologists in regard to the so-called cystoid or "filtering" cicatrix—namely, that in desperate cases it is a favorable condition, by allowing free percolation of fluid through the lips of the wound and beneath the conjunctiva and thus aiding in keeping the tension low. This is undoubtedly true in so far as the maintenance of normal tension has a direct influence upon the maintenance of the existing vision. But this is only one of the factors interested in the preservation of the existing vision, and not a few cases of simple chronic glaucoma show a diminished tension from start to finish; and these cases, in the reporter's experience, all end unfavorably.

Conclusions.—In endeavoring to draw some rational conclusions from the study of ninety cases, it seems wise to begin with a quotation from Priestley Smith, to whom ophthalmologists owe so much of their knowledge of the pathogeny and pathology of glaucoma:

1. In considering the expediency of an operation in simple chronic glaucoma he says: "In every case of chronic glaucoma the responsibility of advising an operation is a heavy one, and should on no account be undertaken without a full explanation to the patient or his friends of the almost positive certainty of blindness on the one hand, and of the uncertainties which beset the operation on the other. Having regard to the age of the patient, the impossibility of great benefit, and the possibility of a painful and accelerated progress, a prudent surgeon will only operate on the express desire of the patient to receive the only possible chance of benefit, however small it may be." Armed with the preceding precaution, it seems to be our duty to operate in cases of chronic progressive glaucoma, and the earlier the better.

2. If the disease in a given case seems to be stationary and is still in the primary stage, and if it be possible to test the vision and the visual field at short intervals, delay in operating is permissible, but a weak solution of eserine or pilocarpine should be used daily, merely as an aid in controlling the course of the disease. The examination of these patients should be at short intervals, and should invariably include the tests for visual acuity and the careful examination of the visual field.

3. If the disease exists in both eyes, but with useful vision in both, the eye in which the disease is the more advanced should be operated upon without delay; and the surgeon will be guided in his treatment of the fellow-eye by the result of the operation on the first eye.

4. To insure the best result, the incision should be made well in the sclerotic, with a narrow cataract-knife or a very broad lance-knife, and the entire segment of iris, from one end of the incision to the other, should be carefully torn or excised from its insertion.

5. The most carefully performed iridectomy by skillful hands is sometimes followed by the rapid loss of what sight still remains, sometimes partial, but, unfortunately, sometimes also total.

6. A successful result is, in the majority of cases, more likely to follow the operation if it is performed early in the course of the disease, but the preservation of the existing degree of vision even in these cases is not invariable.

7. As regards the question of symmetry, it is probable that in the large majority of cases—perhaps as much as eighty per cent.—the disease is sooner or later present in both eyes, and a careful study of the cases seems to establish the fact that there can be no specified or certain interval of time which insures the second eye against an attack.

8. If the patient is old and feeble, and one eye is still free from the disease for a year or more after the other eye has become affected, it may be considered prudent to avoid an operation on the affected eye, as it is probable that the unaffected eye may remain free during the remainder of the patient's life.

9. The condition of the field of vision is no constant guide, either in forming a prognosis as to the progress of the disease or in deciding as to the time of operation.

10. The acuity of vision bears no constant relation to either the success or the failure of the operation.

11. The anterior chamber is usually shallow, is occasionally entirely absent, but is often apparently normal in depth. The condition of the chamber gives no reliable hint as to the state of the vision or the visual field, nor any indication as to prognosis.

12. The appearance and motility of the iris appear to have some bearing upon the prognosis, though not perhaps to the extent believed by Nettleship. The latter states that in the cases in which the iris reacted rapidly to eserine the operation proved successful. This has not always been the experience of the reporter; but in the majority of the cases in which eserine caused rapid contraction of the pupil, the visual acuity was fairly good and the field was not seriously limited.

13. The depth of the excavation in and the color of the optic disc seem to have no close connection with the defect in vision or with the limitation of the visual field; nor do they offer any constant guide as to prognosis, or to the effect of an operation upon the progress of the disease.

14. The condition of the intra-ocular tension is a very uncertain guide in deciding the time for operating. It may be normal or increased, or even diminished. It does not seem to bear any constant relation to the degree of visual acuity or to the state of the visual field. The steady maintenance of an increased tension, however, without any diminution, almost invariably indicates the necessity for an immediate operation, and this necessity is especially indicated if the tension is continually on the increase.

15. The health and age of the patient exert a decided influence upon the effect of the operation, and any marked evidence of senility is distinctly unfavorable to operation.

A CASE OF SARCOMA OF THE THYREOID GLAND.*

By J. SOLIS-COHEN, M. D.,
PHILADELPHIA.

Pressure on the Right Sympathetic Nerve; Unilateral Tonic Spasm of Laryngeal Muscles; Intermittent Clonic Spasm of Opposite Side; Compression Stenosis; Tracheotomy; Hæmorrhage from the Gland Twenty Months later; Pressure upon the Left Sympathetic Nerve; the Functions of the Compressed Pneumogastrics aroused by Irritation of the Trachea; Death from Disturbance in the Functions of the Two Pneumogastrics.

X. Y. Z., of Wyoming Territory, a stock raiser, aged about forty-five years, applied to me July 18, 1887, at the instruction of his physicians, with a swollen neck, dyspnœa, right-sided ptosis and contracted iris, abnormal warmth of the same side of the face, and with frequent right-sided perspirations of both neck and face. His clinical history was as follows: He was reared in a limestone district, and had always led an active out-door life. His mother had had a goitre, which he thinks was the cause of her death. A brother and sister have disease of the throat, which he thinks is due to swellings in the neck.

Somewhere about 1871–'72 he began to notice that in running he got out of breath much sooner than any of his companions, and that his neck was getting thicker and thicker, so that within from five to six years it increased fully two inches in circumference. His general health continued good. In 1874 he suffered pain for the first time. This pain was a neuralgia of the right eye, which had been more or less continuous since, and at times excruciating. In 1881 he had erysipelas of the right side of the face, and about one month after recovery therefrom his right upper eyelid drooped and the ptosis had been continuous. In 1885 he noted that the right side of his face was hot, and this heat had been continuous since. This heat had been attended by frequent perspirations of the right side of the face and neck, sometimes several times a day.

The patient was a sturdy man of medium height, with an irregular, dense, nodulated tumor of the thyreoid gland, larger on the right side, with several enlarged cervical glands to the exterior of the tumor, and with considerable collateral effusion into the surrounding connective tissue. This effusion he stated was much less since he had left the high altitude of Colorado. He had considerable continuous dyspnœa, and had had a few suffocative spasms. The outline of the lower portion of the larynx and of the trachea could not be defined. He had contraction of the right pupil, ptosis of the right upper eyelid, and redness and heat of the right side of the face, with frequent perspiration of the same territory. The right vocal band was immobile in the median line (Fig. 1), and the movements of the left band were feeble, but sufficient for respiratory and phonatory purposes. The diagnosis made was that of malignant tumor of the thyreoid gland with stricture of the trachea by compression. The ptosis, contraction of the pupil, heat of the face, and perspiration I attributed to the results of pressure upon the sympathetic nerve; and the spastic contraction of the vocal band in the middle line to the result of pressure or irritation upon the recurrent laryngeal nerve.

* Read before the American Laryngological Association at its eleventh annual congress.

A tentative treatment with arsenic internally and with inunctions of diluted red iodide of mercury ointment over the mass soon produced improvement in breathing and marked diminution in the bulk of the tumor, especially in the nodules at its periphery.

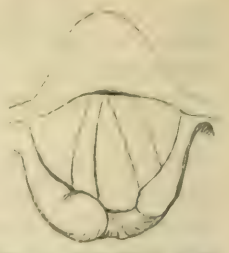


Fig. 1. Immobility of the right vocal band in the median line.

On August 1st I noted for the first time clonic spasms of the left vocal band, rendering the slit for breathing very narrow, but without producing as much disturbance of breathing as I had noted in similar conditions. I attributed this spasm to reflex irritation from traction on the right pneumogastric by the contraction of the mass, rather than to any direct implication of the recurrent nerve of the left side. The patient reported that he had nearly choked the night before, apparently from something which he had swallowed; but I attributed this to spasm. I deemed it most prudent to send him at once to a hospital, where I performed a prophylactic tracheotomy without anæsthesia a few hours later.

On the right side of the middle line, the skin, the intermediate tissues, the thyreoid gland, and the wall of the trachea were all one continuous mass. The trachea was away over to the left side of the neck, and was bent upon itself in its descent behind the sternum. The incision had to be made directly through the enlarged isthmus of the gland. This structure was so calcified posteriorly as to necessitate the use of the curette to scrape a way through to the trachea. After the trachea had been opened a terrific hæmorrhage took place from a portion of the tumor which had penetrated the left side of the trachea. This hæmorrhage was so sudden and so profuse that, had the patient been unconscious, he would in all probability have perished through inability to obey instructions necessary—to place his neck in a favorable position and to cough out the blood as it flooded the air-passage. On account of the bend in the trachea, it was found impossible to introduce the cannula with the aid of the ordinary pilot conductors. Trousseau's dilator and Golding-Bird's dilator both failed; but with the three-valved dilator of Laborde, fortunately at hand, it was found practicable to keep the opening patent and to push the impeding swelling to one side, so as to admit of the introduction of the tube. The patient professed to have experienced no pain whatever during the operation, pain having probably been deadened by the attending excitement. The condition of the parts was such as to justify the inference that the cervical vessels were involved in the growth, thus precluding attempts at extirpation of the mass in the future.

The neuralgia of the right eye ceased with the operation and did not return, and the heat and perspiration of the face diminished considerably. The ptosis and contraction of pupil remained uninfluenced.

Before the wound was dressed, the exposed portion of the diseased gland was dusted with potassium-chlorate powder. This produced considerable disintegration of a portion of the mass which discharged through the external wound, and the size of the tumor diminished to such an extent that, at the end of two weeks, the length of the tube had to be lessened by nearly half an inch, and the tracheal opening had receded a little toward the middle line of the neck.

I kept the patient under observation for about six weeks, during which time he progressed very satisfactorily in every way, except that the clonic spasm of the left vocal band soon became tonic, with permanent occlusion of the glottis to a very narrow slit totally insufficient for respiration (Fig. 2). It ap-

peared in this instance, as I have noticed in similar ones, that as soon as the artificial opening in the trachea insured access of air to the lungs in sufficient quantity, the forced contractions of the dilating muscles of the glottis, in the struggles for breath, subsided, and the spasm became permanent and unopposed. I considered the condition to be spasm of the laryngeal muscles, rather than paralysis of the posterior crico-arytenoids, because of the tense condition of the edges of the vocal bands and the backward position of the arytenoid cartilages—physical conditions which require active contraction of portions of the posterior crico-arytenoid muscles. The voice was excellent as to modulation, but weak in intensity, reedy in tone, andp roduced only with considerable expiratory effort.



Fig. 2.

About one month after the tracheotomy the patient complained of regurgitation of undigested food about three hours after the mid-day and evening meals. Whether this was due to pressure of the tumor upon the œsophagus, or to the presence of a diverticulum, remained undetermined, as the condition soon subsided and did not recur.

The patient returned to his home with his tumor diminished to fully one half of the bulk it had acquired previous to the operation. The trachea had not receded from its position somewhat to the left of the middle line. The contracture of the glottis had become permanent and apparently complete, so that there was practically no room for respiration through it.

Several months after his return to Wyoming Territory I received a letter from his physician, under date of February 15, 1888, in reply to a letter of inquiry, that "the patient was doing nicely, and coughed but very little, the enlargements on the neck having reduced considerably in size and being quite soft. The right pupil remained slightly contracted, and he suffered from occasional attacks of facial neuralgia. He was in good spirits. His weight was one hundred and forty-five pounds, a gain of twelve pounds since he had left Philadelphia. His appetite was fair. He underwent active exercise without much difficulty. He slept well, and, in short, was doing nicely—much better than he had dared to anticipate."

About one year later, February 2, 1889, the patient returned to me to learn whether anything could be done to disembarrass him of his tube, the presence of which, interfering with his convenience, was the only thing he complained of. He felt perfectly well and vigorous. His neuralgias and other pains had almost ceased. The ptosis and contracture of the iris were as formerly. The tumor had enlarged somewhat. The larynx and trachea were fully an inch to the left of the middle line. The glottis was oblique, from right to left, and practically air-tight, the vocal bands being in tense apposition (Fig. 3), and remaining quiescent on the strongest efforts at inspiration.



Fig. 3.

The larynx showed no indication of structural disease. The voice was good and well modulated. While no encouragement could be given as to any hope of dispensing with the tube, I thought something might be done constitutionally to reduce the bulk of the tumor, and therefore put the patient on a course of Zittmann's decoction of sarsaparilla, under the influence of which the tumor diminished considerably in size in about two weeks, especially as regarded some enlarged lymphatic glands on the right side and just above the clavicle.

Some bloody oozing from the top of the wound was now noted on changing the cannula, but I could not determine its source. It did not occur every day, and did not seem to be due to any erosion of the tissues. Despite my desire that the patient should remain with me, he insisted on returning home to shear his sheep, shipping himself a quantity of Zittmann's decoction, and carrying the formula for its manufacture with him, so that its use could be continued under the supervising sanction of his own physician.

Some three weeks after his departure I received a telegram that he was on his way to Philadelphia, his throat bleeding badly. Arrangements were made for his instant admission to Jefferson Medical College Hospital on his arrival. He arrived March 22d, looking well, but pale. The wound was not bleeding. He told me that the oozing of blood at changes of the cannula had gradually become more copious, and that, after a serious hæmorrhage, his physician had thoroughly cauterized the track of the wound with nitrate of silver, and had started him off to Philadelphia with strict injunctions not to remove the cannula under any circumstances until he had reached me—a most judicious procedure and advice, as the sequel proved, all oozing having ceased for two days. I allowed him to remain a day without disturbing the tube. On the next day, in the presence of the late Professor S. W. Gross, whose co-operation I had requested in anticipation of trouble, I removed the tube. Blood poured out from the fistula as from a little pitcher. After a moment of consultation, we cut down upon the parts without anæsthesia, exposing them freely, but we could find no bleeding vessels. The hæmorrhage was parenchymatous from the left side of the body of the gland, which formed part of the fistula. We then cauterized the parts freely with the thermo-cautery, which restrained the hæmorrhage in great measure, but not wholly. Then the cannula was replaced, after having been wrapped in a tampon of gauze, into which a considerable quantity of Monsel's salt had been rubbed. This controlled the hæmorrhage satisfactorily, and the cannula was not removed until the fourth day. There was no further hæmorrhage. There was considerable dyspnœa after these procedures, and the parts became somewhat swollen. I noted contraction of the left pupil. This and the dyspnœa indicated an additional pressure on the left sympathetic and pressure upon the pneumogastrics. The dyspnœa would come on suddenly, there would be an arrest of respiration, and then the face would become pale and then livid, consciousness becoming benumbed and occasionally abolished. Sometimes this condition would be preceded by spasmodic, irregular, diaphragmatic respiration. Any irritation of the mucous membrane of the trachea would relieve the dyspnœa, redden the face, and arouse the patient's consciousness. The dying functions of the nerves were aroused the most effectually by passing down a loop of wire—in fact, the wire of the brush used for scrubbing the cannula. This had been first used for the purpose of drawing out any clotted blood which might have been occluding the trachea. Relief by its introduction was so marked that the patient begged for its almost continuous presence in the trachea. He could recognize the spot in the posterior wall at which the loop of wire would be most effective, and would grasp the physician's hand to prevent its being moved therefrom. When it was withdrawn from time to time, the phenomena of arrest in respiration would supervene. Inhalations of oxygen gave but momentary relief to the dyspnœa. For three or four days there was little sleep, and that fitful and irregular, respiration being maintained chiefly by the presence of the foreign substance in the trachea, and the patient sank from exhaustion on the evening of the fourth day. A promised autopsy was prevented by the interference of relatives after they had arranged to permit it.

The marked feature in this case was the rousing of the pneumogastrics by titillation of the tracheal mucous membrane and

the continuous presence of a foreign body—a condition which I had never observed, and of another record of which I have no knowledge.

THE RELATION BETWEEN FACIAL ERYSIPELAS AND ERYTHEMA ON THE ONE HAND, AND INTRANASAL PRESSURE ON THE OTHER.*

By GEORGE W. MAJOR, M. D.,
MONTREAL, CANADA.

It is my firm conviction that facial erysipelas is sometimes produced by nasal causes acting independently of external infection. This decision has been arrived at as the result of careful observations extending over a number of years. I believe that a definite relation exists between many cases of erythema and erysipelas occurring on the nose, or in its neighborhood, and inflammatory conditions within the nasal chambers, more particularly when they are productive of pressure.

If such is the case, then it becomes our duty to distinguish erysipelas and erythema of an intranasal origin from the same diseases dependent upon other causes. The importance of accurately establishing the origin of these attacks can not be overestimated when we consider that success will often depend upon its recognition. The majority of subjects of facial erysipelas doubtless convalesce under local and constitutional measures even though the exciting cause is unknown and therefore is allowed to persist. The duration of the illness will be greater and the liability to extension and complications will be manifestly increased, not to mention the tendency to recurrence. If, therefore, a removable cause can be demonstrated as productive of facial erythema and erysipelas, we shall find ourselves in a better position to arrest the course of the disease when present, and in the future to prevent it altogether. This is my apology for briefly placing on record the four following cases, with a few remarks thereon:

Case I.—In March, 1884, M. C., a young lady, aged twelve years, was referred to me by Dr. Arthur A. Browne, of Montreal, for the treatment of a troublesome nasal catarrh. On examination of the nose, I found a general hypertrophic condition present. The right middle turbinated body was very much enlarged, turgid, and abnormally sensitive to the touch. It was in contact with and pressing upon the nasal septum. On the cheek bone of the same side there was a dark, dull red and elevated patch of erythema of the area of a half-dollar. On inquiring into the history, I learned that this eruption had lasted for five months, that it had first made its appearance during a severe cold in the head, and that a nose-bleed seemed to diminish its prominence; a variety of local and constitutional remedies had been adopted without success. The probability of pressure being the cause at once suggested itself to my mind. Scarification and punctures of the middle turbinated tissue relieved the sensitiveness of the parts locally and diminished the redness of the facial patch. Soothing local collunaria also gave further relief. Subsequently a series of galvano-cautery applications permanently removed the pressure, and with it the erythematous blush gradually vanished. No local treatment was adopted for the eruption, nor were any constitutional means employed. There has not been at any time since a recurrence of the disease.

Case II.—In February, 1885, I saw, in consultation with the late Dr. R. Palmer Howard, a case of facial erysipelas in a child of four years. The disease had commenced on the bridge of the nose and had extended to the cheeks. The condition had lasted for five days and showed no inclination to yield to the usual local and constitutional remedies. The child's stomach had become irritable and refused to retain anything whatever. On examining the nasal chambers, I found both nostrils obstructed with swelling, the result of an acute cold, and suggested the abandonment of all local and constitutional medication and the substitution therefor of warm alkaline nasal injections. In the course of twelve hours the swelling in the nasal chambers showed considerable reduction, and *pari passu* the erysipelatous blush. In twenty-four hours all trace of the disease had disappeared.

Dr. Howard knew of my views relating to intranasal pressure, and willingly acceded to the change in treatment.

Case III.—In the winter of 1884 I saw, in consultation with Dr. Browne, W. C., aged twelve years, suffering from erysipelas of the nose and cheeks. This child had frequently suffered from erysipelas having its origin always in the same region, though generally spreading to other parts of the body. Some of these attacks had been of most serious and alarming character. I had previously seen him in consultation when suffering from this disease, and had suggested to the medical attendant the likelihood of a nasal origin.

I ordered nasal injections alone, and had the satisfaction of seeing the disease disappear in the course of thirty-six hours. When convalescent I destroyed the hypertrophied turbinated tissue, and have been informed that no recurrence has taken place.

Case IV.—In February of this year A. J., female, aged thirty-six years, was referred to my clinic at the Montreal General Hospital for an erythematous patch occupying the left cheek bone. She stated that it had already lasted four months and that it had so far resisted all treatment. A nasal examination revealed a swelling of the left middle turbinated body exerting pressure on the septum. After deeply puncturing the swelled tissue and allowing of a free flow of blood, a nasal cleansing solution was ordered. In a week the patient reported herself free from the disease.

I have notes of two more similar cases occurring under my own observation, and of four kindly furnished by colleagues, but abstain from making any use of them beyond their mere mention.

During an extended experience of nasal operative work common to all in our specialty, I have but once met with facial erysipelas succeeding a surgical operation in the nasal chambers. It was in a case of nasal polypi, and any interference invariably produced erysipelas. The man, however, came of a family in which erysipelas was a usual complaint. In the cases above referred to the erysipelas always commenced on the bridge of the nose, and was greatest on the side of greatest pressure. There was no condition present in the nasal chambers that I could recognize as of an erysipelatous nature in any of them. Medical literature, in so far as I have been able to ascertain, is barren of any reference to the matter to which I have thus briefly referred.

* Read before the American Laryngological Association at its eleventh annual congress.

ACUTE MULTIPLE ADENITIS (SEPTIC?); ŒDEMA OF THE LARYNX, WITH SPONTANEOUS CURE.

*LARYNGOSCOPIC APPEARANCES.**

By S. W. LANGMAID, M. D.,
BOSTON.

On Tuesday, April 30, 1889, I was summoned by telegraph to visit Mrs. R. at a city sixty miles from Boston. The case was supposed to be one of amygdalitis. I arrived at the hotel at which Mrs. R. was temporarily staying, and when she had been ill for eight days, at half-past five in the afternoon.

The patient, a lady about forty years old, was in bed, propped up by pillows, very restless, with anxious expression, breathing with difficulty, with dry, croupy inspiration. There was no lividity of the face, or other indication of impending suffocation; but I was informed that during the preceding twenty-four hours there had been at times danger of strangulation. The submaxillary glands were much enlarged, as were those lower down in the vicinity of the larynx. The whole region of the neck was swollen, and the tissues in front of the larynx and trachea were thickened. The pulse was feeble, but not rapid. The temperature was 99° F. The voice was fairly loud and clear.

Mrs. R. was able to get out of bed and allow me to make a laryngoscopic examination by sunlight illumination. The mouth and pharynx were normal. There was no enlargement of the tonsils, no membrane, and nothing unusual in the naso-pharynx. The epiglottis was very erect, normal in shape, and only slightly congested. A tumor, apparently as large as a filbert, in which the arytenoids seemed to be incorporated, occupied the posterior arytenoid space, and covered two thirds or more of the glottis. The anterior third of both vocal cords could be plainly seen approximated and scarcely moving during inspiration. Nothing abnormal was discovered in the lungs. My diagnosis was œdema of the vestibule of the larynx, caused by the pressure of the enlarged cervical glands; cause of adenitis unknown, but diphtheria suspected, of which no trace now remained in the throat, mouth, or naso-pharynx.

The attending physician was an irregular practitioner, and had not looked in the throat during the first four days of Mrs. R.'s illness. Another physician had been called the day previous to my visit, who had ordered poultices to the neck, after which the dyspnœa seemed to be slightly relieved. No nourishment had been taken for days because of inability to swallow, but the mouth and throat had been constantly washed and gargled with milk and Apollinaris water. No other treatment seemed to have been used, except hypodermic injections of morphine, which the patient demanded, and which she had been accustomed to take occasionally for attacks of severe headache.

Mrs. R.'s condition seemed most critical. Dr. George W. Gay, of Boston, was telegraphed for, and asked to bring tracheotomy instruments. The patient was closely watched, the throat frequently gargled with milk and water, which seemed to assist in expelling small quantities of viscid mucus, and nine or ten ounces of milk were swallowed. Stimulants were refused by the patient.

I determined to wait as long as possible before attempting any operative procedure, but, should suffocation seem imminent, I hoped to be able to reach and open the laryngeal tumor with a curved bistoury, and, if necessary, afterward open the trachea.

Dr. Gay arrived four hours later, and, having examined the patient, agreed that it was best to delay any operation, as there had been no glottic spasm during the day, and the voice remained good. The poultices were continued, and ten grains of quinine and a mixture of chlorate of potassium and chloride of ammonium were given at Dr. Gay's suggestion. Up to midnight, when we left Mrs. R. with her attendants, no change had occurred; but at four o'clock in the morning I was called, with the report that something had broken in the throat. I found that several handkerchiefs had been saturated with a thin mucoid discharge, which was being incessantly hawked up, and which at first was faintly tinged with blood. It was noticed that the dry, sonorous inspiration was more moist in character and less noisy. The patient was informed that through such a discharge great relief would probably be produced, and was again left with her family. The discharge had been so copious that Mrs. R. feared she "would be drowned by it."

Three hours later a laryngoscopic examination was made. It has been said above that at the previous examinations a tumor was seen in the region of the arytenoids and posterior arytenoid space, below which a portion of the vocal bands was plainly visible. Now, nothing could be seen except the erect epiglottis, almost doubled upon itself laterally, and from the recess so made muco-purulent matter welling up.

The dyspnœa was greatly relieved, quiet inspirations being accompanied by moist bubbling sounds. The swollen neck seemed to be softer.

The patient was left in the charge of Dr. T. C. Morril, who had seen her the previous day.

Upon my return late in the afternoon, I was disappointed to find the respiration still somewhat noisy, and that there was no change in the laryngoscopic appearances. The epiglottis was still bent laterally upon itself, and purulent matter was still flowing. There had been constant expectoration during the day and one attack of vomiting, during which half an ounce of pus had been ejected. Milk had been taken in fairly large quantities, and the patient's strength had not diminished.

A restless night was passed, but with increasing freedom in inspiration. In the morning the neck was less swollen and softer, and the epiglottis had resumed its normal shape. Pus was seen welling up behind the interarytenoid space. The arytenoids themselves had not regained their normal contour, but were not œdematous. The discharge of pus continued in diminishing quantities for several days. On the seventh day from my first visit Mrs. R. was removed to Boston. The neck had at this time nearly resumed its natural size, but considerable induration of the tissues in the vicinity of the larynx still remained. The interior of the pharynx and larynx showed only slight alteration of color. On May 10th Mrs. R. was able to be moved by special car to her home at Baltimore.

This case has seemed worthy of presentation to the society for several reasons:

1. On account of the obscurity with regard to the origin of the adenitis with consequent œdema.

2. The unusual sequel to such a condition—viz., the spontaneous rupture of the œdematous tumor and safe evacuation of its contents, together, probably, with that of a suppurating gland or glands in the neighborhood.

3. The opportunity which was afforded by laryngoscopy for observing the exact condition during the dangerous stage of partial glottic occlusion and fixation, as well as the reassuring appearances after the evacuation of the tumor and glands.

When I first saw Mrs. R. I had no doubt that the adenitis was septic from diphtheria. When told that no

* Read before the American Laryngological Association at its eleventh annual congress.

membrane had ever been seen or expectorated (I supposed then that careful examinations had been made of the mouth and fauces during the first days of the attack), and the perfectly clean, pale condition of the mucous membrane of the whole upper respiratory tract had been observed, under excellent illumination, I was forced to abandon that hypothesis. The fact that eight years previously a gland had suppurated and discharged on the back of the neck did not help to clear up the mystery of the present acute multiple adenitis. The only history immediately antedating the severe seizure was that Mrs. R. had not seemed quite well for two weeks, and on the day previous had been "chilly" and had a slight "soreness of the throat."

It has seemed, however, to Dr. Gay and myself, since then, that there must have been a very limited diphtheria, all traces of which had disappeared by the eighth day. The account which I obtained from Mrs. R., to whom no mention of diphtheria had been made, after her removal to Boston, lends support to such a view, for she said that at the commencement of her illness she had a "sore throat," and she saw on one side of the back of the throat a red place on which there was a white covering. The urine was free from albumin.

The spontaneous rupture of an œdematous swelling in the region of the larynx is probably rare. Intralaryngeal puncture sometimes, but tracheotomy generally, is required. Intubation, if instruments were at hand, would be in such a case as this the remedy *par excellence*, it seems to me. The importance of laryngoscopic examination in this case can hardly be overestimated, for if it is granted that the rational signs were enough to guide the surgeon to the diagnosis and conduct of the case, it will not be denied that the added information with regard to the situation and nature of the obstruction made the instant and succeeding treatment more exact, and added greatly to the knowledge of the pathological conditions.

AN ŒDEMATOUS FORM OF DISEASE, OR SEPTIC ŒDEMA OF THE UPPER AIR-PASSAGES.*

By W. C. GLASGOW, M. D.,

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ADJUNCT PROFESSOR OF THE THEORY AND PRACTICE OF MEDICINE IN THE ST. LOUIS MEDICAL COLLEGE; PROFESSOR OF DISEASES OF THE CHEST AND THROAT IN THE ST. LOUIS POST-GRADUATE SCHOOL OF MEDICINE.

During the winter of 1886 I reported to the Medico-chirurgical Society of St. Louis the existence of an unusual form of throat disease which had been more or less prevalent for two years, and which at that time prevailed to such an extent that it could not fail to attract attention. I called it then rheumatic or œdematous sore throat, from the great similarity of certain of the symptoms to those seen in the ordinary angina rheumatica. I also drew attention to the fact that in certain of these cases patches of exudation were seen in the throat, and I was inclined to consider that these conditions had a common cause. The exudative cases bore a certain similarity to the diphtherias, but the surrounding condition of the throat was utterly dissimilar from that seen in diphtheria. At that time, however, I had not given these cases a sufficient study, and waited to see what further observations would develop. In 1887 Dr. Boislinière, my assistant in the clinic at the Post-graduate School of Medicine, published in the "St. Louis Courier of Medicine" a short article entitled "Œdematous Sore Throat," in which he embodied my views and treatment of the disease. During the winter of 1887 and 1888 these cases were very numerous, disappearing almost entirely during the late spring and summer months, appearing again in the early part of the past winter. About the 1st of January of this year they again appeared, and they have continued during the spring, through the present month. During March and April the cases were unusually prevalent, and the disease might well be called epidemic. I call it epidemic rather than endemic, as I have seen many cases that have originated in different parts of the country. I have also learned from Dr. Seiler, of Philadelphia, that he has seen similar cases in that portion of the country. During the prevalence of this disease I have noticed the disappearance of the ordinary forms of catarrhal inflammation of the throat—a condition which is usually so prevalent during the spring months.

The appearance of the throat in this œdematous form of disease is characteristic, and will always define the disorder. In all cases we find on inspection a pale, swollen, œdematous condition of the fauces. In some this is limited to certain parts, while in others the entire mucous membrane of the fauces is involved in the process. The œdema is a solid œdema, and differs from the usual serous œdema seen in catarrhal inflammations. To the touch the mucous membrane feels firm and waxy, lacking the moist elastic sensation of a normal mucous membrane. A peculiar glistening appearance is very marked in many cases, and I have seen the palate, when the light was thrown at an angle against it, appear as though set with minute brilliants. In the majority of cases the soft palate is the site of the œdema. In some it is so much swollen and thickened that speech is impaired, suggesting the change caused by paresis of the palate. A lesser degree of œdema is more frequently seen. In these cases the action of the palate is not much impaired, but on phonation the uvula is seen to retract with ridges and folds in the mucous membrane, suggesting the impression that the muscles are unimpaired, while the mucous membrane is infiltrated with some foreign substance. The palatine folds and the lower edge of the palate appear at times translucent at the edges. The naso-pharyngeal space and the nasal mucous membrane are also found in the same condition. The nasal mucous membrane presents most frequently a swollen, very dry appearance. In two cases the naso-pharyngeal space was almost obliterated through the great œdema of the membrane. The epiglottis and the different parts of the larynx are also affected. I have seen four cases where the epiglottis was converted into a solid, swollen mass, and in very many cases the œdema of the posterior surface of the larynx could be quite distinctly seen with the mirror. In four cases the true cords were markedly œdematous. They ap-

* Read before the American Laryngological Association at its eleventh annual congress.

peared as swollen, glistening bands with an almost translucent appearance. In another case one, and in still another both false cords were found swollen and enlarged. The two cases in which the solid œdema of the larynx was seen in life died suddenly with symptoms of spasm of the glottis or sudden laryngeal stenosis. In both these cases the post-mortem examination showed a swollen, œdematous condition of the epiglottis and interior of the larynx, which did not subside with death. A peculiarity of this œdema is the rapid and great increase which seems to take place from slight causes. In some cases it disappears almost as rapidly as it arises. In others, however, it lasts for months, slowly subsiding, showing, however, in its course acute exacerbations with an increase from time to time.

An enlargement or swollen condition of the veins is a marked appearance in all cases. Most frequently this is the case with the palatine veins, especially those at the root of the uvula and the pharyngeal veins. Sometimes this venous enlargement is so great as to cause purpura-like spots, and the mucous membrane appears mottled, the dark spots contrasting with the pale surrounding surface. In two cases I have seen these purpura spots in the trachea, and both these cases showed recurrent hæmorrhages. In one case an enlarged vein was distinctly seen on the cord. A peculiar secretion is characteristic of this disease. In some cases it is scanty and in others it is very profuse. It is characterized by its viscid, gluey nature. When it is taken on the finger and the finger pressed against the thumb and again separated, a glue-like thread is formed, which is so tenacious and elastic that the fingers can be widely separated without breaking the thread. Ulceration is occasionally seen, and when it occurs there seems to be a loss of tissue by absorption rather than by destruction. In one case a large ulcer occupied the lateral and naso-pharyngeal wall, extending toward the wall of the pharynx. In three cases the soft palate presented a loss of substance. In one the anterior pillar of the palate was perforated, forming a button-hole. Ulceration of the epiglottis was seen in four cases. In one the loss of substance originated at three different spots, and continued until the greater part of the epiglottis had disappeared. In another the ulceration extended through the mucous membrane, but did not involve the cartilage. The former case died of tuberculosis, and in the latter the ulceration healed and was followed in the course of three weeks by a similar ulceration of the soft palate. In this case there was no history of syphilis.

In certain cases we find, in addition to the œdematous condition, patches of exudation in different parts of the throat. In some cases this is limited to minute white or yellowish-white points, and in others patches of varying extent are formed. These are seen most frequently on the tonsils, both of which are usually involved. These patches on the tonsils usually commence as isolated points, and the exudation in some cases coalesces, forming a complete covering of the tonsil. In other cases we find the whitish points in the pharynx and on the pillars of the palate. In one case there was a small patch on the right tonsil and an elongated patch on the pillar of the palate, the soft palate partially covered, and the uvula enveloped as a finger in a glove. This patient recovered after a six weeks' illness. In another a patch existed on the hard palate, two distinct patches on the epiglottis, with one on the posterior surface of the larynx. This patient had a syphilitic history. The patches disappeared in four weeks. These patches have a yellowish-white appearance, are usually firmly attached to the membrane, and can not be removed except by force, when a bleeding surface remains. If untouched, they gradually fade away, the exudation growing thinner until they only show a thin opaline patch resembling a mucous patch. Some of these cases would be called diphtheritic, but the symptoms of the disease and the appearance of the throat must preclude such a diagnosis. In all, in addition to the patch of exudation, we find the surrounding tissue in a condition of œdema, and more or less of the sticky, gluey secretion is present.

In six cases I have seen spots of mycosis; in three they were on both tonsils and on the base of the tongue, with points on the posterior pharyngeal wall. In three the two tonsils were alone involved. Microscopic examination showed *Leptothrix buccalis*. Glandular enlargement of the neck is frequent.

In most cases the glands are simply swollen, but in others they become enormously enlarged. In some cases they are hard and tense, and gradually soften and disappear as the patient recovers. In one case, with massive œdema and ulceration of the lateral pharyngeal wall, the submaxillary glands attained the size of a goose-egg. This varied in a remarkable manner from time to time, both in size and hardness, at times becoming so soft as to suggest suppuration, changing again to the hardness of a sarcomatous gland. In this case the glands on both sides of the neck were involved. In two cases suppuration of the glands took place.

The symptoms of œdematous sore throat are both constitutional and local. The constitutional symptoms are most prominent and are often present when the local symptoms are wanting. The attack commences suddenly in a condition of previous good health. There is a feeling of intense languor and weakness, slight exertion producing an unusual fatigue; the mind is dull and a condition of apathy prevails; a condition of mental inertia is often present. During the day there is great drowsiness, while insomnia is frequent in the same individual. An unusual and excessive irritability is often noticed. Pain is general throughout the body, the muscles and joints being specially involved. A headache of varying intensity is present. It is usually frontal but sometimes it is occipital. In many cases it is simply a dull, heavy feeling of fullness in the head; in others it is intensely violent, with throbbing pain. Pain in the back, especially about the sacrum, is a characteristic symptom; from this point it radiates toward the hips or into the pelvis. Occasionally the site of pain is more in the lumbar region. Pains in the chest are frequent. The pain is often intensified at night. In many cases we find a soreness or tenderness about the muscles, with a hyperæsthesia of the skin, this soreness being limited to single groups of muscles or a circumscribed spot, with a constant tendency toward a shifting of the site.

The joints have a feeling of stiffness, and in some cases there is great swelling and tenderness of single joints, resembling inflammatory rheumatism. There is this difference, however, that the pain and the tenderness of the joint may only remain a few hours, and then it will entirely subside, to again appear in another joint. There is also the absence of the general constitutional symptoms of the rheumatic affection. Cramps, especially in the fingers, legs, and toes, are often experienced. Some patients complain of a tingling or numbness of the extremities. Black stools are very frequently seen, and in a few cases bloody urine was passed. The general appearance of the patient is suggestive of the disease. The skin is of a dirty-white hue, suggestive of chronic malaria. The superficial veins are engorged, and this is especially seen in the veins of the forearm and in some cases in enlargement of the temporal veins. The blood is of a dark Prussian blue, and this change often attracts the attention of the patient. The fever varies greatly in different cases. In the simple œdematous form of the disease the temperature rarely rises above 101°. This may remain for twenty-four to thirty-six hours. This is often preceded by a chilly sensation; in three cases a decided rigor was seen. In exudative cases the temperature may rise to 103° F., or even more. A typical case commences with a chill, a rise of temperature which may continue for twenty-four to forty-eight hours, which then subsides, continuing at about 100° to 101° during four to six days. I have noticed that where the exudation is confined to the tonsils the fever continued rarely more than twenty-four hours, but where it involved the pharynx it continued from five to seven days. The pulse is always increased in rapidity; it is full, soft, and compressible. Sweating is a very prominent symptom. This occurs especially at night, and is accompanied by a chilly sensation resembling true night-sweats. The disease is certainly in a measure contagious. I have often seen different members of a family develop it in succession. Sometimes one member will show the simple œdema and others will have the exudative patches. In the children's ward of the Mullenphy Hospital all the children were affected, and all recovered.

The local symptoms vary in different cases and depend on the part of the throat involved. In some they are very marked, in others they are entirely wanting. When the nasal mucous membrane is affected, a complaint is made of a feeling of fullness and dryness of the nostrils. When the palate and palatine folds are involved there is frequently pain on swallowing, and it is especially noticeable that the pain is greater on swallowing saliva than on taking food. In fact, the taking of food in some cases seems to produce a certain amount of relief. In cases where there is great œdema of the palate the pain is often so intense as to almost preclude the taking of nourishment. One patient told me that every attempt at deglutition produced a sensation as though a knife were drawn across the throat. But this intense pain is only found in cases where the œdema is great. In the large majority of cases the pain is slight and complaint is made more of a feeling of dryness or a fullness of the throat. It is noticeable that the pain is always increased toward evening and during the night, diminishing, and in some cases almost entirely disappearing, during the morning hours, to be again experienced at the same hour of the afternoon the next day. In œdema of the posterior larynx there is a feeling of fullness with constant desire to swallow, and a sensation as though a foreign body was lodged at this point. Again, a sense of oppression is often experienced in the upper portion of the chest, and there is a constant tendency to sigh. In some cases I have seen an intermittent character given to the pain, it occurring with greater intensity on alternate days. In œdema of the vocal cord there is always more or less change of the voice. It seems to lose in strength and clearness. In two cases, although the speaking voice was little impaired, the singing voice had entirely disappeared. With the subsidence of the œdema the patients who are professional singers regain their voices in the natural strength and purity. The characteristic ropy, gluey secretion is sometimes so profuse that constant hawking and expectoration are necessary. This is also found even with scanty expectoration, the sensation being produced by the feeling of fullness. Hæmorrhages are quite frequent; usually they are small in quantity and recur frequently. In three cases I have seen profuse hæmorrhages in which the expectoration of blood continued through several days. The blood is usually black, clotted, and may be mixed with a viscid secretion, but often it is simply a pure dark blood. When the larynx is affected, cough is a frequent symptom. It may occur in an incessant hack. In other cases there are violent paroxysms. The cough at times bears a great resemblance to the cough of whooping-cough, the inspiratory stridor being especially marked.

Without proper treatment the acute symptoms in the œdematous form will continue from three to five days. A comparative state of well-being then comes in which the symptoms are greatly mitigated. This is followed by another attack. I have seen cases who have suffered in this manner for four months in whom the acute exacerbations occurred about every three weeks. In cases with exudation I have seen the patches remain from one to six weeks.

Diagnosis.—The œdematous form of the disease can only be confounded with that due to a catarrhal inflammation. The pronounced constitutional symptoms and the characteristic appearance of the throat will differentiate the conditions.

In the exudative cases, where the exudation patches are prominent on the tonsils, we should naturally think of simple follicular amygdalitis. The general symptoms are in a measure similar and the appearance of the tonsils is not unlike that of amygdalitis. Close inspection, however, will show the minute white points in different parts of the fauces, and the condition of solid œdema, which is always present, is not found in simple amygdalitis. The tonsils are never enlarged to the degree seen in amygdalitis, and, instead of the red, hyperæmic condition, we find rather an unnatural pallor of the membrane. The characteristic sticky secretion is also wanting. When the exudation is extensive, especially when it is on the pharyngeal wall and the palate, the close similarity to mild diphtheria will give us a good deal of anxiety. The presence of the solid œdema of the fauces

and the character of the secretion will help the diagnosis. The behavior of the patch seems to me to give positive and definite information toward a diagnosis. I have never seen paralysis follow in these cases of exudative pharyngitis.

The treatment of the œdematous form of disease of the throat is very simple. It consists in saturating the system with the benzoate of sodium. I usually combine it with the liquor ammonii acetatis. I have found it to act as a specific remedy in the disease. As a local remedy I have found the bicarbonate of sodium in conjunction with a little carbolic acid to act as a soothing, pleasant gargle. Under this treatment the symptoms promptly disappear, and the patient recovers. In some cases, when the joints are prominently involved, the addition of the salicylate of sodium seems to be of service. Although quinine moderates the symptoms, I have never found it to produce permanent relief. After the subsidence of the acute symptoms I have found the mistura ferri et ammonii acetatis, often combined with arsenic, to be very useful in overcoming the anæmia which always remains after the acute attack has subsided.

From a study of these cases of œdematous disease of the throat, I am convinced that we are considering a constitutional disorder rather than a local disease, and that the condition of the throat is simply one of the manifestations of a general condition. In a paper I am preparing for publication I have endeavored to show an analogous condition existing in the lungs to that seen in the throat. The solid œdema found in the lungs resembles in many respects that seen in the fauces. I maintain that this analogy is strictly legitimate, from the fact that I have seen this condition of the fauces to exist in connection with the pulmonary form of disease, and also from the fact that there are frequent alternations of the two forms in the same individual. Post-mortem examinations have proved that the pathological changes in the body are such as are only found in septic conditions, and cultures of the lung tissue show the presence of various micro-organisms.

Hence I would consider the pathological changes in the throat and lungs to be simply manifestations of a general septic condition, dependent probably on some pathological change in the blood.

The appearance of the disease in certain portions of the year, followed by its complete disappearance for many months, leads me to think of an atmospheric influence in producing it. The recognized fact that patients suffer more and are more prone to relapses in cloudy or rainy weather and improve in the bright sunshine, seems to strengthen this supposition. I have thought at times that it might be a manifestation of influenza, a disease which, as is well known, sweeps over the country in waves and then entirely disappears. The symptoms of influenza, as portrayed by Graves and others, bear a striking similarity to those seen in this septic œdema. Its long continuance during several years is, however, not in accordance with the epidemics of influenza which have been described.

Albuminate of Quinine.—"This salt is formed in yellowish-white flakes. It is insoluble in water alone, but soluble in water containing hydrochloric acid; also in a solution of pepsin. It is tolerated by the most sensitive stomachs."—*Druggists' Circular and Chemical Gazette.*

Correspondence.

LETTER FROM LONDON.

Report of the University for London Commission; Intercollegiate Lectures between the London Medical Schools; the Treatment of Asphyxia by Submersion.

LONDON, *June 4, 1889.*

THE Report of the University for London Commission has at last appeared. As was expected, the commissioners have decided against the request of the Royal College of Physicians and the Royal College of Surgeons for a charter to grant degrees in medicine and surgery, and they are, on the whole, in favor of modifying the existing London University so as to make it meet the admitted needs of the present day. The following extracts show that the commissioners have fully appreciated the causes of the agitation on the subject: "No city in the United Kingdom or, perhaps, in the world offers so good opportunities for clinical instruction as London. Clinical instruction forms an important part of the training of medical students. It is therefore important that a large number of these students should spend a considerable time in London before they are qualified to practice, and they would naturally so spend it unless there was some cause tending to draw them away from London. But medical students are generally anxious to obtain the degree of Doctor of Medicine. A man who can call himself a doctor of medicine possesses certain practical advantages over a man, however distinguished, who can not. . . . The great majority of London students, if they take a degree at all, take it elsewhere than in London, and that is a fact which the highest representatives of the medical profession view with regret. It is injurious, not to the men themselves only, but to the public. In addition to these considerations, the educational wants of the largest and most populous city in the world appear to make it a proper seat for a great teaching university. In such a university the medical faculty would have advantages not perhaps attainable anywhere else in the same degree."

In another part of the report the commissioners suggest that an interchange between the different medical schools, based on the plan of the combined intercollegiate lectures at Oxford and Cambridge, might be introduced with advantage. In this, no doubt, they are quite right; their suggestion would appear to be intended to apply only to the more strictly scientific subjects of the students' curriculum, but I am not sure that it might not be made to apply to all the subjects with advantage. Something of the kind has indeed already been attempted, for some years ago four schools—St. George's, Charing Cross, Middlesex, and the Westminster—arranged to send all their students who were candidates for the preliminary scientific examination of London University to the Science Department of the South Kensington Schools, with what success I never heard. For clinical instruction I would have the schools remain, as at present, quite distinct, but, for the purpose of systematic lectures, I am sure a great deal of amalgamation might be brought about with the greatest benefit to the students.

The Royal Medical and Chirurgical Society is about to reopen the question of the best method of treating the apparently drowned; it is now some thirty years since a committee of that society investigated the question with great care and issued a report which has ever since been a leading authority, and the time seems, in the opinion of some, to have arrived when the whole question might be reconsidered, so Dr. Howard will have a chance of having his "direct" method directly compared with the older and more popular plans.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.

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POST-MORTEM SWEATING.

Such a condition is reported in the "Lancet" for May 25, 1889. The patient, a man of forty-two, had for nine months been suffering from albuminuria. Microscopical examination of the urine showed no casts, but abundant urates. There was no dropsy or ascites. Ten days before his death he was suddenly seized with uræmic coma and left hemiplegia, which last persisted unchanged until the end. The temperature was normal, with the exception of the last few days, when it ranged from 102° to 104° F. This elevation continued till within six hours before death, when it steadily sank. Treatment to produce diaphoresis gave slight results. The skin, though not absolutely dry, was almost destitute of sweat during the earlier days of the fatal attack. Hypodermatic injections of pilocarpine were given on four occasions, the dose being gradually increased. The last injection (of one third of a grain) was given three days before death. This produced a fair amount of sweating for about twenty minutes, but was not repeated, on account of the excessive bronchial secretion it caused. Forty-eight hours later, just before death, the patient began to perspire profusely. This continued till the end, even when the surface temperature was decidedly abnormal. While the body was receiving proper care, nothing unusual was noted, but sixteen hours later it was noticed that the sheets and pillows were absolutely saturated with sweat, and the skin felt moist and clammy. Thirty hours after, the sweating had ceased and the linen was drying. Post-mortem discoloration was well marked, even when the body was first seen.

The late Dr. Carpenter is cited as stating that post-mortem secretions are known to take place, and as explaining their occurrence by saying that the capillary circulation may be maintained for a short time after somatic death has taken place. The only instances in which this form of circulation seems to have been observed in the adult, says the author, Mr. John A. Cones, are those given by Dr. Bennet Dowler, in the "New Orleans Medical and Surgical Journal" for January, 1849. Rapid death from acute disease had been the rule, and the capillary circulation continued for a few minutes, but not for any lengthened period. It seems to have been Dr. Carpenter's opinion, the author continues, that the material for post-mortem secretions might be supplied by the blood in the vessels at the time of death, the gland cells themselves continuing their molecular life some time after the suspension of the general circulation. Mr. T. Bell ("History of British Reptiles," quoted by Mr. Cones) says that when he was engaged in the dissection of the poison apparatus of a rattlesnake, the animal having been dead for some hours and the head taken off immediately after death, the poison continued to be secreted, as the dissection proceeded, in quantities sufficient to be wiped off with a sponge.

These theories of post-mortem sweating scarcely satisfy the author of the paper, who thinks it reasonable to suppose that the glands and lymph spaces were fully charged with fluid, as the patient was sweating freely up to the time of death, and mechanical pressure may have forced this fluid out. Experiments on the influence of irritation of the chorda tympani on the secretion of the submaxillary gland show that the secreting cells do not derive the materials for their secretion directly from the blood, but indirectly through the lymph spaces that surround the alveoli. These spaces are reservoirs. If filled during the experiment, the gland will continue to secrete after the head is removed from the body. It might seem that the quantity was too great to be thus accounted for, but the number of sweat glands and lymph spaces all over the body is considerable. In a person of ordinary stature, according to Sir Erasmus Wilson, there are about seven million sweat glands, with an aggregate length of perspiratory tubing of about twenty-eight miles. Is it, the author asks, unphysiological to suppose that a rise of temperature after death, as well as post-mortem sweating, may be due to an autogenetic stimulus in the cadaver which excites the governing nerve centers into action? Certain cells or groups of cells (according to Carpenter's theory) die at longer or shorter intervals, those higher in the scale of development ceasing their function first. The highest center regulating thermic functions is the thermotaxic or inhibitory. This is destroyed before the lower, which it controls; the thermogenic and thermolytic centers then come into action, producing a rise of temperature. Experimenters have arrived at the conclusion that the secretion of sweat is entirely under the influence of the nervous system, and independent of modifications in the circulation (Straus). In limbs of animals previously rendered exsanguine, profuse sweating has been produced by stimulation of the main nerve-trunk, and in recently amputated limbs; and also on stimulation of the medulla oblongata after ligature of the aorta. Abundant sweating has been induced by faradaic stimulation of the nerves of a limb, while injections of pilocarpine in the dead subject, or into a recently amputated limb, have given negative results.

SYPHILIS FOLLOWING TATTOOING.

Records of an outbreak of this kind form the substance of an interesting paper in the "British Medical Journal" for May 4, 1889. Twelve hearty, fresh-complexioned young men of robust health, all soldiers, between the ages of eighteen and twenty-two years, who had been in service from three to twenty-four months, acquired syphilis through the carelessness of a former comrade who used saliva in the process of tattooing, or put the needles in his mouth. Marked and unmistakable syphilitic manifestations appeared within from thirteen to eighty-seven days. Instead of the one chancre, that usually follows poisoning produced in the ordinary way, there were, in one case, four distinct rupial ulcerations within the area of a

circle an inch and a half in diameter. The severity of the secondary phenomena bore no relation to the number of points of ulceration. The most intractable case presented only one ulcer. Although both arms were sometimes tattooed, and on the same day, in no instance did ulceration occur on more than one arm. Five of the men presented a distinct rupial form of the disease, and one had secondary rupial lesions at the seat of the chancre. In no case in which rupial ulceration formed was there merely a single sore; they ranged from two to four in number. In no case did rupia appear on other parts of the body.

The author of the paper, Surgeon F. R. Barker, states that he had always regarded rupiæ as tertiary manifestations, never having seen them appear at the seat of a primary lesion. Finding in the article on syphilis, by Mr. Jonathan Hutchinson, in the "Dictionary of Practical Surgery," the statement that rupia never occurs very early among secondary phenomena (its usual place being from six to twelve months after the chancre), the author sent a photograph of one marked case to Mr. Hutchinson, from whom he received the following reply: "I have repeatedly seen primary chancres, when occurring on the naked skin, assume more or less closely the features of rupiæ. You will see one of those figured in my 'Clinical Illustrations,' in connection with syphilis from vaccination, in which the sores have much this aspect. I may admit that I have never seen the simulation quite so clear as it is figured in your photograph." The rupiæ, when seen, were of the form of rupia prominens, resembling limpet shells, and, falling off, they left a plane, not an excavated, base. There was uniformity in the symptoms in about the following order: Enlarged glands, rash, sore throat, condylomata, and mucous tubercles.

CIDER AND CANCER.

It is the fate of many of the good things of this life to be accused of producing evil. Blessings, like public benefactors, have their revilers. Our immediate progenitors, who seldom or never partook of the luscious tomato, for instance, handed down to us the opinion of their time that "love-apples" caused cancer when eaten. This opinion uttered to the millions of tomato-eaters of to-day would only provoke a smile of pity for the speaker. But another article of food has recently been incriminated as a cause of cancer, although not on this side of the Atlantic, we believe. No medical authority has given support to such an hypothesis so far as we know, but a writer in the "Normandie médicale" has taken pains to show that the popular fear in regard to cider is unfounded. One of the best points in Dr. Prieur's article is the exposition and denunciation of the custom of certain cider-makers of putting impure water with the crushed apples when in the press, to dilute the cider and render it less alcoholic. He quotes from Dr. Denis-Dumont, who saw producers of "cider" take greenish water from a barn-yard pool near by and pour it into the cider-press. And this, it is to be presumed, was in Normandy, where the cider has the name of being the best in the world. In their ignorance the makers of this vile, not to say death-dealing, mixture believed that when the apple-juice fermented all impurities would be eliminated. It is not surprising, therefore, that such cider might produce disease of some kind, though not cancer.

But from such a solution of ptomaines and such a cultivation of microbes to the pure juice of the apple or to that juice diluted with pure rain water (which is quite a legitimate mixture) there is a decided step. To accuse well-made cider of favoring the invasion of human tissues by cancer is *prima facie* absurd. Nothing short of precise laboratory experiments will convince the scientific mind of the present day that cider is to this extent noxious. And, besides that, we must now *chercher le microbe* in the cider capable of producing carcinoma, just as in cases of suicide or murder it has long been the custom to *chercher la femme*. Now, who would be bold enough to accuse the innocent *Saccharomyces cerevisiæ* of transforming itself into the formidable *Bacillus Scheurlenii?* Who, with the bright memory of delightful champagne suppers still fresh in his mind, could insinuate that the minute furnisher of the *mousseux* nectar was double-faced and double-natured, and caused excruciating suffering as well as exquisite pleasure? No; let cider, like tomatoes and other good things, be taken plentifully and fearlessly, and let the magnesic and selenitic waters that are sometimes added to cider be more dreaded than the pure juice of the apple.

MINOR PARAGRAPHS

OIL OF EUCALYPTUS IN HEADACHE.

The "Medical News" of July 20th has an article on the use of eucalyptus in headaches of various types, after other means had failed, recording a measure of success that will induce many physicians to make a trial of this drug in rebellious cases. The authors of this article, Dr. Morris J. Lewis and Dr. G. E. de Schweinitz, of Philadelphia, report eight cases, all benefited, and refer to others treated by Dr. Weir Mitchell and Dr. Sinkler with satisfactory results. The dose given was five minims, from four to six times daily. In one case twenty minims were given as an attack was coming on, and, in the patient's opinion, prevented it. The best results were obtained in cases where the dose was taken early. The authors suspect that a malarial cause existed in some of their cases, and their first success was in a case of that nature, the drug being prescribed for malarial trouble rather than for the neuralgic symptoms. The "sudden and surprising improvement" in this instance led them to make further use of the drug, even in cases where there was no malarial history. Their impression is that it will be found that headaches of the congestive type will be the ones best suited to the use of eucalyptus. They did not succeed with the drug in one case where the attack was brought on by an indiscretion in diet, although the patient obtained relief at other times; and in one case of ciliary neuralgia failure is reported; also in two others where there was organic disease of abdominal viscera.

A MALPRACTICE SUIT.

A suit for malpractice against a New York physician having been tried before a jury, $1,000 damages were found against him. In the General Term, however, the case has taken a turn in the physician's favor. Presiding Justice Van Brunt wrote the opinion, in which Justice Daniels and Justice Barrett con-

ear. After reviewing the testimony, the judge says that the case seems absolutely barren of proof that there was "any neglect or want of skill on the part of the defendant" whereby any permanent injury had been inflicted upon the plaintiff. A new trial was ordered. The plaintiff received an injury in 1886 by being struck by an ice-cart and knocked down. Not having progressed so favorably as he wished, he brought suit for damages on an allegation of unskillful treatment.

DEAD DOGS FOR MEDICAL STUDENTS.

Some medical students having asked the Mayor of New York to allow them a certain number of condemned dogs from the pound, for experimental purposes, that functionary, as the newspapers report, has duly considered the request, also the protest of a certain humane person who dreads the cruelty to which the dogs might be subjected by the students, and has come to the conclusion that he will allow the students a supply of dead dogs, but no live ones. This generosity is about equal to Artemus Ward's as exemplified in his answer to a person who had asked the privilege of seeing his show without paying—"No, you can't go in without paying, but you can pay without going in."

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending August 6, 1889:

DISEASES	Week ending July 30.		Week ending Aug. 6.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	30	10	45	14
Scarlet fever	32	3	27	4
Cerebro-spinal meningitis	4	4	3	2
Measles	40	5	36	2
Diphtheria	82	29	70	19

The Waldo Memorial.—The citizens of Cairo, Ill., have caused the construction of a monument at Mound City in memory of Dr. Roswell Waldo and of his services in that community during the yellow-fever epidemic of 1878.

The Virginia Medical Society will hold its twentieth annual meeting at Roanoke, beginning on September 3d, Dr. E. W. Rowe, of Orange, presiding.

The University of Michigan.—The medical department has met with a loss in the resignations of Dr. Donald Maclean and Dr. Frothingham, formerly the professors of surgery and of ophthalmology. Dr. Charles B. Nancrede, of Philadelphia, has been invited to take the chair of surgery.

New Hospitals.—A new hospital will soon be erected at Ann Arbor, Mich., a grant of $50,000 having been made for that object by the last Legislature. The city has voted to give $25,000 also, and will issue bonds to that amount. At Memphis, Tenn., a new public hospital will be built under the direction of St. Mary's Roman Catholic church.

The Lehigh Valley Medical Association will hold its ninth annual meeting at Glen Summit, Pa., on Friday, the 16th inst., under the presidency of Dr. George N. Best, of Rosemont, N. J. Among the titles in the programme are "Evolution in the Causation of Disease," by the president; and "Railroad Shock and its Treatment," by Dr. Francis X. Dercum, of Philadelphia.

An Infants' Summer Hospital has been established by the citizens of Rochester, N. Y., at Charlotte, on Lake Ontario. Dr. E. M. Moore is president of the association, and Dr. George W. Goler is the attending physician. Any child suffering from intestinal trouble is treated free of charge. There are accommodations for twenty patients, and many children who would otherwise have received no medical treatment have been cared for.

The Minnesota State Board of Health.—Dr. J. H. Phillips, of Preston, Minn., has been appointed to the board of health, to succeed the late Dr. D. W. Hand, of St. Paul. Dr. Phillips was a member of the State Legislature in 1888.

Recent Deaths.—Dr. Oscar J. Coskery, of Baltimore, died on July 5th, of general tuberculosis. He was born near that city in 1843, and graduated from the medical department of the University of Maryland in 1865. He served in that year as an assistant surgeon of volunteers. He was a member of the State Medical Faculty and of the staff of St. Joseph's Hospital, and in 1872 became professor of surgery in the College of Physicians and Surgeons, of Baltimore. He was a frequent contributor to the journals, chiefly on surgical subjects. He was the author of an essay on hospital construction.

Dr. William Thomas Ennett died on June 15th, a very short time after the expiration of his term as president of the Medical Society of North Carolina.

Dr. Charles Corning Lathrop died in Denver, Colorado, on May 28th, aged forty-three years. He had been a resident of Denver for nearly all his professional life, and was well known from having been for several years the permanent secretary of the State Medical Society.

Dr. Thomas W. Battle, of Columbus, Ga., died on June 16th, aged seventy-three years. He was a graduate of the University of Pennsylvania, in the class of 1840.

Surgeon-General Francis Day, of the India Medical Service, died at Cheltenham, England, on July 10th. He saw active service with the Madras Army, but became identified with the study of the fishes of India. He was made the inspector-general of the fisheries in India, and was the best-known naturalist in that country. He was the author of valuable and standard books on ichthyology.

Dr. Charles Elam, of London, died on July 9th. He was the author of eleven books and numerous minor articles, dealing chiefly with nervous, mental, and psychological questions. His book entitled "A Physician's Problems" was the best known of his essays.

Dr. Lewis A. Sayre has lately received a diploma of honorary membership in a St. Petersburg medical society.

The Deutsche Poliklinik.—At a recent meeting of the executive committee of the German Poliklinik the following figures were presented showing the work done since the opening of the institution, in 1883: Total number of patients cared for, 60,711; of consultations, 189,163; of prescriptions, nearly 123,000. The report also shows that for the last three months there have been more than 1,000 new patients a month. It will not be long, the committee believe, before they will have to appeal to the public for a larger building.

Italian Medical Societies.—Two medical meetings, according to the "Raccogliatore medico," will be held simultaneously in Padua from the 16th to the 21st of September: the thirteenth congress of the Italian medical societies and the third congress of the united societies for hygienic research.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from July 28 to August 3, 1889:*

Brechemin, Louis, Captain and Assistant Surgeon. By direction of the Secretary of War, so much of Par. 1, S. O. 159,

July 12, 1889, A. G. O., as directs his return to his station at the close of the encampment of the Illinois National Guard is amended to direct him to report in person not later than August 20, 1889, at Fort Robinson, Nebraska, for duty at that place. S. O. 174, Headquarters of the Army, A. G. O., July 30, 1889.

HALL, WILLIAM R., Captain and Assistant Surgeon. Granted leave of absence for ten days. Par. 5, S. O. 80, Headquarters Department of Dakota, July 27, 1889.

ROBINSON, SAMUEL Q., Captain and Assistant Surgeon. The leave of absence granted by Par. 11, S. O. 165, from these headquarters, is hereby extended ten days. Par. 8, S. O. 172, Headquarters Division of the Atlantic, July 30, 1889.

MAUS, LOUIS M., Captain and Assistant Surgeon (Fort Porter, N. Y.), is hereby granted leave of absence for twenty days on surgeon's certificate of disability Par. 2, S. O. 173, Headquarters Division of the Atlantic, August 1, 1889.

HARRIS, H. S. T., First Lieutenant and Assistant Surgeon. By Par. 9, S. O. 176, A. G. O., August 1, 1889, the leave of absence granted in S. O. 140, A. G. O., June 18th, is further extended two months.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending August 3, 1889:*

BRYANT, P. H., Assistant Surgeon. Ordered to temporary duty on ironclads, Richmond, Va.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the two weeks ending August 3, 1889:*

HUTTON, W. H. H., Surgeon. When relieved at Mobile, Ala., to assume command of the Service at Baltimore, Md. July 23, 1889.

PURVIANCE, GEORGE, Surgeon. When relieved at Baltimore, Md., to assume command of the Service at Philadelphia, Pa. July 24, 1889.

GASSAWAY, J. M., Surgeon. Ordered to New Orleans, La., for temporary duty. August 2, 1889.

GOLDSBOROUGH, C. B., Surgeon. Granted leave of absence for thirty days. July 29, 1889.

VAUGHAN, G. T., Assistant Surgeon. Orders to Norfolk, Va., revoked; to proceed to Cairo, Ill., for temporary duty. August 1, 1889.

GROENEVELT, J. F., Assistant Surgeon. Relieved from duty at Gulf Quarantine Station; ordered to Mobile, Ala., for temporary duty. August 3, 1889.

Proceedings of Societies.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Eleventh Annual Congress, held at Washington on Thursday, Friday, and Saturday, May 30 and 31, and June 1, 1889.

The President, Dr. ETHELBERT C. MORGAN, of Washington, in the Chair.

Report of the Removal of a Supernumerary Tonsil.—The PRESIDENT read a paper on this subject.

Dr. J. N. MACKENZIE, of Baltimore: In connection with the case reported by Dr. Morgan, I would briefly refer to a case which I reported some time ago, an account of which has not yet been published. It was a case of tumor of the pyriform sinus, which was removed with the wire snare. Upon microscopical examination, it was found to be composed of the lymphoid tissue so graphically described by Waldeyer and his pupils. I have on several occasions removed growths from the tonsils, and once from the anterior faucial pillar, but I am sorry to say they were not examined microscopically. They would doubtless have shown a similar structure to that found in the pyriform sinus.

Dr. D. BRYSON DELAVAN, of New York: This subject has been so thoroughly and carefully worked out by Dr. Morgan that it has given me considerable interest to try to recall a similar instance. While I remember to have seen it stated that supernumerary tonsils may occur, yet, after a careful search through the literature, I was able to find but the two cases referred to by Dr. Morgan. I have seen several cases of tumor of the tonsil, which were distinctly pedunculated and easily removed, but which proved to be largely of a fibrous structure. It seems possible that these fibrous tumors, which are not uncommon, may be degenerated supernumerary tonsils. In the case reported there had been considerable growth, the tumor increasing markedly in size during three or four years. It may be that these fibroid tumors begin as supernumerary tonsils, and later, becoming rich in fibrous structure through the irritation to which they are exposed, assume the character of the former growth.

The Relation between Facial Erysipelas and Erythema on the One Hand and Intranasal Pressure on the Other.—Dr. G. W. MAJOR, of Montreal, read a paper with this title. (See p. 148.)

Dr. J. O. ROE, of Rochester: I have seen a number of cases of erythematous rash about the face which was due to the cause described by Dr. Major. This was well pronounced in a case recently seen—that of a girl twenty-three years of age. She had an erythematous rash upon the face, very red, and studded with blebs and blotches, giving a very conspicuous appearance. She had been treated with constitutional remedies by two or three distinguished men, without benefit. They afterward referred her to me, and I found in both nostrils that the middle turbinated bodies projected firmly against the septum. I removed the projecting portions, rendering the passages free, and there was an immediate subsidence of the erythematous trouble, and it has now entirely disappeared. I can not agree with Dr. Major that erysipelas is due *per se* to intranasal pressure. Erysipelas is caused by a distinct germ, and is an infectious disease. Those who have intranasal difficulty with erosions are more liable to become infected by these disease germs. As we know, erysipelas may come from the infection of a scratch, but the latter is quite different from the erythematous rash which may be excited by simple local irritation.

Dr. MACKENZIE: I can not agree with Dr. Major in regard to the silence of medical literature upon this subject. I think that it has been pretty fully discussed in the last five or six years. I know that some centuries ago, in the time of Willis and Sylvius, this erythema of the nose and face was discussed in separate chapters, and was attributed to intranasal changes. I have myself discussed the subject pretty thoroughly in Wood's "Reference Hand-book," published in 1887. The Germans have reported cases of so-called erysipelas and erythema of the external nose and cheeks as exceedingly common. I have seen erythema very often, but I have not seen a case of true erysipelas. The so-called cases of facial erysipelas from intranasal changes seem to me to be rather an accentuation of the act of blushing. It is a sort of chronic blush. It can hardly be called true facial erysipelas.

Dr. Daly: I am not a believer in the theory of intranasal pressure. I believe that the conception of the theory is not good, and consequently the superstructure is on a bad foundation. The evils, whatever they may be, that we recognize as coming from so-called intranasal pressure, are evils that in reality arise from intranasal turgescence. There is no question in my mind that the condition which my friend Dr. Mackenzie speaks of as an accentuated blush, a prolonged blush of the parts—a very pretty idea—is, when divested of all superfluous mystery, largely due to hypernutrition from a turgescent and permanently dilated and enlarged blood-supply.

During the past year or year and a half I have had under my professional care two cases. One of these was a very well marked case of erythema of the skin of the nose and extending out upon the cheek. I was, however, not consulted by the patient on account of the skin disease, but for a condition which he spoke of as intranasal catarrh. I resorted to prompt surgical measures, removing the turgid condition of the intranasal structures—in a word, cutting off the blood-supply by destroying the blood-vessels; and, as a result, the condition of which he complained as catarrhal was removed, and subsequently also the erythema disappeared. I met the man, who was from a neighboring town, a few weeks ago, and did not recognize him. The turgid and red condition of the nose had disappeared, and he presented quite a respectable appearance and was altogether much pleased with himself.

The second case was of a somewhat similar character in a young lady. She had erythema of the external surface of the entire nose, with a horseshoe-shaped patch around it of the same kind extending down to the outer angle of the mouth on each side. She had been told that it was due to menstrual disorder. I lost sight of that opinion after finding that there was sufficient intranasal deformity to warrant interference for stenosis. After relieving surgically almost complete stenosis of one naris and partial stenosis of the other, the erythema disappeared. In this case, by the way, there was copious hæmorrhage, almost causing death, after one of the operations with the saw. I had said to the patient that a little bleeding would do no harm. She went to her home, two miles and a half in the country, and there bled copiously, but assured her friends that the doctor had said that bleeding would not matter. She bled well into the night, when my assistant was sent for, and found her almost *in articulo mortis*. She, however, recovered, and is now perfectly healthy and a handsome girl, with good nasal respiration, with no defect of skin or complexion.

I do not believe in chronic facial erysipelas, and think that the term is a misnomer. I regard erysipelas as essentially an acute inflammatory disease of a specific type, and depending oftener upon an acute constitutional disorder than a local one, and as diverse from the condition of chronic erythema as possible—in fact, I don't believe such a thing as chronic erysipelas exists at all.

Dr. F. I. Knight, of Boston: Without repeating what has been said, and well said, upon this subject, there is one point which the gentlemen seem to have overlooked. This is in regard to another condition which may serve as a cause of erythema of the nose and face. It is one which I always search for and frequently find—namely, necrosis. When a patient presents himself to me with a localized strong blush on the nose or cheek, I look for necrosis, just as in a case of unilateral profuse purulent discharge I look for a foreign body or necrosis. The worst cases that I have seen have been where there was decided necrosis. Here the erythema has been removed by giving free vent to the purulent discharge and keeping the parts clean.

Dr. Delavan: In four cases of this affection that I have seen the erysipelas has been very severe. The first case was a girl, seventeen years of age, who had recurrent attacks of erysipelatous swelling over the ala of the nose and extending over the cheeks. These attacks recurred every two or three weeks. I thought that some necrotic process might be the cause of this condition, but I failed to find it. I found, however, marked turgescence of the nasal mucous membrane. The condition was treated topically, and in time, with the subsidence of the catarrhal trouble, the erysipelatous attacks disappeared and did not recur.

Another case was that of a girl, fifteen years of age, who suffered from adenoid hypertrophy at the vault of the pharynx. She had had recurrent attacks of erysipelas. That this was true erysipelas was proved by the fact that the inflammation was very severe, that the nose swelled to a large size and remained thickened for a number of weeks, and that, with the subsidence of the attacks, there appeared a distinct herpetic eruption, as often occurs in erysipelas. In this case no necrosis was present. There was, however, extensive engorgement of the nasal mucous membrane, with some pressure in the neighborhood of the middle turbinated body on both sides. The patient had improved under treatment. About two weeks after her last attack, a younger sister, sleeping in the same room, suffered from the same condition. In the latter case there was also some turgescence of the intranasal mucous membrane.

Dr. Harrison Allen, of Philadelphia: I think if Dr. Seiler were present he would tell us of the connection between nasal disease and acne. It has been my experience to see in two cases attacks of furuncles follow treatment of the nose. In a third case these furuncles occurred without surgical treatment of the nasal cavities. In one of the cases there was distinct flushing of the face and nose. I looked upon this as a mild form of cellulitis. I see no difference between a diffuse form of cellulitis of the face arising from intranasal causes and that which follows abscess of a tooth. Under the latter circumstances we frequently see cellulitis of the entire face. I think that Dr. Major meant erysipelas and not cellulitis, so that these remarks refer more to what was said by previous speakers than to the paper itself.

There seem to be several different conditions—first, a distinct erysipelas; second, diffuse cellulitis in various forms; and, third, a chronic determination of blood to the face dependent upon chronic irritation.

Dr. S. W. Langmaid, of Boston: I recently saw a case of erysipelas in Dr. White's clinic in Boston, and he remarked that in such cases we should look for the cause in the nose. The dermatologists have therefore not lost sight of this fact.

Dr. Major: In my paper I have avoided theory and confined myself simply to facts. My opinion is based upon clinical observation that led me to look for these cases. I have looked for them and I have found them. These have been cases of erythema and erysipelas under medical treatment by men high in the profession, but without benefit—cases that have been under the care of dermatologists for months without improvement, and they have been cured by simple removal of the pressure. That is about as straight evidence as to cause and effect that any one need want. I do not think that turgescence will produce erysipelas or erythema unless it causes pressure. In regard to necrosis, this is common enough in syphilitic cases. The erythematous condition may continue for months. I have not mixed up erysipelas and cellulitis. One of my patients had fourteen attacks of erysipelas. All commenced in the nose and extended over the body. In regard to the literature, I would say that I consulted a number of books, but saw no reference to this matter. I am sorry that I overlooked Dr. Mackenzie's observations in Wood's "Hand-book."

Acute Multiple Adenitis (Septic?); Œdema of the Larynx, with Spontaneous Cure.—Dr. S. W. Langmaid, of Boston, read a paper with this title. (See p. 149.)

Œdematous Disease, or Septic Œdema, of the Upper Air-passages.—Dr. W. C. Glasgow, of St. Louis, read a paper on this subject. (See p. 150.)

Dr. T. A. De Blois, of Boston: I have been much interested in Dr. Langmaid's paper, particularly with reference to the possibility of diphtheria being coincident with the condition he describes. Last year I was called in consultation to a case of supposed œdema of the larynx. The epiglottis and the arytenoids were œdematous, not so much at the first examination as subsequently. I punctured the epiglottis and got a slight discharge of blood, and in twenty-four hours the place of puncture was filled by the exudation of diphtheritic membrane. The œdema then progressed, and the arytenoids became so large and obstructed respiration so much that they were punctured, and again extension of the membrane occurred. There was no discharge of pus at all. Sometimes marked œdema will precede a very slight exudation. As Dr. Langmaid has said, there might have been exudation which had passed away when he examined the throat; but I have never seen œdema follow exudation.

Dr. Daly: The condition which Dr. Glasgow has so well described is somewhat new to me. The doctor spoke to me in regard to it a year ago, and asked me if I had seen such conditions. At that time I had not; but last autumn, when the bad weather began, there was in Pittsburgh an endemic of the class of cases to which Dr. Glasgow has referred. A number of them fell to my professional care, but by far the larger number were treated by the general practitioners. I did not regard this swollen condition of the fauces so much as œdema, as we understand that term, as that it was a subacute inflammatory condition of the mucous membrane, with attendant swelling. There was a sufficient number of these cases that had superficial and very thin diphtheroid patches in various parts of the fauces to warrant me in my opinion that they were cases of a diphtheroid disease of the throat. I was confirmed in this opinion by the subsequent occurrence of glandular enlargement, which came on in nearly every case, and was located in the deeper regions at the sides of the throat, sometimes in other parts of the body, and in one or two instances in the axilla. In short, I regarded this endemic as a diphtheroid disease, with exaggerated local symptoms scarcely warranted by the local deposit of false membrane or fibrinous deposit; but, while there were exaggerated glandular symptoms, there was a rather amenable condition of the constitutional symptoms.

The calomel treatment, which I am so fond of employing in cases of true diphtheria, and which has stood me in very valuable service—much more so than any other plan of treatment that I have ever adopted—did not give the results which I am in the habit of observing from it in true diphtheria. These cases were usually manageable, but sometimes slowly so, with a treatment something like this: Three or four times a day, three to four grains of Dover's powder, with two or three grains of quinine upon a full stomach, and then the use, both locally and internally, of a solution of the chlorides—chlorate of potassium, Squibb's preparation—with dilute hydrochloric acid in syrup or, preferably, in glycerin. This was used as a gargle in hot water, and a moderate dose taken every two or three hours.

After the local disease subsided, the glandular enlargement was usually treated with an ointment of veratrine, or simple lanolin, and the use of the iodides. Much handling of these glands was resented by increased pain and swelling. I believe that this is a modified form of diphtheria, with exaggerated local symptoms, but a more amenable condition of the constitutional symptoms, and depending upon a modified form of the germ or infection. It seems to me that it has sprung up in the Mississippi and Ohio valleys, and has radiated from those regions.

Dr. J. C. Mulhall, of St. Louis: I think that a great deal of credit is due to Dr. Glasgow for being the first to recognize that there is a peculiar type of inflammatory trouble of the upper air-passages sweeping over the country. I can confirm, from experience in St. Louis, the existence of this peculiar class of cases. The last acquaintance that I saw before I left was a gentleman who came to the train to tell me that, for the third time, he had tenderness in the throat. He came to me two weeks ago with what he thought to be the symptoms of ordinary quinsy. I found these white patches of exudation on one tonsil, and a great deal of pain without œdema. I regarded the case as one of ordinary follicular amygdalitis, and treated it in the ordinary way. I gave him aconite and a gargle of tincture of guaiacum. In forty-eight hours he again presented himself with an abscess of one tonsil, but the usual relief did not follow the evacuation of the pus. He again returned in forty-eight hours, and then was present this peculiar type of œdema. It involved the uvula, the anterior and posterior pillars on the right side, and extended down the pharyngeal wall on the right side. He then took my advice and went to bed. The treatment which was then adopted seemed to have a marvelously rapid effect in relieving the trouble. It was the old-fashioned antiphlogistic treatment. The inflammation seemed to be of a rather active type, the temperature being from 100° to 103°. The treatment consisted in the application of very hot poultices to the side of the throat every half-hour, the administration of Norwood's tincture of veratrum viride, and antipyrine. Saline purgatives and scarification were also employed. This treatment had a marvelous effect. He recovered, but subsequently the throat again became sore, and exactly the same thing occurred. The same treatment was pursued, and the symptoms subsided in twenty-four hours. When I left St. Louis he had been well for four days, but, as I have stated, he came to me to say that, for the third time, symptoms of irritation of the throat had appeared. Some time ago I saw another gentleman with the same sort of an attack, which subsided, under the treatment mentioned, in forty-eight hours without any recurrence. I have also observed the glandular implication which is very unusual in ordinary sore throat. I saw one of Dr. Glasgow's patients on Monday. He has been suffering since December 15th, and it is only within the last month that the glandular enlargement has begun to recede. His was one of the cases in which ulceration took place. It is possible that the case described by Dr. Langmaid, and probably the case of Allen Thorndyke Rice, belonged to this class, having involved the larynx and produced acute œdema. I have not seen any of the cases in which there has been laryngeal involvement, although, curiously enough, during the last winter I have seen two cases of acute typical laryngeal œdema from erysipelas. With Dr. Daly, I think that this affection originated in the Mississippi Valley, and has radiated to other parts of the country.

I should like to say a word in regard to the pneumonia which has occurred in connection with these cases. I was recently in the biological laboratory of Dr. Bramer, of St. Louis, and he showed me the results of some cultivation experiments from this form of pneumonia, side by side with the cultures from the ordinary pneumococcus. The growth was entirely different, although the gross examination had shown interstitial pneumonia in both instances.

Dr. S. Hartwell Chapman, of New Haven: While expressing my admiration for the exhaustive analysis and close observation of the symptoms of this disease which is the subject of Dr. Glasgow's paper, I can not but differ with him as to the character of the disease itself. It is, I am sure, but another and not

unusual development of diphtheria. We are not obliged to seek in the Western States for these peculiar phenomena, for they are quite as common developments of diphtheria in the Eastern, and I feel confident that I am giving the experience of laryngologists in the Middle and Southern States as well.

A case which occurred in my practice during the spring of this year will illustrate the close connection between the ordinary forms of diphtheria and this peculiar form of which we are indebted to Dr. Glasgow for collecting the interesting symptoms. In the first week in March I treated a lad of ten years, in a family consisting of parents and two children—this lad and a boy-baby of about eighteen months. This case was one of mild typical diphtheria with well developed tonsillar and pharyngeal membrane extending to the brim of the larynx, with moderate glandular enlargement, considerable exhaustion, and moderate rise in temperature. The case was treated with quinine, stimulants, and mercurials, and ran an ordinary course of about ten days, with no bad results following. On the fourth or fifth day of this attack my attention was called to the younger child, who was found to have a dense swelling of moderate size directly under the chin, with rise in temperature and the appearance of being very ill. The same treatment was adopted in this case as in the other, with the addition of hot fomentations to the glandular enlargement. No membrane could be observed in the throat, and indeed the mucous membrane seemed to be in a perfectly healthy state. There was no hoarseness and no dyspnœa.

Notwithstanding all preventive efforts, the glandular enlargement continued to increase, extended to other glands, and finally produced a uniform infiltration of all the tissues of the neck. This occurred rapidly, so that by the end of the fifth day the appearance of the little patient was very peculiar. From the ears to the clavicles, and extending almost to the shoulders, the swelling was one uniform smooth mass, into which the face and chin seemed to have sunken. With the gradual increase of this infiltration, dyspnœa appeared and became finally very alarming. The process of deglutition ceased on the second day, and the patient was nourished *per rectum*. It seemed likely that suppuration had taken place, so that I made several deep incisions in the sublingual region. This operation was followed by rather copious hæmorrhage, but no pus was found and the symptoms were not at all relieved. An O'Dwyer tube No. 2 was then inserted into the larynx, although with very great difficulty owing to the infiltration. This was left *in situ* four days, during which time the infiltration so rapidly subsided that the conformation of chin and neck again became evident. By the eleventh day the patient was again able to swallow liquids. By the fifteenth day convalescence set in. During the course of the disease there was no membrane to be observed, and the mucous membrane of the pharynx and mouth retained its healthy appearance. The peculiarity of the case was the development of enormous infiltration into all the tissues of the neck, forming a dense, hard, inelastic swelling. During convalescence moderate suppuration of the sublingual gland took place. As far as it is possible to judge, this seemed to be a case of modified diphtheria of the general type of the disease so ably described by Dr. Glasgow.

Dr. Charles E. Sajous, of Philadelphia: It has been my good fortune to see several of these cases, and the remark made by Dr. Chapman that they are not limited to the West is exemplified by the fact that Dr. Seiler described a number of them before the German Medical Society of Philadelphia a few months ago. The first case that I saw of this affection was in a young man from New Jersey. He had been exposed to the contact of no case of the kind in the neighborhood. I was struck with the amount of pain and the severity of the general symptoms which accompanied the throat trouble. The appearance of the throat did not resemble the condition seen in diphtheria. Instead of the yellowish, leathery membrane generally present in diphtheria, there were small white patches, probably twenty or thirty in number, covering the pharynx and tonsils. Around these patches was a narrow areola of redness which gradually disappeared to again increase toward a neighboring patch. The vault of the pharynx was slightly involved. There was slight œdema of the soft palate. The temperature was raised throughout the entire course of the attack (102·5°). The case appeared at first to be one of follicular pharyngitis, but the general symptoms were such that I made up my mind that it was an affection with which I was not acquainted. There was redness of the fauces and slight tinnitus aurium. The patient complained of incessant pain in the back and in both legs. After trying a number of remedies, he was placed on benzoate of sodium, suggested by the remarks of Dr. Seiler, which were reported to me by a member of the German society who was present when the paper was read.

I saw another case in Wilmington to which I was called in consultation. This was in a child about two years and a half of age. The case much resembled that reported by Dr. Chapman. The glands were greatly enlarged—sufficiently so, in fact, to warrant the intention of the attending physician to freely open them, fluctuation being present. The knife was not used, however, but the child was placed under minute doses of the bichloride of mercury. The glandular swelling rapidly disappeared and the child got well. The appearance of the throat and the general symptoms were about those found in the case from New Jersey.

Dr. Delavan remarked that this discussion was a timely one, coming as it did in connection with a recent celebrated case. He referred to a patient in this condition whom he had seen suddenly die from heart failure. Other cases, apparently similar, had been occasionally reported. He believed that they were analogous to those described by the older French writers and by Sir Morell Mackenzie as "acute œdematous laryngitis," and more recently by Senator, under the name "acute infectious phlegmon of the pharynx." The speaker thought that the possibility of the disease being diphtheria had not been satisfactorily eliminated. In view of the dangers attending it, he urged that the affection be more carefully studied and explained, and he thanked the reader of the paper for the valuable light which he had thrown upon it.

Dr. Langmaid: Dr. Glasgow's cases seem to me quite different from the one which I reported, in which the œdema was the result of pressure and not necessarily a symptom of the disease which caused the adenitis. I thought that the case which I have related was of sufficient interest to bring before the society, because it was almost diagrammatic. The neck was swollen even from the jaw to the clavicle. The short history of illness made me expect to find membrane or an ulcerated patch from which membrane had been discharged. I found a perfectly clean throat. I can not conceive of an adenitis as extensive as this in a patient of the age of this one, coming on as suddenly as it did and disappearing so suddenly, that was not septic. I believe that there was diphtheria in this case, but, as the history of the first eight days is not known, I can not speak positively. There was no œdema of the pharynx or fauces when I examined the patient. It also seemed to me that the spontaneous evacuation of pus from some gland, as occurred in this case, must be very unusual.

With regard to the cases spoken of by Dr. Glasgow, it has seemed to me that, with the remains of a general practice clinging to me, if these cases had occurred in Boston, I should have seen some of them. I do not recall any such case, and, so far

as I know, they have not been presented to the societies. For some years we have had conditions in Boston which, with the constant presence of diphtheria in certain sections, would render the occurrence of a general epidemic very probable. It has not occurred, and it has seemed to me that, for some reason, the atmosphere of our city is not suitable for the spread of diphtheria. This is possibly the reason that we have not seen these bastard cases, such as Dr. Glasgow has described.

Dr. Glasgow: There is only one point to which I need refer, and that is in regard to the connection between this form of disease and diphtheria. No one could possibly consider the œdematous form as diphtheritic, and the question could only occur when the exudation is present. In my earlier observations I thought the exudative cases might be diphtheritic. In one case, a young girl of seventeen, the whole palate and tonsil was covered with exudation. I thought that it was a case of diphtheria, and placarded the house as the law exacts. As I watched the case I became convinced that it was not diphtheria. I called in one of our ablest physicians, and at first he said that it was diphtheria, but, after watching the case for a few days, was convinced that it was something else.

The history of the exudation is not that of a diphtheritic patch. It never comes away in a mass, but gradually fades away, growing thinner and thinner day by day. It is not surrounded by the inflammatory zone seen in diphtheria. That diphtheria may be ingrafted on such a condition of the mucous membrane I am fully convinced, since I have met with it in several cases. The œdematous condition of the mucous membrane seems to furnish a fertile culture soil for the development of cocci.

NEW YORK SURGICAL SOCIETY.

Meeting of April 24, 1889.

The President, Dr. L. A. Stimson, in the Chair.

Successive Fractures of the Patella.—Dr. R. Abbe presented a patient who had first sustained a fracture of the patella in 1871, in that instance by muscular violence, having slipped and suddenly caught himself. His patella had been fractured a second time by a blow from a truck, in the same year. In January of 1888 he had again slipped and fractured the bone, at a different point, however, from either of the previous fractures, and in this case the union had been effected by wiring. On May 4th of the same year he had fractured the bone for the fourth time by muscular violence, and in this case also in a different place from where the bone had recently been wired together. The result had been a wide gap which had, of course, shown no tendency to unite, and made the limb quite useless. The speaker was in some doubt as to whether he should rewire the fragments, as that might only result in a stiff knee. However, previous to the last fracture the patient had been able to bend the knee but little, and the fracture itself had been caused by a forced bending of the limb. The lower fragment, of a crescentic shape, could be brought nearly into apposition with the large upper fragment. A knee-cap could be gained by wiring or circular sutures. The limb had been a good one, practically, from 1871 until January, 1888. If wired, the limb would still be as useful as it now was. Up to May it had been in a splint.

Dr. Lange thought an operation advisable, because it would improve the usefulness of the limb, and the knee joint might retain the same amount of motion now possessed by it.

The President thought the operation could not do more than give a stiff joint.

Actinomycosis in the Right Hypogastric Region.—Dr. F. E. Lange presented as a case of an exceptional nature that of a man of twenty-five years who, so far as he had understood his physician to say, had suffered six months ago from an attack, resembling perityphlitis in its symptoms, which had lasted three or four weeks. Three or four weeks before being brought before the society the patient had suffered from pain in the region of the liver, an enlargement had appeared at that point, there had been a high temperature and some chills until two weeks before the present time, when, with the appearance of a swelling in the epigastric region, the pain had become lessened. Two days before he had seen the patient at his office with his physician, Dr. Kerr, but, being still uncertain as to the nature of the disease, had decided to make an exploratory puncture at the house of the patient. At first glance the result of this procedure had seemed to be negative, but by using a syringe a few opaque minute granules had been brought away which had made him suspicious of actinomycosis. The microscope had revealed the true nature of the disease, as the operation done some days later had shown. It had involved the deeper portions of the abdominal wall in the epigastric region, and could be followed to a great depth between the diaphragm and liver. The disease occurred probably not so very rarely in this country. Within the last two years he had seen four cases. In one of these cases it had developed on the neck; in another, in the retro-mediastinal space, involving the ribs and diaphragm; in a third one, on the back. The diffuse dense hardness gave the parts in which this disease occurred a peculiar feeling to the fingers. To the eye the mounted specimen showed small, white-yellowish corpuscles, with fine radiating threads passing out from scattered centers. There had been scarcely any formation of pus, even as viewed under the microscope. The patient had lost in flesh and become run down. The question arose in his mind whether a perityphlitic affection may not have been really caused by a process of the disease. So far as he knew, actinomycosis near the liver was a very rare affection, the intestine itself being more commonly its seat. In this case it might have spread from the œsophagus.

Dr. Frank Hartley instanced a case which had come under his observation in the Roosevelt Hospital Out-patient Department, in which the disease had been connected with the inferior maxilla, there being also a previous history of carious teeth. The disease in this case had involved the inferior maxilla, and the adjacent tissues of the neck.

Large Ilio-femoral Aneurysm; Ligation of the External Iliac through the Peritoneal Cavity.—The President presented a patient upon whom he had operated successfully for the cure of an ilio-femoral aneurysm of large size by tying the artery through the peritoneal cavity. The aneurysm had first appeared four months before as a small lump just below Poupart's ligament, and had increased in size at first slowly but of late very rapidly, until it had measured five inches in length and four inches in width. Toward the last, pulsation had been marked, and there had been a large harsh murmur over the central part of the tumor. He had rejected the usual method of operating because of the risk of wounding the sac or exciting its suppuration, and had sought the external iliac artery through the peritoneal cavity. The incision was made along the outer border of the rectus abdominis, and the peritonæum divided for about two inches; then, on pressing aside the intestines, the artery was readily found, exposed by a short incision in the overlying peritonæum, and tied with catgut. Two weeks later, on removal of the dressing, the wound was found entirely healed, and the aneurysm solid and somewhat diminished in size.

On the Extirpation of Certain Non-pedunculated Pelvic Tumors.—Dr. F. E. Lange read a paper with this title. (To be published.)

Dr. Abbe remarked on the immense value of Trendelenburg's posture, as it prevented loss of venous blood which

would otherwise occur by withdrawing it into the upper extremities largely. He had made use of this posture in operations for removing uterine fibromata with the result of greatly decreasing the hæmorrhage from the pelvic vessels.

The President asked, in regard to tamponing the cavity with iodoform gauze, how large and long the strips were which Dr. Lange used, and what the length and thickness of the column of gauze formed was.

Dr. Lange answered that these varied with the surface to be covered. Ordinarily he used six or eight strips two feet long and three fingers wide. The end of each was left outside. He usually arranged it so that there were two lateral strips packed in on each side, and two more in the center. He had found that traction made on large areas of a surface packed with iodoform gauze which formed a continuous mass, when it became desirable to remove this, was painful, and that the procedure of removing it was tedious, and one requiring some force. On the other hand, small strips resulted in limiting the traction necessary to get them away from any one point. He wished opinions as to the occurrence of iodoform poisoning after intraperitoneal operations.

Dr. Abbe said he had had many cases where he had employed iodoform tamponade, and had afterward found iodine in the urine, but never with toxic development of mania.

The President spoke of the danger that ligatures *en masse* might slip when they included much peritonæum. In such ligatures the peritonæum was sometimes drawn in from all sides under considerable tension, and this tension, especially when aided by movements of the patient, created an everting strain which favored the escape of the included artery. He recalled an autopsy in which such a ligature had slipped, leaving a circular gap in the peritonæum three inches in diameter, and in its center the vessel from which the fatal hæmorrhage had come. In connection with Dr. Lange's remarks on removal of the uterus, he showed a uterus and ovaries removed by abdominal section by the method described by the speaker in the "New York Medical Journal" for March 9, 1889 (p. 277), in which he exposed and tied the uterine arteries in continuity. He also secured the ovarian arteries without including the peritonæum in the ligature; he divided the broad ligament after placing a clamp on its outer border, and then easily found the arteries on the surface of section, stripped back the peritonæum, and tied them.

Dr. Abbe thought there was a principle of some importance involved in the history of the wound of the intestine occurring in the operation just described by Dr. Lange in his paper. The speaker had once done an operation on a torn intestine, and applied sutures and a tampon of iodoform gauze on top of these, but after two days the wound had evidently opened, as a fæcal fistula had formed. If no tampon had been applied to the sutured peritoneal surface which might have slipped in among the other intestinal coils, he was inclined to think that more lymph would have been exuded to spread over and cement the sutured wound.

Dr. Lange replied that he had considered that question, but had not dared to act as Dr. Abbe proposed, because he had not been able to make a thorough closure of the opening in the intestine in the instance referred to. He had been able to make only one row of sutures, lest he should narrow the lumen of the gut too much. The iodoform tampon was safe even where we expected loosening of the sutures and escape of the fæces, for it furnished a channel along which the extruded matters could come out. Around such a tampon a plastic exudation formed a wall which shut off the peritoneal cavity. The patient so operated on was already much weakened, and, as there was no certainty of a union taking place, it was better to be prepared for the worst.

Dr. A. G. Gerster said he had listened to Dr. Lange's paper with a pleasure chiefly due to its clear enunciation of the principle of always making an incision of a length sufficient to permit of an easy inspection of the viscera to be handled. We saw some records published telling of such and such a tumor removed through a small incision. He thought all such operations were done at great risk, as being done without the guidance of the eye. The finger, sometimes called the surgeon's third eye, could never, in his opinion, be safely substituted for direct inspection, especially where the latter could be had by the prolonging of the incision to an extent which was relatively without importance as affecting the recovery of the patient. Some writers had dwelt upon the fact that as a matter of statistics it could be shown that the mortality had been greater in proportion as the incisions made at the beginning of operations had been longer. The point here was that the large incision was, in the great majority of cases, not to be blamed for the bad result so much as the serious nature of the operation which the larger incisions preceded. The incisions, necessarily, had only been made of a length more or less adequate to the operation needed, and he believed even more serious results would have followed had smaller incisions been made. When the parts being dealt with lay directly under the eye, not only could bleeding points be seen and ligated promptly, but a variety of other accidents and injuries of the parts could be avoided. The advantages were almost entirely on the side of the ample incisions.

Bony Union of the Patella.—Dr. Abbe presented the patellæ which he had removed at an autopsy from the body of a man, sixty years of age, who a number of years ago had sustained a transverse fracture of each patella, and had come under the care of Dr. Markoe at the New York Hospital some time after the accident, who, finding the union that had occurred in each not sufficient to enable the man to walk, had wired both together, putting an interval of three months between the two operations. As proved by the autopsy three years later, this patient had possessed very little kidney structure at that time, as only a shell of kidney tissue had been found at the autopsy. Consequently the tendency to suppuration had been very marked, and both wounds had suppurated some time after the operation. Nevertheless, both patellæ had firmly united by bony union. Both joints had become ankylosed. The wire had been removed from one, but was still present in the other patella.

Dr. T. M. Markoe said that when the patient had first come under his care there had been a separation of about an inch between the fragments of each patella. In both the operations there had been great difficulty in approximating the fragments, owing to the rigid contracture of the quadriceps. This had been divided at several points in each operation, and even then the approximation had not been satisfactory until the wires were pulled home. In the first operation the wound had healed under one dressing. In the second some suppuration had occurred owing to the opening of the synovial cavity in making the division of the quadriceps. The wound had finally healed, however, with the exception of a small sinus which had still existed when he was discharged. The recovery in the use of the limb had not been satisfactory, because the patient, a heavy, fat, and flabby man, would not take any exercise, and had persisted in stumping about the ward on crutches. The indications for operation in this case had been enforced by the fact that the man had practically no use of his limbs, since, both patellæ having been broken, he had been unable to bear any weight on either limb when it was flexed in the slightest degree, and had not the other one to keep him from falling.

The President thought the inference ought not to be drawn from such cases that bony union would follow wiring in all

cases; autopsies in cases where this method had been followed had too often shown that the union which had been obtained was not complete.

Dr. ABBE suggested a partial explanation for the successful result in this instance in the fact that the patient had a tendency to a rapid bone formation, and had once been operated on for the removal of an exostosis of the orbit.

An Intraligamentous Cyst of the Broad Ligament.—Dr. FRED. KAMMERER presented such a cyst which he had removed from a patient, twenty-five years of age, who had given the physical signs of an abdominal tumor. The cyst had lain very near the uterus, and, as the latter was placed very high in the pelvis, the operation was one of some difficulty. He had not been able to enucleate the cyst until he had tied off the arteries, severed the connections with the uterus, and had worked down for some distance along the side of the cyst, nearly to the floor of the pelvis. During the operation he had tapped the cyst and let out a clear watery fluid; sections made after it had been removed had shown that it was in the beginning of malignant degeneration. There had been slight ascites. The case had ended fatally. He had not seen the patient after the operation until the fourth day. Persistent vomiting had set in after the operation, and on the fourth day had increased in violence. There had been no rise of temperature, no tympanites, or tenderness of the abdomen. On removing the dressing, a loop of intestine was found protruding at the upper angle of the wound, where one of the catgut stitches with which he had closed the peritonæum had probably given way. He replaced the gut, but this made no change in the symptoms of obstruction. Laparotomy on the following day gave no clew to the persistence of ileus. Enemata had not even resulted in a passage of gas. The patient died on the eighth day. The autopsy showed that no peritonitis was present, and no mechanical cause for the obstruction was discovered. The case seemed clinically to correspond with Verchère's description of *septicémie intestino-peritonéale*, the main feature of which was absolute constipation. The only rise of temperature had occurred shortly before death.

Operation for Pyosalpinx.—Dr. KAMMERER also presented two specimens, consisting of the tubes and ovaries, which he had removed. The patients were twenty-five and twenty-eight years of age, respectively, and both had recovered. The diseased organs had been matted down on the floor of the pelvis. In both instances the sacs had burst, and their contents had poured freely into the peritoneal cavity, but, after sponging out the latter well, it had been closed. The temperature had not afterward risen above 101° F. In thirty-nine cases in which Gusserow had operated for pyosalpinx, rupture of the tubes and escape of their contents into the peritoneal cavity had occurred in nineteen, and all the patients had recovered. The speaker had never seen any other method of operation used in these cases, or any drainage of the peritoneal cavity, and there had been no bad results. Microscopical examinations and experimental cultivations made with the fluid from tubes distended with pus had in no instance shown the presence of microorganisms. It was a remarkable thing that, after a spontaneous rupture of the tubes, septic peritonitis often occurred. He thought this might be explained on the basis of a mixed infection, the primary pyosalpinx being due to an invasion of the gonococcus. A secondary infection of the sac with one of the pyogenic cocci might perhaps precipitate a rupture, allowing pyogenic material to enter the peritoneal cavity. Bumm had first called attention to mixed infection in pyosalpinx.

A Case of Cerebral Surgery.—The PRESIDENT also presented a small piece of wood and a button of bone removed by trephining from a patient, of whom he gave the following history: A man of fifty had fallen backward while blacking his shoes, and had hit his head upon the pointed end of a paint-brush, receiving a small scalp wound on the right side of the back of his head. Two days later he began to feel badly, and, after two more days, passed into a dazed condition, with paresis of the left limbs and considerable fever. Six days after the injury he was brought to the Chambers Street Hospital, unable to speak or understand directions given him, but able to feel pain. He was etherized and the wound enlarged. A small foreign body was found driven through the skull; in the efforts made to seize it, it slipped farther in, and a little pus escaped beside it. A trephine was applied over the opening, and a button of rather thin, soft bone removed. The foreign body, which had penetrated the dura, was then picked out, and proved to be the end of the paint-brush, five eighths of an inch long and a quarter of an inch thick, tapering slightly to the point. An ounce of pus escaped from beneath the dura after the opening in the latter was enlarged.

Within two hours after the operation the patient became conscious and intelligent, and the temperature had slowly fallen. Three days after, he was able to sit up in bed and the paresis had diminished, but the aphasia still continued; he was able to understand what was said to him, and recognize the names of things so as to be able to point out anything mentioned which lay within his view. The aphasia was also agraphic. By the next day he had become able to write his name with partial accuracy, and set down numerals called out to him, with slight confusion of the numerals required. Hemianopsia was also present, the right side of each eye being blind. The wound was situated on the back of the head, an inch and a half to the right of the median line and an inch and a quarter above the occipital protuberance, almost diametrically opposite the position habitually assigned to the speech center. The patient was not left-handed. On the other hand, as regarded the hemianopsia, the position of the wound coincided with the results of other observations and of experimentation. The paresis was to be explained as a pressure effect, or as due to a spreading surface inflammation. The wound was three inches behind the most posterior part of the motor area.

A New Urethrotome.—Dr. GERSTER presented a new instrument for the division of urethral strictures. (See vol. xlix, page 683.)

Dorsal Dislocation of the Hip.—The PRESIDENT presented a portion of the structures of the hip joint taken from the body of a man who had died ten days after receiving a dorsal dislocation of the right hip. The rent in the capsule was situated in its posterior portion, close to the labrum cartilagineum, beginning at the cotyloid notch and running upward about two inches. From its upper part a prolongation ran parallel to the axis of the neck along the posterior part of the capsule, in close relations with the tendon of the obturator internus. The labrum cartilagineum was detached, but not separated, from the margin of the acetabulum for an inch and a quarter at its posterior part, beginning at the notch. A piece of bone of new formation, which was attached to the outer surface of this part of the labrum and in close relations with, but not a growth from, the margin of the acetabulum, an inch long and from a quarter to half an inch wide, had been pushed back, and its upper quarter of an inch broken off. The ligamentum teres was completely divided. On the anterior surface of the head of the femur was a groove or contusion parallel with and close to the edge of the articular cartilage, an inch long, half an inch wide, and an eighth of an inch deep, along which the cancellous structure of the bone was exposed. When the dislocation was reproduced, this groove rested on the piece of new bone above described, and had evidently been caused by

pressure against it. The ilio-femoral ligament and the anterior portion of the capsule were untorn. When the dislocation was reproduced, the tendon of the obturator internus was stretched over the upper part of the head. The injury had been caused by a fall through a hatchway.

Fracture of the Patella.—The President also exhibited a specimen of fracture of the patella taken from the other limb of the same patient, of interest as showing the difference between a fracture produced by direct violence and one caused by muscular action. The bone was broken into five or six large pieces, which were held close together by the untorn fibro-periosteal investment of the anterior surface. Knowing that there was rarely any tendency to separation in such fractures, he had left this for the ten days of the patient's survival without any other dressing than the straight posterior splint, and, as the specimen showed, no separation had taken place.

Meeting of May 8, 1889.

The President, Dr. Lewis A. Stimson, in the Chair.

Fracture of the Patella.—The President presented a patient who had sustained a fracture of the left patella by muscular action on February 25th, which had been treated by means of the subcutaneous silk suture. The patient's condition two months and a half after the accident was as follows: No independent mobility of the fragments, full active extension, and ability to flex the knee to a right angle. A plaster-of-Paris splint was applied on March 7th, and worn constantly for about three weeks, and thereafter only during the day-time. The patient wore a check-spring. This was not a selected case, but one of fourteen thus treated since the December previous, with an equally good result in almost all. The operation had been performed without ether. The speaker expressed his increasing confidence in this operation, as it had given such excellent results in his hands, but he thought further experience was necessary to determine the measure of risk incurred; however, the avoidance of risk seemed of more importance than the time necessary for recovery.

Acromegalia.—Dr. Frank Hartley presented two women exhibiting the characteristic symptoms of this unusual disease, described by Freund, Erb, and Virchow, which consisted in a progressive enlargement of the bones of the face, arms, legs, hands, and feet, together with hypertrophy of the connective tissue and skin in these same regions. Genital difficulty was a usual though not constant symptom. Menstruation had ceased in one of Dr. Hartley's cases, the patient being then thirty-five. Only twelve cases had been recorded. The measurements in one of the two patients presented exceeded those given by Virchow as having been taken in one of his cases. These cases were to be fully reported on by Dr. Vough at a later period. The cause of the disease was unknown. Erb had said it was impossible to tell the exact cause. Freund considered the condition a species of atavism, a return to the negro type first, and then to that of the ape. The condition gave evidence of retrograde changes. In acromegalia the growth was not limited to the proportions normal to the higher types of mankind, but took on the forms common to inferior races. Persons having this condition resembled negroes at first, and later in life developed in a measure the physical structure of apes. At first the condition expressed itself physically only; afterward there was a tendency to melancholia, which resulted from being constantly watched and talked about; sometimes a kyphosis was one of the symptoms presented. Erb had considered this condition due to a tumor of the hypophysis cerebri, but post-mortems had failed to disclose a tumor in this locality, or any enlargement of the thymus or thyreoid glands.

Book Notices.

A Text-book of Human Physiology. By Austin Flint, M. D., LL. D., Professor of Physiology and Physiological Anatomy in the Bellevue Hospital Medical College, New York; Visiting Physician to Bellevue Hospital; Fellow of the New York State Medical Association; Correspondent of the Academy of Natural Sciences of Philadelphia; Member of the American Philosophical Society, etc. With Three Hundred and Sixteen Figures in the Text and Two Plates. Fourth Edition, entirely rewritten. New York: D. Appleton & Co., 1888. Pp. xvii–872.

It is natural that the author of a text-book that has proved acceptable for a considerable period of years should content himself, in preparing a new edition, with a simple revision; and certainly the faults in the old edition of Dr. Flint's work were not so many or so glaring as to call imperatively for more than occasional changes and additions. It is therefore all the more to his credit that he has chosen to rewrite it entirely. The result, of course, is more satisfactory, and it is not to be supposed that his readers will fail to appreciate the service he has done them by going through with the task.

In general plan and scope, the present edition does not differ from its predecessors, and it is not notably different in the arrangement of matter, but it presents the facts of human physiology as they are accepted at the present day, stated in such clear language and in such a natural sequence that it is easy for the student to make himself master of the subject. The author's many years of experience as a teacher of physiology in one of our largest medical schools have taught him to know just what the medical student and the medical practitioner want in a text-book of that science; they have enabled him to solve most judiciously the difficult question of drawing the line between the facts and doctrines necessary to be presented and unnecessary details of methods and means of investigation that would add inconveniently to the bulk of such a book and prove little more than confusing to the reader. As it stands, this text-book, we think, has no superior in its proper field. It is trustworthy in its statements, sufficiently comprehensive, free from irrelevant and cumbersome matter, and easily understood.

The publishers are to be commended for bringing it out in so handsome a form. The excellence of their work shows both in the typography and in the press-work. The pictorial illustrations are numerous, well adapted to their purpose, and exceedingly well made.

BOOKS AND PAMPHLETS RECEIVED.

Lectures on Pathological Anatomy. By Samuel Wilks, M. D., F. R. S., Consulting Physician to, and formerly Lecturer on Medicine and Pathology at, Guy's Hospital, and the late Walter Moxon, M. D., F. R. C. P., Physician to, and some time Lecturer on Pathology at, Guy's Hospital. Third Edition, thoroughly revised by Samuel Wilks, M. D., LL. D., F. R. S. London: Longmans, Green, & Co., 1889. Pp. xx–672. [Price, $6.]

The Physician Himself and Things that concern his Reputation and Success. By D. W. Cathell, M. D., Baltimore, Md. Ninth Edition, revised and enlarged. Philadelphia and London: F. A. Davis, 1889. Pp. 298. [Price, $2.]

Zwölf Vorlesungen über den Bau der nervösen Centralorgane. Für Aerzte und Studirende. Von Dr. Ludwig Edinger, Arzt in Frankfurt am Main. Zweite umgearbeitete Auflage. Mit 133 Abbildungen. Leipzig: F. C. W. Vogel, 1889. Pp. viii–164. [Preis, 6 Mark.]

First Annual Report of the Methodist Episcopal Hospital, located in the City of Brooklyn, N. Y., covering a Period of Ten and One Half Months, and ending October 31, 1888.

The Washington Life Insurance Company. Historical, Actuarial, and Medical Statistics. New York: Published by the Company, 1889.

Reports on the Progress of Medicine.

SURGERY.

By MATTHIAS L. FOSTER, M. D.

Focal Epilepsy cured by Trephining and Excision of the Motor Centers.—Lloyd and Deaver ("Am. Jour. of the Med. Sci.," Nov., 1888) report the case of a man thirty-five years of age who had suffered from epileptic seizures for fourteen years. Six years before the first fit he was struck on the head with a ball bat, from which blow he became unconscious and was confined to bed one week. The seizures became more and more frequent until he was admitted to the hospital. The fits commenced in the left arm, the fingers were flexed over the thumb, the hand flexed at the wrist, and the forearm flexed on the arm. The head was drawn over to the right side and the right arm and leg became rigid. The head soon began to rotate to the left, the fingers of the left hand relaxed, the mouth opened and was drawn to the left side with the right angle depressed. Clonic spasms occurred in the left arm and in the left side of the face. The pupils were widely dilated and fixed. Consciousness was preserved, at least partially, throughout the fit, which was of short duration. Paresis of the left arm and of the left side of the face followed the fit. At length the fits occurred very frequently, twenty-eight being recorded in a single day. The paresis became very noticeable. The face was relaxed, the angle of the mouth depressed, and the right side drawn over perceptibly. The orbicularis palpebrarum was not involved. The tongue was not paralyzed. The pupils were equal and responded to light and accommodation. The flexor muscles, particularly of the arm, were weakened, but did not present any reactions of degeneration. There was no change in tactile sensibility. Nothing indicative of organic cerebral changes could be found in the fundus oculi. From these symptoms it was inferred that there was an irritative lesion in the region of the junction of the middle and lower thirds of the ascending frontal convolutions on the right side, possibly involving the contiguous portions of the ascending parietal convolutions. The nature of the lesion was not clear. There was no history of syphilis, and treatment with the iodides resulted in no benefit.

A button of bone an inch and a half in diameter was removed, exposing an area on both sides of the fissure of Rolando in the region of the lower and middle thirds of the ascending convolutions. This opening was enlarged with a rongeur forceps, but nothing abnormal could be found in the bone, membranes, or cortex by gross inspection. By means of exploration with the faradaic current a point was discovered back of the fissure of Rolando where faradization produced exactly the same action of the flexors of the left arm which took place at the onset of the fits, and at a point farther in front and below, faradaic stimulation caused marked contraction of the facial muscles of the affected side. At no time during the application of the faradism did contractions of the leg muscles occur. There was no evidence of a subcortical tumor.

Three pieces of brain tissue three fourths of an inch in depth were removed—one, half an inch square, from the point back of the fissure of Rolando, and two smaller pieces anterior to it. After the operation the left arm and the left side of the face were paretic, with occasional twitches of the muscles. These ceased after six days. On the third day there was some stiffness of the fingers, which may perhaps be explained by irritation of white fasciculi during the process of healing. The temperature of the left axilla was at this time one to one and a half degree higher than that of the right. From the sixth to the eighteenth day the patient was not in a normal mental state. He became dull, then lacrymose and incoherent, and a part of the time had maniacal delirium. At times there seemed to be headache. There was much œdema of the scalp, the pupils were dilated, the left side of his face was the more flushed, and when at the worst there was some priapism. Then he began to improve, and by the end of the fifth week was practically well and had recovered some muscular power. Three months afterward the sensory condition was excellent and the motor was much improved.

Dr. Deaver prefers the lines given by Reid and Horsley to locate the fissures of the brain to Broca's, Lucas-Championnière's, Harss's or Wilson's method, because he considers them simpler and more comprehensible and quite as correct. He thus describes the lines: "First draw a line which runs from the lower border of the orbit through the center of the bony meatus of the ear. To find the fissure of Sylvius, draw a line from a point one quarter of an inch behind the external angular process of the frontal bone to a point three quarters of an inch below the most prominent part of the parietal eminence. Measuring from before backward, the first three fourths of this line will represent the main fissure, and the rest of the line the horizontal limb. The ascending limb starts at the point indicating the termination of the main fissure—*i. e.*, two inches behind the external angular process—and runs from this vertically upward for about an inch. The fissure of Rolando is found by drawing two lines from and perpendicular to the base line to the top of the head, one passing through the depression in front of the ear and the other through the posterior border of the mastoid process. The fissure of Rolando is now represented by a line drawn from the point of intersection of the posterior vertical line with the line connecting the nasal eminence with the external occipital protuberance, indicating the great longitudinal fissure, to the point of intersection of the anterior vertical line with the line representing the fissure of Sylvius, upon either side of which are the ascending frontal and parietal convolutions."

Cerebral Abscess.—Dr. Thomson ("Med. Chron.," December, 1888) reports a case of cerebral abscess cured by trephining. The patient was a boy eleven years of age who had received a blow from a cricket bat a year before, and had since then often complained of frontal pain, especially on stooping. On one occasion the headache lasted a week, and was accompanied by vomiting after every meal. When brought to the consulting-room headache and sleeplessness had persisted for two days, but the pupils, pulse, and temperature gave no indication. Three days later the pulse was 62 and the temperature 99° F. The next day the pulse was 56, the temperature 99·8°, and the patient was unable to articulate. He showed irritability on being touched. The pupils were normal. The skull was trephined over the site of the injury, and a director was passed an inch into the brain substance, but no pus was found. Sixty hours after the operation he returned to consciousness and the cerebral symptoms abated. There was a slight bulging at the wound, which increased so that two days later the wound was reopened and a considerable amount of flaky pus was evacuated. The wound had to be reopened twice subsequently, at intervals of one and two weeks. Eventually the patient made a complete recovery.

Antesternal Dislocation of the Clavicle.—Ducket reports a case of this rare form of dislocation ("Lancet," Oct. 6, 1888). The patient was swimming on his left side and attempted to turn upon his back when he "felt something give way in his neck." When seen there was a marked projection of the sternal extremity of the left clavicle forward, inward, and somewhat downward upon the anterior surface of the sternum, over which the skin was tightly stretched. The dislocation was very easily reduced and the parts were easily retained in position.

Hernia into the Foramen of Winslow.—Treves ("Lancet," Oct. 13, 1888) makes a very valuable contribution to our knowledge of this form of internal hernia by an excellent description of the clinical history, operation, and post-mortem discoveries in a case which came under his care. The clinical history indicated a complete intestinal obstruction involving the colon not far from its commencement, and some peritonitis in the epigastric region. An exploratory laparotomy was performed, hernia through the foramen of Winslow was diagnosticated, and two or three feet of small intestine was reduced, but another coil could not be reduced, as it was impossible to enlarge the opening through which the bowel had passed. On autopsy, it was found that the cæcum, the ascending colon, and part of the transverse colon had passed through the foramen of Winslow and had become strangulated. The cæcum lay at the extreme left of the abdominal cavity, had forced its way through the anterior layer of the gastro-hepatic omentum, so that the vermiform appendix was lying on the anterior aspect of the lesser

curvature of the stomach close to the œsophagus. The strangulated colon was gangrenous in two places and had ruptured. Outside or beyond the foramen of Winslow the colon bent very sharply to the left and was again sharply bent at the splenic flexure. A few inches of the ileum were found in the hernial cavity, and lay at the seat of stricture behind the colon. Reduction of the strangulated colon could not be accomplished until the hepatic artery, portal vein, and bile duct had been divided. The foramen of Winslow admitted four fingers. It was evident that the cæcum was undescended and had led the way through the foramen. All the other viscera were normal. Only four other cases of this condition appear to be on record.

Amputation of the entire Upper Extremity.—May ("Ann. of Surgery," December, 1888) reports two cases of amputation in the contiguity of the trunk according to the mode of Paul Berger. Each case was for malignant tumor of the upper end of the humerus, in which exarticulation would have been evidently insufficient to eradicate the disease. He divides the operation into three stages. In the first he resects the portion of the clavicle between the attachments of the rhomboid and coraco-clavicular ligaments through an incision extending from one inch outside the sterno-clavicular joint along the clavicle to its external end. In the second stage the large vessels are secured. To do this, he cuts across the subclavius, defines the upper border of the pectoralis minor, and ligatures the cephalic vein and any branches of the acromio-thoracic artery which may interfere. The external anterior thoracic nerve appears prominently and serves as a guide to the subclavian artery. If it is followed upward it leads between the artery and the vein. The artery is tied with two silk ligatures a little more than half an inch apart and divided, and the vein is then treated in a similar manner, but with more care and delicacy, after holding the arm vertically for a couple of minutes to empty it of blood. The supra-scapular vessels which cross the upper part of the wound are similarly divided. In the third stage the flaps are formed and the limb removed. An incision is made from the middle of the first incision down the front of the shoulder, across the inner side of the arm in a backward direction to the tip of the scapula. The pectorales are divided, then the brachial plexus; the arm, which hitherto has been kept down to the side, is drawn away and the latissimus dorsi and teres major are cut. The patient is then rolled on to the sound side, the limb drawn across the chest, and an incision carried from the outer end of the first straight down the back of the shoulder to the angle of the scapula, where it joins the preceding. The integument is dissected up as far as the vertebral border of the scapula, and the limb is severed from the body by dividing close to the bone the muscles attached to it. The flaps so formed he found to fit admirably.

The necessity for so extensive an amputation seldom occurs. Berger collected fifty cases of the operation done by all methods. It is indicated in tumors of the scapula necessitating removal of the greater portion of that bone; in tumors of the upper end of the humerus—if benign, of such size as to render exarticulation impracticable—if malignant, englobing the articulation, invading the scapula or its muscles, the skin over the deltoid, or, above all, the lymphatic glands in the axilla; and in traumatic cases with extensive shredding and laceration of the integument and tearing away of the limb. The causes of death range as hæmorrhage, entrance of air into the veins, shock of operation or injury, purulent infection, secondary hæmorrhage, exhaustion, and sloughing. Pure operative shock is not a marked feature—much less so than at the hip.

Club-foot.—At the meeting of the British Medical Association ("Brit. Med. Jour.," Oct. 27, 1888) a very interesting discussion took place on this subject. Mr. Parker considers the cause to be the environment *in utero*. When the cause begins to act early the deformity will be a very fundamental one, but when it begins to act at a later period the deformity will be less severe. Paralytic talipes is a secondary and accidental condition, differing entirely from the congenital condition. The only constant anatomical condition is the ligamentous hindrance to rectification, which is more or less pronounced. The chief ligamentous combination consists of the astragalo-scaphoid ligament blended with more or less of the anterior portion of the internal lateral ligament of the ankle joint and the capsular ligament between the scaphoid and internal cuneiform.

Operations, when necessary, should be performed at the earliest possible moment, and all of the requisite cutting should be done at once. The chief guide in the treatment is the amount of rigidity present, which is greater in proportion as the ligaments are implicated. With the exception of the tendo Achillis, it is seldom if ever necessary to divide tendons unless together with the ligaments associated with them at their insertions. The deformity should be rectified at once as much as possible.

Dr. Ogston recommends rectifying the deformity as much as possible by means of manual pressure, and then applying a plaster bandage made of the best quality of plaster rubbed into fine bandages, next to the skin, without intervening flannel or muslin. This is removed at the end of six weeks and the process repeated. If the bandage be not pulled tight during its application, but be laid loosely around, no constriction results, but merely accurate adaptation. The adducted or varus position should be entirely corrected before the equinus is meddled with, and then the tendo Achillis should be divided. Three to eight sittings are necessary to cure the adducted position and one to three for the plantar flexion.

In very bad cases he seems to prefer Lund's operation of excision of the astragalus. Linear osteotomy of the tarsus he does not consider a good method. Cuneiform exsection gives a result pretty to the eye, but after it is done the anterior part of the foot is of no assistance in walking. He has also obtained good results in some cases by osteotomy of the tibia and fibula just above the ankle joint.

Dr. Whitson maintains that the only method which holds out any hope of permanent benefit in talipes varus after the second or third year is the extraction of a portion of the tarsus. The soft structures might be stretched if they alone were at fault, but the resistance of the osseous deformity is much too formidable to be overcome by mechanical means. After operation, mechanical treatment must be diligently pursued for from twelve to eighteen months. For this purpose he recommends incasing the foot in paraffin boots which should be renewed every month.

Dr. Buchanan divides cases of talipes varus into three classes: First, those of minor degree in which the deformity depends on shortening and rigidity of the tendons, fasciæ, and ligaments, which can be remedied by manipulation and fixation; second, cases in which the abnormal position of the bones is maintained by such a degree of tension and rigidity of the soft parts as to render tenotomy necessary of the tendo Achillis, or of the plantar fascia and the muscular substance attached to it. To divide the latter he introduces a tenotomy knife at the inner edge of the foot opposite the tuberosity of the scaphoid, passes it superficial to the plantar fascia till the point reaches the middle of the sole of the foot, turns the edge of the knife vertically, elevates the handle to depress the point, and cuts through the plantar fascia and the muscles beneath it till the point is over the articulation between the head of the astragalus and the scaphoid. Here he cuts the tendon of the tibialis posticus and the deep ligamentous fibers, thus freeing the astragalo-scaphoid joint, which is the one upon which the incurvation of the foot hinges. In his experience no bad results have attended this somewhat heroic incision. Third, cases in which the bones have been so altered by pressure from walking on the distorted foot as to require excision of a portion of the tarsus for their correction. The form of operation should be chosen to suit the individual case.

Mr. Symonds employs the chain saw passed around the tarsus at its greatest convexity for the purpose of tarsotomy, and says that it is a method superior to any other because it is more simple and more easily executed, because practically no deformity is left, and because it is almost a subcutaneous operation.

Dislocation of the Metatarsus.—Atkinson ("Lancet," Dec. 1, 1888) reports a case of this rare dislocation which resulted from a fall. A prominence was found corresponding with the line of the tarso-metatarsal joint. Posterior to the prominence there was a hollow where the articular surfaces of the four outer metatarsal bones could be felt. The base of the first metatarsal was raised a quarter of an inch above the level of the internal cuneiform. The front of the foot was everted, forming a distinct angle with the tarsus. The extensor tendons on the dorsum were prominent. The length of the foot from the heel to the tip of the hallux was half an inch less than that of the other foot; from

the external malleolus to the tip of the fifth toe it was a quarter of an inch less. The dislocation was easily reduced under chloroform.

Unilateral Adductor Paralysis of the Larynx due to Reflex Nasal Irritation.—Stewart ("Lancet," Oct. 13, 1888) reports two cases which tend to confirm the view that laryngeal paresis may be due to nasal irritation. In both of the cases given the paresis was unilateral on the right side, and the adductors were at fault; in both, the right middle turbinated bone was much enlarged and was pressing on the septum; and in both the laryngeal symptoms disappeared on removal of the nasal trouble.

Congenital Cyst of the Urachus.—Lawson Tait ("Lancet," Oct. 6, 1888) reports a case in which a cyst of the urachus projected into the pelvis of a woman, aged twenty-eight, completely filling it. It was filled with fœtid, thick, flaky pus, and was attached to the abdominal wall by a short sessile pedicle more than two inches in diameter. It was easily removed.

Cholecystotomy.—Torrance ("Brit. Med. Jour.," Dec., 1888) reports a case in which he removed forty-three small calculi from the gall-bladder. They were round and closely packed together. The patient made a good recovery from the operation.

Danger of operating upon Persons with Splenic Enlargement.—A reminder of conditions not surgical under which it is dangerous for him to operate is occasionally useful to the surgeon. So an article by Mr. Williams ("Lancet," Nov. 24, 1888) on a fatal case of litholapaxy is very instructive. This patient was suffering from splenic leucæmia, a condition which militated greatly against the success of any operation. But that persons with simply enlargement of the spleen are liable to serious risks if operated on is shown by two cases furnished by Mr. Cadge. It is also the opinion of Sir Joseph Fayrer that it is best to avoid, if possible, any operation not absolutely necessary to save life in cases of splenic enlargement, even though there may be no leucæmia or apparent anæmia present.

An Antiseptic Solution.—Rotter ("Ctrlbl. f. Chir.," No. 40, 1888) advocates the following solution as effectively antiseptic while not likely to produce such toxic symptoms as occasionally follow the use of the generally employed solutions of carbolic acid and bichloride of mercury. He considers these points to be of major importance to an antiseptic solution, and claims that these are met by the one which he proposes. 1. The antiseptics must be cheap and easily kept. 2. The solution should remain perfectly clear without color or odor. 3. The materials should be always readily soluble in common spring water; and 4, should be dry and easily carried about. The formula he gives, for a solution in one litre of water, is:

℞ Hydrargyri bichloridi	0·05	grm.;
Sodii chloridi	0·25	"
Acidi carbolici	2·00	"
Zinci chlorid, Zinci sulphocarbolatis, āā	5·00	"
Acidi borici	3·00	"
Acidi salicylici	0·60	"
Thymolis	0·10	"
Acidi citrici	0·10	" M.

He arrived at the formula theoretically and professes to have proved its value practically.

Miscellany.

The Philadelphia "Times and Register" thus states its position with regard to the matters concerning which we quoted from the "Druggists' Circular and Chemical Gazette" in our last issue:

"The 'Druggists' Circular' continues the attack upon us which was opened by its manager at Newport. We desire to say at once that every statement and insinuation therein made concerning the 'Times and Register' is utterly and unqualifiedly untrue. Neither manufacturers nor patent-medicine houses own or control our company. It is not a trust and has no designs upon its contemporaries. The absorption policy suggested only exists in Lillard's imagination. This, and the impudent attempt to represent the 'Times and Register' as favoring substitution, are simply intended to create a little prejudice against our enterprise in the minds of publishers and advertisers."

"By one of those mistakes which, we are assured, occasionally happen in even the best regulated families, an annotation slipped into one of our late issues which was worded in such a manner as to give rise to misapprehension. It scarcely seems necessary to say that neither the 'Times and Register' nor any member of its editorial staff favors or desires in any manner to condone the wrong of substitution. Our record in that matter is certainly clear, and there is scarcely a medical journal in the country which has not quoted approvingly our editorial condemnation of this practice, and defense of the physician's right to prescribe whatever he considers best, and the pharmacist's duty to give exactly what is ordered, no matter what his individual opinion thereupon may happen to be. We have even gone to the trouble and expense of having special examinations made of the various pepsins and fluid extracts in the market, and demonstrated the necessity under which the prescriber rests of designating the manufacturer upon whose fluid extract he is basing his dosage; as, in the case of belladonna, we found a diversity ranging from 0·18 to 0·58 between the samples tested. The writer of the annotation headed 'A New View of Substitution' had no thought of defending the manufacturers of febriline, whoever they may be (we do not know the parties, and have no advertising or other interest in them), in what was an undoubted wrong—the selling of one thing under the name of another. Even if commercial quinine does contain, as is claimed, a portion of quinidine, this is also a wrong, and does not constitute a valid reason for their action. The writer of the paragraph labored under the hallucination that his item was ironical, and that he was making a very passable poke at himself and his brother physicians when he suggested that they were themselves doing the very thing they so strongly objected to in the case of the druggists. Like Mark Twain's celebrated joke about the Indian statue, however, this one seems to have been so far fetched that nobody saw it."

An Exanthem following the Subcutaneous Use of Antipyrine.—Mazzotti ("Giorn. ital. del. mal. ven.," etc., 1888, xxiii, 210) employed subcutaneous injections of antipyrine over the sciatic nerve, seven grains and a half once a day, for the relief of sciatica, and on the third day of the medication an exanthem appeared in the region of the injections. It consisted of raised round or oval papules of the size of a lentil or a bean, of deep brick-red color, and grouped, sometimes forming irregularly shaped figures. The eruption reached its height in twenty-four hours, and then began to fade slowly. On the fifth day of the eruption an unexpected change took place in the exanthem. Some of the papules were much paler and more flattened; others had assumed a bright-red color, and upon them had arisen small, pinhead-sized vesicles containing nearly clear serum, which were confluent. There were also groups of vesicles along the outer side of the leg and on the dorsal and plantar surfaces of the foot. A zoster had developed, extending beyond the site of the original eruption. It was noticeable that upon the original site of the eruption the zoster showed itself exclusively upon the original papules. The zoster ran its regular course.

The late Dr. Isaac O. Lea.—At the last meeting of the Medical Society of the County of Richmond the following preamble and resolutions were adopted:

Whereas, The announcement through the public journals of recent date has informally brought the sudden and untimely death of our late esteemed associate, Dr. Isaac O. Lea, to the attention of this society; therefore,

Resolved, That the Medical Society of the County of Richmond recognized in the late Dr. Lea one of its oldest, ablest, and most experienced members; a physician who, for the past thirty-four years, had held a position in the medical profession of this county second to that of none of his compeers; a genial, warm-hearted, and clear-headed man, who, when questions of vital interest to the profession were under discussion before this society, never failed to take a prominent part in its deliberations and a conservative position in regard to its action thereupon; a gentleman always in all his relations to his associates,

and a physician whose place among us it will be difficult to fill. Peace to his memory.

Resolved, That this society tender its profound sympathy in their bereavement to the several members of our deceased associate's family, and that the secretary be ordered to forward a copy of these resolutions, properly engrossed, to the son of the deceased, as the family representative, and provide that the same be published in the county papers and in the New York "Medical Record" and the "New York Medical Journal."

Committee: F. E. Martendale, *Chairman*, F. U. Johnston, J. Walter Wood, May R. Owen, *Secretary*.

The City Board of Health.—The office of Sanitary Superintendent having been resigned by Dr. Walter De F. Day, the secretary of the board has sent him the following letter, dated July 30th:

"The Board of Health directs me to inform you that it has this day, with great reluctance, accepted your resignation of the office of Sanitary Superintendent, which you have long filled to the entire satisfaction of the public and of this department, and with great honor to yourself. The board desires me to officially express to you its high appreciation of your valuable services as the chief executive officer of this department, of your ability and integrity, and of your uniform kindness and courtesy in all your official relations. The board regrets that your health obliges you to dissolve your connection with this department, and thereby deprive it of the services of an officer who has its entire confidence."

We are informed that the appointment of Dr. W. A. Ewing as Dr. Day's successor was favored by the president of the board as being for the best interests of the department and the public service. Dr. Ewing served the board in various capacities from 1870 to 1886, and is considered thoroughly familiar with all the work of the office to which he has now been appointed.

The Walden California Brandy.—The "Merchant and Viticulturist," of San Francisco, publishes a translation of an article in the "Destillateur-Zeitung," in which Mr. Edward Walden, of the firm of Walden & Co., of California, is represented as having said to its representative:

"The manufacture of cognac out of California wines is not at all new. A number of growers have tried it for years, generally, however, without success. The conditions for manufacturing brandy in California are identical to those of Europe; only few districts producing wines suitable for it. It was a sore mistake of many a grower to believe that any good sound wine, distilled anywhere, would produce a cognac like the French, the only kind in demand; like those who have tried the same thing in Hungary, Spain, Portugal, and other countries, they have met with sad disappointment. It is only after a number of experiments and close observation that I have been able to determine which are the most suitable wines and where to find them. My distilleries are now north of San Francisco in the Napa and Sonoma valleys. To manufacture cognac I use but very young wines from grapes of my own vineyards or those of my neighbors, pressed on my own premises. Early in September the fresh-cut grapes are brought to the pressing-house and the work begins at once. Immediately after the first fermentation we begin to distill, and the work continues until the middle of February. Buying older wines at the vineyards for distillation I have abandoned entirely. I can only guarantee the quality of my product and its subsequent aging when the pressing has been controlled by me. For the manufacture of cognac in California I consider this of the utmost importance. We have great difficulty in keeping light wines of good quality. The temperature is evenly warm. We lack the cold of winter, the freshness of spring, and the coolness of fall. A winter like that in Germany we do not know. Wines pressed in the fall often become spoiled the following summer, and this for the simple reason that, with but few exceptions, the wine growers have not sufficient room in their cellars or proper places to keep the wine. It is of frequent occurrence that wines more or less gone are used, to save them from entire destruction, for the manufacture of so-called cognac, a poor and miserable product, not worth a third of the cognac manufactured from sound, fresh wines. Cognacs made of spoiled wines have a very peculiar ethereal taste, which becomes stronger as it gets older, and which after a while does not even remind you of anything like cognac. In my distillery cognacs are brought from the still at 14° above proof (equal to 75 Tralle), and as they come from the still they are delivered to the trade. For this reason no sugar is added to my cognacs, as is the case with most of the French cognacs, and this is not without value to the German consumer. The import duty on cognacs to which sugar has been added is, I understand, 180 marks per 100 kilogrammes, while the duty on my production is only 125 marks."

ANSWERS TO CORRESPONDENTS.

No. 278.—We do not call to mind any recent articles on the subject. One form of the affection, the *entérite glaireuse* of the French, is well treated of in Nonat's "Traité pratique des maladies de l'utérus," etc.

No. 279.—A weak lotion of corrosive sublimate has been recommended.

No. 280.—1. It is an excellent work. 2. Letheby, "On Food, its Varieties, Chemical Composition," etc. New York, 1872.

No. 281.—Try Labarraque's solution.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

OPERATIONS UPON STRUMA.*

BY FRANK HARTLEY, M. D.

MY interest in this subject is due not only to the privilege which I have enjoyed of seeing a goodly number of cases operated upon by others, but especially to six cases in which I have operated for enlargement of the thyreoid gland myself. These cases comprise one for struma fibrosa —total thyreoidectomy; two cases of partial thyreoidectomy —one for simple adenoma (struma hypertrophica simplex), the other for substernal vascular adenoma; one case of enucleation for struma cystica, one case of Kocher's resection for struma hypertrophica simplex involving only a portion of one lobe, and one case of partial thyreoidectomy involving one lobe, in which the sarcoma had extended beyond the capsule on its external surface. This operation was done not with the intention of a radical cure, as it was too advanced to expect any such result, but only for relief from the impending asphyxia. The patient is now free from her difficulty in respiration, although there is a return of the tumor beneath the sterno-mastoid muscle. The length of time elapsing from the operation is now nearly two months. I take the liberty of reporting to the society my experience in these cases for the purpose of obtaining an expression of opinion on the part of those who have met with this class of cases.

Although we must admit that the good results of to-day (0·8 per cent.) for simple goître are largely due to the care which we bestow upon the treatment of the wound, we must not overlook the fact that the technique of this operation as practiced by Kocher, Miculicz, Liebrecht, and others is important, and is dependent upon two principles—the one, the management of the hæmorrhage; the other, the avoidance of the recurrent laryngeal nerve.

Of the arteries and veins, by far the more important are the veins. The thyreoidea ima artery, existing only once in ten cases, is the only artery for which we are to be especially careful, since the other arteries are less liable to anomalies, and can be easily found. The veins are, however, more numerous, larger, and more important than the arteries, and an exact knowledge of them is necessary for a bloodless operation. Of these veins, the venæ subcutaneæ colli have always been prominent and quite important, on account of their relation to the external incision. The external jugular vein has only been seen in one case, in which there was an exceedingly large development of the lateral lobe. The oblique jugular vein has been present in three of the cases, but in only one did it require ligature. In all cases the anterior jugular veins were present and required ligature. Of those veins lying upon and within the external capsule of the gland, the communicating branch between the superior thyreoid veins, when present, has seemed of more importance than the vein itself, probably from the fact that one is more liable to overlook it than the main trunk. Its ligature is important, for it receives often a communicating branch from the anterior jugular veins above their point of usual ligature.

The superior accessory thyreoid vein was present in three in five cases, and in two was as large as the superior thyreoid vein itself. Of the veins about the lower border of the gland, the venæ thyreoideæ imæ have been marked, and in each case the right has been larger than the left. The inferior accessory thyreoid vein has been present in two cases, and in the remaining three cases the inferior thyreoid vein was present without an accessory. As to the position of the recurrent laryngeal nerve to the inferior thyreoid artery, the nerve has been found in all these cases where it was exposed (5) in front of the artery, and crossing it while its course was transverse; but when the artery divides into its branches its relation is altered so that its position is on a plane posterior to the artery and parallel to it. I have examined in all about twenty cadavers for this purpose, and have found the same relation to exist, except in three cases, where the nerve passed between branches of the artery. This seems to be the case only when the artery divides early in its course into its several branches.

Wölfler first drew attention to this matter, and Kocher has shown that the relation of the artery to the nerve is important, and is a constant one in that the artery from the thyreoid axis passes transversely, slightly ascending, lying at first upon its outer side, and then behind it. When the artery meets the trachea it ascends upon its inner side, and, dividing into its branches, suppplies the posterior surface of the lateral lobes. For this reason, the only safe points at which we may ligate the artery are either at its origin close to the carotid artery, or its branches must be tied close to the capsule of the gland.

Of the various incisions used, I have, in partial or complete extirpations, preferred that of Kocher's to the median or that along the anterior border of the sterno-mastoid muscle. It gives the most perfect and complete survey of the whole field of the operation, and an excellent chance to ligate the veins and arteries without difficulty. So perfect is the field offered by this incision that the operation can be done with quite as much ease as in a dissection upon the cadaver. The veins and muscles are recognized in their respective relations to one another, and are undisturbed by the line of incision or the slight traction given to the margins of the wound by the retractors. Moreover, the exposure of the trachea where the gland is attached and of the inner surface of the inferior horns of the lateral lobes where the thyreoideæ imæ veins are present, and which in struma substernalis must be rendered free for ligation, seems to be perfect. The upper oblique portion of the incision, besides dividing the skin and the platysma muscle, crosses the anterior, oblique, and external jugular veins transversely, or at least obliquely, so that they may be secured by double ligatures before proceeding further with the operation.

The median and oblique incisions seem to me to be best fitted to those cases in which we are to remove strumous nodules either by enucleation (Socin) or *évidement* (Koch-

* Read before the New York Surgical Society, May 22, 1889.

er), but not for partial or complete thyreoidectomies or resections (Kocher).

As to the treatment of that portion attached to the trachea, the isthmus, I have made use of Miculicz's method in two cases, which consists in fastening the struma in the neighborhood of the isthmus and trachea and by squeezing out the glandular portion to leave a pedicle consisting only of the connective tissue representing the tunica propria of the gland. This pedicle, which is made at a point where the gland is not attached to the trachea, may be treated as in ovarian tumors. It seems to me that this method is preferable to the usual one of dissecting the gland from the trachea on account of the safety one feels in respect to the nerve without any increased concern as to the conduct of the pedicle in the wound. It is true, however, that in Kocher's resection one is perfectly safe so far as the nerve is concerned, but I can not see that, as Kocher states, the danger is so much greater in this method that we are to prefer his resection in most cases of enlargements of the thyreoid on this account alone.

Tracheotomy has been carefully avoided in these cases in which thyreoidectomy was performed, and would only have been performed in case of immediate danger of suffocation, such as is generally the result of stenosis of the trachea from the pressure of substernal strumæ or severe tracheitis or a double recurrent paralysis. In all other cases it appears to me best to avoid it as long as possible, allowing, as Kocher suggests, an assistant to press upon the trachea from before backward, maintaining an oval or rounded lumen and giving a free ingress of air until the operation is finished, when, unless the rings are softened to the last degree, if the head is fixed, the danger will not recur.

The perfect success of this method was shown to me in one case in which the danger of immediate suffocation seemed impending until the pressure of the finger upon the deformed trachea restored it to its proper shape. It was maintained in this shape by the use of sutures passing through the tracheal walls, as suggested by Kocher.

This method consists in passing one suture through the lateral wall of the trachea without injuring the mucous membrane, over the anterior surface of the trachea, and through the lateral wall of the opposite side. The ends of the suture are then drawn tightly and tied over the anterior surface. In this way the lateral walls are drawn away from one another, the sharp anterior angle is pushed backward, and the rounded form of the trachea is more or less completely established.

It has been suggested to sew the lateral walls to the soft parts upon each side and thus attempt to maintain the size of the lumen by giving support to the lateral walls. With this method I have had no experience. It does not, however, suggest itself to me as so perfect a method as the first one. The sutures in the first method maintain the position of the walls to one another as given them by the pressure of the finger during the operation, and exert their pressure directly upon the trachea itself and not through traction upon movable tissues in the neck. This method is, of course, applicable to the majority of such cases, since the deformity in the trachea is more frequently due to approximation of the lateral walls than of the antero-posterior walls, or of one wall alone to the other. Should there be a more or less complete absorption of the tracheal rings, so that the trachea becomes practically a membranous tube whose walls will collapse from atmospheric pressure as soon as the support given them by the struma is removed, nothing is left but tracheotomy with the attendant danger of septic bronchopneumonia, cervical and mediastinal cellulitis.

The selection of the mode of operation in these cases has been guided by the fact that as much of the thyreoid gland as is not involved in the struma should be left, not only for the avoidance of cachexia strumipriva, but for the prevention of the deformity in the neck as the result of the loss of the gland. Moreover, the variety of the struma, its size, vascularity, the extent of the involvement of the gland, and the character of the pathological condition existing in the gland will decide for us the particular method best suited for its removal.

Dependent upon the observations that a cachexia will not occur if a portion of the gland remains, Miculicz has recommended his so-called "resection" of the thyreoid gland in order that not only a portion of the gland may be left, but also that any injury to the nerves or vessels may be avoided. Instead of this mode of operation, but for the same reasons, Wölfler recommended the ligature of the thyreoid arteries in order to induce an atrophy of the gland. Such a method might be of advantage in the vascular or aneurysmal variety, but certainly not in the colloid or cystic.

Rydygier has lately reported sixteen cases in which ligature of the arteries has been performed—in fifteen all four arteries, and in one only the two arteries upon one side. These cases have been observed one year and a half after without return of the struma or the development of cachexia strumipriva. He seems to limit the operation to the recent parenchymatous struma. The methods of ligature used have been those of Velpeau, v. Langenbeck, Drobeck, and Rydygier. It is alleged for Rydygier's method that the cosmetic result is much better, as the cicatrix is concealed beneath the collar. I have no experience in this method of operation.

The intracapsular or intraglandular enucleation of the struma, as recommended by Julliard and Socin, however, seems to be the most certain and radical of the methods for partial extirpations, with the slightest possible danger from hæmorrhage or injury to important nerves.

In cystic strumæ the intracapsular enucleation first recommended by Julliard seems to be the safest and least dangerous of all methods. It requires the shortest time for healing and is easily accomplished. The bleeding is slight, as the vessels of the capsule are already obliterated in large part.

In parenchymatous strumæ the intraglandular enucleation recommended by Socin and Garré is applicable to those cases in which small or moderately large and circumscribed nodules are present and in which the vascular supply is not marked. Kocher's *évidement* or evacuation differs from the enucleation in that, instead of dividing the glandular capsule down to the struma and shelling it out, one incises immedi-

ately through the strumous nodule and removes it with the fingers or sharp spoon. This method Kocher recommends for those cases where the separation of the strumous nodule from its surrounding tissue is too difficult to accomplish and the hæmorrhage from the gland is excessive, or where, during an operation, dangerous symptoms of suffocation are present. This condition of affairs is seen especially in those cases consisting of large, soft, and circumscribed nodules with abundant vascular supply.

These two methods are less liable to be followed by tetany or cachexia strumipriva than other methods of partial thyreoidectomy. In fifty cases Socin saw no case of tetany or cachexia.

Should the parenchymatous goître involve the whole of one half of the gland, or be composed of a large number of cysts or nodules not covered by the parenchyma of the gland, a partial thyreoidectomy is to be preferred to an intracapsular method, as the bleeding is much less and the time required for the operation shorter.

In just such a case P. Bruns lost his first case in seventy consecutive operations. If we are obliged to select an operation for the removal of one lobe, or if both lobes be so involved and pressure upon the trachea and œsophagus such as to give symptoms of impending suffocation, struma bilobaris or circularis, struma maligna, or the thyreoiditis diffusa, we can do no less than the partial or total thyreoidectomy. Such conditions put the life of the individual in immediate danger, and we are forced to use a radical method to overcome the immediate danger, although in so doing we expose the patient to risk of a cachexia strumipriva amounting to thirty-three per cent. in total operations and one per cent. in partial ones. In order to avoid just this possibility, one selects either Miculicz's or Kocher's resection. In the first method we leave behind a certain amount of the gland and avoid to a large extent doing injury to the recurrent nerve; but the vascular supply of this portion left has been more or less interfered with in the operation, and it renders the result somewhat uncertain if we rely upon the portion remaining for any functional action.

The second, Kocher's resection, which has been recommended to supersede Miculicz's simply on account of the possible danger of injury to the nerves in the application of the ligature to the stump, has also the great advantage of leaving behind a portion of the gland normally supplied with blood. This method, which we may consider as applicable to the greater number of cases of struma, except the malignant, diffusely inflamed, and the diffuse hypertrophic goîtres, for which extirpation alone is applicable, consists in two principal steps: 1. If we wish to preserve as much of the healthy gland as possible for functional activity, we omit the ligature of the thyreoid arteries; if not, this is done as in the operation of extirpation. 2. Enucleation of the diseased portion according to Kocher's method. This operation may be said to be an enucleation with a circular division of the gland, and with or without ligature of the arteries.

The extirpation of the gland, either partial or complete, is to be reserved for those cases not applicable to some of the above methods, because of the extent of the involvement of the lateral lobe, or for the malignant strumæ, the diffusely inflamed strumæ (thyreoiditis diffusa), or the hypertrophic and diffuse variety with impending symptoms. It appears to me that we must be very careful in our selection of the extirpations, for we are often not certain of the condition of the opposite lobe in the partial operation, nor can we as yet place much reliance upon the accessory thyreoid glands to carry on the loss of function from complete extirpation. Although these glands, together with a processus pyramidalis, have been shown by Streckhusen, Zuckerkandl, and Gruber to be by no means uncommon and to be situated above and below the hyoid bone (twenty-eight per cent. and twenty-one per cent.), below the isthmus and upon the arch of the aorta (Carle), upon the lateral borders of the lobes (Madelung), as well as posterior to the thyreoid gland between the trachea and œsophagus, or œsophagus and vertebral column, and to exist in about one half of the cases, still the development of cachexia strumipriva amounts today to thirty-three per cent. for total extirpation, and for partial extirpation to one per cent. I do not think we can disregard this sequela to this method of operation, and I think that we should, considering the frequency of it, limit the operation as much as possible. So far as we know at the present day, the theories of Kocher, Baumgärtner, Gussenbauer, Reverdin, and Bircher are not substantiated by the results of operations upon man. When we compare these with the experiments upon animals made by Dr. Halsted, now of Baltimore, with the clinical observations as collected by the Clinical Society of London, and the exact physiological investigations of Horsley and Fuhr, we are led to the belief that the symptoms following the loss of the thyreoid gland, either from operation or as the result of disease, should be ascribed, not to any injury to the nerves nor to any general disease existing before the operation, but to the loss of a function which is indispensable to the proper activity of the nervous system (Bruns). Considering these facts to be true, we would assume: 1. For aneurysmal or vascular struma, possibly recent hypertrophic strumæ, ligature of the thyreoid arteries (Wölfler). 2. For cystic strumæ, enucleation (Julliard); when involving the whole of one lobe or both lobes, extirpation, partial or complete. 3. For parenchymatous strumæ, when circumscribed and not vascular, enucleation (Socin); when diffuse, ligature of the thyreoid arteries (Rydygier); when confined to one lobe, or if both lobes are involved and composed of a large number of small cysts and nodules with no parenchyma uninvolved, a partial or complete thyreoidectomy is alone admissible, especially if there are present dangerous symptoms of impending suffocation. 4. In by far the greater number of cases of struma a Miculicz's or Kocher's resection is indicated, and the selection is to be made according to the value of the portion remaining in the prevention of the cachexia strumipriva. 5. Extirpations: complete are to be reserved for the cases of struma maligna, thyreoiditis diffusa, struma bilobaris, with impending symptoms of suffocation; partial, to those cases in which the involvement of one lobe is complete, so that no parenchyma is left which can be saved.

In the cases operated upon I have not seen any compli-

cations in wound treatment except in one case,* nor has there been any case of tetany or cachexia strumipriva. In one case of large substernal struma a left recurrent paralysis has followed, which, however, was not present at the time of the operation, nor in the hospital before his discharge. How to explain this otherwise than as from cicatricial contraction I am at a loss.

PERIPHERAL PARALYSES DUE TO CARBONIC-OXIDE POISONING.†

By GEORGE W. JACOBY, M. D.

The occurrence of poisoning by the inhalation of carbonic-oxide gas is a well-known fact; it is also acknowledged that the cases of poisoning ensuing upon the inhalation of the products of combustion which are developed from glowing charcoal, mineral coal, and turf, or from the incomplete combustion of wood, when burned in a closed room, are dependent upon the deleterious action of this gas. Naturally, the composition of the gas will vary greatly, according to the quality and quantity of the coal burned, as also according to the duration and degree of combustion.

The products of such combustion are, on the average, composed of about five per cent. of carbonic oxide and six per cent. of carbonic acid, in addition to seventy-nine per cent. of nitrogen and ten per cent. of oxygen. Purified illuminating gas, which contains from eight to ten per cent. of carbonic oxide, probably also owes its poisonous qualities to this gas. It is for this reason that I feel myself justified in referring to the two cases which form the incentive to this communication together, although in the one instance the poisoning was due to coal gas and in the other to illuminating gas.

The action of carbonic oxide upon the animal organism is recognized by all writers upon the subject as being a double one—that upon the blood and that upon the central nervous system. A few inhalations of the pure gas produce convulsions, frequently also sudden paralysis, anæsthesia, and long-continued unconsciousness, the gas in this instance acting as a direct poison upon the brain and medulla oblongata. The walls of the vessels also lose their tonus, become dilated, and rupture easily.

Autopsies have revealed large foci of softening in the brain, hæmorrhages into the meninges, and capillary apoplexies in the brain substance, but there are as yet no pathological or experimental data showing an action of the gas upon the peripheral nerves. Clinically, where we are not dealing with the pure gas, our knowledge of the action of this poison upon the peripheral nervous system is, as will be shown, also very meager, although *a priori* there does not seem to me to exist any valid reason why the peripheral nerves should in this case be exempt from the same influence which we know is exercised upon them by a variety of other poisons, infectious as well as chemical. The symptoms, as described in the various reported cases, consist of a burning sensation and reddening of the face; dizziness; tinnitus; headache, particularly in the temporal regions; a feeling of throbbing in the temples; oppression; nausea; vomiting; unconsciousness; tonic and clonic convulsions; involuntary passage of urine, fæces, and semen; complete paralysis; coma and death. In some cases eccentric pains in the extremities, as well as sensory disorders of the skin, have been noted. The objective symptoms referable to the nervous system observed in patients who have recovered are local or generalized anæsthesia of the skin and paralyses of the voluntary muscles. Cases have also been reported in which paralysis of the sphincters of the rectum and bladder has remained for a long time. Psychic symptoms have also been noted, and even cases of dementia paralytica described as occurring after such poisoning. The number of cases reported in which paralyses of voluntary muscles have occurred after poisoning by carbonic oxide is not large, and all of them, with the exception of one or perhaps two, are evidently of central origin. This has been particularly surprising to me, not only because I had seen two cases which were undoubtedly peripheral, but also because Schachmann, in an introduction to the report of a case observed by him, accepts all previously reported cases as peripheral. A reference to the original reports and articles, however, shows that this assumption is entirely unwarranted, and that, if the cases prove anything, they prove just the reverse. Thus, as early as 1775, Portal * described four cases of paralysis after carbonic-oxide poisoning; they are very insufficiently given, but the descriptions leave no doubt as to the central origin of these paralyses.

The cases briefly are as follows:

Case I.—Two women were asphyxiated by carbonic oxide; one died; the other "remained for several days without being able to support herself upon her legs, and she experienced a considerable numbness in the lower extremities."

Case II.—Male; asphyxia by carbonic oxide; recovery. "And it was believed for several days that he could not support himself upon his legs; but, little by little, the extensor muscles regained their action."

Case III.—Girl, aged twenty-one; asphyxia by carbonic oxide. She was unable to move any one of the extremities; the arms recovered first, and soon thereafter the legs.

Case IV.—Male, aged twenty-two; asphyxia by carbonic oxide. "The lower extremities could not support him, and the upper ones were very weak. . . . The first day that he went out his legs trembled and could not carry him, but they acquired power in a few days."

Another case was published by Bourdon in 1843. From Leroy D'Étiolles,† who refers to it, as well as to Portal's cases, I have taken the following quotations, as Bourdon's thesis was inaccessible to me. The case was that of a young girl asphyxiated by carbonic oxide. "She noticed that she could hardly keep upon her legs. . . . This weakness lasted about twelve days."

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* Bichloride eczema; did not interfere with the recovery in the usual time.

† Read before the New York Neurological Society, June 4, 1889.

* "Observations sur les effets des vapeurs méphitiques sur le corps de l'homme," 1775. Sixth edition, 1787.

† "Des paralysies des membres inférieures ou paraplégies," Paris, 1856.

The next writer upon the subject was Leudet.* His article is probably the best and only extensive one concerning these affections since Portal's. Although the author mentions the occurrence of peripheral paralyses, the chief value of the article undoubtedly lies in the description of the vasomotor disturbances, as the two cases of paralysis which are there described do not seem to me to be clearly of peripheral origin.

In the first case there was "a feeling of numbness in the three last fingers of the right hand, and they are extended with difficulty." There was also an "eschar over the lower part of the sacrum of the size of the palm of the hand."

The second case commenced with a paralysis of the extensors of the right leg, occurring in a male alcoholic, nineteen days after the poisoning by carbonic oxide. The entire right leg then became paralyzed; thereupon the left leg and thigh, both arms, and finally the face. Death ensued on the sixth day after the onset of the paralysis. The autopsy showed merely inflammation of the right sciatic nerve, the brain and spinal cord being found normal. This case is apparently a case of acute ascending paralysis (Landry), and was probably due to some undiscovered central cause, no mention being made of a microscopical examination of either cord or brain.

Since then but isolated cases of paralysis due to carbonic oxide have been published, and all, with the exception of the two following, are undoubtedly of central origin. The first of these, described by Rendu,† occurred immediately after poisoning by carbonic oxide and showed the hemiplegic form of paralysis. The muscles of the face and the extensors of the forearm and foot of the right side were affected. The skin of the paralyzed parts was anæsthetic; the thighs and upper arms were not implicated. Four weeks after the occurrence of the paralysis, faradaic excitability was entirely absent. Rendu believes the case to have been of peripheral origin, but the data given are not sufficient to establish this positively.

The second case is undoubtedly peripheral and is recorded by Schachmann.‡ Three persons attempted suicide by asphyxiation with carbonic oxide. Two of them died and the other survived. This one was a female aged twenty.

The attempt at suicide was made on May 8th. On the 10th the patient appeared to have entirely recovered from the effects of the gas, but, upon examination, a complete extensor paralysis of the left forearm was found. Sensation was normal. An electrical examination of the muscles was not made.

May 11th, 12th, and 13th.—The condition remained unchanged.

14th.—Slight movements of extension could be made with the fingers.

15th and 16th.—Continued improvement.

17th.—Almost complete restoration of function.

20th.—Complete cure.

* "Recherches sur les troubles des nerfs periphériques et surtout des nerfs vaso-moteurs consécutifs à l'asphyxie par la vapeur de charbon," "Archives générales de médecine," 1865, p. 513.

† "Union médicale," 1882, pp. 386, 397.

‡ "France médicale," July 1, 1886.

How little was known about paralyses following carbonic-oxide poisoning, and that the occurrence of a purely peripheral paralysis with reaction of degeneration, etc., from such a cause was even doubted up to the time of this publication of Schachmann's, is shown by the demonstration of a patient and the subsequent discussion which took place at the *Berliner medizinische Gesellschaft* in January, 1885. Here Remak* showed a case of partial radial paralysis in consequence of hypodermatic injections of ether. The patient, a female, aged twenty-three, was received into the hospital at Friedrichshain (December 5, 1884) on account of carbonic-oxide poisoning, and was given several injections of ether into both forearms because she was deeply comatose. When she regained consciousness she noted a paralysis of the left hand, which consisted principally in an inability to extend the basal phalanges of the fingers and an inability to abduct the thumb. Examination (eight days before the demonstration) showed a partial paralysis in the territory of the radial nerve. The supinatores longus and brevis and the extensors of the wrist joint were not affected. Electrical examination showed the severe form of reaction of degeneration in the territory supplied by the deep branch of the radial nerve. Sensory disorders were not present. Although Remak was cognizant of the fact that numerous cerebral, spinal, and peripheral disorders might occur after carbonic-oxide poisoning, he nevertheless believed that in this case the paralysis was not due to the action of the carbonic oxide, but that it could only be accounted for by the ether injections.

In the discussion which followed, Bardeleben asked for further proof in support of this supposition, saying that he considered that already given as insufficient, whereupon Remak replied that paralyses occurring after carbonic-oxide poisoning had been but little studied; all that we knew was that they occurred, but that "particularly the increase of galvanic excitability observed here—*i. e.*, the typical course of a severe traumatic paralysis—had not been observed in carbonic-oxide paralysis."

This deficiency, which must be looked upon as the *punctum saliens* of the entire discussion, is not supplied even by Schachmann. The following personal cases cover the ground completely, as particular attention was paid to this point:

Case I.—S. W. H., male, aged thirty-eight, came under observation December 8, 1887. Previous history unimportant. Habits good, and had always been comparatively well, although not very robust. On December 1st he left home in the evening in his usual health, called upon a friend, and entered into conversation with him. The room which they occupied was heated from below by means of a furnace; doors and windows were closed. After a short conversation his face became flushed and hot, then he felt dizzy, and his head began to ache. In addition to this he noticed strong pulsations of the arteries of the head and neck, blackness before the eyes, nausea, and a feeling of deathly sickness. Then complete unconsciousness supervened. The last recollection which he had of that time was seeing his friend sitting in a chair holding his head in his hands and hearing him say "Oh, my God! my God!" During the unconscious period he vomited. He was unconscious for about six hours, but

* "Berliner klinische Wochenschrift," 1885, p. 76.

had been removed to another room several hours before his return to consciousness. Beyond a feeling of general malaise, he experienced nothing until he attempted to walk, when he noticed that his right leg was weak and that his foot turned in, also that he had no feeling in his right foot. The following day severe pains were felt in the right leg, and these have not abated.

December 8, 1887.—Examination showed patient to be normal in every way except as regarded his right foot. Here it was found that the foot and toes hung lax in extension, and that they could not be flexed dorsad; the condition, therefore, representing a paralysis of the muscles supplied by the peroneal nerve. The muscles affected were the tibialis anticus, the extensor longus digitorum communis, the extensor hallucis, the peronei longus et brevis, and the interossei.

Examination of sensation showed complete anæsthesia of the front of the foot, extending upward to the middle of the leg; partial anæsthesia of the outer side of the leg, extending around the leg to beyond the median line upon its posterior surface. The outer margin of the little toe on the dorsal surface, the inner border of the foot, and the entire plantar surface, including the heel, were not affected. The electrical reactions of all the muscles were normal, and there was no atrophy. Patient complained of severe pain in the leg and foot.

12th.—Lowered response of muscles to faradaic current.

22d.—Motor paralysis present to about the same extent as at the first examination. The anæsthesia has disappeared, except in patches, located in the above-described territories, varying in size from that of a pea to a twenty-five-cent piece. Marked atrophy of the interossei. Pronounced reaction of degeneration is present in all the muscles supplied by the external popliteal nerve.

The course was that of a typical severe degenerative paralysis. The patient improved slowly, so that in April, 1888, when he discontinued treatment, he had complete control over all the muscles, although they still presented some weakness and reduced excitability to both currents. The anæsthetic spots also had not entirely disappeared.

Case II.—A girl, E. D., aged eighteen, of French nationality, on account of domestic affliction determined to commit suicide. She locked the door of her room—a small hall room—turned on the gas, and went to bed. Some time afterward people in the house, noticing the smell of gas, traced its origin, broke into the room, and found the patient moaning and dazed, but not unconscious, upon the bed. She was removed to the fresh air, where she in a short time regained the full use of her senses; she then noticed that she could not use her right hand, while all her other extremities, with the exception of a feeling of weakness, were normal. I saw her two days after this occurrence.

January 6, 1889.—Examination showed the patient to be normal in every way except as regards her right hand. Here we found a paralysis of the extensor digitorum communis. Extension of the basal phalanges of the fingers was not possible, whereas extension of the end phalanges (interossei) was normal. There was also paralysis of the extensores pollicis longus and brevis and of the abductor pollicis, and paresis of the extensors of the wrist. The supinator longus and the triceps were normal. Slight sensory disturbance in the radial territory of the hand was present. The patient was seen regularly at intervals of three or four days, and the development of reaction of degeneration in the affected muscles, together with some atrophy of the muscles of the forearm and thumb, was plainly observed. Improvement began to take place in the beginning of February, and by the 1st of March the patient was considered sufficiently recovered to discontinue treatment.

It does not seem to me that in either of these cases there can be any reasonable doubt as to the connection existing between the paralysis and the carbonic-oxide poisoning. The paralysis occurring immediately after such poisoning must place the idea of a connection between the two uppermost in our mind. The possibility of a pressure paralysis must certainly be thought of, but it seems to me that this is an entirely gratuitous supposition, as the first patient was found sitting in an arm-chair, and was thence removed to a bed, so that pressure upon the external popliteal nerve could hardly have taken place; in the second case there is, in addition to the improbability of pressure having taken place, the fact that the paralysis did not implicate the supinator longus or the triceps. This partial localization of the paralysis makes it highly improbable that pressure should have been the cause. As regards the peripheral nature of the paralysis, I think there can be no doubt in either case. The localization of the paralysis, the strict confinement to a single nerve territory, the sensory disturbance, and the occurrence of reaction of degeneration and atrophy, together with the further typical course—all make it safe to assume that we are dealing with a neuritis.

The lesson which directly results from these cases is that peripheral paralysis affecting the radial or peroneal nerves may be due to the action of carbonic oxide; that we are once more taught that it is not safe to draw positive lines of demarkation between the possible central or peripheral action of certain toxic agencies. It has furthermore seemed to me (but this is only an impression in support of which I have no facts) that both radial and peroneal paralyses occur most frequently in winter among the poor occupying small and unventilated rooms, generally heated by a stove in the room itself; that, as my second case shows, complete unconsciousness is not necessary for the production of such paralysis dependent upon carbonic-oxide intoxication; therefore it is possible that these paralyses are, more frequently than we can at present admit, due to this cause. Further observations in this respect might prove of interest.

A CASE OF COMPOUND FRACTURE OF THE PATELLA TREATED BY WIRING.

*BONY UNION.**

By S. T. ARMSTRONG, M. D.,
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Although it is now almost a decade since Sir Joseph Lister said, "The risk a patient incurs in having his knee joint opened antiseptically is not greater or so great as that attending the removal of an ordinary fatty tumor without antiseptic treatment,"† still it is the more frequent custom for surgeons to treat fractures of the patella by the old fixative procedures. This is done, notwithstanding the fact that the late Dr. F. H. Hamilton, in his work on "Fractures" (ed. 1884, p. 542), says: "Probably none of the

* Read, in part, before the Section in Surgery of the New York Academy of Medicine, May 13, 1889.

† "Lancet," 1879, vol. ii, p. 768.

tabulated transverse fractures (106) were united by bone; . . . only a small proportion of the vertical and comminuted fractures were thus united," thus demonstrating the failure of splints to secure bony union.

It is hardly credible that it is an accepted fact that ligamentous union of a fractured patella is as useful as bony union. Mr. W. Adams said: "From an examination of specimens [of fractured patellæ] in London museums, ununited fractures or feeble ligamentous union was the rule, a firm ligamentous union almost the exception."

Whatever may be the difference of opinion regarding the utility of wiring simple fractures of the patella--a procedure that will certainly find no supporters in the authors of our surgical text-books—there can be no question of the justifiability of operative interference in compound fractures of the bone in which the integrity of the knee joint has already been assailed.

In a paper by Mr. A. Poland,* published in the pre-antiseptic days, he has collected sixty-nine cases of compound fracture of the patella. Of patients with incised wounds, six recovered, two died; bony union took place in one case and ankylosis in one case; four patients had mobile joints. Of those with lacerated wounds, nine died, in one case the result was not stated, and thirty recovered; of the latter, ten had mobile joints, five had partial ankylosis, eleven had complete ankylosis, four had the leg amputated. Of those with gunshot wounds, three died and eighteen recovered; of the latter, two had mobile joints, three had partial ankylosis, eight had complete ankylosis, and in five cases the result was not defined.

The above-given statistics are far from encouraging, but medical literature of recent date contains a creditable number of recoveries following wiring of compound fractured patella, and the following case is reported as a contribution to the subject:

J. B., aged thirty years, a native of the United States, was admitted to the United States Marine Hospital, New York, on the night of March 23, 1889. He stated that he was injured on the 21st instant by a barrel of paint rolling against the left knee, the chine of the barrel striking over the patella, lacerating the skin and fracturing the bone. The wound was made as aseptic as possible by the interne, Dr. George B. Young, and the fracture was temporarily dressed.

On the 24th I examined the knee, finding a transverse fracture of the patella, the fragments moderately separated, and the joint distended by fluid. The necessity of an operation was presented to the patient, and, as he consented to its performance, he was prepared therefor.

On the morning of the 25th he was chloroformed, the incised wound of the skin of the knee was scraped with a sharp spoon, and the wound enlarged by transverse incisions to the bone. A quantity of bloody fluid escaped, and between the bone fragments was a quantity of blood-clot and some shreds of ligamentous tissue. These were removed, and the cavity of the joint was thoroughly cleansed with warm Thiersch's solution. Much trouble was experienced from venous hæmorrhage, and time was expended in ligating bleeding points.

A longitudinal incision was made in the skin over the upper fragment, in order to expose the bone, as nailing was intended. But in driving the nail into the upper fragment it was found that there was a longitudinal fracture through this fragment, so holes were drilled through each portion of the upper fragment, corresponding openings made in the lower fragment, and the bone united by wiring instead of a nail. The wires were inserted so as to be extra-articular. A drainage-tube was placed over the patella and the skin united by a continuous catgut suture. Iodoform gauze was wrapped about the knee and the leg and thigh incased in plaster of Paris. Acetanilide and quinine were given every two hours. On the evening of the 26th his temperature was 38° C., but at no other time did it exceed 37·2° C.

On April 12th the dressing was removed. The wound had healed by first intention, except at entrance and exit of the drainage-tube and at the point of emergence of the silver wire. The patella could be moved over the condyles, showing that there was no ankylosis. The drainage-tube was removed. Leg placed on an inclined long posterior splint.

On April 18th the wire was removed from the patella.

On April 22d and 24th there were fungous granulations at the point from which the wire was removed. A sharp spoon was used to curette them. The patient was allowed to use crutches on the 24th. On May 9th a bone-hook was introduced into the sinus, about which the granulations had formed. The bony surface of the patella was detected, especially at the site of fracture, demonstrating a bony union. The patient was allowed to walk without the aid of crutches.

On May 13th the sinus over the patella had healed, and the patient was discharged on the 22d with a mobile joint, not quite able to flex the leg as in the normal state, but every day the range of motility was increasing and he was able to resume his occupation on shipboard.

The patient used his leg freely after being discharged, but while at work on June 10th he chafed his knee, and during the night the joint was painful. He was treated for this by the ship's surgeon on June 11th, and readmitted to the hospital on June 12th. When he was admitted, the joint was painful and swollen, and in the cicatrix over the patella was a mass of granulation tissue that was necrosed superficially; a temporary dressing was applied the evening of his admission.

The patient was seen by me on the morning of the 13th, and the joint was evacuated with an exploring trocar. As the fluid was slightly cloudy, and a microscopical examination showed pus corpuscles present, the joint was washed out, through the cannula, with a warm Thiersch's solution. The granulation mass was scraped with a sharp spoon, and when the patella was reached a piece of wire was found that had caused all the trouble. It proved to be a suture that was overlooked in removing the wires originally. The wound was dressed aseptically after removing the wire, and the patient given quinine and acetanilide. No fever occurred during the convalescence, and the motion in the joint was excellent.

There are several cases on record that have recovered with wires left in the bone, in which the wire had to be removed at a later date. One of the most interesting is recapitulated:

Mr. G. R. Turner reported ("Lancet," vol. i, 1887, p. 572) a seaman, aged twenty-five, that had fractured the right patella. For twelve days he received no treatment; then the joint was strapped and a plaster-of-Paris splint was applied. He was discharged in a month. Four months later he came under the care of Mr. Robson, of Leeds, who found separation of an inch and a half, and the limb weak and useless. In order to wire the fragments, Mr. Robson had to divide the lateral expansion of the vasti and quadriceps femoris. He discharged the patient in

* "Medico-chirurgical Transactions," London, 1870, p. 49.

something more than two months. While at sea the patient fell and hurt the knee. On landing he went to Mr. Turner for treatment. A wire protruded from a sinus at the outer side of the joint, a little suppuration around it. As there were signs of septic infection of the joint, it was opened, turbid lymph escaping, and a drainage-tube introduced. Three wires were removed. The patient recovered with a useful joint.

After being discharged the patient fell in an epileptic fit and refractured the same patella at a point below the first fracture. He recovered from this.

In treating fractured patellæ with wires two points seem to be essential: (1) To introduce the wires so that they will not enter the cavity of the joint, and (2) to remove the wires as soon as osseous union has occurred.

As the removal of the wire will always necessitate some disturbance of the granulations, it is suggested that a small bone drill, or gimlet, be employed to keep the fragments in apposition, and this may be left *in situ*, and can be easily removed.

If sufficient confidence could be reposed in the slow absorption of chromatized catgut, as well as in its adequacy to keep the fragments in apposition, it would be the best material to employ, as the wound could be closed and healing take place by first intention.

SOME DISCURSIVE REMARKS

BASED UPON HAVING OBSERVED INTIMATE RELATIONS BETWEEN

CHRONIC DISEASES OF THE UPPER AIR-TRACT AND NEURASTHENIA.*

By WILLIAM H. DALY, M. D.,
PITTSBURGH, PA.

During the past five years I have made some observations and noted them with reference to certain symptoms or diseased conditions referable to the intranasal structures or of the pharynx or larynx which have either been the immediate precursors or the concomitants of neurasthenia. In other words, many of the patients that have consulted me for a variety of symptoms referable to the upper air-passages have at the same time given a history of concomitant or early succeeding neurasthenia, and I think I may offer these observations to the profession as being not only new to its literature, but based upon a clinical experience sufficiently extensive to warrant us in taking up a new line of thought as to some of the features expressed in naso-pharyngeal catarrh and functional and inflammatory aphonia as they precede or coexist with neurasthenia in some one of the latter's many forms. It was the teaching of Murchison and others, and quite generally accepted too by the profession, that many of the conditions we know now as neurasthenia were conditions of suppressed or undeveloped gout or lithæmia; but if the thoughtful medical man will carefully read Murchison, eminent and able reasoner and clinician though he was, he will nevertheless be forced to conclude that the data for pronouncing certain forms of nervousness, in men especially, which are characterized by insomnia, indigestion, mental irritability, etc., conditions of suppressed gout or lithæmia are wholly insufficient to satisfy those of us who like to believe we have found a rational cause, or that we have been taught one that is to our minds reasonable and borne out by future observations of our own upon patients. Unless this can be done, few of the thinking men in the profession can long hold to any dogma, let it emanate from whatever source it may.

I am fonder of noting plain practical observations in pathology and therapeutics than of indulging in abstruse theories as to what causes these certain conditions noted. Why? Because it is much easier for me to do this, and it suits best my practical bent of mind. Yet how much commoner it is among medical men, as among laymen, that at once a cause is sought for an evil and little or no attention paid to the interpretation, meaning, or cure of certain manifestations! As I have said, I confess to being more wrapt in noting the coexistence of symptoms, and, if possible, getting a remedy for their alleviation and cure, than of diving into their mysterious workings and explaining their manifestations by mere theories. The abler heads may weave theories to their hearts' content. But one page of practical experience, with careful and intelligent observation honestly reported, will redound more to our instruction than whole tomes of dry and baseless theory or dogma. What I have to say will, I trust, at least seem worthy of inspiring further observation in this direction. In these days of hard going and pushing for place, fame, and fortune, especially in cities, it is appalling indeed to see the early wreck of the physical and mental constitutions of the cultivated and respectable men and women who are neurasthenic either through their own folly or circumstances that are innocent enough of themselves if guarded by common sense and moderation. Now, it will seem strange to you possibly to hear from me that I believe laryngology and its congener, rhinology, have much with which to concern themselves in neurasthenia, as well as in the many reflexes that have been so well studied by the able minds of J. N. Mackenzie, Hack, of Freiburg, Roe, of Rochester, and others. But you will not be altogether surprised either. One of the old masters in medicine spoke of the nose and throat as the gateways of life, and I believe he was quite right. They are more than that; they are also the sentinels at the gateways of life in more ways than one. It is from these regions we are so often warned of the approach of discomfort, danger, and disease.

I need not refer to the fact that all the disease germs enter the system through these gateways. It is in one of these gateways that the half-pleasing sense of titillation causing sneezing warns us that we are catching cold; and, by the way, let me digress and ask, What is "catching cold"? My observation has taught me that the causes of so-called "catching cold" are as often intrinsic as extrinsic. That is to say, a patient without any exposure whatever to draughts of air, either suspected or real, may, by a certain state of the organs and their secretions, be seized with a tickling in the pituitary membrane and sneezing, followed by all the symptoms of "catching cold," and subsequently have pneumonia or other form of pulmonary inflammation

* Read before the American Laryngological Association at its eleventh annual congress.

with all its worst and most protracted consequences. Now, resuming my subject, permit me to refer to a summary of twenty-five cases of which I have the clinical records bearing specially upon the question I have brought herein to your notice in the title of this imperfect paper. These cases have a clinical history like the following ones selected, with certain features altered, masked, or absent, but the main ones to which I call your attention prominent and leading —viz., the presence of acute or chronic disease of the upper air-tract in some of its extent, and neurasthenia in one of its protean forms.

Case I.—J. G., male, aged thirty, of bilious temperament, good parentage and habits of life, no acquired blood disorder, occupation active and mentally exciting. Subjective symptoms, a sense of intranasal fullness under the bridge of the nose and alternating stenosis in one or the other naris, especially at night when trying to sleep. Has a sense of worry and anxiety constantly present, and his mind is very active when repose is sought at night, precluding sleep, which, when obtained, is light and fitful. Appetite good, and digestion thought to be good. Uses no tobacco or stimulants. Social relations marital and excellent. No vices or excesses. Local objective symptoms, a bony spur upon the left side of the septum narium and a flaccid state of the mucous membrane on both inferior turbinates. Still under treatment, with some improvement going on, although the patient says he fails to discover the latter. This, however, will be discovered to him surely when the local intranasal condition is cured, and a cure in this case is one of the most encouraging and certain of possibilities, with further time and care.

Case II.—Miss W. J., aged twenty-eight, nervo-phlegmatic temperament. A well-rounded, symmetrical, and apparently well-nourished figure. Complexion sallow. Nose flattened and tip deflected to the right. Secretion of mucus from nares posteriorly copious and sometimes offensive; tongue clean. Appetite and digestion always poor; bowels constipated. Catamenia normal. Has lived for over a year on pancreatized milk chiefly. A sense of intranasal fullness even when she is certain the canals are cleansed and freely pervious to air. Always weary and tired, and especially at the latter part of the day she is utterly exhausted. Sleeps badly, and always wakes with a bad taste in her mouth and a dry tongue.

Objective intranasal examination reveals a contorted condition of all the internal parts throughout that looks as though the nose had been hit with a hammer or caught in the door at some former time and badly twisted in its extrication. All the ordinary anatomical relations are of a cork-screw pattern and quite beyond a brief description. This patient is improving, but nothing short of the highest and most skilled rhinoplastic surgical art will ever make this nose a thing of beauty. The neurasthenic state is improving under alterative, local, and general treatment.

In ten cases, with which I will not burden you in detail, there was obstinate inflammatory aphonia attended with utter prostration, nervousness, and insomnia; seven of these patients had nasal disorder of a chronic character; the remaining cases all had as leading factors naso-pharyngo-laryngeal diseases in some form, with neurasthenia in some form also. Although one swallow does not make a summer, a flock of them will cause us to look for a change of weather; and will this little flock of cases not cause us to look out for this too widely prevailing constitutional condition as one of the unfortunate possibilities or concomitants of disease of the upper air-tract? That they coexist there can be no question.

DISPUTED POINTS IN THE PATHOLOGY AND TREATMENT OF PERITYPHLITIS.*

By RICHARD J. HALL, M. D.,
SURGEON TO BELLEVUE AND ST. LUKE'S HOSPITALS.

The amount of light thrown on the unsettled questions in regard to the pathology and treatment of perityphlitis by the numerous papers and discussions on the subject during the last year might seem to render a revival of the subject at present unnecessary. Undoubtedly the weight of surgical opinion was in favor of the intraperitoneal situation of the abscess, and a tendency to recommend operation a little earlier than has been customary.

Yet surgeons were not wanting to maintain the old views and methods, and when we find the name of the late Professor Sands at the head of this list, and consider the confidence which the profession has justly placed for many years in the accuracy of his observations and judgment, it seems to me important to publish every case whose symptoms, treatment, and course furnish evidence for the one side or the other.

In June, 1886, I published a case of suppurative peritonitis due to perforation of the vermiform appendix—laparotomy; resection of the appendix; recovery. A distended hernial sac on the right side naturally led to the supposition of a strangulated hernia before operation, and in reference to the operation various writers have seemed inclined to regard it as a case of strangulation of the appendix. It may be well to state, therefore, that the perforation was due to tubercular ulceration, and that there was no constriction at any point.

Since that time I have had occasion to open the abdomen for existing or threatened perforative peritonitis three times. My second case, which ended fatally, has already been reported to the Clinical Society, so I will merely state here that I was called out of town to see a married lady, about thirty-five, who had suffered for several months from pain in the right iliac fossa. Three days before I saw her, the pain being much worse, her husband proposed a drive to distract her attention. While driving, the pain became intense, and, on returning, her physician recognized general peritonitis. She was treated with opium and the cold-water coil. When I saw her, I at once made a diagnosis of perforation of the appendix, with suppurative peritonitis.

I at once performed median laparotomy, found a gangrenous and perforated appendix, a small suppurating cyst of each ovary, and the lower portion of the abdomen filled with fæces and pus.

The appendix was resected and the stump sutured; both ovarian tumors were removed; hot-water irrigation and toilet of peritonæum were performed, with drainage through the incision. The delay necessary for the double ovariotomy and the miserable condition of the patient doubtless made the death from septicæmia, twelve hours later, inevitable.

* Read before the New York Surgical Society, April 10, 1889.

My third case was as follows:

Case III. *Perityphlitic Abscess.*—J. M., married, aged fifty, Ireland, farmer, admitted to Ward 8, October 14, 1886.

Previous history: Patient says that, five days previous to his admission to Bellevue Hospital, he ate a hearty meal of fried sausage, and a few hours afterward he was taken with vomiting, purging, and cramps in his bowels. The symptoms abated somewhat, but the pain continued, and during the last three days the pain has been referred to the right iliac fossa. Patient has had diarrhœa until thirty-six hours before admission, when it ceased. Nothing characteristic about patient's stools. About two days before admission he noticed a hard, tender swelling, of about the size of a man's fist, situated in the right iliac region and extending toward the umbilicus, which has increased in size and become more and more tender and painful till now. Patient says also that he has had great pain and stiffness of the thigh in walking, that during the past twenty-four hours he has had chilly sensations and a feeling of heat alternating therewith, and that now he feels prostrated.

On admission, patient has a rapid, feeble pulse, a considerable elevation of temperature, fœtid breath, and muscular weakness.

Case seen by Dr. R. J. Hall. Patient placed at once upon operating table and abdomen examined. There is a large, tense mass lying low down in the right side of the abdomen and chiefly occupying the iliac region. The tumor causes a considerable swelling of the abdomen. On pressure, it is sensitive, and at its lower part and toward the right border deep fluctuation seems to be obscurely felt. There is no redness of the skin.

Operation performed by Dr. Hall. Patient etherized and the abdomen and parts shaved, scrubbed, and thoroughly disinfected in the usual manner. A hypodermatic needle was inserted deeply over the supposed site of fluctuation. After several punctures, about fifteen minims of a brownish-yellow, turbid, and odorless fluid were withdrawn, which, on microscopical examination, was found to consist largely of pus. An incision three inches long was then made through the skin, beginning about two inches above the right anterior superior spine of the ilium, and thence running downward and inward. The superficial fascia and the three muscles of the abdomen were divided, until the fascia transversalis was reached. This structure was found much thickened and slightly œdematous. It was divided on a director, and, the loose tissue beneath having been torn through, the caput coli was exposed. After some further exploration with the hypodermatic needle, pus was found lying behind the gut. It was readily reached with the finger by tearing some slight adhesions between the intestine and the fascia transversalis. The quantity of pus evacuated may have amounted to two drachms. The cavity was then gently irrigated with a solution of mercuric bichloride (1 to 2,000), two drainage-tubes were inserted into the wound, and a dressing of iodoform gauze and bichloride gauze was applied. Patient recovered readily from the effects of the ether and was transferred to the Sturgis Pavilion, where he was put to bed, covered warmly, and surrounded by hot bottles. He received liq. morphinæ, Magendie, ♏v, and was ordered milk diet.

October 15th.—Patient passed a good night. His temperature since the operation has been about 99° F., and he has but little pain. Dressing removed this afternoon. Wound found to be healthy and very little pus in the drainage-tubes.

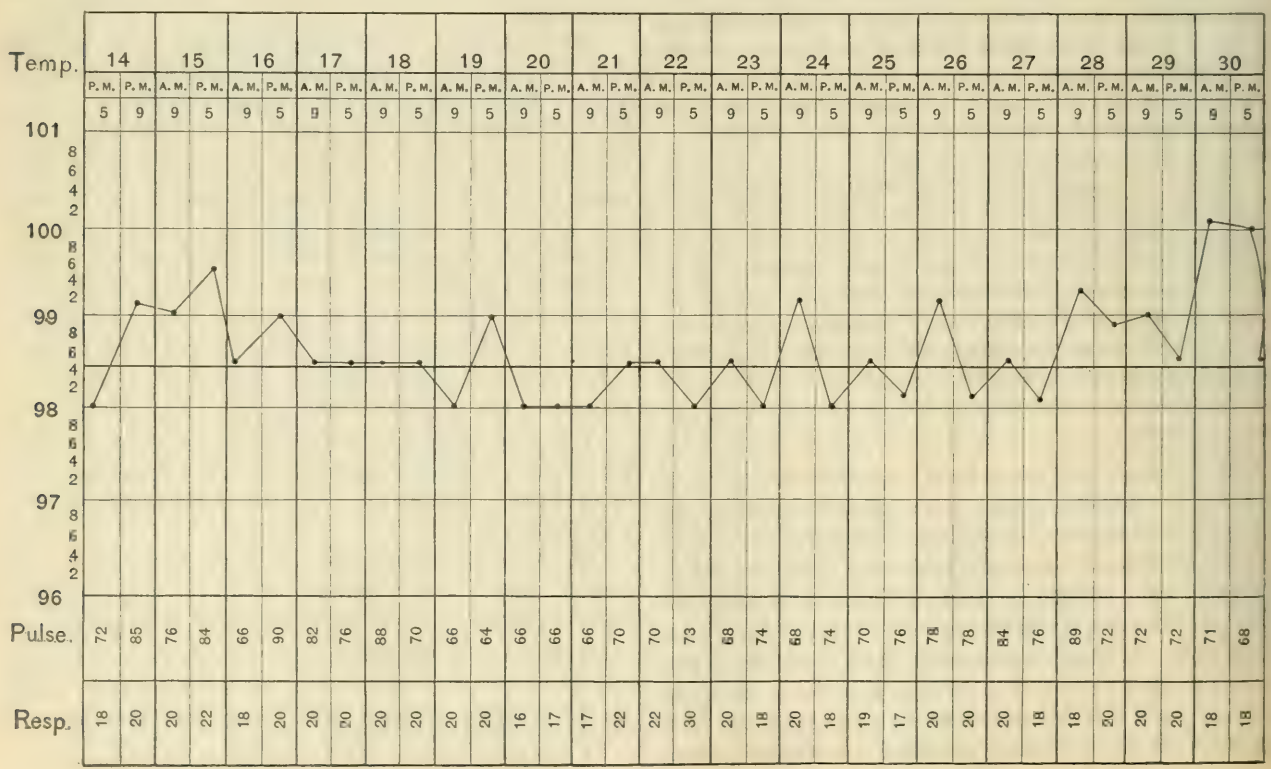
Tubes cleansed and dressing reapplied.

16th.—Temperature remains low. Patient comfortable.

18th.—Wound redressed; small quantity of pus in it. Patient had a movement from the bowels which was natural in character.

20th.—Redressed. One drainage-tube removed; there is no inflammatory redness about the wound; the amount of discharge is small. Patient free from pain and fever.

25th.—Last night patient received a large enema and had a very large fæcal movement. He says he has no pain to-day, but his dressing feels uncomfortable. Dressing removed; examination shows that the wound is for the most part granulat-



ing. Small amount of pus in the wound. Raw edges touched with argenti nitras and the wound then strapped.

27th.—Patient continues to do well. Wound granulating; restrapped.

November 8th.—This A. M. patient had several large movements, following salts, one dose.

12 M.—He complains of chilly sensations and a rigor. The wound appears as usual.

9 P. M.—Temperature rose to 102°. Pulse 102. Patient suffered from pretty severe pain, described as colicky and referred to lower part of abdomen. He slept but little during the night.

9th.—Pains continue this forenoon.

9 A. M.—Temperature 100°, pulse 96, respiration 20.

5 P. M.—Temperature 100°, pulse 107, respiration 20.

Patient continues to have abdominal pain. Wound redressed; presents no evidences of retained pus, but rather more tenderness about it than usual.

29th.—Since last note the wound has entirely healed. Patient has had no further abdominal symptoms. Slight increase of fullness on right side of abdomen. Discharged cured.

The confusion in our anatomical text-books as to the real relations of the caput coli to the peritonæum led to an animated discussion, among the Bellevue internes who witnessed the operation, as to whether I had opened the peritoneal cavity or not, and the writer of the history reported it in accordance with the, at that time, current views. The real state of affairs was as follows: The tumor in the iliac fossa extended well toward the umbilicus, the patient was profoundly prostrated, in a condition of acute septicæmia, and there was much tenderness and moderate pain over the whole abdomen. The patient stated, moreover, that the pain had been constantly increasing during the last few hours. This determined me to open the peritoneal cavity if I found no adhesion between the tumor and the parietal peritonæum. Having done so and come directly on a distended cæcum, I was able to raise the abdominal wall, to palpate and inspect the whole iliac fossa, the cæcum and adjacent coils of small intestine, and ascertain that they were intensely congested, but not suppurating. I sought also for the appendix, but did not find it. The upper portion of the wound was then packed with iodoform gauze, the cæcum raised, separating adhesions so slight as to offer no sense of resistance to the fingers, and an abscess between the posterior surface of the cæcum and the parietal peritonæum evacuated. I searched for the appendix again, but did not find it.

Had the abscess been situated behind the iliac fascia, it is evident that I must have cut a second time through the iliac (transversalis) fascia, and found myself in a cavity bounded posteriorly by the iliacus muscle, which was not the case.

I narrate this case as affording evidence in favor of the following propositions:

1. That an abscess, which would until recently have been regarded as typically extraperitoneal, is shown by anatomical considerations and inspection to have been intraperitoneal.

2. That the preliminary incision of the peritonæum is no barrier to the subsequent evacuation of the abscess. We are apt to forget that the abdomen is completely filled by the intestines, and offers no encouragement to the entrance of pus so long as a free exit exists in another direction.

3. That we can not divide cases into two classes, readily recognizable from the beginning—one a circumscribed inflammation, in which it is safe or even imperative to delay operation; the other, a spreading peritonitis, usually rapidly fatal, immediate laparotomy offering the only chance.

Further, the fact that my needle must have repeatedly passed through the peritoneal cavity and both walls of the cæcum, and been withdrawn infected with both fæces and pus, went far to determine me to abandon a procedure sometimes dangerous and almost always useless. Certainly the failure to find pus would never prevent my operating where other indications pointed to an acute inflammation. My fourth case was as follows:

CASE IV. *Perityphlitic Abscess.*—J. N., aged twenty-one, married, United States, bricklayer, admitted to Ward 8, August 11, 1888. Patient said he had fallen off the platform of a horse-car, twisting his right ankle and knee. He also complained of abdominal pain in the right iliac region.

On admission, examination showed a sprain of the right ankle, a sprain of the right knee, and contusions of both eyes. The abdomen was tense, and the right iliac region was very tender to the touch. Patient said he had some diarrhœa.

Treatment.—The patient was put to bed, and Magendie's solution of morphine in seven-minim doses was administered.

August 14th.—For the past forty-eight hours the patient has had twenty-one minims of Magendie's solution of morphine in twenty-four hours, and has rested quietly in bed. The patient lies on his back with the right thigh flexed. In the right iliac region there is a large tumor, which is very tender on manipulation, and the abdomen is markedly tympanitic. At eight o'clock P. M. the operation was performed by Dr. Hall. The patient was placed upon the operating table and anæsthetized with ether. The parts about the tumor were shaved, scrubbed, and thoroughly disinfected in the usual manner. Then an incision, about six inches long, was made parallel with and one inch above Poupart's ligament in the right iliac region, and, by means of a director and curved scissors, the subcutaneous layers were successively divided down to the peritonæum. The peritonæum was opened, and about three ounces of pus were liberated from behind the cæcum, being shut off from the peritoneal cavity by adhesions. The cavity was washed out thoroughly with Thiersch's solution.

The hand of the operating surgeon was introduced into the cavity, and all adhesions were broken up. There occurred some parenchymatous hæmorrhage. A few deep and superficial catgut sutures were inserted, and then a large-sized rubber drainage-tube was placed in the cavity.

The cavity was packed with iodoform gauze; this was covered with bichloride gauze, and the dressing was retained in place by a sublimated gauze bandage. The patient was put to bed, where he was warmly covered and surrounded with hot-water bottles, and he soon reacted well from the effects of the ether and received hypodermatically eight minims of Magendie's solution of morphine.

15th.—The condition of the patient is much improved.

20th.—The operation wound has been dressed every other day, and it is healing well by granulation. It is now dressed with balsam of Peru and iodoform gauze.

September 15th.—The wound is healed, except a small fistula an inch and a half in depth, and this is packed with iodoform gauze and balsam of Peru every other day.

October 24th.—For some time past the wound has been com-

pletely healed. The patient is fully restored to good health. Discharged cured.

This case is of special interest because of its apparently traumatic origin; no doubt an already ulcerated appendix gave way, though rupture of a healthy distended cæcum can not be excluded. The invasion of the pus had been so rapid that the abscess walls retained in places the shining peritoneal surface.

The symptoms of threatened general peritonitis were much more marked than the history would indicate, tenderness rapidly extending over the abdomen, with pain and symptoms of acute septicæmia.

I may add that I did not see the patient until immediately before the operation or I should have interfered sooner; that the tumor determined the line of incision, and its length was such as to enable me to introduce the hand and inspect and palpate all the surrounding parts before evacuating the abscess. As before, the peritoneal adhesions were so slight as to offer no sense of resistance on separating them. The upper portion of the wound was packed with iodoform gauze before opening the abscess.

Although the cavity could be freely examined and explored, no trace of an appendix or of a rupture of the cæcum could be found.

I offer the case as confirming the previous propositions, and to support Dr. Weir's plea for early operation in such cases. I am confident, so threatening were the symptoms, that a delay of twelve hours would have resulted in general suppurative peritonitis.

A SUCCESSFUL CASE OF INTUBATION,

WITH SOME REMARKS UPON AFTER-TREATMENT.*

Reported by F. H. BARTLETT, M. D., and
J. C. CLARK, M. D.,
OLEAN, N. Y.

Intubation of the larynx, since operators can report their cases by hundreds, has become an operation of such common occurrence that the report of an isolated case can not be a matter of particular interest to the profession unless there are circumstances attending the case—in the way of clinical history, after-treatment, or some other facts in relation to it—which impress the operator with its peculiar importance. The object, therefore, in reporting the following successful case of intubation is more particularly to call attention to the after-treatment and some of the difficulties which are frequently encountered after the introduction of the tube, and regarding which the literature on the subject furnishes comparatively little information.

F. J. C., female, aged seven years, on Monday, April 8th, complained of sore throat, which developed into what was supposed to be follicular amygdalitis. This yielded readily to the usual treatment, so that she was considered well and allowed to go out of doors on the following Saturday and Sunday. On Monday, April 15th, she again complained of sore throat. This was accompanied by slight fever and slight hoarseness. She was then given tinctura ferri chloridi. This condition remained unchanged until Tuesday night, when her symptoms became worse, the hoarseness increasing, accompanied by dyspnœa and restlessness. On Wednesday diphtheritic exudation appeared on the tonsils, her temperature then being 101·5° F., and pulse 130. She was then given bichloride of mercury, $\frac{1}{32}$ of a grain every hour, with apparently some beneficial effect, as her condition on Thursday and Friday was somewhat improved. Her pulse and temperature were nearly normal, and the exudation in the throat had commenced to disappear; the hoarseness was also less marked. Saturday morning her condition became worse. There was an increase of the stenosis of the larynx, with considerable dyspnœa, and she coughed constantly. Saturday afternoon the dyspnœa increased rapidly; she became cyanotic, and preparations were made for intubating the larynx. About 5 P. M., however, during a violent paroxysm of coughing, a bit of membrane was coughed up, which greatly relieved her breathing. She immediately fell asleep and rested quietly three hours. Sunday morning the dyspnœa again increased. She from that time coughed constantly, the stenosis rapidly increased, and the general condition became grave, she showing evidences of extreme exhaustion.

Dr. M. C. Follett, Dr. C. H. Bartlett, and Dr. W. H. Sage were called in consultation, and all hope of recovery, except by means of an operation, was abandoned. Intubation was decided upon, and was successfully performed by Dr. F. H. Bartlett, with immediate relief of the dyspnœa, the patient falling asleep and resting two hours.

As has already been said, the literature on the subject gives unsatisfactory information as regards the details of the after-treatment of intubation. This being the fact, the operator of limited experience is somewhat uncertain as to the best mode of procedure. Such proved to be our experience in this case. O'Dwyer recommends giving semisolid food, like custards, etc., to avoid irritation caused by fluids entering the trachea through the tube. This plan was tried, but there was such a loathing by the patient of anything that approached solid foods that very little was taken. Milk and brandy in small repeated doses were given, but this excited a cough, which was so distressing that it was with great difficulty that she could be induced to take any nourishment by the mouth. Enemata of beef juice and brandy were given; but the morning following the operation found our patient in no better, and perhaps a worse condition, so far as the symptoms of exhaustion were concerned, than immediately after the operation, her pulse being then over 160.

At the suggestion of Dr. J. C. Clark, who was in attendance after the operation, the patient was kept in a recumbent position when taking nourishment, with her face turned to one side, and, instead of giving her nourishment by teaspoonful doses, she was induced to drink from a feeding cup, taking as large swallows as possible and swallowing rapidly. By adopting this method we were delighted to find that she could take two ounces of milk with two drachms of brandy at each feeding with little or no difficulty and no coughing, very little of the fluid entering the tube. As soon as the effects of the increase of nourishment and stimulants began to be felt there began a steady improvement in her condition, which continued until she had fully recovered. The dyspnœa did not return after the introduction of the tube, which kept free from mucus while it was retained, it being coughed up eighty-four hours after its introduction, there being no return of the dyspnœa after its expulsion. The expectoration became muco purulent on the second day after the operation, and on the third day bits of membrane were coughed up. During the first week after the operation she took thirty-two ounces of milk, two ounces of Cibyl's beef juice, and two ounces of brandy every twenty-four hours. Minim doses of fluid extract of digitalis were given, more especially for its diuretic effect, and on the third day,

* Read before the Medical and Surgical Club of Olean, N. Y.

when the expectoration became scanty and tenacious, two grains of chloride of ammonium were given every hour with satisfactory results.

The patient's improvement, although slow, was satisfactory, and at this writing, although her nervous system is considerably shattered, she is slowly recovering her usual health.

Clinical Reports.

NEW YORK POLYCLINIC.

SERVICE OF DR. LANDON CARTER GRAY.

ERB'S TYPE OF PROGRESSIVE MUSCULAR ATROPHY.*

(Reported by R. S. Newton, M. D.)

H. S., aged thirty-five, married, Englishman, parents Jewish Poles, came to the Polyclinic on January 7, 1889. His mother and uncle have some difficulty in walking, of unknown nature. Patient's health has always been good. He was a strong and athletic boy, seldom defeated in running, swimming, wrestling, turning hand-springs, or any rough play. When twelve years old he was apprenticed at sea, being a deck boy for three years, and his strength was unimpaired during this period. The first symptom noticed was an inability to start on a foot-race when fifteen years old; yet for several years following he carried a heavily laden basket daily as a match peddler. He married when twenty-one. At this time he walked with "a flopping-down of his feet." Eight or nine years ago he found that he had to pull himself up stairs with his hands, though he could run down stairs without difficulty and walk on the level as well as before. Two years subsequently both his arms were equally and insidiously affected, and, in attempting to lift anything heavy, he could not carry his arms beyond the horizontal—as in putting a load on his shoulder or head. He soon became awkward even in combing his hair. The main trouble appears to have been in his arms and shoulders, as his fine movements of adjustment remained intact. He continued to walk about, although his back grew very weak. For the past seven years his disease has gradually but positively progressed. One year ago he walked without assistance, though slowly and imperfectly, but he now needs a man to aid him. No history or any evidences of syphilis. Several of his children were seen, and presented nothing abnormal. He has never, at any time in the course of the disease, had any pains or paræsthesiæ; no disturbances of the sensory, sexual, rectal, or vesical functions.

Present Condition.—He is a short, heavily-built man, with enormously bulky shoulders, scapulæ that fall far away from the ribs, ridiculously thin arms and well-developed forearms, and perfectly normal hands. As he stands, his abdomen is greatly protuberant from the great lordosis present. A plumb-line from the shoulders falls away from the buttocks, and the concavity of the spine is fully five inches away from the line. The buttocks are small, and there is great waste of the thigh muscles. The calves are hypertrophied; the feet normal.

Measurements.—Chest, 96 centimetres; right biceps, 19½ centimetres; left biceps, 20 centimetres; right forearm, 25½ centimetres; left forearm, 24½ centimetres; right shoulder girdle, 58 centimetres; left shoulder girdle, 57 centimetres; right thigh, 35½ centimetres; left thigh, 34½ centimetres; right calf, 34 centimetres; left calf, 36 centimetres; circumference of shoulder, 113 centimetres.

The patient can inflate his chest slightly, and retain air but a short time. Diaphragm not affected. Movements of the head natural; forward and lateral movements of the head natural, but backward movement is limited from the hypertrophied muscles over the cervical prominence. The arms can not be raised above the horizontal; can only be brought forward to bow out; touch the finger-tips and palms with the greatest difficulty. Backward movement impaired. When he sits, the lordosis almost disappears, proving that the extensor muscles of the hips are seriously affected. In attempting to sit down, he falls like a rocket into the chair as soon as he bends past his center of gravity, and can not get up unaided. He must be pulled up like a dead weight, when he will stand for hours without fatigue, as he does every day at his stand in Washington Market. He has the exaggerated roll of a sailor in walking, with a loose, flopping movement of the legs. No static or locomotor ataxia, Romberg symptom, involvement of the cranial nerves or of the face, trophic or vaso-motor disturbances, or fibrillary movements. Deep reflexes preserved. Knee-jerks lost. Pupils active to light and accommodation. Optic discs normal.

The faradaic and galvanic reaction are lost in all the affected muscles, whether atrophied or hypertrophied groups. In some muscles which are greatly wasted the anodal closing contraction is equal to the cathodal closing contraction, but there are no other changes electrically.

MUSCLES ATROPHIED.	MUSCLES HYPERTROPHIED.
Upper extremity.	Upper pectorales.
Pectorales in part.	Trapezii.
Latissimi dorsi.	Supraspinati.
Serrati.	Levatores ang. scapulæ.
Rhomboidei.	Upper deltoid.
Lower portion of the deltoid.	Gastrocnemii.
All the muscles of the arms, with weak supinators.	NORMAL MUSCLES.
The glutæi, quadriceps, abductors, adductors of the thigh.	Sterno-cleido-mastoid.
The erectors and extensors in part of the spine.	All forearm (except supinator longus).
	All wrist and intrinsic hand muscles.
	All muscles of the leg, except gastrocnemii.
	All muscles of ankles and feet.

Remarks.—After first calling attention to this variety of atrophy in his work on electricity, Erb reported twenty cases,* and maintained that they represented a distinct type. The age of the patients ranged from seven to forty-six, but the disease generally began in youth before twenty, frequently in families, and often in the female members. "It is a peculiar form of progressive muscular atrophy, characterized by a definite location, definite course, definite behavior of affected muscles, and definite alterations in them, but without alterations in the spinal cord" (p. 510). There is a remarkable persistency in choice of muscles affected. It begins most frequently in the shoulders and upper extremities, but it may also commence in the back and legs. It is characterized by slow, mostly symmetrical, but intermittent and often stationary, atrophy and weakness of these definite muscle groups. It is an atrophy, says Erb, "which is frequently combined with false or true muscular hypertrophies, a peculiar firmness of the wasted muscles, but without any fibrillary contractions or any traces of reaction of degeneration. . . . All other parts of the body (*i. e.*, excepting the muscular system),

* The patient was shown to the Section in Neurology of the New York Academy of Medicine, February 7, 1889.

* "Deutsch. Arch. f. klin. Medicin," Bd. xxxiv, 1884.

be it of the nervous system, organs of sense, vegetative organs, or external cutaneous system, remain healthy." The muscles of the forearms (except supinators) and those of the hands remain usually unaffected throughout the course of the disease." Erb considers this form of atrophy to be interchangeable with muscular pseudo-hypertrophy, except that the lipomatosis may be wanting.

The disease appears to be rare outside of Germany, as only two undisputed cases have appeared in England, and none in this country before this case. Congenital defective predisposition of the muscular system appears to be the only known cause. The prognosis is most uncertain. The disease may slowly progress, or even become stationary, or after many years involve new or many parts. In a considerable number of cases the malady does not appear to have shortened life. So few cases have been under treatment that nothing definite can be urged in the way of therapeutics.

The symptom group, according to Erb, would be: 1. The strong tendency to heredity. 2. The onset in youth or before twenty. 3. The selective and definite location. 4. The definite course. 5. The prominence of the atrophic process. 6. The subordinate degree of the hypertrophic process. 7. The freedom of the hand and wrist muscles from attack. 8. The absence of all pains, paræsthesiæ, or sensory phenomena. 9. The absence of fibrillary contractions. 10. The definite behavior of muscles to electrical tests. 11. The strong clinical and pathological data which point to this being a disease of the muscular system, to the exclusion of any implication of the nervous system.

Correspondence.

LETTER FROM PARIS.

Lactose as a Diuretic.—Chloride of Methylene as a Substitute for Chloroform.—The Water-supply of Paris.

Paris, *June 28, 1889.*

Professor Germain Sée has startled us again lately with a new idea—that of using lactose in place of milk itself. It is all very well for Eloy to show afterward that Rabuteau and others had said years ago that lactose was a good diuretic, but the fact remains that the merit of demonstrating the therapeutical value of many of the lately introduced drugs, by careful clinical experiments, belongs to Professor Sée.

It would seem that lactose is the most powerful and at the same time the most inoffensive diuretic that we have, one hundred grammes of sugar of milk producing a diuresis that we are not certain to get with five quarts of milk. The polyuria resulting from the ingestion of the above-named quantity of milk-sugar is greater than that from any other form of medication. It produces very rapidly two litres and a half of urine, and this goes on to three and four quarts on the third day. Then it becomes stationary for a few days, and gradually falls again to two quarts and a half. During this time any œdema or dropsy that may exist disappears, while, the blood being dehydrated, there is no longer the same quantity of urine eliminated, but after a few days of repose the same effect can be produced by the same dose of lactose.

The diuretic action of lactose may be prevented by lesions of the kidneys and by diarrhœa; profuse sweating also may diminish its power, but it will certainly be shown at a later period. The sugar of milk is well borne and should be prescribed for eight or ten days at a time, allowing a few days to elapse between each period. Dr. Germain Sée gives one hundred grammes of lactose to two quarts of water, and this can be made more agreeable by the addition of a small quantity of brandy or mint water. All other drinks are forbidden. Even soup, if given, is measured, so that the quantity of all liquids taken will be known and their diuretic effect observed.

Dr. Sée is studying another group of diuretics, which he calls the "renal diuretics." They consist of caffeine and theobromine. He also insists again that when dyspnœa exists, iodide of potassium is the remedy to add to diuretics in all heart cases. He finds it is useless to change the iodide of potassium for iodide of sodium, under the mistaken notion that the first is toxic. Indeed, Dr. Sée believes that iodide of potassium is the best medicine we have for the heart and the circulation, and that it only lacks a diuretic effect, which he finds in lactose.

M. Dujardin-Beaumetz also has tried lactose in his hospital service and had good results, but he was led to try also glucose. He dissolved the grape-sugar in milk and found that it also had a diuretic effect. He found, in fact, that all the sugars had a diuretic action, if the kidneys were in a state favoring their action, but, fearing glycosuria, he advises the use of lactose only.

The regular administration of chloroform, to the exclusion of ether, is one of the peculiarities of European surgical practice. Several deaths that have taken place lately in the Paris hospitals, under our most skillful surgeons' hands, when every precaution had been taken and when the patients were apparently in a fair state of health, have brought the subject of danger in the use of chloroform up again. It is now proposed to substitute chloride of methylene, or what is more properly called methylic chloroform. Professor Regnauld has called the attention of the *Académie de médecine* to this substance, which was formerly spoken of with great favor by Sir Spencer Wells and also by Richardson. M. Regnauld has made a series of experiments on this drug with M. Villemin, his assistant professor, and he finds that this pretended chloride of methylene is nothing but a mixture of four parts (or volumes) of chloroform and one volume of methylic alcohol. It has, however, the great advantage of remaining unchanged in air and light. M. Polaillon gives the results of seventeen cases in which he used this product (which was carefully prepared for him by Professor Regnauld). Its action was found to be very slow, as it took from twenty to thirty minutes to produce sleep, although some patients were brought under its effects in fifteen minutes. But the great question is whether it is safer than ordinary chloroform or not, and M. Polaillon says that it would require a large number of cases before that question could be answered, but, from the number of times he has tried it, he thinks that it is certainly not so dangerous as chloroform. Under the action of the new mixture the pulse and respiration were regular. In any case the mortality under the use of chloroform is such that any effort to produce a better method of anæsthesia is to be encouraged.

Notwithstanding the enormous increase of the population of Paris owing to the Exposition, the city mortality is very low, and this notwithstanding that, owing to new fountains and the hot weather, there is a scarcity of water—so much so that the usual supply of spring water is not sufficient and the River Seine water has to be used, in certain quarters, although it is said to be teeming with typhoid bacilli. With all this, Paris is remarkably healthy. Dr. Seguin, of New York, has been presented to the Paris Academy of Medicine as corresponding member.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. Appleton & Co. Edited by Frank P. Foster, M. D.
NEW YORK, SATURDAY, AUGUST 17, 1889.

DISINFECTION WITH SULPHUR COMPOUNDS.

Experiments with sulphurous acid have been made by Dubief and Bruhl, at the laboratory of the Hôpital Cochin, for the purpose of determining the disinfecting powers of the gas in certain localities. A report of their bacteriological researches has been presented to the French Academy of Sciences. A summary of their results is given in the "Lancet" as follows: 1. Gaseous sulphurous acid has an evident destructive action on germs contained in the air. 2. This action is particularly manifest when the atmosphere is saturated with watery vapor. 3. Sulphurous acid acts upon the germs of bacteria. 4. When employed in a pure state this gas may destroy germs even in a dry condition if its action is prolonged.

What the fate of sulphur fumigations in sanitary work will be it is not easy to say. Sulphurous acid has often been declared useless, and yet it continues in use, and commonly the alleged uselessness has been demonstrated to have been but imperfectly made out. It has risen superior to so many attacks that it may do the same yet longer, and continue to be regarded among our boards of health as a favorite agent for disease prevention. The work of the French experimenters mentioned above tallies very closely with the positions taken by Dr. E. R. Squibb, of Brooklyn, in a paper on "Disinfection by Burning Sulphur," in "Gaillard's Medical Journal," wherein he remarks that the chemical changes which result from burning sulphur in dry air do not yield sulphurous acid, but sulphur dioxide, which, he says, is not disinfectant. "There should be moisture," he says, "either with the sulphur dioxide or with the infected matter, or with both." To fumigate with the active sulphurous acid, instead of the inactive dioxide of sulphur, it is only necessary to evaporate water to the extent of three or four times the weight of the sulphur to be burned, or to wet the surfaces to be disinfected, or both, so that plenty of moisture may be present; a shallow pan of water upon a kerosene stove, well started in advance of the lighting of the sulphur, and the floor, ceiling, and walls well sprinkled with water by means of an ordinary dust-brush, will yield the required amount of watery vapor.

The time has not yet come for the discarding of sulphur fumigations for sanitary ends, but it is imperatively required that, if this method is to hold its place as a disinfectant of value, it be practiced in a more scientific and thorough manner. If it becomes manifest from a future study of this agent that it is not destructive of spores or germs of communicable disease, it will, of course, be discarded for some agent like corrosive sublimate, which, while more potent, is at the same time more dangerous to handle on a large scale, as must be done when its use becomes a routine factor in public health administration. It is one thing to demonstrate the powers of some particular agent in the laboratory, but it is quite another thing and, in some particulars, a more difficult thing to bring that agent into daily use. For all that, let the laboratory work go on; we are grateful for every discovery and advance that it has made.

For the present, our conclusion is that the laboratory testimony against sulphurous acid as a disinfectant is conflicting, and that the agent should not yet be discarded, but be more thoroughly applied, and to this latter end it seems highly important that our boards of health and other authorities should review and revise their codes and circulars of instruction concerning the prevention of diphtheria and other infectious diseases.

EXECUTION BY ELECTRICITY.

The warfare that has been waged between the supporters and the opponents of the electrical execution law of New York State has given rise to the most conflicting kind of testimony regarding the lethal force of the agent required to be used hereafter. Those who oppose the law are, at the same time, in most instances, persons whose interests lie in the more profitable and popular uses of electricity for motor or illuminating purposes; by some strange logic of their own they seem to argue that if the electrical execution law can be, and is, carried into effect, there will be a stigma placed upon the commercial applications of electricity.

In spite of a variety of statements to the contrary, it is probable that a trial of the means provided by the new law must be had in due time; and we have no fear that it will not prove adequate. Professor William H. Howell, of the Johns Hopkins University, says: "Anybody who has been unfortunate enough to have a very strong electric current pass through his system must suffer paralysis of some or all of the nerve-centers. This may be temporary or may be permanent. If the paralysis does not affect the vital parts of the human mechanism, the patient may live. . . . The descriptions of the apparatus in the infliction of the penalty which the New York criminal is to suffer show that there is little possibility of his escaping almost instantaneous death. His head is to be invested in a metallic cap, and the full strength of a very strong current sent directly through the centers controlling the mechanism of life. These must be immediately paralyzed, and the beat of the heart, as well as the breathing, cease. The brain must also be entirely paralyzed at once, and all consciousness be lost."

Such a statement will, to the medical mind at least, carry conviction. Until the test has been made and the facts are found to contradict these scientific propositions, we shall expect to see the new law obeyed. The contracts have been entered into, we are informed, with our State officials for the delivery of a suitable electrical plant to each of the three prisons where the extreme penalty of the law will hereafter be administered—at Sing Sing, Auburn, and Clinton. These prisons already possess the steam-power sufficient to drive the form of

dynamo that is ordered. The dynamo is said to be of the Westinghouse pattern of alternating current, electric-light machine; the pressure of the current will be equal to that used in the system of electrical illumination.

THE DISINFECTION OF THE HANDS.

Much has been written on this important subject, but we are rather hindered than assisted in our efforts to arrive at practical conclusions by the very excess of literature. Many of the recent articles give such elaborate directions for cleansing the hands that the general practitioner despairs of grasping so many details, the omission of a single one of which, in the opinion of the antiseptic enthusiast, vitiates all the rest and endangers the life of the patient. At least ten minutes must be devoted to washing the hands before making a vaginal examination, if we follow the teachings of a well-known writer on antiseptic midwifery, and some of our most careful and successful surgeons are equally thorough in their preparations for an operation. This is all very well for the gentlemen with whom this practice has become such a matter of daily routine that they are not obliged to stop and think of the various steps of the process, but the general practitioner, whose work is such that he really needs to exercise greater care than the surgeon, must have some shorter and equally reliable rules. It is, therefore, with no little satisfaction that we call attention to a recent article by Panschinger, in the "Münchener medicinische Wochenschrift," in which he reconciles his practical experience with the experiments of Fürbringer, who arrived at the conclusion that the thorough scrubbing of the hands with soap and warm water was more important than the use of any particular antiseptic solution. The latter's directions are briefly as follows: Clean the nails, scrub the hands for one minute with soap and warm water, immerse them for one minute in alcohol (ninety per cent.), and wash them for another minute in a solution of bichloride of mercury, one to two thousand, or in a solution of carbolic acid, one to thirty.

MINOR PARAGRAPHS.

VOLATILE OIL OF CORIANDER.

This substance has been made the subject of experiments by M. Cadéac and M. Meunier, who have reported upon them before the *Société nationale de médecine*, of Lyons, at a meeting the proceedings of which are reported in "Lyon médical." According to these investigations, the action of coriander is more like that of fennel than like that of anise. Unlike fennel, however, it does not cause convulsions, and the authors do not feel warranted in calling it a carminative. It causes a brief stage of excitement—all the briefer as the dose is larger—followed by blunting of the sensibility, muscular relaxation and inco-ordination, and the stupor of ordinary drunkenness. Its local action is only slightly irritant, and its effects are not materially different whether it is given by the mouth, by inhalation, or by intravenous or subcutaneous injection. It is said to kill the germ of farcy in three days and that of typhoid fever in seventy hours. Meat impregnated with it becomes mummified.

RECIPROCAL TRANSFUSION.

A correspondent of the "British Medical Journal," taking for his text Dr. Lauder Brunton's suggestion of washing leucomaines out of the blood of fever patients by injecting saline solutions, asks what the effect would be of mutual transfusion, one of the parties being a fever patient and the other a person proof against the fever by virtue of having had it. The blood of such a person, he thinks, would be better than mere blood from a healthy person who had not had the disease, on the hypothesis of its containing some element destructive to the micro-organism. The formation of such an element he considers a more probable cause of immunity from a second attack than consumption of the pabulum on which the micro-organism must subsist.

THE BACILLUS OF SENILITY.

Since Brown-Séquard's, no new elixir of life has actually been discovered, but Dr. Achille Malinconico feels confident that he is on the trail of one. In a brochure entitled "Trattato sulla possibilità della prolongazione illimitata della vita umana," mention of which we find in the "Deutsche Medizinal-Zeitung," he unfolds his plan of operations. It rests upon the assumption that decay and death are not necessary phases of development, but the work of a specific micro-organism. On the principle of "first catch your hare," this organism must be identified, and Dr. Malinconico has no doubt that this will soon be accomplished, and that its destruction will then sink to the level of a mere detail. Until then, however, death still hath its sting and the grave its victory.

THE OPIUM HABIT IN BEASTS.

A writer in the "Annales de médecine vétérinaire," M. Jammes, a summary of whose article is given in the "Fortschritte der Medicin," states that in countries where opium smoking is customary it is not uncommon to see cats, dogs, and monkeys that are much in the presence of men acquire a taste for opium in consequence of inhaling the fumes given out by the smokers. He cites three examples, one in a cat and two in monkeys.

ITEMS, ETC.

The Medical Microscopical Society of Brooklyn will hold its next meeting at the Hoagland Laboratory at 8.30 P. M., Wednesday, September 4th. Papers on the following subjects are announced for the meeting: "Intimate Structure of the Derma of the Skin"; "Silver Images in Inflamed Cornea."

Back Numbers Wanted.—If any of our subscribers or advertisers have numbers of the Journal for January 12 or May 4, 1889, which they do not care to retain and will send them to the publishers, they will confer a great favor.

The Metropolitan Throat Hospital.—During the past year the work of the Throat Hospital at No. 351 West Thirty-fourth Street has included attendance upon 10,036 patients.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from August 4 to August 10, 1889:*

Smith, Andrew K., Colonel and Surgeon. By direction of the Acting Secretary of War, leave of absence for seven days is granted. Par. 12, S. O. 178, A. G. O., August 3, 1889.

Woodhull, Alfred A., Major and Surgeon. By direction of the Acting Secretary of War, leave of absence for two months on account of sickness, with permission to leave the Division

of the Missouri, is granted. Par. 5, S. O. 178, A. G. O., August 3, 1889.

JANEWAY, JOHN H., Major and Surgeon. Leave of absence for two months is hereby granted, with permission to apply for an extension of two months. Par. 3, S. O. 52, Headquarters Division of the Pacific, July 29, 1889.

COCHRAN, JOHN J., Captain and Assistant Surgeon, now on duty at Fort Adams, Rhode Island, by direction of the Secretary of War, will report in person to the commanding general, Department of the Platte, for temporary duty with troops *en route* to and at the summer camp at Fort Robinson, Nebraska. Upon the completion of this duty, will return to his proper station. Par. 10, S. O. 180, A. G. O., August 6, 1889.

GORGAS, WILLIAM C., Captain and Assistant Surgeon. By direction of the Secretary of War, the leave of absence granted in S. O. 84, July 3, 1889, Department of the Missouri, is extended two months. Par. 2, S. O. 182, A. G. O., Washington, August 8, 1889.

BANISTER, WILLIAM B., First Lieutenant and Assistant Surgeon, by direction of the Acting Secretary of War, is relieved from further duty at Fort Wingate, New Mexico, and will report in person to the commanding officer, Fort Grant, Arizona, for duty at that station, relieving Captain ARTHUR H. TAYLOR, Assistant Surgeon, who, upon being so relieved, will proceed to Fort Wingate, New Mexico, and report in person to the commanding officer thereof for duty at that post. Par. 4, S. O. 178, A. G. O., August 3, 1889.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN SURGERY.

Meeting of May 13, 1889.

Dr. CHARLES A. POWERS in the Chair.

A Case of Double Empyema.—Dr. F. HUBER presented a patient, a boy fourteen years old, of whom he related the following history: On January 14th he had fallen to the ground, from a height of eighteen feet, and had been rendered unconscious for a short time by the blow. Those who happened to be near had drenched him with water. There had been no fracture of the ribs or the skull. A few hours subsequently the boy had been seized with a severe chill, followed by fever and sweating, and within a day or two it had become evident that he had a severe attack of double pneumonia. On the fifth day he had been found in a very precarious state, unable to sit up so as to allow of an examination, and for a week following life had been sustained by digitalis and camphor. After the third week the chest had given signs of the presence of fluid in large amount. On the twenty-seventh day a pint of pus had been removed by the aspirator. Nearly six weeks after the accident it had been found necessary to make openings for permanent drainage, and at that time shreds and also masses of lymph, besides pus, had been removed. At the third month the patient had been able to walk about, and the drainage-tubes had been dispensed with. The patient was in sound condition on the evening of the meeting, five months after the fall. The speaker believed the attack had been caused by the drenching the patient had received when in the unconscious state produced by the shock of his fall. He had delayed so long in establishing permanent drainage because the heart action had been so feeble. The case illustrated the fact that simple incision, drainage, and washings out with hot water were an efficient means of dealing with even so severe a case of empyema as this had been. He would finally call attention to the tubes he had used for drainage and irrigation, which, by having a simple flange, had been made so that it would have been impossible for one of them to slip into the chest cavity.

Dr. R. T. MORRIS called attention to a form of drainage-tube devised by Dr. Phelps which had a flange to prevent its entering too far, and also a rubber valve which closed as soon as an inspiration began, but opened with each expiration. Any masses of lymph formed late in the course of an empyema were expelled with certainty.

Dr. A. M. PHELPS thought patients having empyema should be divided into three classes: 1. Those having simple empyema; that is, a purulent effusion, or, in other words, an effusion of serum afterward becoming purulent. Such cases should be regarded in a very favorable light; they did not present the granulating surfaces of the severer forms of the disease. The lung would expand when pus of this sort was removed, and this, together with a certain amount of falling in of the chest wall, would rapidly close up the space left. 2. Those presenting the complicated form of the disease, in which large flakes of fibrin were formed and the serous surfaces had patches covered with granulation tissue. Here the more serious surgical measures would probably be needed. 3. Those patients in whom a tuberculous pulmonary abscess had broken into the pleural cavity and set up pyemia. All such died.

As regarded treatment, all abscesses required the same sort of treatment; the pus must be removed and the pus cavity must be obliterated by making its walls fall in on each other. If to effect the latter object we cut away two or more ribs, so as to allow the chest-wall to fall in, we gained the point desired. Some doubt had been raised in many minds as to the expediency of cutting open the chest cavity, on account of a danger of causing sudden collapse of the lung. In an experiment on a dog, exposure of the lung had been followed by collapse, and this had continued until a piece of glass had been fitted over the opening, when the collapsed portion had presently expanded again as respiration went on. In opening the chest for empyema, therefore, the aim should be not to destroy the expansion of the lung; and whenever, to aspirate the chest cavity, a drainage-tube without a valve was inserted the principle was violated. He believed that, as a rule, the chest should never be washed out in empyema unless decomposition had set in, and then Condy's fluid, and not bichloride of mercury, should be used to impregnate the water.

Dr. S. T. ARMSTRONG asked of Dr. Phelps the results he had got by operation in non-tubercular cases.

Dr. PHELPS answered that his success had varied with the causes to which the empyema had been due, and had also depended upon his getting the chest wall to fall in. In his four last cases all the patients had recovered. A number of cases had been recorded by Dr. Gerster where he had removed large portions of the ribs, with recovery in all.

Dr. ARMSTRONG remarked that in his own experience the results following resection had been disastrous, and had led him to feel that the principle on which the operation was based was not wholly correct. He agreed that air should be excluded from the chest. At the same time, the very fact that suppuration was going on in a given case indicated that micro-organisms were present, and these we should have some means of reaching and destroying; it was not necessarily attained by getting approximation of the inner surfaces of the cavity. In all his own cases where he had performed resection a sinus and a discharge of pus had persisted. He considered the case presented by Dr. Huber as one where drainage and washings had

had a successful result. In one of his cases where the patient had recovered (without resection) the same conditions had been present, and his treatment had likewise consisted of drainage of the cavity and thorough irrigation of the cavity with an antiseptic solution strong enough to destroy micro-organisms. The valved drainage-tube, excluding air as it did and allowing the lung to expand by its own tendency, seemed to him the best means of getting a return to normal conditions.

Dr. H. Koplik thought that when empyema occurred in children the prognosis was regularly more favorable than in adults; the latter were much more likely to recover with a crippled lung—*i. e.*, granulations followed by adhesions between the serous surfaces, or the beginning of tuberculous disease. In children the process was commonly a serous effusion which became purulent after a time.

Dr. Huber said that he had sometimes diagnosticated empyema as early as the fourth day of the illness, and he had often found the fluid in the thorax purulent from the first. His experience had been quite extensive, embracing thirty cases where he had operated in children. Early diagnosis was the important point in the management of these cases. If the incision was made before the lymph had become organized, the chances of a recovery were good. He had lost only one case, and there the drainage tube had slipped inside the chest. Weeks or months had sometimes been needed for complete recovery, but in none of his cases had a permanent sinus remained. As soon as the chest cavity was emptied of an effused fluid the ascent of the diaphragm and the returning mass of intestines went far toward effecting a closure of the recent space.

Excised Cancer of the Rectum.—Dr. Parker Syms presented a specimen of an excised rectal carcinoma, and the patient, a colored woman forty-four years of age, from whom the growth had been removed. Her health had been good until eleven months before the operations, when she had begun to suffer from piles, protrusion of the bowel, pains in the affected region, and bleeding. When she was first seen by the speaker a mass of scirrhous growth protruded from the sphincter, and the general health of the patient was impaired by the loss of blood and the obstruction to defecation. The diseased tissue had been found to extend upward for three inches, but the lymphatics of the region had not been involved perceptibly. The patient's condition had been so poor that he had not done the major operation until the fourth week after doing inguinal colotomy, by which her health had been much improved. He had then determined on the operation devised by Allingham, Jr., in which a circular incision was to be made at the sphincter and carried up around the diseased bowel to a point to which the process had not extended; then, having cut the bowel square off and removed the diseased lower segment, the operator was to draw down the healthy gut and stitch it to the sphincter. In the present case, in carrying out these procedures, it had been necessary to remove the entire posterior vaginal wall and to open the *cul-de-sac*, which had been left to granulate, after establishing drainage. His experience in this case, although the result had been excellent, was that the method was best suited to cases where the growth was low down, or just adjoining the anal outlet. The wound made in the present instance had been large and the exposed surface large. He had been compelled to open the peritonæum, and had exposed the patient to more danger than the case warranted.

Demonstration of the Mechanism and Anatomical Features of Subluxation of the Head of the Radius.—Dr. R. T. Morris read a paper with this title, with the presentation of a specimen. (See p. 684, vol. xlix.)

Dr. J. H. Girdner, while he considered the demonstration good in its way, thought an element of doubt remained. A joint in a dead body must be a very different thing to deal with from the same joint during life. When the displacement was produced in a living body we had to take into account the swelling and pain commonly present; the traction of the muscles about the joint was not entirely overcome, either, by the anæsthetic. We could not make every deduction from a consideration of the position of the parts, etc., as seen in the dead body, therefore. The speaker had once made a series of experiments on dead bodies relative to the breaking of bones, and the results so obtained he had never been able to check by what he saw taking place in living subjects accidentally.

Dr. Van Arsdale, having examined the specimen prepared by Dr. Morris, remarked that the explanation proposed by the latter had been given by other investigators in times past, and had been specially considered in his own paper on the subject, recently read before the Section. It had first been advanced by Hugernet, but had been reviewed and discarded by Schroeble. It had also been considered as the most probable one by Dr. Stimson. The objections to the theory were that the action of the muscles in the living subject kept the capsule of the joint well out; and that it did not explain how the condition should be retained for three days and upward, as it often was.

A Hip-Splint for Tubercular Arthritis.—Dr. Phelps presented a boy who was wearing an apparatus of this sort, consisting of a steel bar running along the inner side of the leg, and of attachments for securing abduction and extension of the limb and at the same time absolute immobilization of the joint. The great object to be secured was to enable the surgeon to control the effects of the reflex spasm in the muscles about the joint. Wearing this apparatus, no patient could recover with an angular deformity, and meanwhile walked about freely.

Dr. L. H. Sayre thought that in many cases Dr. Phelps's device would be a very admirable solution of the difficulties presented by holding the joint in the position needed, and giving the physician good control of spasm, which Thomas's splint did not do. At the same time he considered that in many cases no upright piece was needed to prevent bending of the limb, and that in many cases a limited amount of motion might be allowed. It was not always necessary to make traction in the line of the axis of the neck of the femur, and relief from pain could be obtained by simple straight traction. The apparatus was excellently adapted to making lateral traction where that was needed, and the shoulder-piece was decidedly preferable to Thomas's shoulder-splint.

Dr. Phelps insisted that it must be a mistake to allow motion in a joint in tubercular inflammation, for any motion favored the development of reflex spasm, and also broke up the new tissue being thrown out, set up fresh inflammatory action, and directly led to ankylosis. He never had a splint worn in bed. The long traction splint often used was certain to produce angular deformity, or else shortening and ankylosis. Traction, to be of real service, must be made in the line of the origin and insertion of the muscles affected with spasm, whether flexors, abductors, or adductors.

Compound Fracture of the Patella.—Dr. Armstrong presented a patient upon whom he had operated for an injury of this sort with entire success. (See p. 174.)

Dr. Morris said he wished to speak of two matters in connection with these operations—the chances and conditions of obtaining bony union, and the sort of drainage best adapted to a perfect result. Any one who had cut down on a fractured patella could see how it was that the old tradition that no bony union occurred in the patella had held sway so long. When we considered the blood-clots which formed between the bony frag-

ments and the fibrous shreds from the torn capsule that were turned inward between the underlying pieces of bone, we might well question if bony union had ever taken place under the old methods of treatment. It was difficult enough to obtain bony union, even when we made an ample opening and dissected up the inverted ligamentous fibers. He had had three cases, and had obtained bony union in one; in the two others it had been impossible to bring the fragments into apposition. In a compound and especially in a complicated fracture of the patella it was always in order to lay open and wash out the parts, and to trim away the introverted fragments of the capsular ligament. For draining the wound he could recommend the absorbable bone drainage-tubes. They were needed to let out any excessive serous secretion that might occur; otherwise there should be no need of draining the joint. However, with the permanent dressing a tube should always be included to provide for a possible secondary infection of the joint while dressing it.

Dr. T. H. Manley asked for opinions as to whether the surgeon should make it a rule to remove the wires used to unite a fractured patella, or to leave them buried in the parts. He had had one case of compound complicated fracture of the patella. It had been received in a railroad accident, and the joint had been badly infected by sand, bits of paper and clothing, etc. Every precaution had been taken to get the parts into an aseptic condition. However, surgical fever had set in, and the patient had died in a few days.

The speaker had employed the wiring method in about eight cases, and had met with no unfavorable results, unless there should prove to be such in his most recent case, then under his care, in which for some unknown reason a purulent infiltration into the muscles of the thigh had been set up, and he had been compelled to make a number of incisions for drainage; however, the patient's condition was improving. While there were many things to encourage the surgeon in undertaking these operations, he still believed that complete bony union of the patella must always be an exceptional result. The patella was only a sesamoid bone and had no periosteum. Moreover, whether a fibrous or a bony union was secured, the fracture recurred very easily, as compared with the likelihood of recurrence when the shaft of a bone had been fractured. The speaker then related several instances of successive fractures of the patella. In a case under Dr. McBurney's care the patella had been refractured while he was making gradual and cautious movements of the limb to break up the stiffness in the joint, after the union of the recent fracture was thought to be complete and firm. Union was less likely to be lasting in proportion as the seat of the fracture was near to the junction of the ligamentum patellæ with the patella. But it was always a defective union, and an operation to bring about that union must always involve some additional dangers, unless, indeed, the joint had already been exposed by the trauma.

Dr. Armstrong replied that while a number of instances were on record in which refracture had occurred, it must not be taken for granted that they occurred in the exact seat of the primary fracture. He had met with one case, and was certain the new fracture had run through a different part of the bone. He should expect after union had occurred that a refracture would be more likely to occur in any other part than the line of union. As regarded leaving in the wires, he could only say he had met with some instances where, on account of the irritation set up by them, a second operation had been required for their removal.

Demonstration of a New Medical and Surgical Battery.—Dr. J. H. Girdner exhibited a new battery designed to furnish with certainty any sort of current which might be desired, and at the same time be readily carried about. That such a battery was needed, all who had endured the incessant vexations and disappointments connected with the management of even the best chemical batteries would probably testify. His device consisted simply of a battery of one, two, or more secondary storage cells (according to the amount of work required) which could be charged from a dynamo, or, if used in country practice, from the ordinary gravity cells. Once charged, such a battery supplied electricity of large amount, sealed up and portable, not liable to leakage, always instantly available, and convertible into any sort or strength of current desired. The speaker then attached the battery successively to a motor, a cautery, an electric arc light, and a faradaic vibrator, and decomposed water with the direct current. The expense was slight in view of the work done, a double-celled battery complete costing about fifty dollars. The battery improved with age. It was made and sold by Ford, of New York.

A Mechanical Device for making Roller Bandages.—Dr. Huber presented such an instrument. It was so arranged that a bandage was evenly spread or sprinkled with plaster of Paris at the same time that it was wound on a revolving cylinder.

Objections were made by Dr. Phelps and others that any mechanical bandage roller was apt to wind too tight a roll, so that it did not wet through easily; and, secondly, that a machine-made bandage did not have the lightness requisite in a bandage used to make a plaster jacket. A bandage could be rolled by hand and impregnated with plaster from which a corset might be made weighing but three pounds. A corset made from the machine-made roller weighed not less than eight pounds, and this difference in weight was a serious objection to the latter.

NEW YORK SURGICAL SOCIETY.

Meeting of May 22, 1889.

The President, Dr. Lewis A. Stimson, in the Chair.

Operation for Deformity resulting from an Unreduced Pott's Fracture.—The President presented a patient upon whom he had operated for the relief of a deformity due to faulty repair after Pott's fracture—a woman, aged thirty-one, who had been injured sixteen months previously. The fracture had involved the bones of the right ankle. The woman had remained in a hospital for two months. For some time after her dismissal she had walked about, and her use of the limb had somewhat improved for a year following, and still the result had been far from satisfactory. The foot had been markedly displaced outward and backward. He had operated on this patient on April 1st of the present year. He had begun by making two incisions—one beginning three or four inches above the tip of the external malleolus and carried downward and forward upon the dorsum of the foot; the other had been made on the inner side of the foot, beginning about two inches above the malleolus and ending on the inner side of the foot in front of the malleolus. It had then appeared that the foot was so far displaced backward as well as outward that it lay entirely behind the tibia. A large nodule of bone had formed in the torn internal lateral ligament, which completely prevented a reduction of the displaced bones. After its removal and division of the callus that united the broken fibula, he had found himself still unable to restore the astragalus to its true position, and on further dissection he had found a large bony growth forming a buttress or spur on the back of the tibia, against which the body of the astragalus was supported. After removal of this spur, reduction had still been prevented by the contraction of the muscles, and, as the articular cartilage of the tibia had in great

part disappeared, he had cut away enough of the upper part of the body of the astragalus to make reduction possible. The incisions were then closed, two drainage tubes were inserted, and a creolin dressing was applied. The course had been uneventful. The dressing had been changed once, and now, in the seventh week, there remained only a small superficial granulating surface over the internal malleolus. The foot, although still somewhat deviated to the outer side, was entirely serviceable, and there was some motion at the ankle joint—enough, he thought, to enable the patient ultimately to walk without a limp. He had not ascertained how this deformity had failed of being reduced at the time of the accident, but he thought it was not unreasonable to assume that it had been overlooked. The displacement backward, although evident, had not been so marked clinically as one would perhaps suppose. The heel had been prominent, and the foot shortened between the toe and ankle, but until the operation was done he himself had not recognized its full extent. The case exemplified the importance of great care in making and maintaining reduction after such fractures.

Dr. Willy Meyer remarked that two cases of deformity, following a badly treated Pott's fracture and very similar to the one just described, had recently come under his observation. The deformity had existed for two months in one case and four in the other. Both patients had been markedly flat-footed and utterly unable to walk. The speaker had seemed to get the same good results as those obtained by the president by performing linear osteotomy just above the ankles and then reducing the foot. He had chiseled through the bones at the usual seat of Pott's fracture, and first overcorrected the deformity, the intention having been to put the foot into its normal position definitely at the time of the first change of dressing, twelve days after the operation. Both patients had recovered without fever or any other reaction, and now walked without difficulty. The speaker intended to present both patients before the society after the summer vacation.

Dr. Frank Hartley asked whether it was possible to reduce the deformity in this way without taking out a wedge-shaped piece of bone, and whether Dr. Meyer had cut the bone with the osteotome transversely or obliquely.

Dr. Meyer replied in the affirmative; in both cases he had made the chisel pass through the tibia obliquely from the inner side below to the outer side above. There had been an abundance of callus, still quite soft, which had been readily passed by the chisel.

The President said that, strictly speaking, Dr. Meyer's operation was a correction of the functional disability, not of the deformity of the bones—that is, it brought the foot back directly under the shaft of the tibia and thus enabled it to bear the weight of the body without undue strain upon the internal lateral ligament, but it did this by shifting the lower end of the tibia also to the inner side. It left the abnormal relation between the astragalus and the lower end of the tibia and the fibula uncorrected. His own operation was designed not only to relieve the functional disability, but also to correct the displacement of the astragalus and to restore the malleolar mortise.

Dr. Meyer thought that the main result to be gained was to make the patient walk, and this in the easiest way; when the patient could step on the outer side of the foot he could walk.

Dr. C. K. Briddon thought Dr. Meyer's case quite exceptional and that the lesion had been one of minor degree. The very fact that the president had found it difficult to reduce the deformity after he had exposed the lesions of the bony parts would prove that it was difficult and quite exceptional to reduce such a deformity by osteotomy alone; and it also showed that the operation of exposing the bony parts by adequate incisions was the safer of the two methods. He would be understood that he deemed it quite proper for Dr. Meyer to have used osteotomy in the way that he had, but he believed it would fail to accomplish the result desired in many cases, in which event an operation by open wound would be necessary.

The Surgical Treatment of Struma.—Dr. Hartley read a paper on this subject. (See p. 169.)

Dr. F. E. Lange inquired of the author what plan he had for dealing with hæmorrhage when performing partial extirpations, either that occurring during the operation or secondary to it; also whether he had met with any severe cases of a cystic or adenomatous character.

Dr. Hartley replied that he had seen one case in which severe hæmorrhage occurred during operation, but never hæmorrhage of a secondary sort. In this instance the tumor was a vascular and partly substernal adenoma. The veins were irregular, large, and thin-walled. The hæmorrhage had occurred from the inferior thyreoid and thyreoideæ imæ veins. They had been isolated, but during ligation were torn. They were rapidly caught, however, and ligated again.

Dr. Lange had seen two cases in which secondary hæmorrhage occurred, following severe vomiting as the patients recovered from the anæsthetic. It had been mostly venous in origin, and not attended by serious consequences.

Dr. Briddon referred to a case which had come under his treatment in the Presbyterian Hospital, which had been seen by a number of surgeons of New York, and in which there had been considerable doubt as to diagnosis. It occurred in a female about thirty years old, and she had been suffering some time from dyspnœa. There was a tense elastic swelling occupying the middle and left side of the neck. It rose and fell with the movements of respiration, and when prominent during inspiration it was resonant. On one occasion Dr. Lange had detected fluid by introducing a fine needle. The trachea was displaced to the right and compressed. The only diagnosis that could be arrived at had been that it was thyreoid, solid, and cystic, situated in the mediastinal space, and complicated with a pneumonocele. The tumor was exposed by a large V-shaped incision, and was found to be exceedingly vascular—so much so that the most careful manipulation was followed by copious hæmorrhage, requiring the application of a number of ligatures. A cyst was exposed and emptied and its edges were sutured to the integuments, and it was not deemed prudent to continue the operation. The patient was not benefited; the apnœa continued until her death two or three days afterward. The autopsy revealed the presence of a large vascular tumor involving the thyreoid and situated deep down behind the sternum. The trachea had been displaced to the right, and its walls had been approximated by the pressure of the tumor. It had appeared to the speaker that this condition would have been temporarily relieved by section of the isthmus between two ligatures, and he had thought that after such section a more radical operation could have been made by turning the tumor to either side, until the supplying vessels had been reached and ligatured. This would have endangered the laryngeal nerves, but he thought the operation could have been accomplished. It would have been impossible to accomplish anything in the ordinary manner, so thin were the walls of the innumerable vessels exposed in the wound. The speaker believed that in vascular hypertrophy or struma it was better not to open the capsule; the walls of the blood-vessels were so thin that when unsupported by the capsule they gave way at all points.

Dr. Meyer asked if Dr. Hartley had ever had the opportunity, in his operations, to follow the advice to apply an Esmarch's bandage to the pedicle of the goître. It was thus pos-

sible to perform the intraglandular shelling out of the diseased portions of the thyreoid gland without the loss of a drop of blood. The plan seemed to present but little difficulty, as it was easy to raise the lobe out of its bed as soon as it had appeared in the wound, and apply the bandage.

Dr. HARTLEY replied that he did not remember ever having met with much hæmorrhage, but he thought a clamp placed on the isthmus of the gland would render an equivalent service.

Dr. BRIDDON asked what was meant by the pedicle.

Dr. MEYER replied that the term might be used to signify the portion of the lobe beyond the largest diameter and attached to the larynx and trachea. Of course there was no real pedicle of the goître. A species of pedicle was formed merely by the application of the elastic ligature, especially after the shelling-out of the node or nodes by means of a blunt instrument. He had not yet tried the method himself, but should certainly do so in his next cases.

Dr. BRIDDON repeated the statement that in the case just detailed by him a large portion of the mass had been below the clavicle and beneath the sternum, upon which Dr. Hartley remarked that he had had a case of this kind where an operation for extirpation of the gland was performed. A portion of one lobe had extended an inch and a half below the sternum. The patient had suffered from marked asphyxia, and this had been at once relieved when the process of the tumor had been lifted out of the mediastinum.

Dr. LANGE asked if Dr. Hartley had seen any cases of malignant goître.

Dr. HARTLEY replied that he had seen one in a girl. The cyst had opened like an abscess; the growth coming out of the opening three weeks afterward, when she entered the hospital, had suggested sarcoma. The lobe was removed and the mass cut down upon and removed as far as the upper border of the left lung. The patient now breathed well, but the disease would soon involve the trachea.

Dr. LANGE then cited two cases in which he had operated for the relief of the intense dyspnœa. In one case the tumor had projected into the trachea; at least, by the laryngoscopic mirror it had been possible to make out a mass protruding into the trachea below the vocal cords. It had been necessary to perform tracheotomy, which was done without an anæsthetic. The patient survived several weeks, and died of septic pneumonia, caused by the breaking down of the tumor and the inhalation of particles of purulent matter. The second patient had died on the table from either shock or asphyxia during an attempt to perform tracheotomy. Before the operation began the patient had been so cyanotic and so nearly asphyxiated by carbonic-acid poisoning that he had not dared to still further increase the dyspnœa by giving an anæsthetic. So the operation had been begun with the patient in a sitting posture, as lying down so increased the dyspnœa. It had been very difficult to find the deeply imbedded trachea. At last he found it displaced over to the right side, but before he could make an opening the patient had died. He opened the trachea when this had happened, and tried to restore life by artificial respiration, but without success. He had never yet performed a total extirpation of the thyreoid body, but he had operated upon many cystic and adenomatous growths in this organ, and had never had to complain of ill-success. Most of his patients had recovered easily.

Some very practical advice had been given by Burkardt, of Stuttgart, with reference to cystic tumors, that we should distinguish between the capsule of the thyreoid and that of the tumor. Sometimes the two lay close together, and here it was necessary to watch very carefully, for, unless the incision went through the capsule of the thyreoid on to that of the tumor, there would be much hæmorrhage, and difficulties would be met with at every step. Sometimes it might be necessary to cut through a layer of glandular tissue of more or less thickness to get to the surface of the tumor. In such cases considerable hæmorrhage sometimes took place. The same thing applied to adenomata.

The PRESIDENT instanced a case of malignant disease of the thyreoid in which the dyspnœa had been so severe that he had feared to place the patient in a recumbent posture, or to give an anæsthetic. The operation was done under cocaine. The trachea was found displaced to the left and deeply imbedded in a mass of calcareous degeneration which existed at that portion of the diseased growth, but he had succeeded in giving the patient a respite which had lasted for some weeks.

Dr. B. F. CURTIS, speaking of the difficulty of recognizing the different layers of tissue which existed about the thyreoid cysts, remarked that he had once removed from a woman a cyst of the size of a base-ball. At the outset of the operation he had made several false beginnings, getting between the wrong layers of the capsule, as the difficulties of dissection soon convinced him, and so, after trying several layers, he had come to the true capsule of the cyst, and enucleation had then been accomplished with no difficulty whatever. The combined layers which in this case inclosed the cyst had been no thicker than a piece of blotting paper. There had been absolutely no hæmorrhage during the operation.

Dr. MEYER remarked that a case similar to Dr. Curtis's had occurred in his own practice last summer. He had found it easy, after finding the true capsule, to shell out the cyst. He also wished to put on record a case which had recently appeared at the German Hospital of a Swedish girl having apparently numerous lymphatic swellings along either side of the neck, which were thought to be lymphomata until an operation was done for their removal, when it appeared that they were quite another thing. Eight different masses or swellings had been distinguishable before the operation along the side of the neck between the clavicle and the lower jaw on the left side, and seven on the right side. They had been irregular in shape, and so not identical with the oval swellings proper to lymphomata, but they had been movable. All had proved to be small goîtres, each supplied by its own artery. It had been one of the rare cases of multiple goître. Microscopical examination had shown them to be encystic parenchymatous degeneration. The patient had made a quick recovery.

Dr. HARTLEY spoke of a case which he had seen in Billroth's clinic at Vienna of a very peculiar goître situated in the posterior triangle of the neck, behind the sterno-mastoid muscle, which had been found to be a tumor of an accessory thyreoid gland. The speaker here added a list of all the possible situations in which accessory thyreoid glands might be met with, the percentages in the different varieties of cases recorded, the presence of an accessory thyreoid of any sort, etc.

Abdominal Hysterectomy.—The PRESIDENT showed a specimen, consisting of a uterus in a state of fibroid degeneration, which he had removed by the method of total hysterectomy described in the "New York Medical Journal" for March 9, 1889, the leading feature in which was the preliminary ligation of the uterine arteries. Some hæmorrhage had been encountered in this operation, the fifth that he had done. As before, he had divided the uterus above the cervix after applying the two ligatures, and so had removed the body of the tumor before removing the cervix. He had in this case made one of the incisions for the exposure of the uterine artery through the anterior layers of the broad ligament, instead of the posterior, as heretofore, but the result had been such that he should henceforth return to the previous plan of reaching all

the vessels from the posterior aspect of the broad ligament. In removing the cervix there had been considerable hæmorrhage, and five ligatures had been required. However, by this method of operation any bleeding vessel could readily be secured. The patient was now doing well, having had no temperature above 100° F.

Actinomycosis in the Right Epigastric Region.—Dr. Lange reported that in the case of actinomycosis, of which he had given an account and shown the patient, and specimens under the microscope, at the previous meeting, he had since operated for removal, but without success. It had been found that the suppuration extended between the liver and diaphragm in the direction of the vertebral column. He had not been able to make out the bottom of the suppurating cavity. The tissues above the diaphragm were in all probability infected, so far as could be judged by the physical signs over the lower lobe of the left lung. The patient had never yet expectorated, but he had a short, hacking cough. A great mass of the actinomycotic matter had come out from the incised wound during the operation. The patient would probably succumb before long to the exhausting suppurative process that was going on. It was not now possible to remove the infected matter from its deeper ramifications.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Eleventh Annual Congress, held at Washington on Thursday, Friday, and Saturday, May 30 and 31, and June 1, 1889.

The President, Dr. Ethelbert C. Morgan, of Washington, in the Chair.

(*Continued from page 161.*)

The Intimate Relations between Chronic Diseases of the Upper Air-tract and Neurasthenia.—Dr. W. H. Daly, of Pittsburgh, read a paper on this subject. (See p. 176.)

Dr. John O. Roe, of Rochester: This is a subject which can not fail to interest us, because we all must have met with many such cases, and it simply illustrates the general effect which local irritation may have upon the system. The persistent nagging of a constant irritation will sooner or later produce a depressed condition of the system, and, unless we remove the local cause, we can not hope to relieve the general condition. It is useless to enlarge upon the subject, as most of us are familiar with it, and it should not escape our attention in cases of general debility that we must look for and remove causes of local irritation.

Dr. F. W. Hinkel, of Buffalo: I rise with some hesitation to express my opinion, on account of my limited experience as compared with that of the gentleman who read the paper. I can not concur in the opinion that has been expressed. It seems to me that before we admit that a general neurasthenic condition can be the result of any nasal lesion as the sole cause, or as the main cause, a careful analysis of all the constitutional conditions is required. I should be interested in hearing what the general treatment was to which Dr. Daly alluded. I admit that any local irritant would have its effect upon the neurasthenic condition, but that pharyngeal or naso-pharyngeal lesions can be the main cause of such a condition I am, from my own experience and general observation, hardly able to admit.

Dr. Daly: I hope that the gentleman will do me the justice to admit the caution with which I approached this subject. The title of my paper is "Some Discursive Remarks based upon having observed Intimate Relations between Chronic Disease of the Upper Air-tract and Neurasthenia." The problem I left largely for this body to solve, if it is within its power, as to which is the causative condition.

Dr. Langmaid: I did not understand Dr. Daly to say that the condition was due to disease of the nose, but that there was an intimate relation I did understand him to say. I should differ with Dr. Roe, and should consider that much of the trouble in the nose was from the neurasthenia. I am sure that is what Dr. Hinkel means. So often is this the case that operative interference fails to relieve the patient because the neurasthenia is not cured.

Dr. Mackenzie: I do not like to speak upon this subject, for I am afraid that I should keep the society too long. In my paper, read at the meeting in Philadelphia, I made the statement that very frequently in nasal troubles—as, for instance, in hay-fever—the local symptoms are due in a certain class of cases to the neurasthenia, and, until the general condition is relieved, the local treatment is without avail. It is a curious historical fact that this peculiar dullness and incapacity for vigorous intellectual work, dependent upon chronic affections of the nose, was recognized by the ancients. A number of classical writers—for instance, Cicero—mention this curious fact.

Dr. Sajous: I am inclined to support rather vigorously the remarks made by Dr. Daly. It has been my fortune to observe a number of cases in which I noted fluctuations in the nervous condition, and these corresponded with fluctuations in the conditions within the nasal fossa. I have now under treatment a gentleman who, some months ago, had an operation for deviated septum performed by a fellow-specialist. The operation was done because all treatment directed to the general systemic condition had been without benefit. After the nasal trouble had been corrected the gentleman immediately began to improve, and the general neurasthenic condition, although it did not quite disappear, was materially improved, and he was able to resume his duties. I am sorry to say that the secondary treatment of the case was not such as to maintain the condition obtained immediately after the operation. The septum, as often happens in these cases, returned to its original position, and at once there was a marked return of the general symptoms. Having undergone a second operation, with a carefully conducted secondary treatment, the neuralgia and other symptoms not only disappeared as they had before, but they did not return. In this case we are able to follow the fluctuations as the case proceeded, and to note the marked benefit brought about by treatment of the nose.

Dr. Daly: The imperfect manner in which I have been compelled to present this subject does not do either myself or the subject justice. I would say that the remarks of my friend, Dr. Roe, have a great deal in them. I believe that he has epitomized a great deal that is valuable—that is, that this local irritation, this local obstruction, which is a source of continual nagging and local irritation year after year, is borne by the patient because he does not know where to get relief, or is in the hands of a practitioner who will not see these conditions or admit that others can see them, and therefore temporizes with the case until some acute disorder comes on, and with it an explosion, so to speak, of one of the forms of neurasthenia.

While the presentation of the subject may seem crude and rather bold, I assure you that it is a modest presentation. I have had sufficient observation, with flattering and lasting results in treatment, to warrant me in re-uttering what I said to you with fourfold force if it were in my power, that local treatment alone, leaving the neurasthenic condition out of the question, is necessary, is advisable, is right, and that such local treatment will be sufficient of itself to cure, and it will be surely followed by relief from the disagreeable and troublesome neurasthenic symptoms. I say *followed*, and I say it advi-edly. These symptoms come on late in the history of the case, and they take their departure late. In other words, the physiological and anatomical condition of the intranasal structures can be made as near normal as possible, but still the neurasthenic

symptoms will linger. The patient will not be cognizant of any general improvement, possibly of no local improvement at once, but tell the patient to wait. It will come in one or two months or perhaps a year, but it will surely come, and come to stay.

In regard to the question of general treatment. I do resort to general treatment, which is very simple and rational. In these cases of neurasthenia, while the predisposing cause may be, and I believe that it is, a local condition, there is a condition of deficient nutrition co-existing, and I direct mild remedies, but not frequently given, to act as a fillip to the secretions. I give a mild hepatic stimulant once or twice a week at bed-time, such as a quarter of a grain of calomel with fluid extract of senna, with something to prevent griping. This is simply a stimulant to the liver, and it gains these certain ends, not suddenly, but gradually. Other than that, I do not rely much upon internal remedies. I do not believe in the phosphates, which I regard as a once popular fad now moribund. I depend largely, and would not hesitate to depend entirely, upon restoration of the intranasal structures to what would be considered a normal anatomical and physiological condition.

Book Notices.

Examination of Water for Sanitary and Technical Purposes. By Henry Leffmann, M. D., Ph. D., Professor of Chemistry in the Woman's Medical College of Pennsylvania, etc., and William Beam, M. A., Demonstrator of Chemistry in the Pennsylvania College of Dental Surgery. Philadelphia: P. Blakiston, Son, & Co., 1889. Pp. vi–9 to 106.

This little manual does not purport to be a work on general hygiene or sanitary chemistry, but is devoted to the subject indicated by its title. It treats first of the history of natural waters and then of analytical examinations, both sanitary and technical, with the interpretation of the results. Modern processes are given rather than time-honored ones which have been shown to be inaccurate, so that some which hold a prominent place in most books on the subject are here omitted. The work is sufficiently complete for its purpose, well written, concise, and clear, and will be of good service to the sanitarian.

BOOKS AND PAMPHLETS RECEIVED.

Retrécissement cicatriciel du larynx d'origine syphilitique. Trachéotomie datant de six ans. Dilatation quotidienne, de haut en bas, du retrécissement, pendant six mois, par les sondes en caoutchouc durci de Schroetter; guérison. Par le Dr. Gouguenheim, médecin de l'hôpital Lariboisière. [Extrait des "Annales des maladies de l'oreille et du larynx."]

Contribution à l'étude des corps étrangers des voies aériennes. Par le Dr. E. J. Moure, Professeur libre de laryngologie, otologie et rhinologie, etc. (Communication faite à la Société de médecine et de chirurgie de Bordeaux.) Paris: Octave Doin, 1889. Pp. 5–24.

Report of a Case of Stricture of the Rectum, the Probable Result of a Specific Vaginitis. By Lewis H. Adler, Jr., M. D., Philadelphia. [Reprinted from the "Medical and Surgical Reporter."]

Inversio congenita dell' istinto sessuale in due donne. Pel Dottor Angelo Zucarrelli, di Napoli.

Transactions of the Southern Surgical and Gynæcological Association. Volume I. Session of 1888. Birmingham, December 4th to 6th.

A Surgical Hand-book: for the Use of Practitioners and Students. By Francis M. Caird, M. B., F. R. C. S. (Ed.), and Charles W. Cathcart, M. B., F. R. C. S. (Eng. and Ed.), Assistant Surgeons, Royal Infirmary, Edinburgh. With very Numerous Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1889. Pp. xv–262. [Price, $2.50.]

The Urine, the Common Poisons, and the Milk. Memoranda, Chemical and Microscopical, for Laboratory Use. By J. W. Holland, M. D., Professor of Medical Chemistry and Toxicology, Jefferson Medical College of Philadelphia. Illustrated. Third Edition, revised and much enlarged. Philadelphia: P. Blakiston, Son, & Co., 1889. Pp. vii, 9 to 84. [Price, $1.]

Bournemouth as a Health Resort. By A. Kinsey-Morgan, M. R. C. S. Eng., etc., Member of the Sanitary Institute of Great Britain, Medical Officer of Health for Bournemouth, etc. With Illustrations. Bournemouth: F. J. Bright & Son, 1889. Pp. 5 to 98.

Suspension in the Treatment of Affections of the Spinal Cord. By Alexander B. Shaw, M. D. (Read before the St. Louis Medical Society, June 15, 1889.)

Corea in seguito a scarlattina. Nota clinica del dott. Umberto Dieci. [Estratto dalla "Rassegna di scienze mediche."]

The Sixteenth Annual Report of the Metropolitan Throat Hospital for the Treatment of Diseases of the Nose and Throat, 351 W. Thirty-fourth Street, New York.

On Spasmodic Urethral Stricture from Anal Fissure. By L. Bolton Bangs, M. D., Surgeon to St. Luke's and Charity Hospitals, New York. [Reprinted from the "Medical Record."]

Accumulators and their Medical Uses. By Robert Newmann, M. D. [Reprinted from the "Philadelphia Medical Times."]

The Annual Report of the Department for the Insane of the Pennsylvania Hospital. For the Year ending Fourth Month 22d, 1889.

The Natural Rectification of Malpresentations, and its Imitation by Art. By A. F. A. King, M. D., Professor of Obstetrics in the Medical Department of the Columbian University, Washington, D. C. [Reprinted from the "American Journal of Obstetrics and Diseases of Women and Children."]

Pelvic and Abdominal Drainage. By David Prince, M. D., of Jacksonville, Ill. [Reprinted from the "Transactions of the American Surgical Association."]

Two Suggestions for improving the Operation of Excision of the Knee Joint for Strumous Disease. By A. G. Miller, M. D., F. R. C. S. Ed. [Reprinted from the "Edinburgh Medical Journal."]

A Plea for Prompt Interference in Abdominal Diseases. By J. M. Baldy, M. D., Philadelphia, Pa. [Reprinted from the "Medical and Surgical Reporter."]

Thirty Consecutive Cases of Abdominal Section, with One Death. By J. M. Baldy, M. D., of Philadelphia. [Reprinted from the "Medical News."]

Reports on the Progress of Medicine.

CUTANEOUS AND VENEREAL DISEASES.

By GEORGE THOMAS JACKSON, M. D.

Thiol is one of the latest additions to the dermatological pharmacopœia ("Monatsheft f. prakt. Derm.," 1889, No. 7). It is allied to ichthyol in its chemical constitution, but is a production of the laboratory and much cheaper than ichthyol. It occurs in two forms—either a liquid or a powder. As it contains sulphur, and is readily miscible with water, a wide use for it is at once suggested. It has been found useful in seborrhœa, rosacea, acne, eczema, combustio, pemphigus, dermatitis herpetiformis, impetigo, zoster, etc. In most of these the powder was used in the proportion of twenty per cent. in talc, starch, or zinc oxide.

The Treatment of Zoster, according to Unna (*ibid.*), varies with the degree of development of the lesions. To abort the development of the lesions is acknowledged to be exceedingly difficult, and requires very early interference, for, once begun, the vesicles will develop in spite of treatment. In some cases painting the affected spots with ichthyol, or applying equal parts of zinc paste and resorcin, will abort the vesicles. Another method is to cover the place with a layer of wadding soaked in a ten-per-cent. ichthyol or resorcin solution, and covering this with a piece of adhesive-plaster muslin, a dressing that can be left on many

days. If vesicles have formed, they can be prevented from becoming purulent by applying to them a zinc sulphur paste, or alcoholic solutions of corrosive sublimate, iodoform, carbolic acid, or resorcin.

A New Treatment of Acne.—By this attractive title Startin ("Lancet," May 11, 1889, p. 934) describes a method he has recently employed with success. It consists in steaming the face by means of a steam atomizer. The process should be kept up for some twenty or thirty minutes, and the face then gently rubbed with a soft towel. Tincture of benzoin may be used in the medicine cup.

Acne Frontalis seu Necrotica is the name that Boeck, of Christiania ("Archiv f. Derm. u. Syph.," 1889, Heft 1, p. 37), prefers to acne varioliformis (Hebra), acne pilaris (Bazin), and acne atrophica (Bulkley). This form of acne, though well known to dermatologists, is little, if at all, recognized by physicians in general, and is one of the rare forms of skin disease. The case related in this article was remarkable for occurring not only on the face, but also on the breast, neck, and back. The lesions on the back were specially well pronounced in character. All the lesions begin as very small papules originating in the swelling of a hair follicle and its immediate neighborhood. These papules slowly enlarge, and when they reach the size of a hemp-seed and cause a certain amount of tension in the skin, a lot of very small hæmorrhagic points will appear in their centers, forming a small, delicately marked, violet-red spot. If the papule grows large enough to include several follicles, it will form a turgid, raised, quite firm and flat patch, of a punctate appearance and a bright violet color. After a time these lesions begin to sink in in the middle, and take on more of a brownish-violet color. These changes are continuous, till at last the whole patch sinks in, and lies in the skin as a sharply defined, circular, hard plane, of brownish-violet color, slowly changing to brown, presenting the appearance of a mummified piece of skin. The sensibility of the patch is preserved. If the surface is removed by emollients, a granulating ulcer is left behind. If left alone, the mummified skin will fall of itself, leaving a scar. The larger the lesion, the deeper this process of necrosis goes. The disease may return in the scars, and is prone to relapse. It is a sort of dry gangrene of the skin whose ætiology is unknown.

Xanthoma Multiplex Planum, Tuberosum, Mollusciforme.—Dr. Lehzen and Dr. Knauss, of Würzburg ("Archiv f. path. Anat. u. Phys.," etc., 1889, cxvi, Heft. 1, p. 85), give us a study of this interesting disease as found in two sisters—one eleven and the other nine years old. The parents were healthy, and there was no history of any skin diseases in the family. There were two other children in the family that were free of skin troubles. The older girl was always delicate, having had an attack of jaundice shortly after birth. In the third year of life she had "festers" over her whole body for a long time. In April, 1887, she passed through measles, and entered the hospital in November, 1887. She came into the hospital on account of the xanthoma, which began in her fourth year, on both eyelids, as yellow, slightly raised papules. In about a year afterward the spots appeared on both knees and hands; later on the elbows, the gluteal region, and the left heel. The right heel was attacked about one year later. All the spots increased in size. Subjective symptoms were absent, except a slight amount of itching at the time of the appearance of new lesions. The only other abnormal symptom was insufficiency of the mitral valve. Various tumors were excised under chloroform anæsthesia. The patient died of heart failure about a month after the last operation. At the autopsy the liver was found of a deep bluish-red color, and with its free edge markedly high. On the valves of the pulmonary artery yellowish, xanthomatous papules were found, and a great number of these bodies were scattered about the heart and great vessels. The younger sister showed the same skin disease, but of less pronounced grade, and there was no heart trouble. Her trouble began in the third year, after a vesicular or bullous skin affection of uncertain nature. The peculiarity of the first case was the affection of the intima of the blood-vessels; and the practical lesson is that we should examine patients for heart symptoms in order to qualify our prognosis.

The Anatomy and Histology of Verruca Vulgaris.—After describing in detail his methods of preparation and study, Kühnemann ("Monatsheft f. prakt. Dermat.," 1889, No. 8, p. 341) gives the following as the result of his study: The pathological process of wart formation is one of anomaly of growth, the type of which is purely epithelial, the cutis as such taking no part in their formation, and the papillary character of the wart resulting from the hypertrophied prickle-cell layer sinking down into the cutis. The warty growth begins in the prickle-cell layer, hypertrophy forcing the layer upward and downward. It is probable that some external source of irritation—perhaps the entrance of micro-organisms into the epithelial layer of the skin—produces proliferation of the cells of the stratum dentatum, and as a secondary effect irritation and dilatation of the papillary blood-vessels and the larger vessels of the cutis, an increased supply of blood, and consequent increased nutrition of the tissues. Hence an alteration in structure of the upper layers of the epidermis takes place, and the process of cornification is essentially modified. The process, then, is not merely one of hyperakanthosis, as Auspitz and Hebra teach—that is, so far as verruca vulgaris is concerned—for the prickle-cells do not change into the usual flattened cells of the corneous layer, but preserve, more or less, their original form, and their kerato-hyalin is present, either in very small amount, though evenly distributed through the layers, or is abundant in the interpapillary portions, and entirely wanting over the papillæ. The nuclei of the cells of the corneous layer are preserved. The corneous layer is less lamellated than usual. Warts are, then, keratoses of the order dyskeratoses, and not elongations of the papillæ of the cutis vera.

The Cure of a Case of Sclerema Neonatorum by Mercurial Inunctions is reported by Money ("Lancet," March 16, 1889). There was no history of syphilis in the case, and the cure was nearly complete after about six weeks' treatment.

Mycosis Fungoides has again been studied histologically, this time by Dönitz and Lassar ("Archiv f. path. Anat. u. Phys.," etc., 1889, cxvi, Heft 2). They conclude that the disease is not due to a parasite. Though cocci are found in the lymphatics and capillaries, these are results and not causes of the disease. Mycosis fungoides, though resembling sarcoma histologically, differs from it in so many respects that for the present it is best to regard it as a special form of new growth of undetermined classification.

Nerve Lesions and Hair-fall in Relation to Alopecia Areata.—Behrend ("Archiv f. path. Anat. u. Phys.," etc., 1889, cxvi, Heft 1) declares himself as still satisfied that the characteristic change in the hairs in alopecia areata is an infiltration of the hair with air. This he has never found in any other disease of the hair, and has quite constantly found it in alopecia areata. He believes that the fall of the hair in alopecia areata is probably due to some local disturbance of the circulation. He has repeated Joseph's experiments that seemed to prove that the hair-fall was due to a trophoneurosis, using white cats. The experiment was repeated three times on different cats; each time there was redness of the ear of the side operated on, the auricularis magnus being the nerve cut. In all, the redness did not last very long. Cutting the sympathetic had the same effect, though more pronounced. This showed that vaso-motor fibers ran in the course of the second cervical nerves, but that the disturbance was of too short duration to cause the alopecia. Between different species there exist great differences in the distribution of the vaso-motor nerves. They do not exist in the roots of the cervical nerves of the dog, but are found in those of cats and rabbits. To test Joseph's theory, a series of experiments (nine) were performed. In but one of the cases was there alopecia, and this followed the formation of a crust and was passing. The cats were, all but one, killed and dissected, and it was found that the ganglion had been fully cut in two. By these experiments the theory of Joseph is pronounced not proved. [In the succeeding number of the "Archiv" Joseph replies, and so the controversy is kept going.—Ed.]

Some Hair Recipes.—Lassar, of Berlin, in 1882 published, in connection with our fellow-countryman, Bishop, an account of some experiments tending to show that alopecia præmatura was contagious, and could be cured by antiparasitics. In this article ("Therap. Monatsheft," 1888, No. 12) he still insists upon the contagiousness of ordinary baldness and its spread through the agency of barbers, and the employment by several persons of one comb in common. Even though as yet no definite parasite has been found in alopecia, Lassar believes that there is one and that it will be found in time. He does not believe that alopecia areata is a neurosis, though he allows the possibility of it in a few

cases, but does believe that most cases are from contagion. In the past few years he has met with many hundreds (?) of cases of alopecia areata, many of which have been in relatives, patrons of the same barber-shop, school-mates, or possessors of dogs or cats having similar bald spots. In the belief of the parasitic origin of alopecia, our author has treated more than a thousand cases by means of an antiparasitic plan of treatment, and with marked success. His method is the following: For six to eight weeks the hair is washed with a soap rich in tar (Berger's), the suds being rubbed well in for ten minutes each day. Then the suds are washed out with warm, followed by cold, water, the scalp and hair dried, and the former anointed with ℞ Sol. hydrarg. bichlor. (one third of one-per-cent. strength), glycerin, and cologne water, equal parts; then rubbed dry with absolute alcohol containing one half per cent. of naphthol, and then anointed with ℞ Salicylic acid, ʒ ss.; tincture of benzoin, gr. xlv; neat's-foot oil, ʒ iij. M. After six to eight weeks the process is to be less often repeated. In obstinate cases the sublimate solution should be used many times a day. Or this salve may be used: ℞ Carbolic acid, 15 grains; sublimed sulphur, 65 grains; horse-neck fat, to ʒ ij. M. Another good stimulant is oil of turpentine, either with equal parts of an indifferent oil or with dilute alcohol. Another is pilocarpine hydrochloride, 30 grains; vaseline, 5 drachms; lanolin, 2 ounces; oil of lavender, 25 drops. M. Tar is good; and as a final formula we have: ℞ Pilocarpin. hydrochlor., 30 grains; quinin. hydrochlor., 1 drachm; sulph. præcipitat., 2½ drachms; balsam. peruv., 5 drachms; medul. bovin., ad ʒ iij. M.

Trichophytosis Dermica.—Campana, of Genoa, believes that the trichophyton is capable of germinating and growing in the connective tissue of the skin ("Archiv f. Derm. u. Syph.," 1889, Heft 1, p. 51), and, further, that the chief part of such tumors as are formed in connection with ringworm is composed of the fungus itself. He gives a case of diffused ringworm of the body, onychogryphosis of all the toes, and a tumor of egg size (location not stated). Mycelia and spores were found not only in the scaly patches, but also in the nails and in the tumor. The latter consisted of hard fibrous connective tissue, which in places showed signs of beginning necrobiosis.

The Anatomy of Scabies.—Török, an assistant of Unna's, has examined seven cuniculi of scabies, and believes ("Monatsheft f. prakt. Dermat.," 1889, No. 8) that most of the previous teachings in regard to their anatomy is wrong. He says that the cuniculi are located, not in the prickle-cell layer of the skin, but in the lowest part of the middle corneous layer. The eczema to which scabies gives rise is not excited by the scratching, but is caused, probably, by some irritating substance secreted by the itch-mite. The new and smallest vesicles are usually just below the cuniculus, and grow downward, and therefore are not produced by the scratching. Further, a foreign body in the epidermis does not of itself cause much itching; and the moving about of the mites in the epidermis does not account for the paroxysmal itching so well as a paroxysmal secretion of an irritating substance by them would. Of course the scratching due to the itching aids in the production of the clinical picture that we recognize as scabies.

Ringworm is studied by Pellizzari, of Pisa, in the "Giornale ital. del. mal. ven. e del. pelle," March, 1888. He first speaks of *ringworm of the palm*, of which he has seen seven cases. It is usually accompanied by manifestations of the same disease upon the back of the hand, but may occur on the palm alone. Usually only one hand is affected. It generally assumes the appearance of a chronic eczema, with special changes in the nails. Sometimes it looks like a dysidrosis; sometimes like a hyperkeratosis; sometimes like an eczema rhagadiforme. The microscope shows a number of mycelia, but no spores in the epidemic scales. The disease is very chronic, often lasting for years. He next describes the three varieties of tinea tonsurans, and speaks especially of one variety that resembles very closely and is often taken for alopecia areata. This occurs in the form of more or less round, bald places, without any eruption upon the scalp, redness, or other sign of dermic reaction; covered with fine, dirty-white, or yellowish scales, often having in their center a black point, the remnant of a hair broken off near the surface of the scalp, and filled with the spores of the fungus. This variety is one of the most difficult to cure, and may last for years, one case having been seen in a patient, forty-four years of age, which had lasted nearly all her life. He then speaks of *ringworm of the beard*, and of cases which, under his observation, changed in appearance and symptoms to a simple sycosis. This leads him to believe that many cases of sycosis have originated in trichophytosis. He explains this on the theory that the presence of the fungus at one time gives rise to an irritation that continues even after the fungus has disappeared. He has found the trichophyton present not only in the epidermic structures of the skin, but also in the derma itself, where it exists mostly in the form of spores. He believes that in many of the cases of simple sycosis in which no broken hairs are present and no fungus demonstrable in epidermis, hair, or contents of pustules, it is possible that the fungus is still in the derma, and there keeping up the irritation that gives rise to the sycosis.

But the most important part of this study is that which relates to *onychomycosis*. This form of ringworm seems to be much more common in Italy than it is with us, for our author had twenty cases of it out of one hundred and fifty cases of trichophytosis in the course of thirty months. Out of nineteen cases, nine were in males. The youngest was aged twelve years, and the oldest was fifty-seven. In four cases the disease was limited to one finger; in two to several fingers of one hand; in two it was spread over the fingers of both hands. In all of these there was no other evidence of the disease elsewhere on the body. In five cases ringworm of the palms was present, in three the scalp was affected, and in three there was ringworm of other parts of the body. The disease seems to first manifest itself by a change in the color of the nail, which appeared as if dotted over with little white points, distributed without order, or as if striated with white longitudinal lines. These lines have a reflex like that of quartz, as if the nail had split. The nail soon becomes uneven, which is readily apprehended by sight and touch. The nail has become thickened, but the thickening is more manifest in the white lines, as there the normal lines of the nail are exaggerated. Sometimes this may occur on only one side of the nail, and then that side will be raised and curled up, while the nail substance is greatly thickened, and some of the superficial corneous laminæ are detached. Generally, however, the whole nail is affected from lunula to free border. At times the nails have their superficial laminæ intact and transparent, but they are thickened and of a white color. This condition may last for years. The nail-bed likewise becomes thickened so as to obliterate the anterior or subungual sulcus, and the nail itself often becomes eight to ten times as thick as normal, or even more. The surface of the nail becomes marked by transverse lines, especially on the anterior border of the lunula, which is, as it were, hunched up. Sometimes the thickening takes place along the median line of the nail so as to make it raised in the middle, but usually it is general, and the nail has its normal convexity increased. Sometimes onychogryphosis is present. The superficial laminæ are the last to be attacked, and when they are, they become opaque, begin to exfoliate, break, and at last fall off entirely, separating first at the periphery and anteriorly. At times the nail looks worm-eaten, on account of the falling out of the whitish spots above mentioned. When the disease is well developed, the nail is rough, and the upper layers look as if they were torn up and frayed out. Subjective symptoms are wanting, and patients seek relief either on account of the ragged nail being in the way of their work or on account of the manifest deformity. At most there is a little itching of the finger end, or slight pain when the part is exposed to heat, as of the fire or warm water.

The diagnosis of trichophytosis of the nail is difficult when it occurs by itself without disease of the skin elsewhere. It might be mistaken for onychogryphosis. Here the diagnosis would be suggested by finding other nails more or less affected with trichophytosis in its early stages, by the fact that, combined with the hypertrophy of the nail, there is also a retrogressive degeneration, while in onychogryphosis the hypertrophy is progressive, and there is great thickening of the corneous layer of the nail. In the latter the nail is dark-yellow, but always bright, and throughout the structures of the nail are uniformly thickened. The diagnosis from favus of the nail is made by the fact that favus attacks primarily the superficial corneous laminæ of the nail, producing a number of little, depressed, saucer-shaped points, without special color. At the same time there will usually be found other evidences of a chronic favus on the hands. In favus, as in ringworm, there is an apparent great thickening of the nail, but in the former case it is

due to a soft, yellowish-brown substance interposed between the nail and its bed, pushing the substance proper of the nail upward, while in the latter there is a true thickening of the nail substance. In favus there are also little points of sulphur-yellow color scattered here and there through the nail, which are easily seen. They advance from below, and finally perforate the upper layers.

As the fungus is always deeply seated in the nail and its bed, it is useless to speak of treatment by means of scraping the nail and applying antiparasitics. The treatment, to be efficacious, must be energetic enough to cause an artificial paronychia, produce suppuration of the nail, and in this way kill the parasite. A good plan is to keep green soap upon the nail under a rubber cot for a few days until the nail is softened. Then apply equal parts of olive-oil and pyrogallic acid, endeavoring to cause it to enter beneath the nail and into the sulcus. When the nail loosens, it is to be removed, and the finger dressed with iodoform.

Tubercular Skin Diseases.—Pick ("Prag. med. Woch.," 1889, No. 19), while believing that we are far from having reached our full knowledge of tubercular skin diseases, says that at present we are justified in applying that term only to the following: Tuberculosis cutis propria of Chiari, lupus, so-called scrofuloderms, the tuberculosis verrucosa of Riehl and Paltauf, and the verruca necrogenica of Karg and the last-named authors. He reports one case of verruca necrogenica, which he cut out, together with an enlarged cubital gland. In the latter was found a cheesy mass. He also reports a case of tuberculosis verrucosa in a tuberculous subject, in which there were multiple lesions, all resulting from self-infection by means of the sputum. Two cases of lupus are reported. One was of the nose and upper lip in a tuberculous subject, lungs and larynx being affected. Many bacilli were found in the secretion of the lupous ulcer. The second case was likewise on the nose, cheek, and eyelids. The patient was of a tubercular family. Many bacilli were found in the secretions of the ulcer. Both cases resembled tuberculosis cutis, the resemblance arising from the vascularization of the parts, their maceration from secretions, and the high temperature of the locality. Another case is reported of papillomatous lupus in a strumous subject, beginning as an ordinary verrucous lupus, and changing after measles into a hypertrophic, inflammatory, papillomatous lupus, with rapid dissemination and tubercular infection of the neighboring glands. As benign lupus may thus become active, and take on the characters of tuberculosis cutis, every lupous patch should be destroyed early, and the neighboring glands extirpated where they are involved.

Scrofula or Syphilis is the title of an instructive article by Mannino, of Palermo, in the "Giorn. ital. delle mal. ven. e della pelle," 1888, xxiii. After citing several cases to show how difficult it sometimes is to make a diagnosis between the two diseases, he gives us the following diagnostic marks: The color of the syphilide, either of the elementary lesion or the surrounding areola, is dark red, reminding one of the color of copper or of lean ham; lupus is of a pale rose, or a rosy golden color, with a tendency, especially in the areola, to a bluish tinge. The consistence of the syphilide is hard and resistant to pressure; that of lupus is soft and elastic. The crusts of ulcerating syphilides are dark, brownish-green, or black; those of the scrofulides are usually white or dirty white; in syphilis they are regularly formed, hard, stratified; in lupus they are but little prone to be homogeneous, and but slightly dense and hard. The ulcers of syphilis are sharply cut, with hard, infiltrated edges, deeply adherent to their bases; those of lupus are less sharply defined, and the edges are flaccid, soft, often separated from the floor of the ulcer. The floor of the syphilitic ulcer is more or less deeply hollowed out, uneven, irregular, covered more or less by a grayish-yellow, yellowish-crimson, or lardaceous plaster-like excretion, resulting from the necrobiosis of the gummatous tissue; in old cases of lupus, the floor is slightly or not at all hollowed out, rather raised above the level of the surrounding parts, of a rosy or pink color, often smooth, as if covered by a kind of transparent, easily detachable varnish. The shape of the syphilide is ordinarily gyrate, representing a complete circle or an arc of a circle, a half moon, or only a serpentine undulation; the scrofulide, although at times round or circinate, is usually less regular and more variable. The course of lupus is very chronic, extending very slowly, and destroying the tissues cell by cell; syphilis develops rapidly, extending as much in a few months as lupus would in as many years, destroys the tissues in mass, and often becomes serpiginous. The history of the two diseases is different, in one pointing strongly to syphilis, and in the other to lupus, and this not only in the personal history of the patient himself, but also in that of his parents and immediate relatives. At present neither bacteriology nor histology is well enough established to furnish positive evidence in any particular case. In truth, the two diseases may in certain cases resemble each other so closely that a diagnosis can be made only by a most careful comparison of all the symptoms.

Precocious Manifestations of Congenital Syphilis is the title of a series of articles in the "Progrès médical" for 1888–'89, by Sevestre. Lenticular erythema is a papular eruption, with erosions at times, which may occur upon a papule or independently of one. The lesions are generally isolated; sometimes they may touch at their edges. They occur upon the buttocks, or on the border of the fold of skin above the buttocks, upon the inner side of the thighs, or upon the posterior surface of the calf; more rarely upon the posterior part of the scrotum, or the external surface of the labia majora, and still more rarely in the neighborhood of the anus. They may appear elsewhere, but exceptionally. Another characteristic is that this eruption spares the natural folds of skin. This eruption has been described as a syphilide, but in reality it is not. It may appear in syphilitic children, but it is only a special form of simple erythema. It occurs from the fourth to the sixth month of a child's life. The diagnosis is to be made by the absence of all other signs of syphilis, by the peculiar localization, by the presence of vesicles, by the rapid evolution of the eruption, and by its cure by simple measures. Syphilis occupies the anal region, runs a slower course, and yields only to specific treatment. Dry onychia is not a positive sign of syphilis. It is due to a disturbance of the nutrition of the child, which syphilis may cause, but not necessarily. Ulcerating paronychia may occur independently of syphilis, and is therefore not to be regarded as a sign of syphilis. Alopecia, when occurring in the form of bands and upon the anterior and lateral portions of the head, is diagnostic of syphilis to a certain extent. Adenopathies are of no value as a sign of infantile syphilis. They are rarely met with, and point rather toward tuberculosis than syphilis. Lesions of the lips, mouth, and pharynx are important. Fissures of the lips are most frequently met with. They may be median, and then usually of the upper lip, not involving the skin, but going deep down to the chorion of the mucous membrane. Unless they are very superficial, they are pretty sure signs of syphilis, and heal slowly under a greenish crust. Median fissures may also exist at the same time or alone, and are of less value than those of the upper lip in diagnosis. Scattered fissures—that is, a number upon the lips—constitute positive evidence of syphilis. Commissural fissures involve both the skin and mucous membrane, and are often deep, long, and covered with crusts. These are often mucous patches, and are positive evidence, as are also erosions. Mucous patches of the mouth and pharynx are rare. They are of two varieties, one being simply a reddening of the pillars of the palate, and this is not positive evidence of syphilis. The other form is superficial ulceration, or simply erosions upon the lips, gums, and the free border of the palatine arch. They are not absolutely characteristic, but suspicious. Of the tongue we have mucous patches and a desquamative lesion. Mucous patches here are rare, and occur most often upon the dorsum of the organ near its point, are seldom more than two in number, and resemble those of acquired syphilis. The desquamative lesion of the tongue is not a sign of syphilis, though it has usually been considered as such. It was found only seven times in one hundred and fifty nurslings. Coryza is one of the most constant and earliest symptoms of hereditary syphilis. The mucous membrane is attacked usually alone, the bones are rarely involved. The depression of the bridge of the nose can hardly be regarded as a sign of syphilis in infants, in whom the nose normally has a depressed bridge. A more frequent phenomenon is a sort of narrowing of the anterior nasal orifice, the skin seeming stretched and drawn in. This occurs after the coryza has lasted some time. The voice and cough are usually altered, being harsh, which depends upon a simple tumefaction of the larynx. More rarely we may find ulcerations of the larynx. The alterations of the organs of sense are so rare as to be of no value in precocious congenital syphilis. Interstitial keratitis is very exceptional before the

age of two years. Iritis, chorioiditis, and retinitis are not rare, but are so hard to diagnosticate, for one not specially skilled in eye diseases, as to be of little use for diagnostic purposes. Suppurative otitis media is quite common, with perforation of the drum. It is characterized by sudden appearance without any pain. Sudden deafness without antecedent otitis is a positive symptom. Lesions of the viscera are usually not to be determined except post mortem. They exist, but, unless accompanied with some more positive evidence of the disease, are of small diagnostic value. Enlargement of the spleen and of the testicle are the most diagnostic lesions. There are no positive signs from the central nervous system. The teeth are very rarely affected in early congenital syphilis. They are often retarded in their growth. The bones are often affected, most commonly the humerus, femur, and tibia; then the ulna, radius, fibula, ribs, and lastly the clavicle, the metatarsal and metacarpal bones, and the phalanges. The alteration is most often characterized by a more or less extensive thickening, but sometimes it is difficult to recognize it. A solution of continuity may take place near the epiphyses, but it is rarely complete. The skin over the diseased bone may remain unaltered or become necrosed. Ulceration of the skin is most often seen in connection with dactylitis. The bones of the skull may be affected, giving rise to craniotabes or osteophytes. The general appearance of the child should always be noted. It may seem well nourished or greatly debilitated. We may find well-marked cutaneous or other signs of syphilis on a well-nourished new-born child. The debilitated appearance is due to profound lesions and alterations of the blood. But, unless the disease is successfully treated, debility will sooner or later set in in all cases. In all there will be a marked pallor of special tone most evident upon the forehead and chin. As a rule, when a well-nourished infant suddenly begins to grow pale and flabby without any error in feeding or hygiene, we may suspect syphilis or tuberculosis, sometimes it is hard to say which. [This very interesting and important paper is so long as to be the despair of the abstracter. We have endeavored to select some of the leading points, and now commend its perusal in its original form to all who are specially interested in the subject.]

Extra-genital Syphilitic Infection.—In the course of nine years Pospelow, of Moscow ("Arch. f. Dermat. u. Syph.," 1889, Heft 1 and 2), met with one hundred and ninety-eight cases of extra-genital initial lesions, distributed as follows: Lips (20 men and 29 women), 49 cases; gums (1 man), 1 case; tongue (1 man and 2 women), 3 cases; throat (14 men and 32 women), 46 cases; breasts (69 women), 69 cases; chin (1 woman), 1 case; eyelids (3 men), 3 cases; nose (1 man), 1 case; trunk (10 men), 10 cases; anus (5 women), 5 cases; arms (3 men and 3 women), 6 cases; legs (4 women), 4 cases.

These initial lesions presented certain peculiarities that make them worthy of special remark for diagnostic purposes.

1. *Initial Lesions of the Mouth. a. Of the Lips.*—Most of them were covered with greenish-brown, more or less thick crusts composed chiefly of the secretion of the lesion itself. Sometimes the crusts may be easily removed, and sometimes they adhere quite closely. When removed they leave exposed either an erosion of little if any hardness, or an ulceration of cartilaginous consistence. When the lesion involves both the skin and mucous membrane it is raised above the level of the latter and resembles a hypertrophic secondary papule. Sometimes when the center of the papule has broken down it presents the appearance of ulcus cupuliforme. There was nearly always a firm œdema about the sclerosis, which is a diagnostic mark from secondary papules. The lips were nearly equally affected (twenty-three upper, twenty lower). Usually but one lesion was present; only three times was it multiple. The size of the sclerosis varied greatly; the form was usually round or oval, sometimes extended across the lip, sometimes of zigzag contour. Induration was usually marked; secretion was scanty; pain was usually experienced on pressure and on motion of the lip. The submaxillary glands were usually the ones first affected, and in rare cases they became enormously enlarged, even so much so as to change into abscesses. The first suspicious sign of a lip chancre is the failure of a fissure of the lip to heal. The second symptom is the formation of an increasing crust similar to what is seen in ecthyma. The third symptom is the enlargement of the submaxillary glands, most marked on the side of the chancre. The fourth symptom is induration and œdema, sometimes cartilaginous in hardness. Treatment: Application of an ointment of white precipitate (gr. 3 to 6), and carbolic acid (gr. 10 to 15) to the ounce of lard. On the mucous membrane the papule was touched with nitrate of silver. Absorption of the infiltrate was hastened by the use of mercurial plaster. General mercurial treatment was used at the same time.

b. Of the Gums.—Only one case. Location, left upper side. A hard, slightly raised, bright-red band, with left-sided swelling of submaxillary glands. Probably derived from the use of a clarionet.

c. Of the Tongue.—Three cases. Ulcer round, sharply defined, fleshy-red color, and raised and hard. Adenitis, cervical and submaxillary.

d. Of the Throat.—To this the attention of the patient is first attracted by a certain difficulty or even pain in swallowing. The pain is located mostly in the tonsils and increases by pressure. It antedates the first eruption on the skin by from two to five weeks. Then the submaxillary and cervical glands become swollen, especially the former, and that more pronounced on the side of the chancre. The third symptom is an intense redness of the pharynx, which may be limited or diffused, and in unilateral infection is unilateral. The color may be brown-red, dark cherry-red, or even dark-violet. The fourth symptom is enlargement of the tonsils, with hardness, pain on pressure, and redness. To this redness and swelling of the tonsils erosions may be joined, which at times extend upon the adjacent parts of the pharynx, and the whole becomes covered with an ash-colored deposit, a sort of false membrane. The last symptom is the ulcer itself. This presents irregular, gnawed-out edges, which are seldom undermined. Around the ulcer is a sharply defined, variously shaded redness. The edges of the ulcer feel much harder than the floor. The latter is superficial when the pharynx is involved; a crater is formed and covered with a dirty-brown or grayish deposit when the tonsils are attacked. There was almost always induration. When the sclerosis was located upon the palatal arch or roof of the palate, it became markedly pale by lifting the roof or by pressure with the sound, like the whiteness produced by rolling back the prepuce when the chancre is located in that region. Most chancres of the throat were located on the tonsils, and in nine cases both tonsils were affected.

2. *Initial Lesions of the Mammæ in Women.*—These were about two thirds of all the cases of extra-genital chancre, and arose in most cases from suckling infected children. The majority of the patients were wet-nurses in private families. Thirteen were mothers infected by their own children, and in them the syphilis was always more recent than in the child. Some were infected through their own children after birth, but it is not stated that all were. Most all the initial lesions of the breast were multiple, either upon the same breast or upon both. One case is reported of five lesions on one breast and a sixth on the other. The nipple was the part most often infected. The size of the sclerosis varied from that of a lentil up to three inches in diameter. In form they were sometimes linear, sometimes sickle-shaped along one side of the nipple and sometimes completely encircling the nipple, and sometimes of various configuration. In appearance they varied as chancres will. When the nipple was affected it was redder than the one of the other side, sometimes dark-red, enlarged, hardened, and at times flattened. Mastitis, simple or suppurative, was met with, also phlegmonous inflammation of the breast. The chancre ended by cicatrization, and at times by a hyperæmic cicatrix. The submaxillary glands of the same side were swollen and hard, and of both sides if both breasts were affected. If one side was infected before the other, on that side the swelling was most marked. In a few cases there was swelling of the glands over the pectoralis major muscle. The diagnosis of these chancres was usually easy. An important diagnostic sign of syphilitic infection of the breasts, when the chancre has healed and there are none of the usual symptoms to point to syphilis, is a flattening of the enlarged nipple and an asymmetrical leaning of it to one side. This is of importance in choosing a wet-nurse, and is best observed by looking at the breasts from behind the patient. It is not a positive sign, as other diseases of the nipple may give rise to it. Leucoderma colli is another important sign of syphilis in women, and is met with after infection of the breasts.

3. *Initial Lesions of the Face.*—In chancre of the eyelid the preauricular and submaxillary glands of the same side were enlarged. In

chancre of the nose the submaxillary glands were enlarged. In chancre of the chin the submental and submaxillary glands were enlarged.

4. *Initial Lesion of the Upper Extremity.*—In chancre of the arm both the axillary and elbow glands were affected. In four cases of chancre of the finger the axillary glands were enlarged in three, the epitrochlear glands in two, and the ulnar glands in one.

5. *Initial Lesion of the Lower Extremities and Trunk.*—These were located on the inner side of the thigh, on the nates, about the anus, on the pubes, on the lower part of the abdomen, and on the scrotum. The possibility of infection of the buttocks from privy-seats is allowed. Extra genital chancre was found to be much more common in women than in men—nearly three times as frequent. The most frequent location of extra-genital chancre is the mouth. The next, in women, is the breast.

Miscellany.

Mortality in Cities in the United States.—The following table represents the mortality in the cities named, as reported to Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, and published in the abstract of sanitary reports received by him during the week ending August 9th:

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—										
				Cholera.	Yellow fever.	Small-pox.	Varioloid.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y.	Aug. 3.	1,575,791	850	..	..	..	..	..	..	13	2	22	1	14
Philadelphia, Pa.	Aug. 3.	1,040,245	442	..	..	..	..	..	..	17	3	4	..	5
Brooklyn, N. Y.	Aug. 3.	834,607	399	..	..	..	..	..	..	5	3	15	2	8
Baltimore, Md.	Aug. 3.	500,343	203	..	..	..	..	..	..	3	..	1	..	1
San Francisco, Cal.	July 26.	350,000	84	..	..	..	..	..	..	1	1	1	..	....
Cincinnati, Ohio.	Aug. 3.	325,000	98	..	..	..	..	..	..	4	..	6	4	....
New Orleans, La.	July 27.	254,000	137	..	..	..	..	..	..	1	..	2	2	....
Cleveland, Ohio	June 29.	235,000	60	..	..	..	..	..	..	2	1	5	..	....
Cleveland, Ohio	July 6.	235,000	68	..	..	..	..	..	..	2	1	5	..	....
Pittsburgh, Pa.	Aug. 5.	230,000	103	..	..	..	..	..	..	14	3	2	2	....
Detroit, Mich.	July 27.	230,000	83	..	..	..	..	..	..	..	..	..	..	....
Louisville, Ky.	Aug. 3.	227,000	54	..	..	..	..	..	..	3	..	..	..	....
Washington, D. C.	Aug. 3.	225,000	112	..	..	..	..	..	..	2	..	3	..	2
Minneapolis, Minn.	Aug. 3.	200,000	34	..	..	..	..	..	..	1	..	3	..	....
Kansas City, Mo.	July 27.	180,000	40	..	..	..	..	..	..	1	..	..	..	....
Rochester, N. Y.	Aug. 3.	130,000	75	..	..	..	..	..	..	3	..	1	..	....
Providence, R. I.	Aug. 3.	127,000	74	..	..	..	..	..	..	..	..	2	1	5
Denver, Col.	Aug. 2.	100,000	42	..	..	..	..	..	..	1	..	..	..	....
Richmond, Va.	July 27.	100,000	45	..	..	..	..	..	..	2	..	..	..	..
Toledo, Ohio	Aug. 2.	89,000	26	..	..	..	..	..	..	1	..	1	..	1
Fall River, Mass.	Aug. 3.	69,000	46	..	..	..	..	..	..	2	..	1	..	....
Nashville, Tenn.	Aug. 3.	65,153	27	..	..	..	..	..	..	..	..	..	1	....
Charleston, S. C.	Aug. 3.	60,145	53	..	..	..	..	..	..	1	..	..	..	....
Lynn, Mass.	Aug. 3.	50,000	22	..	..	..	..	..	..	..	..	1	..	....
Portland, Me	Aug. 3.	42,000	17	..	..	..	..	..	..	1	..	..	..	....
Galveston, Texas	July 26.	40,000	12	..	..	..	..	..	..	..	..	..	..	1
San Diego, Cal.	July 27.	32,000	3	..	..	..	..	..	..	..	..	..	..	....
Binghamton, N. Y.	Aug. 3.	30,000	8	..	..	..	..	..	..	1	..	..	..	....
Altoona, Pa.	July 27.	30,000	10	..	..	..	..	..	..	..	..	..	..	....
Auburn, N. Y.	Aug. 3.	26,000	19	..	..	..	..	..	..	1	..	3	..	....
Haverhill, Mass.	Aug. 3.	25,000	8	..	..	..	..	..	..	1	..	..	..	....
Newport, R. I.	July 25.	22,000	2	..	..	..	..	..	..	..	..	..	..	....
Newport, R. I.	Aug. 1.	22,000	5	..	..	..	..	..	..	..	..	..	..	....
Rock Island, Ill.	Aug. 4.	16,000	6	..	..	..	..	..	..	..	..	..	..	....
Keokuk, Iowa	Aug. 3.	16,000	5	..	..	..	..	..	..	..	..	..	..	....
Pensacola, Fla.	July 27.	15,000	10	..	..	..	..	..	..	2	..	..	2	....
Pensacola, Fla.	Aug. 3.	15,000	7	..	..	..	..	..	..	..	..	..	..	....

The Health of Michigan.—According to the State Board of Health's Report for the four weeks ending August 3, 1889, diphtheria was reported from twenty-six places, scarlet fever from thirty places, typhoid fever from eighteen places, and measles from thirteen places.

The U. S. Grant University is the title of an institution situated in Athens and Chattanooga, Tenn., formed by the consolidation of the Grant Memorial University and the Chattanooga University. The medical faculty is constituted as follows: Dr. E. A. Cobleigh, dean, medicine, clinical medicine, and dermatology; Dr. G. A. Baxter, surgery and clinical surgery; Dr. J. R. Rathmell, obstetrics, diseases of children, and clinical medicine; Dr. H. Crumley, anatomy; Dr. G. W. Drake, physiology and psychology; Dr. W. T. Hope, materia medica, therapeutics, and clinical medicine; Dr. L. Y. Green, gynæcology; Dr. F. T. Smith, ophthalmology; Dr. N. C. Steele, otology, rhinology, and laryngology; Dr. J. E. Reeves, pathology, histology, and microscopy; Dr. W. C. Townes, medical chemistry and toxicology; Dr. J. L. Gaston, minor and operative surgery and bandaging; Dr. E. M. Eaton, diseases of the mind and nervous system; Dr. T. C. V. Barkley, urinary and venereal diseases; Dr. E. B. Wise, diseases of the chest and physical diagnosis; Dr. D. E. Nelson, electro-therapeutics; Mr. Harry Wise, pharmacy; Dr. W. G. Bogart, diseases of women and clinical gynæcology; and Dr. R. L. Vaught, demonstrator of anatomy. Chairs of sanitary science, dental medicine, and medical jurisprudence are to be established. The regular winter course opens at Chattanooga on the 7th of October.

The French Congress of Surgery will hold its fourth session in Paris from the 14th to the 20th of October, under the presidency of Baron Larrey. Among the subjects to be discussed are the following: "The Immediate and Remote Results of Operations for Localized Tuberculosis," "The Surgical Treatment of Peritonitis," and "The Treatment of Aneurysms of the Limbs." Business communications should be addressed to M. F. Alcan, 108, boulevard Saint-Germain, Paris; those on scientific matters may be addressed to Dr. S. Pozzi, secretary general, 10, place Vendôme, Paris.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

THE "PERFECTED EVACUATOR."

BY FESSENDEN N. OTIS, M. D.,

CLINICAL PROFESSOR OF GENITO-URINARY DISEASES IN THE COLLEGE OF PHYSICIANS AND SURGEONS, NEW YORK; CONSULTING SURGEON TO CHARITY HOSPITAL, TO NEW YORK SKIN AND CANCER HOSPITAL, TO ST. ELIZABETH'S HOSPITAL, TO THE MANHATTAN EYE AND EAR HOSPITAL, ETC.

THE credit of conceiving and carrying to ultimate success the operation of removing stone from the bladder by lithotrity at a single sitting is indisputably due to Professor Henry J. Bigelow, of Boston.

The method of crushing the stone has not materially changed from that pursued in former times, although we are indebted also to Dr. Bigelow for more powerful lithotrites. These at once became a necessity when attacking the large and hard stones, which the field of his brilliant operation quickly embraced. With the heavier instruments now available, it is rare indeed to find a stone which, in skilled hands, is beyond their compass. After the ability to use large evacuating tubes (from 25 mm. to 30 mm. in circumference, and even larger) was demonstrated, the evacuation of the *débris* seemed easy of accomplishment. The first instrument (a modification of Clover's) devised by Professor Bigelow answered the purpose admirably in the main, but was soon found to permit a return to the bladder of a portion of the *débris* after it had been deposited in the receiver, a fault which, however, did not prevent the accomplishment of many notable successes by this method; but Professor Bigelow at once began a series of elaborate and expensive experiments to remove the difficulty. Sir Henry Thompson, of London, who soon adopted Professor Bigelow's operation and contrived instruments of his own for its accomplishment, found the same difficulty to contend with. A sharp rivalry between these distinguished surgeons—to construct an evacuator which should act by the most direct and shortest route, and yet perfectly prevent the return of *débris* to the bladder—began in 1879, and for the several succeeding years furnished to the journals (chiefly the London "Lancet") many interesting illustrations and much animated discussion. After various modifications and expedients had been adopted and discarded during a period of several years, Professor Bigelow, in 1883, presented the instrument which has remained from that time up to the present (1889) without modification.

In presenting this improved instrument to the profession, in the London "Lancet," January 6, 1883, Professor Bigelow says:

"However otherwise arranged, a satisfactory aspirator should have some device near the catheter to act as a trap for *débris* and secure every fragment that has passed it. The chief difference among evacuators now is in the certainty with which they retain the fragments they have aspirated. Any instrument will draw out the fragments, but few hold them securely, for the *débris* does not always fall into the glass receiver, nor does it always remain in it. On the contrary, it is easily carried back into the bladder. This defect in the action of the evacuator has received little attention from surgeons, although it is the only point connected with the instrument which offers any difficulty whatever. Until recently it has been remedied only by sacrificing simplicity in the apparatus."

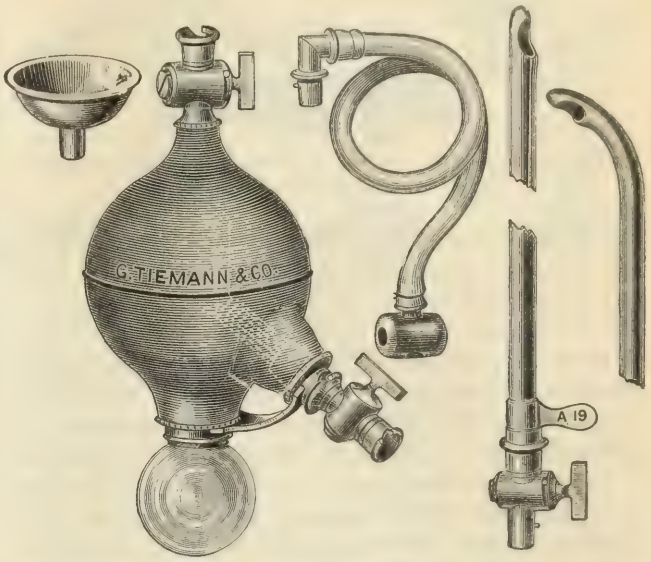


FIG. 1.—Professor Bigelow's latest evacuator. Weighs twenty-four ounces; filled, weighs thirty-four and a half ounces; holds ten and a half ounces.

In this latest instrument of Professor Bigelow the route to the bladder has been changed to correspond with that of Sir Henry Thompson, in which the evacuating tube was attached directly to the evacuator, without the intervention of tubing, as in Professor Bigelow's previous instruments, thus apparently giving both surgeons the advantage of the same and the shortest route to the bladder. In place of various contrivances—ball, valves, traps, and strainer of previous modifications—a perforated tube was inserted into the lower side of the rubber bulb and continuous with a stop-cock which connected directly with the evacuating catheter. This perforated tube or strainer was alleged to prevent effectually the return of *débris* into the bladder, and, in operation, it was proved to do so; but the strainer, while working perfectly in experiments with crushed coal or coral, when in practical use quickly became so clogged with mucus and coagulated blood that the frequent cleansing of the strainer during operation became necessary. This fact led Sir Henry Thompson to say (London "Lancet," 1883) that "all the perforated tubes and strainers get blocked with *débris* (as I found long since) in the human bladder, not with coal in water, so as to be practically useless there." As Professor Bigelow had, in the "Lancet" of January 6, 1883, presented a large-sized woodcut illustrative of the absolute inability of Sir Henry's then latest instrument to prevent the return of *débris* to the bladder, with ample descriptive text, it might be suggested that his opinions of perforated tubes and strainers had been somewhat modified by personal feeling. The accompanying accurate copy of a photograph of the perforated tube or strainer of Bigelow's improved evacuator, taken at the close of an operation at St. Luke's Hospital not long

since, will, however, go far to justify Sir Henry's statement.

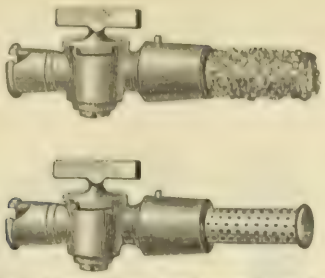


Fig. 2.—Clogging of the tube. The upper figure shows the obstructed tube; the lower one, the same after cleansing.

In cases free from mucus and pus and perfectly free from any admixture of blood with the water during operation, there will not be any noteworthy difficulty; but if there is a trace of blood present in the progress of the procedure the perforated tube will inevitably and promptly become blocked, as in the photographic reproduction above presented. The instrument was a good one for practical purposes before the addition of the perforated tube; but it was open to the objection, as shown, that *débris* was likely to be left in the bladder after operations with it. Save under very favorable conditions or by the frequent cleansing during operation, the objection evidently remains.

Sir Henry Thompson's experiments and modifications finally culminated in an evacuator which, equally in action, prevented the return of *débris*, without being open to the objections made against Professor Bigelow's instrument. This improved aspirator was presented in the London "Lancet" of April 12, 1884.

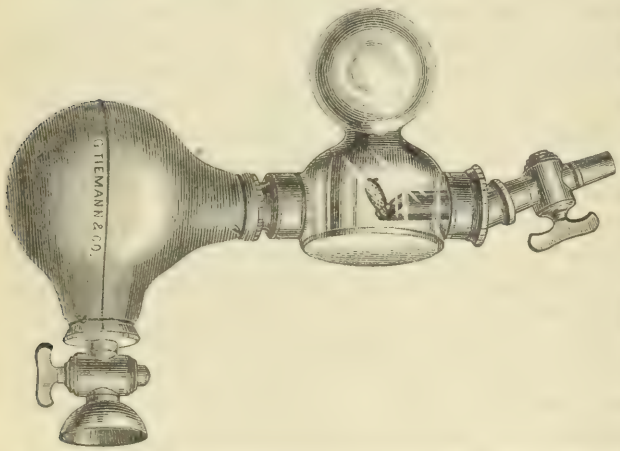


Fig. 3.—Sir Henry Thompson's instrument (improved, 1889).* Holds 12½ oz.; weighs 27½ oz. (Troy) empty; 40 oz. filled.

"The improvement consists in a light, loosely hanging valve of fine wire attached by a simple hinge to the end of the evacuating tube, which terminates within the glass trap of the instrument. When pressure is made on the India-rubber globe, and the current flows by the evacuating catheter into the bladder, this light valve is driven close to the aperture and no *débris* can leave the glass trap. When the pressure is removed and the current returns from the bladder, the valve floats widely open and permits the *débris* to enter unchecked. The wire valve is circular in form, and its border, being flat and thin and about the tenth of an inch wide, is delicately sensitive to the movements of the current, and responds to the slightest impulse of the hand on the India-rubber globe." "But," Sir Henry further remarks, "I am quite satisfied that, with my last published aspirator (the one so elaborately criticised by Professor Bigelow in the 'Lancet' of January 6, 1883), as well as with the form now described, no *débris* returns to the bladder if the instrument is properly used, when, of course, the valve is unnecessary. Few persons are aware that very slight but quickly made pressure on the globe, sufficing to transmit only six or eight drachms of fluid into the bladder, generally removes more *débris* than a powerful impulse which transmits, at one act, all the fluid contents of the globe, or nearly so. When employed in the manner last named the valve becomes useful, and only then is it required."

At the commencement of the evacuator contest I was using very satisfactorily the original Bigelow instrument, and was, at the time of the notable discussion in the London International Congress of 1881, under the impression that it was the best then in use. During that discussion Sir Henry Thompson accorded to me a fair share of the honor of contributing something toward the ultimate success of the operation of removal of vesical calculi at a single sitting. My distinguished countryman, Professor Bigelow, however, neglected to give me the credit of the previous discovery of the normal urethral caliber, through which alone the rapid evacuation became possible. Not desiring to assert my claim as a grievance, I determined, if possible, to invent another evacuator and, in describing it, to write the history of evacuators in general; in this I proposed, while according honor where honor was due, to take what I believed to be my legitimate place in the preliminary history of litholapaxy.

Two years after—viz., in November, 1883—I presented and demonstrated my first evacuator at a meeting of the New York Academy of Medicine, and read a paper in which "the removal of *débris* from the bladder after lithotrity"* was fully considered, with representations of previous instruments which had been in use for that purpose, adding those of my own, and in which, while it was distinctly shown that Professor Bigelow did not discover the increased capacity of the urethra, which alone made his operation possible, and also that he did not discover the tolerance of the bladder to prolonged instrumental interference; yet, as I there maintained, "he did much more—he utilized the knowledge which he, in common with other surgeons, possessed. He had the inspiration to conceive of its value as a factor in a great life-saving operation. He seized my dem-

* This cut, which shows the swinging trap of Sir Henry Thompson's instrument, is taken from the latest modification (1889), wherein the general form of the instrument approaches more nearly to that of the author (see Fig. 1).

* Subsequently published in the "Medical Record," and in a reprint (1883) entitled "The Simplified Evacuator for the Removal of Débris from the Bladder, after Lithotrity." New York: G. P. Putnam's Sons.

onstration of an average urethral caliber of 32 mm. in circumference. He joined it with his knowledge of the toleration of the bladder to legitimate surgical procedures, and litholapaxy was born. He had the courage, the surgical knowledge, the skill, the inventive mechanical genius, and the perseverance to carry it, *vi et armis*, to a successful maturity, thus finally achieving one of the most brilliant surgical triumphs of modern times."

My own instrument was constructed on an entirely different plan from those of both Professor Bigelow and Sir Henry Thompson. Having appreciated the difficulties of overcoming the alleged faults of both, I endeavored to accomplish evacuation without return of the *débris*, independently of traps, valves, or strainers. This was effected by a simple breaking of the currents to and from the bladder, so that the *débris* should be released *in transitu* and drop down into a receiver arranged to be a perfectly dead point.

In its practical working it was found fully equal in its evacuating power to the improved instrument of Bigelow, with the advantage that, without trap or strainer, no *débris* was returned to the bladder. It was found, however, that, under circumstances where, during the operation, it became desirable to introduce an additional amount of water into the bladder, this could only be effected with considerable inconvenience—much greater than in Bigelow's or Thompson's instruments. In 1885, therefore, a tap and stop-cock were added at the end of the rubber bulb, as shown in Fig. 4, so that, when it was found desirable to introduce additional water into the bladder, this was done with great ease by attaching the discharge-pipe of the Davidson syringe to a stop-cock (at L), while the supply end is immersed in a vessel (preferably a large glass graduate) filled with water at a proper temperature. The easy attachment and detachment of the Davidson syringe allow any desired amount of fluid to be introduced into the bladder without delay or inconvenience. With this addition the instrument did most satisfactory service in my hands during the following two years. The only real embarrassment which was found in the use of this evacuator was from the weight and inconvenience of manipulation of the two stop-cocks, which objection obtained equally in the instruments of Sir Henry Thompson and Professor Bigelow. At the suggestion of my son, Dr. William K. Otis, who had noticed the greater lightness of the evacuator of Dr. Ultzmann, of Vienna, I substituted hard-rubber fittings similar to his, and, in the course of experimentation which this change suggested, removal of all intermediate connections between the glass reservoir, the rubber bulb, and the evacuating catheter, was found practicable, decreasing the weight and adding to the ease in handling the instrument. It was then discovered also that a stop-cock was not necessary to prevent the water from flowing from the evacuator, this being effected by atmospheric pressure alone in any position which the handling of the instrument required, and that only when laying it down was any water liable to run out. For use in this event, a simple plug of hard rubber, attached by a string, was alone necessary.

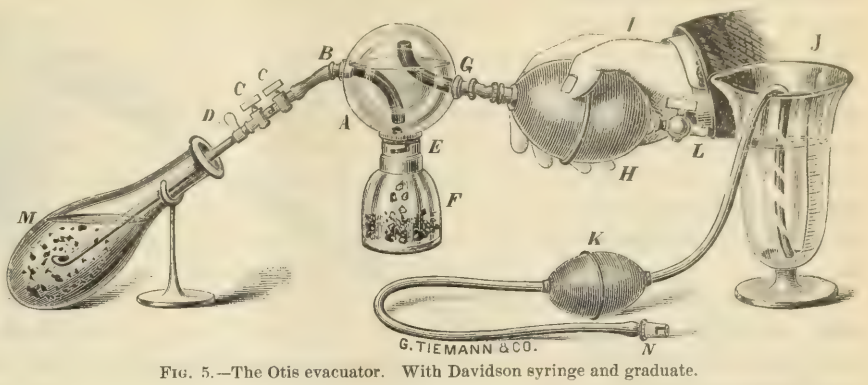


Fig. 5.—The Otis evacuator. With Davidson syringe and graduate.

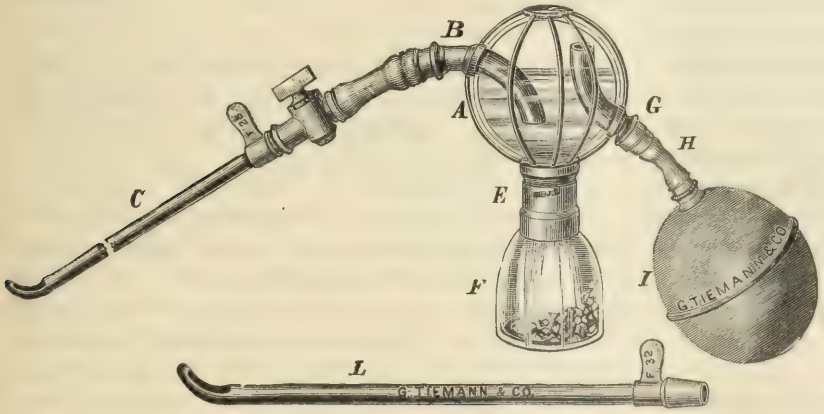


Fig. 4.—The author's first evacuator, 1883.

The successful elimination of one stop-cock, previously supposed to be the most important and still absolutely essential in the instruments of both Bigelow and Thompson, directed attention to the possibility of getting rid of the remaining stop-cock on the evacuating tube, which seemed desirable in order to prevent loss of water while attaching the evacuator to it after the crushing. It was ascertained in actual practice that, by changing the routine of operation a little, this stop-cock was also wholly unnecessary. These important changes decreased the weight to such an extent that, when filled, my perfected evacuator weighed six ounces less than Professor Bigelow's empty. Now, instead of attaching the evacuator to the evacuating tube immediately upon its introduction into the bladder after crushing, the fluid was allowed to flow out, carrying with it all the fragments that could thus be washed out; then, deliberately attaching the evacuator to the tube, the desired amount of water for working the instrument easily was introduced by means of the Davidson syringe, which

was connected with the rubber bulb. The syringe was then attached, and the evacuation deliberately proceeded with. It was not found necessary to press the end of the evacuating tube to the extent of depressing the bladder floor, so as to make the portion with which it is in contact the lowest point, as advised in using the evacuator of Professor Bigelow; but the current was sufficiently strong to draw out the *débris*, if the tube was simply well introduced into the bladder cavity.

Among the tests which were originally made to prove that the receiver was a perfectly dead point, and that fragments once deposited in it were thus entirely out of the influence of the currents passing to and fro during evacuation, was that of filling my evacuator completely as for ordinary use, then detaching the reservoir, emptying it, refilling it with glycerin, and then reconnecting it with the reservoir. A small quantity of crushed coral (which more nearly resembles vesical calculus than coal) was introduced into an ordinary soda-water bottle, and this half filled with water, to which a little ink had been added. On working the bulb, the fluid thus colored was seen to pass back and forth through the reservoir, but not in the least mixing with the glycerin, while the coral was drawn out of the bladder in the inky current, and, receiving its impulse and direction from the discharge-pipe, was disengaged from the colored medium, and, dropping down through the clear glycerin, was deposited at the bottom of the receiver. This experiment, which proved in a striking manner the perfect retention of the *débris* in the receiver during evacuation, was subsequently found to work admirably in actual practice; and in all operations, for the last two years, where blood was present in sufficient quantity to obscure the fluid, I have used the glycerin with great satisfaction. Without it, it will occasionally be difficult, and sometimes impossible, to tell whether the evacuation of the *débris* is proceeding satisfactorily without disengaging and emptying the receiver.

The changes which have been made in the old instrument are as follows:

1. Removal of all stop-cocks.

2. Removal of tubing between bulb and globe and between globe and evacuating tube, thus making the instrument more compact, and the distance from the bladder to the receiver the shortest possible.

3. Introduction of hard rubber in place of metal wherever possible, giving the utmost lightness.

4. Making the tube apertures in the globe oval instead of round (Dr. W. K. Otis's suggestion), and thus giving the greatest security against their getting loose and leaking.

5. Increasing caliber of evacuating tube where it enters the globe, thus securing a greater rapidity in delivery.

It is now maintained that this latest evacuator presents the following advantages over all other instruments now in use:

1. Perfect trapping of all fragments without the use of any form of valves, perforated tubes, or strainers.

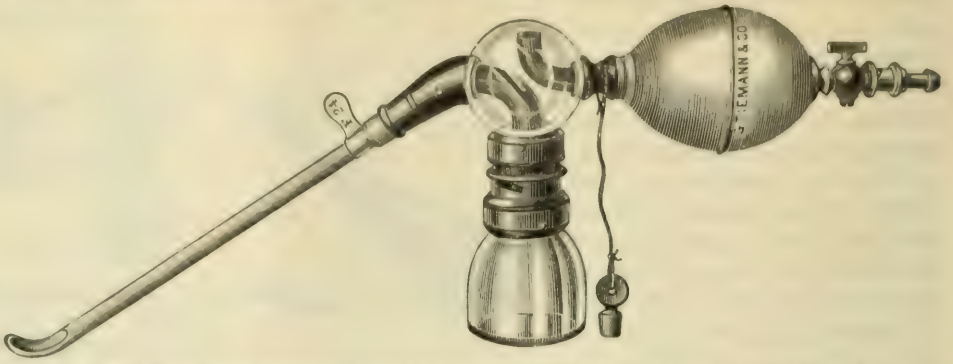


Fig. 6.—The perfected Otis evacuator. Holds eight ounces; weighs ten ounces empty; eighteen ounces filled.

2. Shortest possible route of fragments from the bladder to the receiver.

3. Absence of all stop-cocks between the bladder and receiver.

4. Ease of filling and perfect control of the amount of water in bladder during evacuation.

5. Lightness, compactness, power, and facility of manipulation.

6. In that the fragments being visible from the moment of leaving the tube until removed from receiver, it can be seen that they do not return to the bladder.

5 West Fiftieth Street, New York.

Note.—The original Otis evacuator was manufactured by Messrs. George Tiemann & Co., surgical instrument makers of New York, who, with much pains and skill, have aided me in the succeeding changes necessary to bring the instrument finally to its present state of perfection. F. N. O.

ANGULAR CURVATURE.

INTERDEPENDENCE OF STRUCTURE AND FUNCTION OF THE SPINAL COLUMN.

By GEORGE H. TAYLOR, M. D.

Vertebral disease, without question, has its source in conditions unfavorable to a sufficiently vigorous vitality. It follows that whatever is adapted to correct these conditions by substituting the more favorable conditions for the less is remedial. True remedies necessarily bear a philosophical relation to the sources of the malady. However urgent and aggressive symptoms may be, if they are effects of a hidden cause, remedies which fail to include these causes are impotent. The stream flows on, while the sources continue the supply. It hence too often happens in vertebral cases that while the physician palliates the pain, fosters the hopes, and opposes the exterior changes of contour of the spine, he has the mortification of noting the almost imperceptible diminution of strength of his patient, and of feeling a deepening consciousness of the inevitable doom.

The medical error is that of blending causes and effects in estimating the nature of the affection, and of practically

restricting his efforts to the latter. Perhaps also he estimates too highly the remedies at his command applicable to the sources of the disease. Vertebral disease exists potentially in its sources rather than in the register of its progress afforded by the shape of the column. But the sources are *functional acts*, and such acts are the only conceivable way in which structure can be either built or repaired.

In vital objects, therefore, structure is indissolubly associated with function, whether health or disease be the product. These two conditions are not opposite or antagonistic to each other, as the sufferer is apt to think, but degrees of the same thing—stages arrived at by function, ranging from perfection down through all forms of imperfection. Depressed and perverted function is disease, or at least its commencement, whatever its mode of expression may be. Such depression portends a corresponding recognizable condition of the structures to which the function belongs.

These statements express a general law of the vital organism. The law is a necessity arising from the nature of vital processes, the unceasing mutation of the *ingredients* serving vital uses. The word *nutrition* includes the sum of these changes of substance in the vital organism. Nutrition implies of necessity the two mutually dependent acts of supply of material to vital structures and expenditure or dismissal of the same. All remedies, therefore, from equal necessity, take effect in one or both departments of nutritive activity.

In all branches and departments of therapeutics the aim is the restoration of functional acts to a due degree of perfection. That such is the legitimate and, in fact, the only practicable way of building and repairing the organic structures is never doubted. Remedies are selected to aid and modify functional acts, not to obstruct, harass, or suspend them. Thus incited and guided, function approaches its normal degree and quality, and structural substance is re-enforced and solidified.

The reasonableness of these statements appears in bold relief when applied to different distinct functional parts of the organism. In disorders of the respiratory, the digestive, the circulatory, the pelvic, the nervous, and other parts of the body having plain functional duties, remedies are employed to assist the processes of which the respective organs are the seat. So far as structure is involved, its reparation is trusted to the consequences of improved and perfected function. The destinies of the two things are naturally and inseparably interlocked. These principles are obvious and probably trite, but are nevertheless invested with a world of meaning in their application to vertebral affections, their causes and consequences. The several tissues of the spinal column afford no exception to the principles above outlined, but, on the contrary, present unequivocal and abundant confirmation of them.

Reparation of diseased vertebræ is therefore to be rationally sought through a judicious adjustment of those activities which are *natural* to its tissues, and which in health maintain the normal state, to their impaired and weakened condition. Indeed, health is but a continuous reparation; the same effect follows the same causes, adjusted in degree in case of feebleness and impairment.

It is unfortunate for the spinal sufferer and for the therapeutics of the spinal column that the correctness of the above-stated principles has hardly been tested, even for the purpose of refutation. The physiology of the column, its tissues and their functions, has been misunderstood and misinterpreted, and therapeutics has consequently been misdirected. The immediate purpose is to present the neglected elementary facts, which lead to a better selection and use of remedies for spinal affections.

The development of this purpose requires frequent reference to elemental facts in anatomy and physiology. It is important that the reader have an accurate picture in his mind of these facts, including the distinct separate portions of the spinal column, its tissues and muscles, and the purpose these serve in health. In the descriptions of those which follow, all details not useful for advancing the central purpose are omitted.

The spinal column is composed of several distinct anatomical parts, whose functions are associated. It consists of bones, cartilages, ligaments, tendons, canals, and interosseous spaces, filled with fluids. At each side of the column and closely associated with it are large and powerful masses of muscles. These muscles control the position, the shape, and the motions of the column. In doing this they determine the outflow and inflow of its nutritive fluids, and therefore, to a large extent, the conditions for its health. This will be better seen when each anatomical part is examined separately and its intrinsic needs are ascertained.

The *bones* are a series of superimposed blocks or segments, called *vertebræ*, extending from the head to the lowest bone or sacrum. The lower vertebræ are broad, adapted to sustain greater weight; the size gradually diminishes upward. Those opposite the chest articulate with the ribs; those of the neck are narrower in proportion to height. They have very similar external appearance, being broader at the articulating faces, somewhat rough exteriorly, thus increasing the surface for attachments of tendons and muscles which engage the column. All have posterior projections or *spinous processes*. These are long at the neck, the length diminishing with each vertebra downward.

A remarkable peculiarity of the vertebræ is their capacity for fluids. A dried vertebral bone is light compared with other bones, like cork compared with wood. The division of one of these bones shows an interior of spaces or cells, which communicate freely with each other. The divisions are formed of very thin plates or laminæ of bone which intersect each other, giving an appearance resembling fine sponge. The exterior shell of bone is also very thin.

Although in the dry state the vertebral bones are inelastic, unresisting, and brittle, these qualities are reversed in the vital state and when saturated with moisture. They now have great strength united with elasticity. The thin bony exterior and the thin interior laminæ are separately very yielding; united, they acquire resisting power without sacrificing the elasticity of the separate parts. The fluids which the interior cellular spaces contain contribute to both the resisting power and elasticity of the whole, for these fluids

are free to move through all the cells in consequence of their intercommunication. When, therefore, pressure is applied to any point of the exterior, the fluids recede to other parts, and at the same time mechanically diffuse the pressure throughout the interior laminæ. The vertebral mass is therefore constructed with a view to elasticity as well as resistance.

The intervertebral cartilages appear to be nearly structureless and devoid of fluid spaces; their function would seem to be mainly that of elasticity. They are susceptible of slight extension by the removal of perpendicular pressure, while vertebræ appear to require a shifting of pressure from one to another part of the transverse diameter in order to develop the elastic property. The one tissue mitigates shocks from arrested motion, the other increases the extent of the lateral motions of the column. The elastic properties of the two classes of tissue supplement each other in the physiological rôle.

The ligaments and tendons which invest and unite the junctures of the vertebræ serve to increase the resisting power of the spinal column and to render it a mechanical unit. These tissues also aid in extending the action and power of the spinal muscles attached to the column.

Spinal Elasticity.—The spinal column divested of its muscles and separated from its natural connections would have very little sustaining or resisting power. It would easily yield or bend in obedience to gravitation or whatever force might bear upon it. The spinal column, in other words, is *flexible*, capable of bending in all directions; and it is also *elastic*—that is, possesses the power to return to the initial position.

The elasticity of the spine has been held to reside chiefly if not entirely in the intervertebral cartilages. The evidence is strong that a part of the columnar elasticity, probably a large part of it, in healthy animals and man, is an inherent property of the vertebræ; that it is an indispensable function of vertebræ; that this property may diminish with deterioration of health, and especially with diminished power of spinal muscles; and that it may return with improved health and restoration of the muscles which serve the elastic function. The evidences supporting the proposition that the vertebræ are elastic, a part of which have been mentioned and others to be introduced, are the following:

The structure of the vertebral bones eminently conduces to that function, while a structure resembling that of other bones would forbid it.

The unique combination of fluids with the structure, both uniting while dividing its minutest parts, conduces to the same end.

Cartilaginous elasticity alone is insufficient to account for the *degree* of flexion, and consequently the extent of the elasticity, constantly witnessed in animals and man in health. A part of it, therefore, devolves on other tissues of the column—the vertebræ.

The elasticity of vertebræ is strongly indicated, negatively, by pathology; for whenever they are for a season forcibly deprived of the exercise, the elastic quality, they approach and finally assume a morbid state.

Therapeutics even more strongly indicates, positively, that vertebræ have elastic properties; for, when suffering unmistakable hyperæmia, the exercise of the elastic quality of the spine in a proper way is the most certain and powerful remedy for the removal of this condition and its consequences. This shows that motions which involve elasticity are a natural function and constant in health. The proofs of the last two statements will appear in the proper place.

The Spinal Muscles.—The large, longitudinal masses of flesh which give the rounded form to the back are the spinal muscles and their covering of skin. These muscles fill the V-shaped space or groove each side of the spinous processes, and the outward convexity or bend of the ribs. The visible exterior fails to indicate their thickness; but this is approximately measured by the length of the spinous processes.

The spinal muscles are related to the column in two ways, which together determine the functions and health of the column. A thorough understanding of these relations is imperatively necessary for those whose purpose it is to rectify spinal faults and restore columnar tissues. One of the functions of these muscles is universally understood. It is that of causing the column to bend at will in any chosen direction, and of sustaining it in any chosen position. This purpose is effected by such graduated opposition of muscular action as shall secure the desired result. The action is an interplay of mechanical counter-forces. Whether spinal flexion or a special fixed form of the column is produced, it is equally the result of the tension of some combination of spinal muscles.

It hence appears that flexibility and elasticity of the column impose on its muscles the necessity of *constant work* or function, except only when the body is in a lying position, for, even when apparently motionless, muscular tension is required to maintain the position, and this involves action of the constituent elements of muscular substance. This muscular activity naturally responds to the need of the column of a vigorous collateral circulation promoted by the action of spinal muscles. It also indicates the vast amount of *chemical* function assigned to the same muscles of direct and undoubted advantage to the fluids of the vertebræ.

The other form of relation of spinal muscles and the vertebral column is an extension of that above described. The action of spinal muscles is the potential and effective *instrumentality of columnar nutrition.* Through their agency the physiological state is maintained. The absence of this agency is provocative of disease, liable to become localized in the column.

The details of the process whereby such important results as the nutrition of the column are secured become easily intelligible. In flexion or bending of the column its tissues become compressed at the concave side, and by equal necessity are drawn apart, stretched, or distended at the opposite or convex side. These are inevitable physical consequences of the physical cause operating—they are inevitable and constant. We will next see what occurs in the interior.

A certain portion of the fluids contained by the tissues of the column is unconfined and free to obey motor im-

pulses. These fluids move forward when in the least degree urged, the motion being of course in the direction of least resistance. It follows that the fluids of the *compressed* side of the column are *diminished;* those of the *stretched* side, at the same sectional area, are *increased;* they become displaced from the compressed portions and admitted into the stretched region. It follows that the nutritive fluids contained by the interspaces of the vertebral tissues which have been subjected to this act of flexion have become renewed and refreshed.

The term "fluids" in this connection includes the two kinds of blood. It further includes all mobile matters borne from arterial sources into the region of mechanical change described, and all similar substances capable of emerging therefrom through venous channels. The term further includes such matters as are rendered fluid and mobile through the chemical changes superinduced by the oxygen introduced from arterial sources, in connection with the coincident motion which facilitates, even enforces, the oxidation of unstable organic matters. It therefore includes the *exclusion* from the columnar region of products of waste, surplus materials, matters whose prolonged retention would threaten the integrity of vital structures; for prolonged retention of unstable organic materials in the extensive spaces afforded by the vertebral cells and canals is a condition which, if not actual disease, is one particularly favorable to its development, and therefore to the degeneration of the columnar structures. The phrase "change of local fluids" is therefore fraught with profound *therapeutic* as well as physiological significance; it is just what is most earnestly sought by physicians through numberless other channels, yielding only insignificant and temporary effects.

Physiological statements replete with therapeutic interests like the foregoing will necessarily be received with caution, not to say distrust. Except by the few physicians who, under the writer's guidance, have had the temerity to verify these statements by practical and satisfactory tests, their import has been but poorly apprehended. It is therefore proper to multiply analogies, illustrations, and explanatory statements, the better to enable those who desire to push this class of inquiries to do so to the best advantage.

The inability of the spinal column to urge forward, through its own tissues, its sanguineous and other fluids is obvious from the nature of these tissues. Bones contain no muscular or other self-contractile tissue. Such fluids as enter find egress without assistance from the bones. Students of anatomy learn that on entering osseous formations the arterial branches for the supply of nutrition are divested of their muscular coats, and the onward flow is due to other causes. This fact indicates the necessity, and therefore a provision, for such onflow.

The columnar tissues are not alone in requiring muscular power from a distance to aid their sanguineous outflow or venous circulation. There are physiological parallels in many parts of the organism. The *head* is an instance in point. A portion of its venous blood is in large sinuses, and the venous walls in general have feeble if any control of their contents. The brain contains no muscles to indirectly affect the venous flow. Its blood must remain indefinitely stationary but for exterior assistance. This is supplied in the pump-like action of the chest, which constantly diminishes the pressure in it, and therefore the desired outflow of the cerebral fluids.

The contents of the *pelvic* venous vessels are similarly circumstanced, and have the additional disadvantage of ascending in opposition to gravitation. Yet the same means as before mentioned is effective for the same end, so long as chest-motions operate in the pelvic direction. The therapeutic effects of *increasing* the action referred to, when the contents of the pelvis are in a pathological condition, proves incontestably the reality and the efficacy of the force described.

The functions of the spinal column require its tissues to be too dense for an effective penetration of the force which is sufficient for the return of the cerebral and pelvic venous blood and excess of fluids. Nature provides an additional and far more certain and effective means, of which the tissues of the column supply the mechanism while the neighboring muscles supply the force required. The working of the columnar mechanism may be further illustrated.

If a green twig, supple and full of sap, be cautiously and strongly bent, it is evident that the woody fiber of the concave side is compressed, occupies less space; the longitudinal measurement is diminished. The interspaces between the fibers are made smaller and their fluid contents are necessarily in part displaced or *squeezed out.* This mechanical effect extends in diminishing degree to the center.

At the opposite or convex side of the same object a contrary condition of the structure simultaneously appears. The fibers are drawn apart, the dimensions of the interfibrous spaces are increased, and their capacity for fluids enlarged. The removal of pressure produces a condition of the interspaces known by the term *suction,* which is active and efficient in proportion to the rapidity of the motion. It is evident that in the green twig, or any object having similar physical peculiarities, the fluids would be driven from one side and become free to assume other relations, while the opposite side would at the same instant receive such other fluids as come within its sphere of attraction.

The physical changes to which the fluid portions or contents of the spinal column are subjected by its flexile motions are aptly shown in the mechanism and action of a common rubber syringe. The bulb is compressed and water issues from the pipe. The pressure being released, expansion causes inflow in exact measure to the outflow, its direction being controlled by valves.

The steam pump is a mechanism practically similar, and more completely typifies the action of the spinal column, inasmuch as its action is also double. The liquid urged from the *eduction* pipe by the movement of the piston corresponds to the similar consequence produced by flexion. The *induction,* at the other side of the same piston, simultaneously produced, corresponds to the admission of fresh arterial blood into the vertebral spaces by the same acts of flexion. In both cases the reversal of the motion exchanges the work of the two distinct parts, but continues the flow. In both cases, also, the fluids subjected to impulse have

been passed quite through the mechanism, and have emerged therefrom.

The nature of the columnar interspaces may obscure but can not hinder or delay the mechanical effect imputed to the flexile motions of the column. So long as these interspaces are *pervious*, the application of force insures the passage of the animal fluids. The abundance of interstices, all pervaded by fluids, compensates for want of size of the channels. The transfer is physical in its nature and is irrespective of other considerations.

The act of transfer described of the columnar tissues is not an exceptional but an ordinary incident in physiology; a local manifestation of organic law; a step in the grand procession of matter in vital objects. Its analogue exists in every part of the organism. The vital cell exchanges its contents; the muscles change their shape; there is alternation—*rhythm*—of heart, chest, digestive organs, etc. In each case the tissues impel contents. The marked peculiarity of the column is its deficiency of motor energy, and its appropriation of that expended by neighboring muscles, for its special physiological needs.

The fluids supplied to the spinal column in the way described are those whose inflow is insured by arterial pressure, and are necessarily arterial. Those disengaged are venous, and, outside the area of compression, mingle with the venous currents. After the disengagement the columnal fluids are the common property of the vital system; they are subjected to the organized depurating processes of the vital mechanism—to the vital chemistry—and the fate of whatever is derived from the spine, healthy or morbid, is indistinguishable from that common to all parts. All now depends on the completeness attained by this general chemistry, by the further physical act of oxidation, and the working of the physiological mechanism which secures the necessary degree and rate of oxidation.

Practical Confirmation of the Preceding Statements.—The practicing physician is usually pressed for time, and loses his disposition for physiological experimenting. He is content to pursue the therapeutic course commended by precedent, and he is but little influenced by unverified physiological statements. He requires practical satisfactory tests of the value of new and strange remedial methods. In the present instance such verification is not wanting. It is even unnecessary at present to cite the direct tests of the author and the physicians who have investigated therapeutic methods based on principles above explained. A more satisfactory evidence is that supplied from another but related branch of therapeutics—viz., that of the spinal *cord*.

The anatomical position and the physiological relations of the spinal cord largely merge its interests with those of the column. The cord is nearly inclosed by the column, and they have similar sanguineous connections. The cord, like the column, contains no muscular or contractile element; can impart no motor impulses to its fluid contents. Especially it has no direct control of its products of expenditure and semi-expenditure.

Even more than the column, the cord is liable, in our civilization, to hyperæmia and its consequences. The cord is conceded to be the central source of sensory power. The unbalanced exercise of the sensory and emotional faculties may give rise to an excess of arterial supply over the venous outflow from the same part. The vessels of the cord would then suffer from the deterioration within it of stagnant blood, affording symptoms more or less painful and often threatening the integrity of its tissues.

To remove spinal hyperæmia and the concrete and more or less fixed products of hyperæmia is, therefore, the recognized problem of the therapeutist. Whatever methods and details he pursues aside from temporary relief of pain, his radical design is to empty the cord of its superfluous fluids, and, if possible, to reduce local impediments to an emergent or fluid form. The present writer showed in the "New York Medical Journal," nearly twenty years ago, that *motor impulses*, however communicated, were capable of profound therapeutic effects. Stretching, by hanging and by horizontal tension, was a part of the processes by which impulses were communicated. These processes appeared to reach the *causative* factor. For the removal of hyperæmia and its consequences, under whatever name, is but a temporary advantage unless the physiological mechanism which returns the circulation from the cord and its precincts be also raised to the normal condition. The two objects are effected together by the alternation of pressure which is the natural and indispensable function of the column.

In the May 11th number of the "New York Medical Journal" Dr. William A. Hammond cites Dr. Motchowkowsky, of Odessa, as having discovered the same principle as that above described—viz., that certain affections of the cord are relieved by alternations of the column. The word *stretching* is used as descriptive of the process, but continued tension is evidently not meant; only limited periods of suspension at judicious intervals. The process is called *stretching* the cord, but the present writer has found that no amount of tension that can be borne is capable of elongating the spine to a greater extent than occurs spontaneously, follows an hour's quiet sleep—viz., from three eighths to half an inch. If the suspension be by the arms, the practice soon enables the subject to bear the application of a surprising amount of tensile force without in the least increasing the length of the spine.

It is evident that the tensile force applied in these and similar processes falls upon the tissues of the column and its muscles rather than the cord. It would also seem that some term indicating *alternations* of compression, or of the weight sustained by the tissues of the column which actually occurs, would be more appropriate than stretching.

Longitudinal tension of the spine, however produced, necessarily falls upon its *resisting* structures; its physiological as well as mechanical consequences therefore occur in these. It is the vertebræ, the tendons and ligaments, the cartilages, and the longitudinal muscles in which involuntary contraction is incited that are primarily affected. The profound effects secured for the cord are rational consequences of these and are easily understood. In the hanging process the muscular action produced co-operates with mechanical changes in the tissues of the column before described, and the result is powerful revulsion from the cord. Its pent-up fluids, surcharged with matters inimical to vital-

ity, are drained away, and arterial blood charged with renovating power is introduced. Another coincident should not escape notice. The amount of air contained by the lungs in the position described is increased to the utmost just at the instant that both the spinal and chest muscles are at their highest possible activity. These acts co-operate to increase the oxygen actually employed, and therefore to diminish the unstable contingent of the organism—the disease.

The discriminating reader can not fail to perceive that *flexion* of the column and *stretching* by hanging or other means are processes potentially identical. They differ in appearance, not in substance, for flexion or bending causes the convex side to *stretch* or become extended to the greatest possible degree—far more than when the processes include both sides or the whole. The coincident compression of the other half or side of the column corresponds to discontinuance of suspension when the column again receives its normal pressure of weight. The flexion process has the apparent advantage of increasing at will this compression, an important element of alternation. Both acts may be simultaneously repeated so long as may be advantageous. Both forms of the process insure thorough diffusion of the blood, filling the capillaries of the whole system at the expense of hyperæmic parts, and act specifically upon the venous contents of the spine, and are equally advantageous for cord and column.

The considerations above presented appear to show in several distinct and conclusive ways that the flexile and elastic functions of the spinal column are not only natural but indispensable; that such acts are necessary for carrying forward the two branches of nutrition of its tissues, including the osseous, nervous, tendinous, cartilaginous, and muscular; that the location of its structures and their dense nature renders the influence of both the collateral circulation and of the forces which act elsewhere in the system insufficient, at least in weakly constitutions and under unhygienic conditions; and that the flexile and elastic functions are in these cases an all-sufficient supplementary force.

Syphilitic Disease of the Eyelids.—J. Hutchinson, Jr. ("Roy. Lon. Ophth. Hosp. Rep.," xii, 2), draws the following conclusions from his study of reported cases: 1. Late secondary and tertiary affections of the eyelids are met with most commonly in those who have suffered severely from their syphilis, especially those who have had rupial or tubercular skin eruptions or ulcers of the palate. 2. The upper lid is more liable than the lower one to be affected, though both are not infrequently involved. 3. The tertiary ulceration (gummatous) of the lids is more often met with in women than in men. 4. Not only do many cases of the latter resist specific treatment in a marked degree, but they show a strong tendency to relapse after being apparently cured. 5. As a rule, syphilitic ulcers and gummata of the eyelids are more painful than those met with on other parts of the skin.

Citric Acid in Milk.—"Professor Soxhlet, a French chemist, has demonstrated that cow's milk naturally contains citric acid in an almost constant proportion of one gramme to every litre. A good animal yields, therefore, at a single milking, as much of this acid as is contained in two or three lemons, and the annual aggregate throughout an extensive dairying neighborhood must be something enormous. It occurs in the form of a calcareous salt."—*Druggists' Circular and Chemical Gazette.*

DEAFNESS AS A RESULT OF NASAL AND DENTAL DISEASES.*

By D. H. GOODWILLIE, M. D.

In order to better understand this subject, it may not be amiss to call attention to the anatomical relation of the internasal passages and that of the internal ear by means of the Eustachian passage, which intimately connects the two.

By reference to the illustration (Fig. 1) of an antero-posterior section of the head, the cavity of the nostril is shown *a*, *b*, *c*, represent one side of the nostril, the superior, middle, and inferior turbinated bones. Between these are three passages (*meatus*); the inferior meatus (14) is especially important to act as a drain for the secretions that fall into it from the nasal fossa and all the accessory cavities—namely, the frontal sinuses (13), tear duct, maxillary antrum and sphenoid (No. 1), and ethmoid cells.

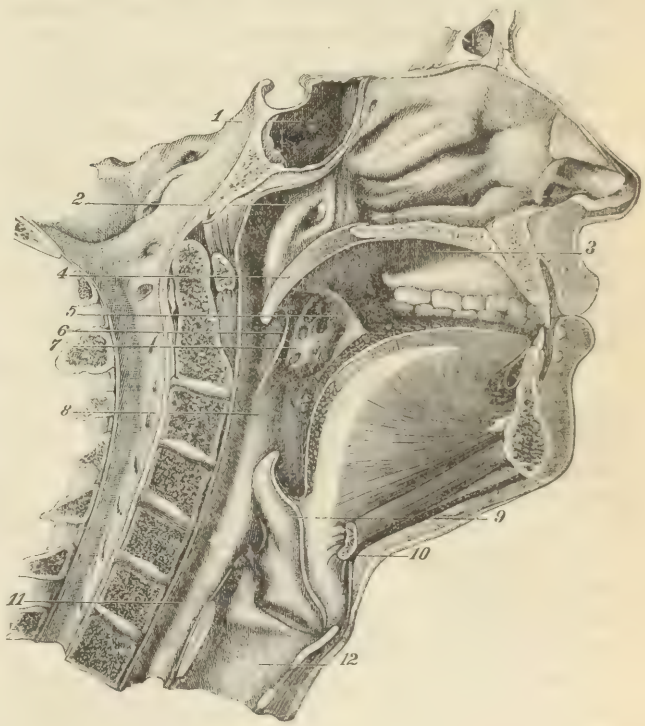


Fig. 1.

The nasal septum separates the two nostrils. At the posterior part of the lower nasal passage (14), and nearly on a line with it, is the Eustachian passage (No. 2) to the middle ear, which contains the tympanum with its contents, the ossicles, membranous walls, and mastoid cells.

The Eustachian tube (No. 2) is provided for the passage of the air from the naso-pharyngeal cavity to the middle ear. The naso-pharyngeal mucous membrane also lines the Eustachian tube, the cavity of the tympanum, the little bones, tendons, ligaments, muscles, nerves, the internal surface of the membrani tympani, and the fenestra rotunda, and extends into the mastoid cells. The tympanum contains air of the same density as that on the outside, in order

* Read before the Section in Laryngology and Rhinology of the New York Academy of Medicine, April 23, 1889.

to maintain the tension on the inner and outer side of the ear drum; in this condition there will be perfect hearing.

The air passing through the Eustachian tube to the middle ear is controlled in a great measure by the action of the tensor and levator palati muscles. The tensor palati muscle arises from the spina angularis of the sphenoid bone and from the cartilage of the Eustachian tube. It passes around the hamular process of the pterygoid, and there expands into the broad aponeurosis of the anterior surface of the soft palate. When in action it dilates the orifice of the Eustachian tube.

The levator palati arises from the lower surface of the apex of the petrous portion of the temporal bone and from the cartilaginous portion of the Eustachian tube. After passing into the pharynx it spreads out on the posterior surface of the soft palate as far as the middle line, where it blends with its fellow of the opposite side. By its contraction it raises the velum and soft palate. The increase in diameter has a tendency to close the orifice of the Eustachian by elevating the lower border.

By the conjoined action of these muscles in the act of swallowing, the Eustachian tube is rendered patent, and it is thus that intratympanic air pressure is regulated. The free ventilation of the tympanum by the action of these muscles upon the pharyngo-Eustachian orifice is essential to perfect hearing. Any condition that causes stenosis of the tube by thickening of the mucous membrane and retention of the secretions, or interference with the action of the muscles, will prevent the equilibration of intratympanic pressure, and will eventually end in otitis media and its sequelæ.

In several cases that have come under my observation where all the internasal bones had been destroyed and carried away by necrosis, along with the end of the nose, giving an excellent view of the Eustachian orifices, I have been able to observe the action of the muscles, both by direct view and also by a small mirror passed through the nasal cavity to the naso-pharynx, by which the condition of the orifice during muscular action in the opening of the Eustachian tube was reflected. In these cases there was no disease of the ear or Eustachian tube, and hearing was normal.

The action of the muscles may also be demonstrated, when there is stenosis by the thickening of the mucous membrane in the Eustachian tube, by inflating the tympanic cavity; the excess of air will be released by the opening of the tube in the act of swallowing.

The sympathetic nerve connection between the ear and other organs by the anastomosis of the tympanic plexus with nerves supplied from other parts accounts for the reflex phenomena so often observed. By means of branches from the otic ganglion, the inferior maxillary nerve is intimately connected. By the vidian nerve from Meckel's ganglion the superior maxillary of the fifth pair is joined to the tympanum.

The carotid plexus of the sympathetic sends a branch to the glosso-pharyngeal and makes connection between the ear and superior cervical ganglion of the sympathetic. There are various other nerve anastomoses that bring the ear in connection with other organs.

An irritation produced in the external auditory canal will produce various sensations in the nose, pharynx, or larynx, manifested by coughing, swallowing, or some nasal irritation. In diseases of the nose, throat, or teeth, when gradual and long continued, a reverse condition will take place until trophic changes are produced and deafness is the result.

The intranasal sensory nerves may be divided into those of special and those of general sensation.

The olfactory nerve, a special nerve of smell, occupies the superior and middle turbinated bone and upper part of the septum.

Nerves of general sensation are the nasal branch of the ophthalmic, which supplies the upper and anterior part of the septum and outer wall of the nasal; the anterior dental branch of the superior maxillary, which is distributed to the inferior meatus and inferior concha; the vidian nerve and the upper anterior branch of Meckel's ganglion supply the upper and back part of the septum and superior turbinated bone; the naso-palatine nerve, which ramifies upon the middle of the septum; and, lastly, the anterior palatine nerve, which supplies the middle and inferior turbinated bones.

It may be seen how, from an intimate connection by continuity of tissue, a catarrhal inflammation of the nasal or naso-pharyngeal mucous membrane may be conveyed to the vascular and sensitive mucous membrane and periosteum of the middle ear, and, by developing disease, may impair the function of hearing.

The vast majority of the diseases of the middle ear manifested by deafness are the direct result of nasal or naso-pharyngeal catarrh. A very small minority are from lesion of the dental organs directly through reflex nerve influence, or more often indirectly, by setting up a degenerative process, either producing or accompanying nasal disease, which may end in middle-ear disease and deafness.

The naso-pharyngeal diseases that act as factors in the production of middle-ear disease in a large majority of cases are as follows, namely: 1. Hypertrophic rhinitis, a perverted condition of mucous membrane; hypertrophy of soft tissue covering the turbinated bones, especially the inferior, which contains erectile tissue; occasionally bone hypertrophy; deflected cartilaginous or bony septum, with occasional exostosis. 2. Growths in the nose or nasal pharynx, fibro-gelatinous polypi, naso-pharyngeal fibroid tumors, and adenoid growths. These either close up the Eustachian tube by mechanical pressure or induce a catarrhal condition. 3. Atrophic rhinitis, in which there is a destruction of the internasal tissue, a fœtid, pasty catarrh that may also extend to the Eustachian tube, tympanum, and other accessory cavities. 4. Hypertrophy of the tonsils, associated with catarrhal conditions, indirectly obstructs the Eustachian orifice by impeding the action of the muscles and thus prevent intratympanic air renewal. 5. Hypertrophy of the palate from tumors, gummata, and abscess. 6. Paralysis of the palate, defective action of the muscles from cleft palate, congenital or acquired. In cases of cleft palate I have repeatedly refused to operate on account of suppurative otitis media, although all else was favorable; diphtheria, pertussis, scarlet fever, and measles are most prolific sources in childhood of rhinitis, eustachitis, and otitis media; small-

pox, syphilis, and the various specific diseases of the nose and throat.

The sympathetic nerve connection between the ears and teeth would naturally lead us to a knowledge of reflex disease in these organs. In a paper read before the New York Neurological Society, January 3, 1876, and published in the "Journal of Nervous and Mental Diseases," April, 1876, on "Lesions of the Trifacial," I called attention to the reflex nervous irritations from lesions of the dental organs and maxillary bones as the prime causes of facial neuralgia and as a factor in the production of other pathological conditions in associate parts, with a report of a large number of cases as coming under personal observation.

The branches of the trifacial appear to be very susceptible to reflex actions, which are often peculiar in their manifestations. While one person may suffer from a comparatively slight irritation, in others the same condition will produce little or no results whatever. A low vitality, a great mental strain, a rheumatic or gouty diathesis are often a predisposing cause.

Dentition is a physiological process, and under normal conditions of physical development ought to give little or no disturbance to the vital powers. The physiological process of teething is too often considered a predisposing cause to disease. Now, the reverse is nearer the truth when we consider the anti-physiological method in which children are reared. Non-tissue-building food, bad air, improper clothing, too little sleep, and all the ailments that come at this age will produce ill-developed organs, and consequently faulty functional activity. Under such conditions the dental nerves are quite susceptible to morbid impressions, which may be reflected to adjacent organs. The same influence that produces a reflex nervous action from an erupting tooth may also set up a nasal catarrh, and this may end in ear disease; but a reflex nervous action from an erupting tooth of the first dentition without other complications may only result in otalgia. Middle-ear disease must be preceded by catarrhal disease of the internasal mucous membrane.

At the full development of second dentition, aural disease that may arise from any dental lesion will probably result from the following direct or indirect causes, namely: Pulpitis by exposure of the dental pulp by caries; this may also result in suppurative pulpitis, to be followed by a maxillary abscess. Osteo-dental development in the pulp cavity, periodontitis, periostitis, impaction of permanent teeth in the maxillary bones, maxillary abscess opening into the nasal cavity or into the antrum, setting up antrum disease, to be followed by purulent naso-pharyngeal catarrh and otitis media. Improper artificial dentures are occasionally a source of reflex troubles. Abnormal respiration through the nose from catarrh in its many forms produces also abnormal pulmonary respiration. From the same cause the air in the vault of the pharynx is in a rarefied condition and abnormally affects the intratympanal air renewal.

From what has been said it may be learned that, in order to successfully treat middle-ear affections, all naso-pharyngeal disease must be removed, and that the otologist must of necessity be also a rhinologist. I can not trespass on your time to go into details on the treatment of the nasal and naso-pharyngeal diseases that may act as factors in ear disease, but there are, however, certain methods of treatment that I desire to bring to your attention.

One of the first things that is to be done in eustachitis or middle-ear disease is the treatment of the nasal catarrh; the removal of pent-up secretions and putting the parts into an antiseptic condition; then follow the treatment, whether it be medical or surgical. Some means must be employed that will accomplish this and do no harm to the diseased parts; the douche does harm and ought not to be used. The treatment can best be made by means of a spray of peroxide of hydrogen (fifteen per cent.). When the peroxide meets the secretion an effervescence immediately takes place, and the sticky, pasty, fœtid mucus is changed into foam. Its septic nature is entirely changed, and it can then be readily blown or wiped from the nostrils. The peroxide* is also a good germicide. Dr. B. W. Richardson, of London, in 1881 called my attention to its remarkable powers. A probe (Fig. 2) wound with cotton should then

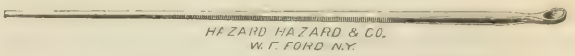


Fig. 2.—Nose and ear probe and curette. Half size.

be passed into the inferior meatus far enough back to wipe the naso-Eustachian orifice. This should always be done before the Politzer or Valsalva inflation is used, thereby preventing the danger of blowing foul air into the tympanum.

Most thorough antiseptic means should be used before a surgical operation and in the after-dressings. All instruments to be sterilized by dry heat or steam.

For the treatment of eustachitis and otitis media (after the removal of the nasal disease) the most efficient means is in the use of the Politzer or Valsalva method—that is, applying medical vapors by inflation. The patient is directed to take a full inspiration and then to blow gently out through the closed lips; just as he begins to exhale, apply the vapor to the nostril; then immediately close the patient's nostrils and instruct him to breathe strongly out of the nose until the tympanum is inflated. The Politzer method can just as readily be used after the vapor medication has been applied. I have obtained good results from medicated vaseline placed in an instrument prepared for the purpose, liquefied by heat, and then vaporized by air-pressure (Fig. 3). After the nasal disease has been re-

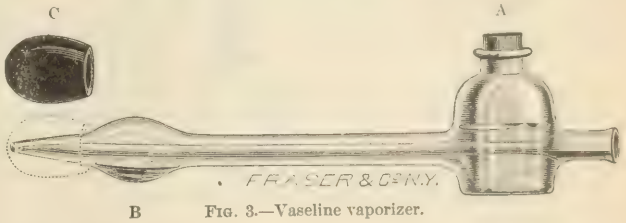


Fig. 3.—Vaseline vaporizer.

moved the Eustachian catheter or bougie may sometimes be of good service in opening up the tube.

* "Peroxide of Hydrogen," by Dr. W. A. Dayton, "N. Y. Medical Journal," April 25, 1885, and "Archives of Otology," vol. xiv, No. 1, 1885.

The medicated vaseline I have had prepared for me by Fraser & Co., and put up in tin tubes of half an ounce each for convenience in filling the receptacle of the vaporizer A, Fig. 3. The medicated vaseline is heated to a liquid at the bulb B. The hard-rubber nose shield C is placed over the end *immediately* after the heating and before the application is made to the nostril. Application must be made promptly after the heating.



Fig. 4.—Electric nasal catheter.

Fig. 4 represents the electric nasal catheter for carrying an electrolytic current into post-nasal growths; used also as a Eustachian catheter or bougie. The catheter as now seen is armed with the Eustachian bougie, C, which is to be drawn in before it is used. The bougie is made quite flexible, to better facilitate its passage into the Eustachian tube. When the catheter is passed into the nostril, it is best known to be at the Eustachian orifice by viewing it with the rhinoscopic mirror through the naso-pharyngeal space. Note, for future guidance, the measurements on the scale by running the slide, B, up to the end of the nose; the length that the bougie is passed into the Eustachian tube is seen on the scale at A; it is at this end the electric current is applied. The Eustachian bougie is replaced by a needle when used on post-nasal growths.

The difficulty of a rhinoscopic examination may be facilitated by a palate retractor and a tongue depressor (Fig. 5). By a skillful use of these, the palato-pharyngeal space will be so enlarged as to allow a good examination of the naso-pharynx. By means of the rhinoscopic mirror all abnormal conditions may be seen, as also the passing of the Eustachian catheter or bougie.

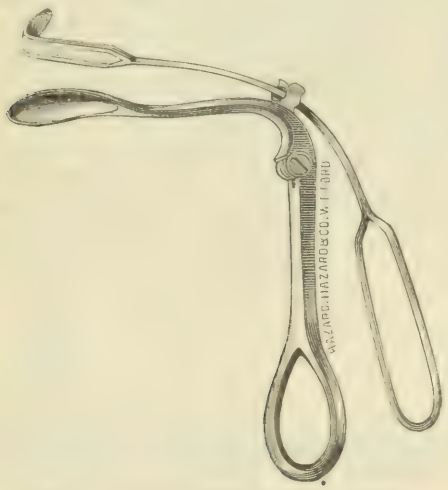


Fig. 5.—Tongue depressor and palate retractor.

Nasal catarrh in childhood, especially after diphtheria and scarlet fever, should have prompt and efficient treatment to avoid deafness, improper respiration, alimentation, and development.

The young are very susceptible to any treatment that wars against the enemy to their vital force in physical and mental growth.

All cases of catarrh in the upper air-passages do not result in deafness. I have repeatedly seen all the internasal bones taken away by disease and the hearing remain normal. Still, the fact remains that nearly all the middle-ear disease ending in deafness is the result of catarrh from the contiguous parts. Dental disease is often the primary cause of nasal catarrh (although it has not been so generally recognized), and the latter may produce deafness.

The following cases may serve to illustrate this subject in a practical way:

Case I.—A. B. A., aged twenty-four, had hypertrophies of the turbinated tissues (Fig. 6, *a* and *c*), over both inferior turbinated bones, with abundant post-nasal discharge. Both tonsils very large, voice husky, deafness coming on for two years. The H. D. L. $\frac{20}{40}$, H. D. R. $\frac{15}{40}$. Removed both tonsils with the guillo-

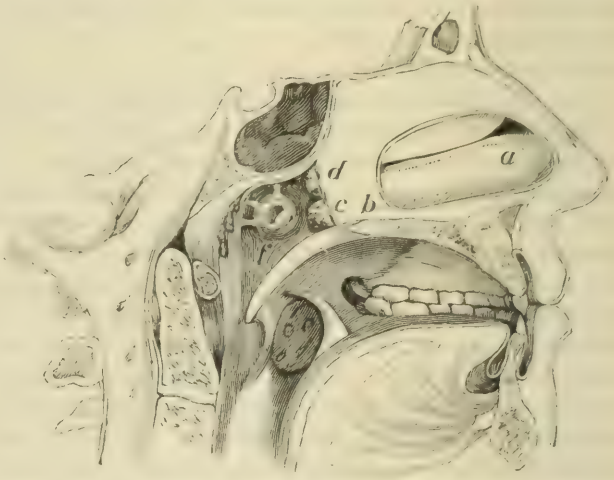


Fig. 6.

tine; then by the rhinoscope could be seen fibrous bands, *f*, passing from the edge of the Eustachian orifice to the pharyngeal folds. These bands were cut away; the turbinated hypertrophies, *a*, *c*, were scarified by the galvano-cautery knife; medicated inflations of the tympanum were applied; the catarrh decreased and the hearing returned. (Dotted line, *a*, represents the size of the inferior turbinated tissues after treatment.)

Case II.—H. D., aged sixteen years, had diphtheria six years ago, with a large amount of false membrane in the nose and on the tonsils. His present condition is as follows: Very little nasal respiration; tonsils and hypertrophied uvula nearly fill up the naso-pharyngeal space; hypertrophied tissues over both inferior turbinated bones; deafness noticed coming on three years ago. H. D. R. $\frac{20}{40}$, H. D. L. $\frac{20}{40}$. Hypertrophied tonsils, uvula, and turbinated tissues removed, after which he recovered his hearing.

Case III.—Rev. S. W. K., aged forty-eight years, consulted Dr. A. H. Buck for his ear trouble, but, finding upon examination that he had a muco-purulent discharge from his left nostril, the doctor kindly referred him to me. He gave the history of some *tooth* trouble three years before. At that time some temporary means were made use of, and it apparently passed away. Soon after, however, he began to suffer from facial neuralgia, followed by chills and fever and great prostration, which has severely affected his health. He was then treated for malaria. Following this was a severe rhinitis and post-nasal discharge and otitis media.

Upon making a careful examination, I found the left inferior turbinated bone entirely destroyed by necrosis, and a copious purulent discharge passing into the naso-pharynx. Post-nasal examination by the rhinoscope revealed the naso-pharyngeal opening of the Eustachian tube, left side, quite large and attached to the pharyngeal fold by fibrous bands; a muco-purulent tract down the posterior wall of the pharynx. H. D. L. by contact with a watch; H. D. R. normal. On examination of the mouth, the only remaining molar appeared dead. Suspecting this to be the origin of the trouble, it was removed, and a large trephine was passed up into the antrum by means of the electric surgical engine, and, upon its removal, about two ounces of exceedingly fœtid pus passed out. This was a sufficient cause for all the local trouble, and of septicæmia instead of malaria. The patient's hearing began to be affected soon after the pus from the antrum entered the nostril, setting up catarrh and producing the necrosis of the inferior turbinated bone. The inflation of vapor of iodo-vaseline (white vaseline, ℥ j; iodol, ʒ j; menthol, one per cent.) to the middle ear, antrum, and all the passages, gave him immediate relief and resulted in great good after the cleansing. Now, after a year's treatment, his health is quite restored, and the hearing of the left ear is $\frac{6}{40}$, with no discharge from the antrum. By an examination of the molar tooth you will see the palatine root partially destroyed by the action of the pus. The hole made by the trephine through the alveolar process into the antrum is still kept open.

Case IV.—D. H. G. had neuralgia on the left side of the head, with extreme sensitiveness at the tragus, with tinnitus aurium, which continued for some weeks. Teeth, ear, and nose were examined, but the cause could not be found. The pain suddenly stopped, but hearing not quite normal. After a few weeks the pain returned, with post-nasal catarrh and synovitis of the temporo-maxillary articulation. Teeth carefully examined again, and a small decay was discovered in the left superior wisdom tooth; the dental pulp was found dead and suppuration had taken place. Thus the mystery of the trouble was solved. The first neuralgic attack was produced by pulpitis, for after the pulp had died, most probably by strangulation of the vessels, the pain suddenly ceased. In a short time decomposition of the dead pulp took place, which excited suppuration in the surrounding cellular bone tissue about the apex of the root of the tooth. The pus found its way through the posterior alveolar process and then into the naso-pharynx, producing catarrh that extended into the Eustachian passage. H. D. L. $\frac{15}{40}$.

Treatment consisted in extracting the wisdom tooth, with the removal of any cellular necrosis; the soft parts were prevented from healing until the bone socket was filled with granulations. The post-nasal and Eustachian catarrh was treated by cleansing the parts with peroxide of hydrogen, followed by medicated vaseline vapor used by means of the Politzer or Valsalva method. The Eustachian catheter and bougie were used with good result. Hearing has returned and the nasal catarrh has quite gone. An occasional return of the synovitis is caused by exposure to severe cold winds.

Case V.—Harry E., now fourteen years of age, had diphtheria when six years of age, followed by paralysis of the palate muscles and those of the lower limbs. There was false membrane at this time formed in the nose.

After his recovery from diphtheria he had an attack of scarlet fever, which was followed by nasal trouble, otitis media purulenta, and deafness (right ear discharging externally).

When I first saw him it was after his recovery from the fever, and his condition was as follows: Tall and slender in form, contracted chest, pleuro-plastic adhesions in posterior part of chest, weight one hundred and five pounds. His left nostril was closed by adhesion from a deviated septum to the turbinated tissue, and with no respiration. The right nostril contained hypertrophic tissue, with little respiration. A post-nasal examination revealed a fibroid tumor growing from the pituitary fossa, and a thickening of the pharyngeal folds pressing against the Eustachian orifices, which were hypertrophied.

Treatment consisted in removing under NO, by means of my shielded nasal trephine (Fig. 7), the hypertrophied cartilage



Fig. 7.

and bone from the left nostril (the deviation and adhesion closed the nostril its entire length). After the operation one of my nasal intubation soft-rubber tubes (Fig. 8) was put into the nostril, thus giving the patient great comfort by permitting him to breathe through it. The tube was readily removed when

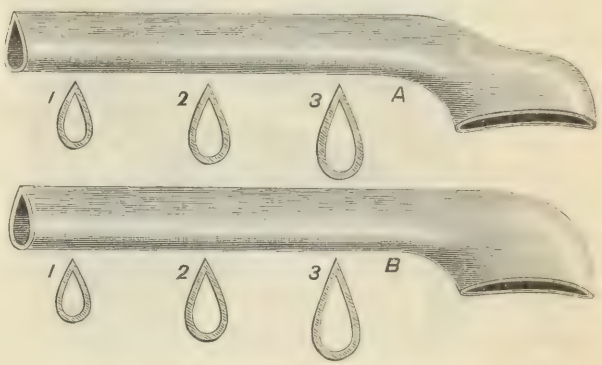


Fig. 8.—Nasal intubation tubes.

necessary for the cleansing of the nostril by peroxide of hydrogen, and as easily replaced. After having worn the tube for some three months and the parts had healed and were in normal condition, it was removed. The fibroid post-nasal growth was subsequently removed by means of electrolysis, the electrolytic nasal catheter and needle (Fig. 4) being used. By means of the inflation of medicated boro-vaseline vapors (white vaseline, ℥ j; boric acid, ʒ j; menthol, one per cent.), the ear trouble passed away and his hearing in both ears became normal.

Case VI.—W. R. B., well developed and formerly very robust, has for several years been in a declining state of health, the cause of which appeared obscure. When first seen by me he complained of great exhaustion, with chilly sensations, fever and night sweats, pain in the right side of the face and head, skin sallow, liver torpid, and troubled with constipation and a muco-purulent catarrh discharging from right nostril. H. D. R. ear, $\frac{6}{40}$; left ear and nostril normal. Believing his trouble to be from some septic origin, I discovered it in a maxillary abscess (which came from a decayed tooth filled some years since), the exit of the pus being into the nostril, setting up the purulent catarrh, extending into the frontal sinus and into the internal right ear, producing deafness.

The treatment consisted in trephining the abscess through the alveolus, and removing also some cellular necrosis. A fistulous opening was found through to the floor of the inferior meatus and into the nostril. By good antiseptic dressing to the abscess and nostril the opening from the abscess in the jaw into the nostril closed, after which the bone cavity soon granulated and healed. A cholagogue with saline mineral waters was administered, followed by tonics. Medicated vapor inflation was made to the internal ear, and after three months' treatment the patient was able to attend to his business. His hearing very much better. H. D. R. $\frac{30}{40}$.

Case VII.—A. E. L., when quite young, began to suffer

from naso-pharyngeal catarrh, non-respiration through the nostrils and consequently mouth breathing and defective pulmonary development, with nasal tone to voice.

This condition was produced by ailments incident to childhood, in which the nasal trouble received no treatment at the proper time. When I first saw her, at the age of twenty-two years, deafness had been gradually coming on for a number of years, until now the watch could only be heard by contact to the ear. The ear drums were contracted.

Fig. 9 represents the case. Inferior turbinated tissue hypertrophied and extending backward to near the Eustachian ori-

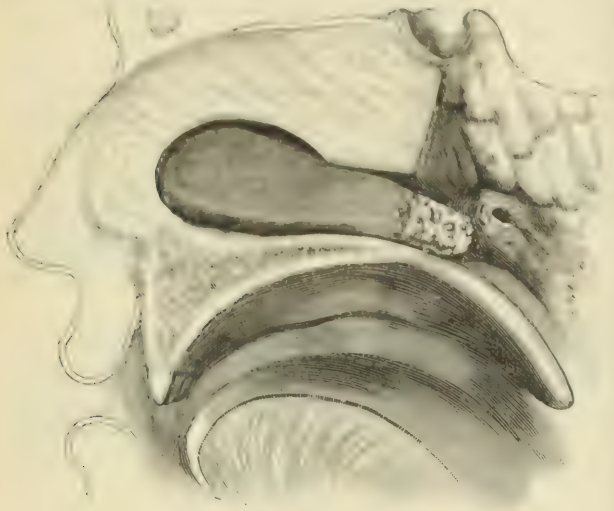


Fig. 9.

fice. By a posterior rhinoscopic view, by means of the mirror and palate retractor (Fig. 5), the adenoid growths could be seen pressing down on the Eustachian orifice, which, together with the catarrhal conditions of the tube, prevented air entering into the tympanic cavity.

After thorough cleansing with peroxide of hydrogen, the anterior two thirds of the hypertrophic turbinated tissue was treated by scarification with the electro-cautery knife; the posterior hypertrophy removed by means of my forceps snare. One of my internasal tubes was introduced after the operation, and worn with comfort until the parts healed and contraction took place. The adenoid tissue was removed by the posterior nasal forceps. By these means the nasal respiration was restored, mouth breathing ceased, and the whole body responded to a change for the better. Inflation continued for some time after the preliminary treatment, with the result of H. D. R. $\frac{5}{6}$, H. D. L. $\frac{6}{6}$, which was better than anticipated, considering the condition.

160 West Thirty-fourth Street.

Alleged Contagiousness of Cancer.—"A small commune in Normandy, Saint Sylvestre-de-Courcelles, with a present population of only 379, as compared with 500 twenty years ago, has in the eight years 1880–1887 lost no fewer than eleven of its inhabitants, between the ages of sixty-two and eighty-three, from cancer—a proportion of 15 per cent. of the total mortality. All but one of the cases occurred in males, and in as many as eight the cancer was seated in the stomach. Such facts have led Dr. Arnaudet ('L'Union méd.,' No. 52) to conclude that cancer is contagious, and is propagated through the medium of water. It is true, he remarks, that not one of the eleven persons mentioned were water drinkers, but then they drank cider, which is made with the pond water of the district. Dr. Arnaudet thinks this sufficient ground to advocate the use of antiseptics and of boiled water as prophylactics against cancer, as well as against typhoid fever or phthisis."—*Lancet.*

A CASE OF GUNSHOT WOUND OF THE HEAD;

BULLET LOCATED BY MEANS OF THE TELEPHONIC PROBE.

OPERATION; RECOVERY.

By GEORGE R. FOWLER, M. D.,

SURGEON TO ST. MARY'S HOSPITAL AND TO THE METHODIST EPISCOPAL HOSPITAL, BROOKLYN, N. Y.

On December 11, 1888, I was requested by Dr. Burger, of this city, to visit with him M. H., a five-year-old boy, who, while playing with a younger brother, suffered a gunshot wound of the face from the accidental discharge of a thirty-two caliber revolver. Dr. Burger saw him immediately after the accident, and simply dressed the wound with a carbolized-water dressing, pending efforts to locate and remove the missile.

Upon my arrival I found the little patient lying upon the lounge, with the region about the left eye swollen, and suffering considerable pain. The face and eye were burned with powder, showing that the pistol had been fired at close range. A bullet wound with blackened edges was observed upon the left side of the face, just below and about on a line with the infra-orbital foramen. After thorough disinfection of the surrounding parts, the wound was probed, but the only information obtained by this was the fact that the anterior wall of the antrum of Highmore had been perforated by the ball. The probe passed directly backward and was arrested at the depth of an inch, but whether by bone or the bullet could not be determined. The telephonic probe was then brought into requisition in the following simple manner, as suggested by Dr. Girdner, of New York: An ordinary metallic sound-gauge was attached to about two feet of ordinary insulated copper wire, and the other extremity of this latter was attached to one of the binding posts of a telephone (receiver); from the other binding post of this instrument a similar piece of wire passed to the eye of a silver pocket-case probe. The sound-gauge was held firmly pressed against the surface of the cheek of the child, and, with the telephone applied to my own ear, I passed the probe again down through the wound, and heard the characteristic rasping, clicking sound in the telephone, which announced the contact of the probe with some metallic substance in the tissues. Following the course of the probe, the ball was extracted without difficulty from the spheno-maxillary fossa by means of a Péan forceps. The antrum was then cleared of blood clot, and further search revealed the bony fragments resulting from the crushing of the anterior and posterior walls of the antrum, which were removed. The ball had passed directly through the antrum, and had lodged in the spheno-maxillary fossa. The fragments of bone representing the comparatively thick anterior wall of the antrum, as well as those resulting from the crushing backward of the thin posterior wall, were easily identified upon removal. The bullet itself bore upon its further extremity a deep indentation where it had impinged upon the sharp ridge on that portion of the greater wing of the sphenoid bone which separates the zygomatic fossa from the spheno-maxillary fossa.

Pasteurism and the Rabbit Pest in Australia.—"It is reported that Dr. Germont and Dr. Loir, who were sent to Australia on behalf of M. Pasteur in order to give practical proof of the efficacy of his plan for exterminating rabbits, have returned much dissatisfied with their reception in the colony. They allege that a law was passed preventing the introduction of microbes, and that the Rabbit Commission reported against M. Pasteur's method without having a public trial. As a consequence of this, M. Pasteur refused to accede to the request of a number of sheep-owners to have their stock vaccinated for anthrax. Altogether the impression brought home by the French scientists is evidently that they have not had fair play."—*Lancet.*

A FATAL CASE OF ICTERUS NEONATORUM.

By JOHN R. HINKSON, M.D.,
BLISSVILLE, LONG ISLAND CITY.

Mrs. V., an emaciated woman, aged thirty-two, mother of seven children, had been troubled with symptoms of renal calculi for about a year. She was confined on July 1st, the presentation being left shoulder, dorso-anterior. I administered chloroform and performed bipolar version early in the first stage. Labor continued for about six hours, and when the body of the child was born the head was arrested and was extracted after some delay with considerable difficulty. The occiput was anterior, and the method used in extraction was by pressing the fingers of the left hand on the back of the neck and by carrying the feet well forward with the right.

The child, a female, when born was asphyxiated and artificial respiration (Sylvester's method) was performed for over an hour before she recovered. The child appeared perfectly healthy till the following morning, when it showed symptoms of jaundice, which became well marked on the next day, with considerable conjunctival congestion, and death occurred late that evening.

On making an autopsy, I found a large extravasation of blood behind the peritonæum in front of the right kidney, the gall bladder was moderately distended, and the left kidney was larger than the right.

The nurse told me on the evening after birth that the child did not pass water, so I ordered her to place her in a warm bath, after which she micturated freely.

I am unable to say whether the jaundice was the cause or the result of the extravasation, but I think it probable that jaundice was caused by the pressure of the tumor on the duodenum and bile duct, although I do not believe there was any violence used in delivery or resuscitation to account for the hæmorrhage.

Toxic Symptoms produced by Glycerin.—"Dr. Jaroschi recently reported to a Prague medical society a case which had come under his care of a man who, having been induced by something he had seen in a popular journal concerning the virtues of glycerin to take large quantities of it, soon became seriously ill. He suffered from vomiting, painful defecation, and pain in the calves of the legs. Under suitable treatment, the glycerin being of course interdicted, he was not long in recovering. The ætiology of the case is not very clear, but it seems that the glycerin used was bought, not from a chemist's, but from an oil shop, as it was cheaper there, and it is said that the glycerin of commerce not infrequently contains a very appreciable quantity of arsenic; at least Ritzert, who investigated the matter some time ago, reported that he had found 'large quantities' of arsenic in commercial glycerin. As glycerin is now very frequently prescribed for rectal use, and as patients frequently purchase it at oil shops, it would appear to be important to get the question of its liability to contain arsenic settled, and if any uncertainty be found to exist, it would be well to caution patients to buy their glycerin at a chemist's."—*Lancet.*

Prognosis of Cirrhosis of the Liver.—"Professor Semmola, of Naples, in a clinical lecture on cirrhosis, published in 'Il Progresso Medico,' maintains that the prognosis of the disease depends entirely on the quantity of urea excreted during twenty-four hours, as he has proved to his own entire satisfaction in seven cases. He teaches that increase in the secretion allows a much more favorable proghosis than a decrease. The quantity of urea secreted corresponds, according to him, with the functional activity of the hepatic cells; so that the extent of nitrogenous metabolism is proportionate to the number of normally acting cells. For the treatment of the disease Professor Semmola recommends an exclusive milk diet, which must be systematically and regularly administered."—*Lancet.*

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. Appleton & Co. Edited by Frank P. Foster, M. D.
NEW YORK, SATURDAY, AUGUST 24, 1889.

THE "TICKETED HOUSES" OF GLASGOW.

A very singular sanitary provision obtains in Glasgow whereby any poor class of house that is in danger of overcrowding may be marked with a tin ticket. This ticket must state the cubic contents of the house and the number of inmates who may be received. It is placed upon the outer door. A system of night-inspection over such houses is maintained by the police, whose duty it is to prosecute, if overcrowding takes place. It is a police measure, but it had its origin in typhus-fever prevalence and restriction. The "ticketed houses" are avoided by the better class of tenants, and landlords are always given timely warning before a new one is added to the list, so that the reputation of the property may be saved by the exclusion of the overcrowding people. Dr. James B. Russell, medical officer of that city, gives a history of this system in the Glasgow "Sanitary Journal," and points out the high death-rate that occurs in these homes of the very poor. From the figures given it appears that nearly 25 per cent. of the population of Glasgow consists of families who have but one room, and nearly 45 per cent. of those having two rooms only. These two classes grouped comprise a little less than 70 per cent. of the whole city. The size of the family occupying a one-room house is, on the average, 3·17 persons, while in the two-room house the average is 2·92. The mean death-rate of these two classes, taken together, is given at 27·74 in a thousand; of those who live in houses of three and four rooms it is 19·45, while in houses of five rooms and upward it is only 11·25. Dr. Russell goes yet more thoroughly into his subject, in that he ascertains how much is paid by every class of tenant for each 1,000 cubic feet of air; the "ticketed house" brings in a better rental, on the cubic-foot basis, than the model building with its many attractive features. "Poverty," he says, "instead of receiving a discount, has to pay interest." The poor not only get "an adulterated property," as the author terms it, but are charged for it more than others who are able to pay for better housing. Dr. Russell quotes the New York Tenement House Act of 1888 with high commendation, and hopes that the day will come when Glasgow will explore some of "the unexhausted resources of legislation," instead of experimenting with such half-way measures as the "ticketed house" system, "if only the people will wake up to the fact that health has proprietary rights, as well as heritable property." The slowness of the legislators appears to beget in him a kind of righteous impatience, as if he were the paid advocate of the abject poor—and advocate he certainly is. He sharply charges the owners of this lowest class of property with imposing taxes not only on health, life, and a purer air, but on "character and fortune."

His argument is that there is a degradation and loss of the future necessarily implied in a descent to the "ticketed house." They who dwell there take on a depraved *morale* that is in keeping with the State permitted vileness of the domicile; their character has the ticket on it, as well as their tenement.

PARTURITION IN RUSSIA.

Certain articles by Mr. George Kennan, which have appeared in the "Century Magazine" during the last year or more, have given important information in regard to some phases of Russian political and social life. It would seem from these that the famous *mot* of the first Napoleon was still pertinent: "Scratch a Russian and you'll find a Tartar." That much of Russia is still barbarian was shown by the statistics presented by Dr. Krayevich at the recent Third Congress of Russian Physicians. It was stated that there were five million births annually in Russia, and that of this vast number only one hundred and fifty thousand received assistance at the hands of physicians. One million two hundred thousand are assisted by either physicians or midwives, but the latter, as a rule, are poorly trained and unintelligent. The remaining three million eight hundred thousand are unattended by any obstetric assistance; that is to say, that number of women experience the pains and dangers of parturition yearly with no more assistance than can be furnished by the members of the household or the neighborhood. It is also stated that the midwives tend to increase, rather than to diminish, the death and disease which accompany parturition. Another Russian (Kotovschikov) reported that the mortality from puerperal fever was seven to each thousand births—that is, thirty-five thousand deaths annually from this one disease. The average number of children borne by a Russian woman being four, it follows that parturient women are exposed to this serious danger four times during the child-bearing period. Add to this the fact that, while many women escape with their lives, the performance of what should be a natural function entails upon them disease and deformity which makes them useless for life. In other words, one hundred and seventy-five thousand women annually suffer seriously from want of proper attention during the parturient and puerperal periods, including the thirty-five thousand who die from puerperal fever. To remedy this terrible condition of affairs it is proposed that all midwives be required to attend courses of instruction which shall fit them for performing their work antiseptically. This is well as far as it goes, but what of the thousands and hundreds of thousands to whom a midwife is never accessible? It seems hardly credible that in a so-called civilized country so little advantage could have been derived from the beneficent advances and improvements of the last quarter of a century. Surely the lot of our Russian *confrères* in stemming this tide of disease and death is a hard one! And to do this in an atmosphere in which suspicion and intolerance check the best results and the freest endeavor but increases the labor and its hopelessness. Could there be a more suggestive commentary upon Russian institutions and Russian development than these statistics?

MINOR PARAGRAPHS.

SIR ANDREW CLARK.

A very interesting occasion was that recently at the London Hospital, when Sir Andrew Clark was made the subject of a portrait on behalf of his associates and other friends. According to the "Lancet," Dr. Clark made a feeling response, and became autobiographical, narrating the trials of his student life. He had been thrown on the world without a friend, his parents died before he knew them, no relative had he to whose home he could resort, he went to London without letters, and he had there just one acquaintance. Added to this his health was poor. He had a small patrimony and a great love for work. By some chance he became an assistant in the London Hospital; at this stage an opponent said of him: "Poor Scotch beggar, let him have the place; he can not possibly live more than six months." He offered these and other reminiscences for the encouragement of his juniors, and especially for those who love work for the work's sake.

HYDROPHOBIA FROM THE CAT.

The "Bulletin of the North Carolina Board of Health" reports the death of a child, two years of age, at Wilmington. The child was bitten on its face by a cat, at Florence, S. C., and in about five weeks hydrophobia appeared. The child died early in the attack, "but all the symptoms were well marked." This is said to be the first death by hydrophobia known to have occurred in Wilmington.

MIDSUMMER CHARITIES.

At Long Beach and Arverne-by-the-Sea, the charitable people have not forgotten the sick children left behind in the cities. At the latter place, the financial results of an evening's entertainment have been made over to the babies' ward at the Post-graduate Hospital. From Long Beach, a check for $1,030 has been sent to the "World's" Sick Babies' Fund, the proceeds of a fair held by the ladies sojourning at the hotel at that place.

THE "FLINT DISEASE."

Dr. W. S. Forwood addressed the Medical and Chirurgical Faculty of Maryland, at its last annual meeting, on the subject of the pulmonary disease of quarrymen. He stated that the "flint disease" was frequent and fatal among those who worked in the quarries of Harford County. Few of the men escaped, and, as a rule, their lungs were permanently damaged, even if they gave up the occupation after a year.

MITHRIDATISM.

Professor Lankester proposes, in "Nature," that this new word be admitted to the scientific vocabulary, to signify that immunity from the effects of a poison which is induced by the administration of gradually increased doses. The selection of the word has reference to the fable concerning Mithridates, King of Pontus, that he became so charged with the poisons he experimented with that he obtained an immunity from them all.

THE LATE DR. ALEXANDER B. MOTT.

Dr. Austin Flint, the secretary of the faculty of the Bellevue Hospital Medical College, writes to us as follows, under date of August 15th: "The faculty of the Bellevue Hospital Medical College desire to record in their minutes an expression of deep sorrow at the death of their associate, the late Professor Alexander B. Mott. Professor Mott was one of the few remaining

members of the original faculty of the college. For twenty-eight years he had given his best efforts to the institution, of which he was one of the founders; and many thousand alumni can bear testimony to the value of his teaching. Endeared to his colleagues by long and intimate association, his death is felt by each one as the loss of an earnest teacher, a good and a true friend."

NEW ENGLISH MEDICAL SERIALS.

"Studies in Clinical Medicine" is the title of a semi-monthly journal which will be edited by Dr. Byrom Bramwell, the pathologist and clinician of the Durham University Medical School. Mr. Jonathan Hutchinson proposes to issue a quarterly, called the "Archives of Surgery." It will contain the cream of his voluminous note-books, and will have colored and other illustrations. His expectation is to continue the publication not longer than four years.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending August 20, 1889:

DISEASES.	Week ending Aug. 13.		Week ending Aug. 20.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	65	14	29	12
Scarlet fever	31	0	42	1
Cerebro-spinal meningitis	2	2	1	1
Measles	42	1	27	1
Diphtheria	73	23	79	19

The New York State Medical Association.—The seventh special meeting will be held in Port Jervis on Tuesday, the 27th inst., under the presidency of Dr. W. T. Lusk, of New York. Dr. W. B. Eager will read "Some Observations on the Use of Concentrated Lactic Acid"; Dr. J. H. Hunt will read a paper on "The Treatment of Typhoid Fever, with special reference to the Cold Water Method"; and Dr. H. B. Swartwout will present a case of empyema.

The Association of American Physicians.—The fourth annual meeting will be held in Washington, in the Medical Museum and Library, on the 18th, 19th, and 20th of September. The programme includes the following items: The president's inaugural address, by Dr. Francis Minot, of Boston; "The Early Stage of General Paralysis," by Dr. C. F. Folsom, of Boston; "Tetany," by Dr. James Stewart, of Montreal; "Tetany and a New Theory of its Pathology," by Dr. John T. Carpenter, of Pottsville, Pa.; "Thrombosis of the Cerebral Sinuses and Veins," by Dr. A. B. Ball, of New York; "Chylous Effusions into Serous Cavities," by Dr. S. C. Busey, of Washington; "Substitutes for Opium in Chronic Diseases," by Dr. J. F. A. Adams, of Pittsfield, Mass.; "A Remarkable Case of Slow Pulse," by Dr. D. W. Prentiss, of Washington; a discussion on "The Relation between Chlorosis, Simple Anæmia, and Pernicious Anæmia, including Leucocythæmia and Hodgkin's Disease," by Dr. Frederick P. Henry, of Philadelphia, and Dr. F. Forchheimer, of Cincinnati; "Primary Cancer of the Duodenum," by Dr. E. N. Whittier, of Boston; "Primary Cancer of the Gall-Bladder and Ducts," by Dr. John H. Musser, of Philadelphia; "Gastric Neurasthenia," by Dr. G. M. Garland, of Boston; "Specimens from Two Cases of Cretinism," by Dr. W. F. Whitney, of Boston; "The Anatomical and Physiological Relations of Lesions of the Heart and Kidneys," by Dr. H. F. Formad, of Philadelphia; "The Contagium of Diphtheria," by Dr. P. Gervais Robinson, of St. Louis; "A Supplementary Inquiry into the Frequency with which Lead is found in the Urine," by Dr. James J. Putnam, of Boston; a discussion on "The Relations of Rheumatism to Rheumatoid Arthritis," by Dr. William Osler, of Baltimore, and Dr. Morris Longstreth, of Philadelphia; "How far may a Cow be Tuberculous before the Milk becomes Dangerous as a Food-Supply?" by Dr. Harold C. Ernst, of Jamaica Plain, Mass.; "The Bacillus Tuberculosis," by Dr. J. T. Whittaker, of Cincinnati; and "Hot-Air Inhalations in Tuberculosis," by Dr. E. L. Trudeau, of Saranac Lake, N. Y.

"The Chicago Medical Journal and Examiner."—The suspension of this journal has been announced, in its forty-sixth year. It has undergone a number of changes of name and plan of conduct, but for the greater part of its career it has represented the best side of the Chicago profession. We suspect that where weekly journals exist and can be supported, the permanence of the monthly periodical, not special in character, will generally be threatened and perhaps lost.

The American Otological Society.—The annual meeting was held at the Pequot House, New London, on July 16th. Dr. Oren D. Pomeroy, of New York, was chosen president, and Dr. J. J. B. Vermyné, of New Bedford, was re-elected secretary and treasurer.

Typhoid Fever in Philadelphia.—There are between 400 and 500 cases of fever in Philadelphia, many of them in the Kensington district. Twenty new cases having occurred in that district, the authorities have taken steps to discontinue the use of some part of the water supply that contains Delaware River water of a suspicious character.

The Chicago Board of Health.—Dr. Oscar C. De Wolf has resigned the position, held by him for thirteen years, of health officer of Chicago. He is to be succeeded by Dr. Swayne Wickersham.

The American Dermatological Association.—The next annual meeting will be held in Boston, during the three days beginning September 17th. For particulars, address Dr. George H. Tilden, of No. 122 Marlboro Street, Boston, secretary and treasurer.

A Medical Library for Chicago.—The collection of books and journals comprising the private library of the late Dr. J. S. Jewell, of Chicago, has been purchased by members of the profession in that city, with a view to building up from it a great medical library. The ease with which the funds necessary to save this collection from dispersion under the hammer of the auctioneer were raised presages the early founding of a medical library worthy of a great city like Chicago.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending August 17, 1889:*

Rogers, B. F., Surgeon. Detached from the U. S. S. Alliance and to wait orders.

Harmon, G. E. H., Surgeon. Ordered to the U. S. S. Constellation. August 13th.

Lowndes, C. H. T., Assistant Surgeon. Ordered to the U. S. S. Constellation. August 13th.

Decker, C. J., Assistant Surgeon. Detached from the U. S. S. Lancaster and granted four months' leave of absence.

Baldwin, L. B., Passed Assistant Surgeon. Detached from the U. S. S. Ranger, ordered home and to wait orders.

Harvey, H. P., Surgeon. Ordered to the U. S. S. Ranger.

Lovering, P. A., Passed Assistant Surgeon. Ordered to the Receiving Ship Wabash at Boston, Mass.

Siegfried, C. A., Surgeon. Ordered to the Naval Station at New London, Conn.

OBITUARY NOTES.

Alexander B. Mott, M. D., died on the 12th inst., after a short illness. He was a son of the renowned Dr. Valentine Mott, and inherited much of his father's aptitude as an operator. He was for many years a teacher of surgery, having been one of the original members of the faculty of the Bellevue Hospital Medical College. He was a graduate of the Medical Department of the University of Pennsylvania, of the class of 1850. He was a general practitioner, and was much esteemed by his patients. He rarely contributed to medical literature, and was not often heard at medical meetings. Among his meritorious undertakings may be mentioned the establishment of the Mott Memorial Library, having his father's collection for its nucleus, and an endeavor to secure the equipment of an institution for carrying out the Pasteur plan for the prevention of rabies in New York.

Letters to the Editor.

METHYLENE BICHLORIDE AS AN ANÆSTHETIC.

Livonia, N. Y., *August 20, 1889.*

To the Editor of the New York Medical Journal:

Sir: In your Paris correspondence dated June 28th, published in the "Journal" for August 17th, is mentioned some experimentation with chloride of methylene. I employed the article, bichloride of methylene, as a substitute for chloroform and ether several years ago in a few cases of ovariotomy, on account of its being so strongly recommended by Sir Spencer Wells. I do not know that any one else in western New York has employed it, except in one instance hereafter mentioned.

In my hands it has proved a very pleasant and satisfactory anæsthetic. Its action was very rapid, requiring not over five minutes to induce complete anæsthesia, and the patient as rapidly passed from under its influence, so that its administration demanded the closest care on the part of the one having it in charge. It was followed by little vomiting as compared with chloroform or ether; it seemed less depressing than chloroform and somewhat more so than ether, although I employed it in too few cases to judge of its comparative safety. In a case of ovariotomy of Dr. J. W. Whitbeck's, of Rochester, at which I was present, at my suggestion methylene was employed; but, the operation bidding fair to be prolonged, it was deemed best, after an hour and a half, to substitute ether as possibly being safer. Methylene seems best adapted to operations which are likely to be completed within an hour and in which the absence of vomiting is important. The article is exceedingly volatile, requiring to be kept under water. I have of late employed ether on account of its recognized safety and cheapness (taking waste into account), and not because bichloride of methylene is not more pleasant to use. Charles H. Richmond, M. D.

THE NIGHT TERRORS OF CHILDREN.

Sardis, Ohio, *August 6, 1889.*

To the Editor of the New York Medical Journal:

Sir: In a recent number of the Journal you referred to an article in the "Albany Medical Annals," by Dr. G. L. Ullman, on "Night Terrors of Children," in which he not only condemned severe measures, but advocated patience and nervous sedatives. In your last issue, Dr. J. G. Biller, of Correctionville, Iowa (a seemingly appropriate name), mildly criticises this treatment, and cites the case of his own child to prove that "spanking," if not a specific in such troubles, is at least of "great benefit." Did it not occur to the father that the fear of this peculiar medication may have deterred the child from exhibiting his terror after becoming fully awake, especially if it was an heroic dose? Aside from the judicious advice of Dr. Ullman, did it not suggest itself to Dr. Biller that attention to the alimentary tract, worms, indigestion, etc., might have been a much better corrective to the poor little fellow's nervous condition than the *external application* to which he was subjected?

B. Dennie, M. D.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN LARYNGOLOGY AND RHINOLOGY.

Meeting of April 23, 1889.

Dr. C. C. Rice in the Chair.

A Case of Syphilitic Adhesion of the Tongue and Soft Palate to the Posterior Wall of the Pharynx.—Dr. J. E. Nichols presented a case of this sort. The initial lesion had been developed sixteen years before. Two years after this the patient had fallen on his face and sustained a fracture of the nasal bones, which had been followed by ulceration and the discharge of particles of bone. Some time after this the patient had, as he had expressed it, "caught a cold," which had settled in his pharynx, and after the period of soreness had passed away there had been much contraction of tissue there. Subsequently it had been found that the septum was perforated, and still later that both the bony and the cartilaginous septa had disappeared. Contraction in the hard palate had also become developed. After several years the patient had begun to notice that he had difficulty in swallowing and breathing. Now, owing to the extensive adhesions between the soft palate and root of the tongue, and the posterior wall of the pharynx, an opening of only half an inch or less in diameter existed, through which air and food could enter the throat. The adhesions also included the surfaces of the posterior palatine arches. The epiglottis was still free and visible. Phonation was normal.

From time to time ulcerative inflammation became developed in the contracted tissues which afforded the patient great relief, as it caused the opening at the back of the throat to become somewhat larger, and so seemed to be a beneficent effort on the part of nature to prolong life. The use of œsophageal bougies had afforded no lasting relief in the way of enlarging the opening, but a marked gain in general health had followed a very frequent introduction of the bougie (sixteen times each week) during a short period, when the speaker had had the case in charge, at the Charity Hospital, and the patient had increased remarkably in weight for the time. This had been due apparently to the better breathing thus made possible to the patient. This treatment not having been continued after the term of his service had expired, the speaker could not say what ultimate results might have been obtained by a more or less incessant use of the sound, but he feared that no permanent change in the size of the passages could be so obtained. He presented the history of the case in the hope of hearing some opinions as to the best treatment that was available in such a case. He himself thought the galvano-cautery might be used successfully.

Dr. Beverley Robinson remarked that the cases belonging to the class to which this belonged were always very annoying and troublesome to deal with, whether by the knife or the galvano-cautery. Whatever operative measures were undertaken to increase the size of the passages, the result was apt to be disappointing, owing to the abundant formation of cicatricial tissue, or else a subsequent continuation of the old inflammatory process, which was especially difficult to prevent. It really came down to a question of our being able to secure for the patient a practically continuous series of dilatations, for we could rarely do anything else for his relief.

While this subject was in the field he wished to again allude to a matter to which he had already called attention, but which his recent experience had continued to prove to him had a good basis in fact. He referred to the peculiar effect of monochloracetic acid when applied to a cut surface or, especially, one eroded by a suppurative process. The eschar which resulted differed from that left by any other caustic application in that it remained *in situ* until the scar tissue formed under it was entirely healed up. This acid, therefore, had a peculiar usefulness where subsequent adhesions of cut or eroded surface were feared.

In the class of cases under consideration he had employed different sorts of dilating instruments, had torn through the obstructing tissue, used scissors, cautery, and escharotics, but had come finally to the conclusion that the most good could be effected by the use of graduated steel sounds. Whenever possible, the patient should be taught to use a suitable dilator himself, so that he could operate on his own throat daily or oftener, and secure the maximum of relief from his dyspnœa.

Dr. David Webster suggested that Dr. Goodwillie, having had much experience in plastic operations in cavities lined by mucous membrane, could probably impart valuable information as to what the chances of success would be for an operation made with a view of getting an opening in such a case as the one under consideration, and securing its permanency by transplanting flaps of mucous membrane on to the raw surfaces at the outset.

Dr. D. H. Goodwillie replied that he could best answer the question raised by Dr. Webster by relating the history of a case somewhat similar to the one just presented, with the exception that there was a cleft of the soft palate, which had been under his care. Here, also, had been adhesions of the soft palate to the posterior pharyngeal wall. He had been in great doubt as to whether he should get an opening from the posterior nares to the throat by releasing the adherent parts, since the passage so made would be lined by a large amount of secondary tissue, the instability of which he had been well aware of. However, he had decided to release them a little at a time, with short intervals between sufficient to allow of the desired change in the tissue, and so avoid the otherwise inevitable ulceration of the soft secondary tissue. Accordingly, he had in a series of operations, continuing for many weeks, gradually cut away the palate from the posterior wall, and, having freshened the edges of the cleft palate, succeeded in getting it to unite by first intention, although in secondary tissue. Such an operation needed great patience and care. The nose must be kept during the treatment in the most thorough manner antiseptic, as when preparing to operate for cleft palate. He was opposed to the use of the cautery or caustics in this class of cases, owing to the suppuration of the secondary tissue which followed its employment. Quite a different method or device, with which he had recently had very encouraging success, was a thin plate of gold of suitable shape and convexity, which he fastened to the upper surface of the palate. Minute button-headed pins passed through the primary and sound tissue at the side of the cleft palate and entered screw-holes on the plate, so that the two halves of the palate united by sutures could be held together securely and the whole separated from the pharyngeal wall at the same time. The line of union would be protected from the nasal secretion.

Dr. H. Holbrook Curtis remarked that he had seen several such cases treated in Paris by the introduction of large probangs, and especially of smooth leaden dilators which were left *in situ* for several hours. He had not made use of the cautery or of acids in these cases. In his experience, dilators were our only practical resource. A cutting operation, however extensive, would have to be followed by the persistent use of the dilator as healing went on, and probably after it was complete.

Dr. E. V. Agramonte thought that in the present case it might as well be recognized that the real difficulty under which the patient labored was an atresia of the glottis and the consequent slow asphyxia. We not only needed to dilate the passage, but to keep the dilator in more or less permanently, and so why not do at once what would soon be absolutely necessary to the continuation of life—put in a tube?

The Chairman remarked that five or six years ago he had had two such cases come under his care, and that in looking up the literature of the subject at that time he had found accounts of several ingenious devices for keeping the parts separated after operation. One of these was to have the patient wear a thin lead plate on the palate which was held in place by a strand of silk fastened to the top of the plate and leading forward through the nose, and another from its inferior edge passing down, to be fastened to one of the teeth. Another was to make an artificial opening into the naso-pharynx through the hard palate, split up the soft palate into folds, freshen their anterior surfaces, make raw corresponding surfaces on the roof of the mouth, and obtain union of the flaps of the soft to the hard palate. He thought most patients would object to such an operation as this.

It was to be remembered, in cases of syphilitic faucial adhesions like the present, that there was a large amount of cicatrization above and below the point where the palate was adherent, and for this condition of the parts dilatation and traction needed to be kept up all the time.

A Naso-pharyngeal Polypus.—Dr. J. W. Gleitsmann presented a patient having such a growth who had first come to him in February, 1888, complaining of a difficulty in hearing. He had found a large, soft tumor in the upper pharynx, attached upward and inward from the orifice of the Eustachian tube. There had been no nasal breathing through the right nostril. He had attempted vainly to remove it by the knife and then by a snare. With each attempt it had slipped out of his reach. He had, however, succeeded in making a number of punctures in it with the galvano-cautery needle. This had caused a contraction of its substance which had lasted for upward of a year, but now it had reappeared and blocked up the whole of the right posterior nares. What treatment was now in order he was in some doubt about. Had he best use the cautery a second time?

Dr. Robinson thought, from what had been said, that the growth must be a mucous polypus. He had once had a similar difficulty in attempting to remove a slippery post-nasal tumor by a snare or knife. Finally, with an applicator he had injected it with chromic acid and withered it up. It could not be denied that these tumors sometimes had a way of slipping upward so that no instrument would enable one to grasp them.

Dr. Curtis took an opposite view, and believed that a snare could be adapted so as to reach around any such tumor by the aid of a hook or wire.

Dr. A. H. Smith had had only a few cases of naso-pharyngeal polypus, and had always been able to snare them off. There had

been no recurrences in his cases. In the last of these cases the tumor had been of more than leathery hardness, and its pedicle had proved to be as resistant a piece of fibrous tissue as he had ever met with. The loop of an écraseur, consisting of the best piano-wire, had been passed around it, but when he had attempted to bring the loop home it had met with a resistance which it could not overcome, and he had finally broken the wire in his attempts, the pedicle, however, remaining firmly fastened in the end of the instrument into which the wire had drawn it. Traction on the handle of the écraseur had finally torn the whole growth away from its attachment to the basal process of the occipital bone. There had been no recurrence. No hæmorrhage had followed this forcible extraction either, but he would like opinions as to whether such a procedure as a means of extracting all fibrous polypi from the naso-pharyngeal space could be regarded as a safe one.

Dr. Gleitsmann replied to Dr. Curtis that he had tried the method of removal by snare in each of two cases of the sort under discussion, and had succeeded both times, but in one case he had met with such difficulty that it had finally been necessary to put the patient under chloroform. Then, after long and tedious trials, he had succeeded in getting the loop about the base of the tumor, and, after keeping it there for many hours, the growth had sloughed away. So he agreed with Dr. Robinson that it was sometimes very hard to get any instrument around the pedicles of these growths.

Dr. Curtis said he had been speaking only of mucous polypi; but in the case of the denser fibrous growths he had always succeeded in extracting them by giving a little ether, using a tongue depressor, and grasping the tumor with a double curette forceps.

The Chairman remarked that he had been accustomed to use a heated snare to remove the fibrous growths.

A Painful Fungous Growth of Unknown Character at the Base of the Tongue.—Dr. Curtis presented a patient from whose mouth a growth of problematical origin had recently been removed, the site of the tissue being still visible on the tongue. Eight days before coming to the speaker the patient had noticed the appearance of a growth at the base of his tongue, behind the circumvallate papillæ. Its growth had been very rapid, so that in a few days it had filled the patient's mouth to the roof with its long tendrils or lashes, which had given it the appearance of a certain sea-weed. Its growth had been attended much of the time by intense pain in the tongue and throat. It was evidently of fungous origin, being without sensitiveness when touched, although the surrounding parts had been so sensitive that the patient had been unable to swallow.

There were no descriptions in the books corresponding to such a growth. There had been no difficulty in disposing of the invading cells or spores, whatever their nature had been. The body of the growth had first been amputated and its site of attachment thoroughly scraped with a sharp curette. The lashes referred to, of which the growth was composed, were blackish or brown in color. The patient had been unable to tear them away with his fingers, such was their toughness, and also the pain so produced in the base of the tongue.

Dr. Goodwillie thought the growth papillary in character. Such growths appeared very often on the palate, and were sometimes half to three fourths of an inch long.

A New Cautery Loop for Lateral Pharyngitis.—Dr. Gleitsmann exhibited a new instrument for the destruction of granular tissue in the pharynx behind the posterior pillar of the fauces. It consisted of an electrode armed with a wire loop of a composite metal (iridium and platinum), through which the current of a galvanic battery was to pass. This metal had the advantage of being more elastic than platinum, so that when crowded through the narrow faucial opening it afterward regained its elliptical shape.

Some operators applied chromic acid, and even sulphuric acid, in the treatment of this condition. It had the advantage of being much more expeditious than Jarvis's snare. Jarvis himself had said that fully half an hour should be occupied in cutting through the hypertrophic granulations of the pharynx. With this instrument a patch or successive patches of the hypertrophied tissue could be burned away to just such an extent as the case might demand. This could also be done without risk of doing damage to the pillars.

A New Nasal Electrode.—Dr. Gleitsmann also exhibited an electrode designed to facilitate the application of the faradaic current in the nose, naso-pharynx, or larynx. The faradaic current was of peculiar service in allaying a cough due to an irritation of a branch of the trifacial nerve acting reflexly, and therefore called the trigeminal cough. The instrument was made by Tiemann & Co., and the price was only fifty cents.

A New Nasal Forceps.—Dr. Gleitsmann also exhibited a forceps especially designed for the extraction of pieces of bone from the nose after the soft parts had been cut away. It had great strength of bite, as could be seen by trying it on the finger-nail. It was adapted for entering a very small space and there exerting great force.

Deafness as a Result of Nasal and Dental Diseases.—Dr. Goodwillie then read the paper of the evening. (See p. 205.)

Dr. Smith remarked that any disease affecting the posterior nares might spread to the middle ear, especially in syphilitic disease where the palate was adherent to the posterior wall of the pharynx. He was prepared to believe that an irritation starting in a decayed tooth might act in the same way. He could scarcely see how a vapor could be passed into the middle ear against the air pressure which an injection of the Eustachian tube must at once set up in its cavity. If an opening through the tympanum existed, it might be possible to start an air current through it, but, considering the small caliber of the Eustachian tube, he hardly saw how a vapor could be pressed through its length into the middle ear. At least considerable compression would be necessary.

Dr. Robinson said he was glad to have the question raised at this time of the aural complications of nasal disorders. It had always seemed to him an unfortunate fact that the ear and eye were so closely connected together in the public mind when thinking of a state of disease in either. It was possible for a man well acquainted with the treatment or diagnosis of affections of the eye to know little or nothing of those of the ear, and *vice versa*. He was convinced that the amount of trouble in the ear that could not be traced to nasal conditions antecedent was very small. Fully eight tenths of the cases coming to be treated for aural affections were of troubles really depending for their origin on inflammatory or septic conditions in the nose or throat. Here neither an oculist nor an aurist was the proper one to carry out the treatment needed to restore the hearing, but a laryngologist. Diseases of the middle ear caused most of the affections of hearing, according to the late Dr. Agnew, and certainly most of these were due to pharyngeal disorders.

He had often noticed a general opinion in the profession that obstructive diseases of the upper air-passages were more frequently followed by aural difficulties than the atrophic affections of these same areas of mucous membrane, whereas it was, as a fact, just the other way. Before he had recognized the true relation here he had often been surprised to have people come to him for the treatment of obstructive diseases of the nasal passages in whom he found no ear trouble, either subjective or objective. It was really hard to say how far naso-pharyngeal diseases directly caused aural disorders, since often

the two seemed to begin and progress simultaneously. At the same time he should say it was always in order to get rid of obstructive diseases of the nose, even if not sure that by so doing we could cure or prevent aural disease. He was opposed to the use of douches in the naso-pharyngeal space in the treatment of obstructive disorders, not on account of their tending to bring about aural affections, but because they directly increased the amount of the discharges. With regard to atrophic diseases, he believed that there was no form of local treatment which did more than prevent an otherwise more rapid march of the disease.

Some patients were seen only after the aural catarrh had gone on for years, and these patients were often unaware of their deafness, or else unwilling to admit it to themselves. The chances of success in treatment was in such cases much lessened or entirely destroyed by this delay in beginning it.

Another matter which he had come to have a very strong conviction about was that, in both the hypertrophic and the atrophic forms of nasal catarrh, a great deal of benefit was to be derived from the use of some modifying agent, and by far the best one he had ever used was the compound tincture of iodine of our pharmacopœia. Its application sometimes seemed to bring about a better condition in the form of hypertrophy, accompanied by gland atrophy even. He did not believe it necessary to the integrity of the aural apparatus that air should pass through the nasal chambers; we saw too many cases where the hearing was good in spite of nasal obstruction.

A very convenient substance to use as a menstruum in applying drugs in the nasal chambers was the cosmoline oil, so called. It was fluid at ordinary temperatures, and so the trouble of heating the reservoir or spray-tube was done away with. He used it in combination with a small amount of carbolic acid. At the same time it must not be forgotten that no chronic nasal, aural, or throat disease could be cured by any local plan of treatment. General constitutional building up by diet, climate, exercise, etc., must in these cases be chiefly looked to for lasting relief.

Dr. Webster spoke of a class of patients that came under his notice quite frequently, who had had deafness coming on a long time, it being due to a slowly developed and chronic aural catarrh. He believed that when that condition was reached—and it was usually accompanied by an atrophic condition of the mucous membrane in the nose and pharynx, a fact which furnished its own suggestion—very little could be done for the local condition by local treatment. He advised these patients in regard to the functions of the skin, exercise, a change of climate and occupation, diet, and all other measures acting on the general health. In regard to the ætiology of diseases of the ear, he was in full accord with the opinion that had been given to the effect that they were almost always due to wrong conditions in the throat, and only very rarely occurred as idiopathic affections. However, he was surprised to hear Dr. Robinson say that the aural affection came *pari passu* with the nasal, or that we were unable to infer that it might not. Against this view he would oppose the well-known fact that an irritation of the posterior nares would produce inflammation of the middle ear, as where acute otitis media succeeded within a day an operation for the removal of a polypus. There could be no doubt here that an inflammation set up by the operation traveled along the Eustachian tube and produced an acute inflammation of the drum of the ear.

As to the question raised whether obstructive or atrophic diseases of the nasal passages were most apt to produce otitis media, he had always supposed that the aural disease began during the obstructive stage of the catarrhal disorder in the nose. All atrophic inflammations were at first hypertrophic. The patient came to us for the aural trouble long after the hypertrophic stage had been succeeded by the atrophic. Although he had heard much about otitis media being due to dental diseases, he had never seen a case of this sort. He had, however, seen many instances where otalgia accompanied caries in a tooth, and where, at the same time, no other cause for it could be found.

Dr. O. D. Pomeroy said he could not believe that disorders in the teeth caused ear troubles of any inflammatory sort. He agreed with Dr. Webster that carious teeth often caused otalgia, but never otitis. There was no reason why inflammation in the ear should follow an affection in a tooth. He had certainly never met with an instance where such a connection showed itself, but the secondary otalgia was common enough. In fact, the only other causes ordinarily met with of pain of a neuralgic sort in the ear were malarial poisoning or some obscure affection of the fifth nerve in that branch of it connecting with the ear.

There was one heresy of belief in many medical and other minds which he should like to explode, and that related to a supposed causative connection between the first dentition and suppurative otitis media. Because they might at times or even often occur together seemed to him a begging of the question, if we gave that as a reason for holding this belief. The chief cause of suppurative otitis media in children of all ages (obtaining in nine tenths of all cases) came in the shape of a throat disorder, especially of some infectious sort.

He was very glad to find himself seconded by Dr. Goodwillie in the matter of the uselessness of the aural douche. He had held this belief for five years past, and it had grown stronger with each year. Enough douching, as a fact, might itself cause chronic otitis media. The use of peroxide of hydrogen in the way described by Dr. Goodwillie he could heartily indorse. The liquid should be really charged with the gas to do effective work. To have it "live" it needed to be kept under pressure in a siphon, just as carbonated waters were prevented from losing their charge of gas. Dr. Goodwillie had called attention rather strongly to a danger he supposed to exist—that in using the Eustachian catheter, unless special precautions were taken (such as wiping out its outlet with a piece of cotton on a probe), foul air might be blown into the Eustachian canal. He did not believe there was any such danger, or that these special precautions were called for in any way. Then, as to the theory that the Eustachian tube was opened and shut in just such a way by the motions of swallowing, etc., he did not think we had definite knowledge on this point; neither could we, in his opinion, determine, from an inspection of the outlet, whether enough air or not was entering the canal. To get a real proof of this canal being patent or not a very simple expedient would suffice, namely, to inflate the cavity of the middle ear and observe whether hearing was thereby much improved. Most practitioners paid too little attention to the condition of the Eustachian tube. Inspection would not tell what it was either, but inflation would do this. We should find, in case of much swelling of the walls of the canal being present, that an excess of air would not empty itself from the tympanic cavity.

With regard to what had been said respecting a connection between obstructed nostrils and ear affections, in his opinion good nasal respiration was of importance, not because it favored the keeping up of a supply of air in the tympanic cavity so much as because the parts were thus kept free from accumulations of the secretions. He thought any apparatus for making applications of spray to the Eustachian tube by which air was withdrawn violently or forced in was almost certain to injure the ear.

Dr. Curtis said he had treated five hundred cases of deflected

septum and had been much struck on observing a relief from tinnitus aurium and otitis media in a large number of these patients after the restitution of the nasal passages to their natural caliber and so insuring a supply of air to the Eustachian tube. Moreover, an abundance of air should pass through the inferior meatus; a supply passing through the middle meatus, in other words, would not answer. The relief of nasal obstructions not only had the effect just mentioned of relieving tinnitus and otitis media, but caused an increase of body weight and of general constitutional vigor, as in many instances where he had operated for deflection of the septum. In the case of one patient the amount of oxygen in the blood had increased after such an operation from six and a half to thirteen per cent. Nothing could indicate more clearly than did this the systemic improvement brought about.

Dr. W. A. Dayton said he could not agree with Dr. Robinson that we did not meet with aural disease to any great extent when the nostrils were closed. He was also opposed to the inflation of the tympanic cavity with a spray of vaseline, if that indeed was possible to do. Once inside, it had no means of escape, and, having no great power of remaining aseptic, would cause suppurative inflammation.

Dr. Robinson said he must still hold to the view that bad aural troubles depended rather on the presence of an atrophic than a hypertrophic condition in the naso-pharynx. They occurred in either case, but the percentage of bad cases of aural disease was much greater in the former. He knew it was an opinion generally received that obstructive troubles in the naso-pharynx were generally followed by aural disorders as a result. Obstructive troubles might and often did exist together with good hearing, and so when disorders were present in both of these regions at the same time it was difficult to prove that the naso-pharyngeal troubles were the cause of the aural. We had to be content with the fact that in certain cases they went together.

Dr. Goodwillie said, in reply to the remarks made in reference to the entrance of vapor of vaseline into the tympanic cavity, that the purpose of the vaseline vapor was to carry an antiseptic or any medicinal agent into the Eustachian tube where it was wanted; he had never seen any results which contra-indicated the use of the method as he had placed it before them. In the treatment of naso-pharyngeal affections he made little use of sprays, preferring, as he did, impalpable medicated powders as indicated in each case.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Meeting of May 27, 1889.

The President, Dr. Alexander S. Hunter, in the Chair.

The Therapeutics of Rheumatism in Infants and Children.—Dr. A. Jacobi, in a paper with this title, opened by calling attention to the frequency with which rheumatism occurred in children and infants. Valvular affections of the left side of the heart were usually secondary to rheumatism, and not to scarlatina. Many cases of rheumatism in children did not develop cardiac symptoms; but, on the other hand, endocarditis was sometimes the first symptom of rheumatism, even in mild cases; the two facts contrasted strongly and must be borne in mind. The slightest symptom of chorea minor should lead to an examination of both heart and joints. Chorea minor due to a rheumatic affection of the spinal membranes might be, not the final, but the earliest symptom of rheumatism and rheumatic endocarditis. "Dentition," "malaria," "worms," or "colds" were too often the diagnoses given in cases of rheumatism in children. This was partly because an idea of the rare occurrence of the disease in children was rooted in the minds of many practitioners, and partly because diagnosis was sometimes quite difficult. Fever in small children was a common symptom, but every disturbance in a child was apt to raise the temperature. The elevation of temperature in rheumatism might be slight and irregular. Swelling of the joints was apt to be trifling in amount and easily overlooked; and the pain (spontaneous or on pressure) might be much less severe than pains due to fatigue, rachitis, syphilis, colic, or otitis. In every doubtful case, where a child showed signs of discomfort, safety required that the heart and joints should be examined. Diagnosis was especially hard if only a single joint, such as the hip or knee, was affected. Other joints might become involved subsequently. But too often such a condition in a young child, requiring really careful and repeated examinations to determine correctly, was almost disregarded by the physician, and the mother was assured that the child's uneasiness was caused by "growing pains." He would emphasize the fact that in a large majority of cases the so-called "growing pain" indicated the presence of rheumatism and the liability to irreparable heart injuries.

As regarded treatment, a change of residence from localities in which rheumatism was apparently endemic was often desirable. Alkalies were often indicated. Cold and moist weather, damp houses, etc., frequently brought on rheumatism in the children of rheumatic parents, and in such children treatment must be mainly preventive. The systematic use of cold water would modify, and sometimes entirely remove, such a tendency. A cold wash, sponge, wet sheet, shower-bath, or bath (according to the child's strength or power of reaction) should be given daily. If in any case this was followed by chilliness, then tepid water containing alcohol might be used at first. Warm clothing should always be worn for the remainder of the day after any cold-water application. Among the various local measures mentioned for the relief of swollen and painful joints, the speaker called especial attention to swathing of the part in cotton and flannel, and to the application twice daily of a solution of iodoform in collodion, brushed copiously over the swollen surface. For endocarditis, absolute rest, cold applications over the heart, and salicylate of sodium were to be recommended.

After referring to gonorrhœal articular rheumatism, nodulated rheumatism (*i. e.*, the appearance of small neoplasms on tendinous and periosteal structures), and peliosis rheumatica (a localized form of purpura), which were occasionally met with and required no special treatment in children, the speaker considered muscular rheumatism. In this form also the best preventive treatment, when a tendency to the affection had appeared, was the regular and systematic use of cold water. In certain cases the injection of a small dose of morphine, the use of the interrupted current, the administration of the salicylate, antipyrine, acetanilide, or phenacetine, and a few subcutaneous doses of one twelfth of a grain of pilocarpine, had given relief. Where a real inflammation was present in a muscle, warm baths, a mild continued current, and small doses of the bichloride of mercury would aid in recovery.

Dr. W. H. Thomson said that many years ago his attention had been drawn to the ætiology of rheumatism, he being then a medical student in Syria, and hearing from his father (then engaged in explorations) what seemed to him paradoxical statements relative to the prevalence of rheumatism among the Arabs of the desert. He had heard that acute rheumatism was as common a disease among the Arabs in the arid country south of Palestine as among the fishermen of Norway and Scotland. He had asked himself then and since what reason there should be for the appearance of a disease either identical or similar among peoples living under apparently opposite conditions of life, in

respect to weather—that is, in climates presenting the extremes of warmth and dryness and a never-clouded sky on the one hand, and incessant fog, rain, and chilly winds on the other hand. He had become satisfied that the cause of rheumatism in either case must be a common one, but not the same as the cause of gout, for gout was nowhere to be met with in Mohammedan countries, unless in the few sections where alcohol was used (as in parts of India, where a drink made from fermented rice was drunk); at least it was very rare. It was safe to premise that rheumatism, so far as climate was concerned in its causation, was connected with changes in temperature, while gout was the outcome of excesses in the diet and in the use of fermented liquors. What, then, was there in common in the conditions of life of a man living in a tent in a burning climate, never having enough water, and a fisherman on the shore of the Baltic drenched with water most of the time? He would answer, Chilling of the skin when moist. This might occur as well in the deserts of Syria as in lands covered with fog half the year round. In the desert there was great heat during the day, the sand became heated as if in an oven, and when a party of travelers lay down to sleep, some time after sundown, on this warm sand, they were in a profuse perspiration, and naturally provided themselves with little in the way of coverings. But the sand radiated its heat very rapidly into the cloudless sky, and before sunrise bitter cold would succeed to the heat of the evening. Consequently the wet skins of the uncovered sleepers became badly chilled; and that rheumatism should follow such exposure was most natural. He had heard his father say that he had never suffered more from cold than just before dawn at the base of Mount Sinai.

No one should attempt to diagnosticate the early stage of rheumatism by an examination of its articular habitat, a joint. A swelling in a joint might be due to gout, trauma, gonorrhœa, or rheumatism; the symptoms in the joint were the same in each case, and so many mistakes were made. Examine the pulse, and no one familiar with the contrast presented by rheumatism and gout in this respect should fail to determine whether it was rheumatism which the patient had in the joint, or gout affecting the heart and arteries. In scarlatinal rheumatism the pulse was often hard, and there was often much uric acid present in the blood and urine; sometimes there was a formation of pus and true textural changes, which were absent in simple rheumatism, and often pyæmia was developed.

He was inclined to believe in the existence of some yet unknown function of the skin connected with respiration in its widest sense; he thought that a failure of skin-action of some sort was a means of causing the accumulation in the body of the matters which were morbific of rheumatism. Quinsy and acute articular rheumatism were sometimes associated, the latter following the appearance of the former. In the genesis of rheumatism there was usually a chilling of the skin, so naturally the warm bath acted as an anæsthetic; moreover, any bath rendered the urine alkaline—even a vinegar bath. Flannel had a peculiar usefulness from first to last. Oily inunctions, and especially inunctions of cod-liver oil, were advisable for the same reasons. This oil had first been introduced as a remedy for chronic rheumatism, and he himself placed great reliance on its effects, both externally and internally.

As to the connection between rheumatism and endocarditis in children, he fully concurred in Dr. Jacobi's warning lest it be overlooked. Endocarditis, he wished to state emphatically, might occur with only the most insignificant indications of rheumatism. He had recently seen a fine boy suffering from only a moderate attack of arthritis with the temperature between 99° and 100°, or else normal; the disease had been contracted by sitting on the ground while watching a game of ball. In spite of all he could do, endocarditis had come on in thirty-six hours, and it would probably leave him with a permanently crippled heart.

To prevent injuries to the heart in children, contracted in this way, we must be on the lookout for the preceding rheumatism, and especially if chorea appeared, which was the normal order in the development of rheumatism in children, the articular affection coming subsequently. He dreaded "growing pains," and put a child on the use of cod-liver oil at once when they were complained of. As prophylactic measures he would advise the application of suitable oils to the skin and the wearing of flannel both summer and winter.

As regarded the therapeutics proper to a case of endocarditis, he had no faith in the power of salicylic acid, either in treatment or prevention; it was useful in articular disorders, not where the heart was involved. Antipyrine or phenacetine was preferable.

But, it might be asked, Why should the heart have this peculiar liability to develop severe lesions during an attack of rheumatism? When rheumatism invaded other parts and structures in the body it did not produce such injuries, or anything like as severe ones. If we found a joint in a state of redness, pain, and swelling such as rheumatism produced, we should say the prognosis was bad unless the attack proved to be rheumatic, for in that case the symptoms would pass away. If such a joint was examined just after death, it presented few indications, or perhaps none whatever, of the inflammatory process recently so active in it, whereas the heart did present permanent structural lesions. The explanation of this difference could be derived from a consideration of the unresting nature of the heart, and the necessarily intensified action of the rheumatic poison on the wall of a serous cavity subjected to such constant mechanical strain. If a man having rheumatism in his knee should kick a hundred and forty times in a minute, he would probably cause the development of structural changes which would remain for life; consequently, the importance of compelling the heart to beat slowly. In children the heart-beat was much more rapid than in adults; and, correspondingly, heart complications in rheumatism were more likely to be developed. He therefore recommended full doses of aconite, and not of digitalis. Aconite allayed the irritability of the heart; also alkalies were to be given; and finally the utmost care exercised to protect the chest, so that no chilling of the sensitive cutaneous nerves should occur; especially should the chest area overlying the heart never be bared of covering.

Dr. J. Lewis Smith remarked that in thirty years of practice he had seen many cases of acute rheumatism in children. For fifteen years he had kept a record of the cases met with in the outdoor department of Bellevue Hospital, in which rheumatism was developed in patients under fifteen years of age. In seventy-eight of these cases there had been a cardiac bruit. As regarded age, he had not met with a single case where the patient was under one year old, and very few where the age was less than two years. In these very young patients there had been little swelling, but some tenderness in the joints. In most instances the disease in children commenced in the lower extremities—a matter of surprise to him—and tended, more or less, to travel upward. He agreed with previous speakers that in most instances the local manifestations were much less pronounced than in adults. There were many walking cases in children under ten years of age.

As regarded "growing pains," often, after finding a cardiac bruit in a child, and questioning the mother if it had not suffered from rheumatism in the past, he had been answered that the father or the mother was subject to the disease, and that a few months previously the child had had "growing pains." It

would be well to teach the laity that there was always a pathological condition behind "growing pains," and that by calling in a physician as soon as they were complained of, endocarditis and possible injury for life might be prevented. Sometimes œdema was the first pathological indication to attract attention, a swelling of the feet, shortness of breathing, and perhaps a hacking cough, being noticed before the other symptoms appeared. In one instance a child of twelve years had been brought to him suffering from lividity and coldness in the right hand and the left leg. He had soon been able to determine that the child had had a severe attack of rheumatism, and that evidently a deposit of fibrin had formed in the heart, emboli from which had lodged in the brachial and femoral arteries. The pains suffered from and the bruit were to be looked to for a diagnosis of endocarditis in children; the rheumatism which had caused it might have been latent. The heart would become enlarged after the disease had lasted more than a year. Quite often, in children, the pulse would be very rapid, showing the difficulty with which the heart was pumping the blood; for the same reason the enlargement took place.

He agreed with Dr. Jacobi that rheumatism was often the cause underlying the development of chorea minor. In one hundred and sixty-five cases of chorea minor of which he had kept a record, only eighteen had been due to rheumatism.

As to treatment, he had found the salicylate of sodium of great value if used early. He gave it internally, and also packed it around the affected joint.

Dr. H. D. Chapin remarked that while it was now recognized that rheumatism was a common disease in children, it was often difficult of diagnosis. There was no pathognomonic symptom, and we must depend on recognizing the composite picture of the disease. Wandering pains, endocarditis, hydræmia, and chorea were manifestations of one and the same condition. They might be met with together instead of following each other. If we paid attention to pain in a limb or joint without looking further, it would be necessary to remember that not all pains were due to rheumatism. Bruises may have been received which gave no external signs; and, still more commonly, pain was due merely to muscular weariness, and especially soreness in the joints, following play. When rheumatism was present, it was even more apt to cause pain in the morning than in the evening, while pain due to the child's being tired would not, of course, be complained of in the morning. Heredity should always be given much weight.

Children having endocarditis were commonly allowed to get up too soon. He agreed with preceding speakers as to the importance of complete rest in the treatment of the affection. In fifteen or twenty out of sixty cases that he had met with, tonsillitis had appeared either before or after the rheumatic trouble. The causes of rheumatism seemed to be acidity in the stomach and bowels, derangement of the hepatic function, and a checking of the activity of the skin; in treating it, therefore, each of these factors should be kept in mind. Hot alkaline baths, a careful diet, and iron internally would often prevent the recurrence of the attack.

Dr. A. Seibert thought rheumatism in children a disease due to infection quite as much as to heredity. He had seen it develop in young children whose parents had never suffered from it, but were attacked some time after their children. This had always occurred in families living in damp and dirty dwellings. Its infectious origin explained those cases in which endocarditis appeared before either a joint affection or chorea. He placed the disease in the same category with fibrous pneumonia, meningitis, and diphtheria; statistics had shown that it was most frequent in the same houses as the latter. He did not believe the mere chilling of the surface of the body could give rise to all the complications which attended rheumatism in children; and, moreover, young children were kept quite carefully indoors in bad weather, and did not get exposed to cold and wet or chilling of the surface.

Dr. J. C. Peters replied to this that the houses of the poor were but too commonly damp and cold, and that children were very often the leading sufferers from this, owing to the carelessness of their mothers about their under-clothes. In most of the cases he had met with it had been necessary to order better under-garments. In treatment he had found lithia (as distinguished from lithia water) of considerable value.

Dr. A. Caillé took much the same view as Dr. Seibert, believing the disease infectious, and hoping that in the new era of medical chemistry now appearing some substance would be found which would combat the poison of the disease.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN NEUROLOGY.

Meeting of May 10, 1889.

Dr. L. C. Gray in the Chair.

Localization of Lesions of the Great Nerve Plexuses.—Dr. C. K. Mills, of Philadelphia, by invitation, read a paper with this title, dealing particularly with lesions of the lumbo-sacral and brachial plexuses. He referred to gross lesions (not neuralgias, etc.), such as would result from neuritis, neuromata, aneurysms, abscesses, etc., and might occur in or adjoining any nerve plexus; also to lesions of special causation in the sacral plexus due to rectal or uterine disorders, or to a partial dislocation of the hip joint. In the case of the brachial plexus, also, a dislocation at the shoulder might act in this way. Considering first lesions of the sacral plexus, the speaker remarked that he had met with two cases in which pains and disturbances of motion or sensation were caused by intrapelvic growths making pressure on this plexus, and three or four similar cases where the symptoms were due to psoas abscess. Several of these patients had till then been treated for sciatica. Pelvic cellulitis might give rise to the same symptoms in either male or female patients. One form of puerperal paralysis was probably due to pressure on the sacral plexus incidental to a prolonged labor or the use of instruments. In one of his cases galvanism, massage, antilithic remedies, and ovariotomy, employed in succession, had failed to relieve symptoms which had finally been found due to injuries of the plexus received in childbirth. In another case pain and soreness deep in the pelvis had persisted for years after the birth of the last child, and were at last traced to a neuritis in the roots of the sciatic nerve. Such a condition as the last (neuritis) could be discovered by passing a finger (in the rectum) over the surface of the pyriformis muscle, where it escaped through the obturator foramen, till the nerve strands were palpated. In most cases, symptoms arising from lesions of the plexuses were unilateral. Large compressing lesions gave symptoms much resembling those due to lesions of the cauda equina—that is, pain, anæsthesia, analgesia, anæsthesia of the bladder and rectum, atrophy of parts below the knee, sweating, and vaso-motor disturbances. These ordinarily were bilateral or partly so.

A diagnosis as to the particular strands of the plexus involved could often be made by a study of sensory projection in nerves known to supply certain limited areas—such as the dorsum of the foot, the back of the thigh, the inner side of the middle toe, etc. The course taken by the ball in the case of President Garfield might possibly have been determined in this way. Still, as the symptoms were bilateral, there may have been in addition a spinal concussion, or extravasation paralysis, thus

giving a double set of nerve lesions, partly spinal (corresponding to where a vertebral body was penetrated) and partly such as would arise from a lesion of the lumbo-sacral nerve.

Considering next lesions of the brachial plexus, here neuritis, neuromata, tumors, and traumatic injuries were to be taken into account. In many of the cases presenting, no possible cerebral or spinal paralysis was to be differentiated. The strand of this plexus affected could often be determined by attention to the muscles and cutaneous areas in the arm supplied from it. The condition of the pupil might, in certain cases, throw light on the problem, since there was a connection between one certain strand of the plexus and the sympathetic nerve. Pain was often projected, and, by studying segmental localization, a diagnosis could be made. Sometimes surgical interference could be guided so as to bring about entire relief. Demarquet had recorded such an instance, and Dr. C. K. Briddon another. The day previous he had himself seen a case in which he could locate in the brachial plexus the lesion giving rise to the symptoms.

Dr. C. L. Dana said that, according to his experience, and especially the studies made by him in two cases operated on by Dr. Abbe, the distribution of given cervical nerves to various muscles was very wide, and a given muscle received its innervation from a number of different nerve strands. The courses of the nerve supply for sensation had been found still more various. Consequently, the distribution of anæsthesia could not point very definitely to lesions of nerves at a point just outside the cord.

Dr. W. M. Leszynsky instanced a case in which a diagnosis had been made by Dr. Mills's method of segmental localization.

Dr. M. A. Starr thought the paper opened up a subject which was not yet fully worked out. He had seen several very obscure cases in which it had been impossible to separate the probability of the existence of a lesion high in the lumbar plexus from that of a lesion of the cord at an adjoining point. There were some points in Dr. Mills's paper which would aid in a working out of this intricate matter. To the proposition that sensations were delayed in lesions of the cord, but not in those of the nerves, he must object. Arsenic and alcohol gave rise to peripheral paralyses in which sometimes sensation was much delayed. In his experience, severe pain about the perinæum and post-sacral region was regularly due to a lesion in the cord.

Dr. Deaver, of Philadelphia, present by invitation, thought that in many cases in which pain returned or became even worse after an ovariotomy, there was probably a lesion of the sacral plexus. In undertaking operative treatment for such lesions, access to the pelvis might be obtained by trephining the pelvis laterally or posteriorly, by going through the sacro-sciatic notch, or perhaps by a laparotomy.

A Case of Spinal Resection for Fracture causing Paraplegia.—Dr. R. H. M. Dawbarn read an account of such an operation. (See vol. xlix, p. 711.)

Dr. Deaver instanced a case in which the patient had been operated on by a colleague of his immediately after reaction set in (subsequent to the receipt of the injury). The condition of the patient had been improved very little, if at all, showing that the damage had already been done at the time of the operation, and that the process of degeneration had begun. It was the opinion of Dr. Agnew, of Philadelphia, and of others, that the injury was done at the time of the accident, in most of these cases where fractured vertebræ were displaced so as to make pressure on the cord. Still, an operation such as Dr. Dawbarn's did not make the condition of the patient worse; it might, on the other hand, improve it, and was safe.

Dr. Dana remarked that he knew of four cases where such an operation had been done—all within the nineteen months previous. One of these patients had been much improved, and three slightly benefited. He would also call attention to Dr. Abbe's method of reaching the spinal canal by making a flap; primary union was obtained and the operation was short—much less time than the three hours used by Dr. Dawbarn being required. He had quite recently preserved a spinal column and cord showing a condition which operation would have helped, at least so as to have prolonged life.

Dr. Starr instanced a case of Brown-Séquard's paralysis which had recently come under his notice. The patient, when trying to stop a sled on which he was descending a hill, by putting down his heels into the snow ahead of the sled, had been thrown up into the air, and had fallen on his back. He had been unable to rise, having suffered from the first with total motor paralysis in the left leg and partial paralysis in the right leg. An operation had been done, the eighth, ninth, and tenth spinous processes having been removed. The hæmorrhage had been severe, and in this respect Dr. Dawbarn's operation had much merit. A callus was found which had been making a unilateral pressure on the cord, and was removed. Some improvement had followed, and still, after five weeks, the patient's actual condition was not materially altered, although the wound had healed perfectly. He thought we could not hope for much improvement in operating after such accidents to relieve a paralysis. When the growth of a tumor made a gradually increasing pressure on the cord, its fibers were forced apart rather than severed, and there the excision of the tumor might give entire relief. But where the fibers were ruptured, as in traumatic injuries they were apt to be, we could not expect them to become reunited.

Dr. S. T. Armstrong, of the United States Marine-Hospital Service, instanced one case where paralysis following a traumatic injury to the spine had led the surgeon in charge to operate for the relief of a supposed compression. Soon afterward gangrenous spots had appeared in different parts of the body, and the man had died from infection following the operation. In another case a seaman had fallen into the hold of the ship on to his back, and became at once paralyzed in his lower extremities. No operation had been attempted, owing to the sinking condition of the patient, but the necropsy had shown degenerative changes in the cord such that any operation would have been futile. He thought the present record of operations of this sort was not good enough to warrant the surgeon in undertaking such an operation as a matter of course, or with the expectation of obtaining an improved condition.

The Chairman remarked that the spinal cord would endure considerable injury such as came from a vertebral dislocation and still recover its continuity of outline and its normal functions, especially if time enough were allowed it. This might be looked for even when the dislocation had lasted for a considerable time. In Pott's disease the cord often withstood much pressure without permanent injury. The important sign was the appearance of muscular atrophy. If the muscles had become much atrophied there was not much hope of getting relief by an operation. In traumatic myelitis no great amount of recovery should be looked for after a successful operation in the first few months, but in the course of six or seven months these patients might perhaps do better than at first seemed probable.

Dr. Dawbarn replied to Dr. Dana that Dr. Abbe's cases had been of a non-traumatic sort—one of tumor and one of neuritis. The long duration of the operation, of which he had read an account, had been due to the unexpected wide deviation of the eleventh spine toward the left, and to adhesions between the theca and the bones. Experiments on a number of cadavers had shown that ordinarily the operation could be done very rapidly. To what Dr. Armstrong had said as to the futility of

the operation, he would reply that we only hoped for a cure, while if we succeeded simply in improving the patient's symptoms the operation was justifiable.

An Hallucination Peculiar to Chronic Alcoholism.—Dr. M. D. Field, of the Blackwell's Island Insane Asylum, read a paper giving an account of ten cases of this sort. The symptom was one he had seen only in these ten cases, all of alcoholic dementia. A patient presenting it, while he had perfect knowledge of his surroundings and his own relation to them—knew that he was confined in an asylum and how long he had resided there—would nevertheless tell his attendants in the most circumstantial manner that on the previous day he had been away from the building, and would describe where he had gone and what he had seen. He would seem unconscious that there was anything improbable in his narrative, and, if questioned, would assure one that he had often before been on such excursions. Some who gave these accounts were confirmed cripples, yet had this delirium of having recently taken a long walk. One patient, for instance, suffering from a double peripheral neuritis and from phthisis, would always, if asked if he had walked out the day before, answer that he had made several miles. At one moment such a patient realized that he had not left the hospital in months; in the next he assured any one conversing with him of his trip, and described it. This curious mental aberration was common to men and women, and to all ages and grades of life. The particular sort of liquor the patient had been addicted to had no relation here. He would here remark that a majority of the cases of alcoholic insanity which came into Bellevue Hospital were the result of drinking what was known as mixed ale, and not of indulgence in the stronger liquors.

Reports on the Progress of Medicine.

ELECTRO-THERAPEUTICS.

By G. G. VAN SCHAICK, M. D.

Electricity in the Diagnosis between Certain Cases of Hysteria and Epilepsy.—Dr. A. Didier ("Lyon médical," No. 49) presents a careful study of the effects of faradaic electrization as a diagnostic means, in certain difficult cases, between hysterical attacks and epileptic seizures. According to the author, faradism is by far the best agent at our disposal for the purpose of arresting the hysterical crisis, or of preventing it, and he cites a number of cases which serve well to substantiate his statements. For diagnostic purposes it enables one to distinguish between epileptics and patients suffering from hysteria, whether epileptoid or convulsive (Charcot), inasmuch as in the first the attack is not modified by this sort of treatment, whereas it is checked in the latter. His method of treatment consists in the application of electrodes along the course of the aura, using a faradaic current of fair intensity. Not only does he assert that faradism possesses a markedly abortive effect on the attacks, but he has also observed a decidedly curative action upon the disease itself.

On the Treatment of Uterine Tumors by Electricity.—Since Apostoli first brought out his statistics of patients treated and cured or materially improved by his method, a profuse amount of literature has appeared on the subject. For the last few months, however, we do not hear quite as much about the matter. It would seem as if the devotees of the method were quietly working up both its technique and its statistics, while its detractors were either informing themselves about a procedure which they commonly decried without the slightest personal knowledge thereof, or had made up their minds to allow time, the best judge, to decide upon the merit or the worthlessness of the method.

The statements of Dr. Thomas Keith, one of Apostoli's strongest supporters, as well as a peerless hysterectomist, are of great interest. After speaking ("British Medical Journal," June 8th) of the other methods of treatment, including the old idea of using the interrupted current with large needles, now fortunately abandoned, he uses the following strong words: "The only treatment (not surgical) worth speaking about that I have seen do any good, and which, at the same time, is free from danger to life if the treatment be undertaken by one who has respect for a strong electrical current, is that brought before us by Dr. Apostoli. If any one should have held on firmly to hysterectomy it is myself, as my results after it are better than those of any other." Dr. Keith further states, in regard to the first two patients upon whom he tried electricity, that "the results got in these two first attempts convinced me of the value of this treatment, and I ceased thenceforth from doing hysterectomy, or even removing the ovaries for bleeding fibroids."

Dr. James H. Aveling, in reference to the same subject, takes the moderate view, which is the one commonly held, as we believe, by investigators into Apostoli's method. In the "British Medical Journal" for May 25th he states that all that his present experience will justify him in vouching for the efficacy of this method of treatment is that in some cases it will cause a fibroid tumor of the uterus to entirely disappear, that in others it will remove it partially, and that in most cases the symptoms which have caused the patient to seek assistance may be relieved or quite cured. In support of this statement he relates four cases treated by electricity with very gratifying results.

The Treatment of Cancer by Electricity.—Dr. Parsons ("British Medical Journal," April 27, 1889), believing that cancer cells are natural tissue cells which have taken on an abnormally active growth from some stimulating cause, but over which the nervous system has in some manner lost its control, has applied electricity in four cases of cancer, which were either too far advanced for a cutting operation or in whom the patient had refused to submit to one. The destruction of healthy tissue is, of course, bound to take place equally with that of the neoplasm, but the former has a recuperative power not possessed by the latter. Hence he argues that the electricity may injure the cancer cells beyond recovery, while the normal tissue may easily regain its pristine healthy state. The vascular supply of cancer being so great, no such general and dangerous sloughing occurs such as would take place in uterine fibromata by the use of the interrupted current. This current was the one he employed in his four cases, under anæsthesia, by transfixing the tumor and all the tissues immediately surrounding it with fine needles, so as not to injure the skin. The current was at first of ten milliampères, which was then increased and flashed through the tumor from fifty to a hundred times. The tumors shrank and became harder, while the pain was lessened and the general health improved.

The Treatment of Tumors by Electricity.— M. Darin (*Id.*, May 11, 1889) considers that the treatment of tumors by electrolysis is applicable under the following conditions: 1. When no other treatment is practicable. 2. When electrolysis offers advantages which the numerous surgical methods do not possess. 3. When the patient refuses to submit to surgical treatment. He has employed electrolysis with entire success in a large cancer of the left breast in a woman aged seventy-four; in a case of scirrhus of the right breast, with enlarged glands in the axilla; in a cancer, of the size of an orange, which appeared in the axilla after being twice extirpated from the corresponding breast; in a hydrocele which had lasted fifteen years; in a case of prepatellar hygroma; in a wart upon the cheek which had existed ten years; and in many other tumors of less importance.

Electricity in Gynæcology. — Dr. P. Bröse ("Deutsche med. Wochenschr.," June 13, 1889) states that he has followed Apostoli's method since four or five months, which he considers too short a time in which to reach any very positive opinions concerning its value. He reports three cases, the first being one of multiple uterine myomata. The patient suffered from hæmorrhages at irregular intervals and from pain. The treatment caused a diminution in the size of the tumors and a relief of the symptoms. The second case was one of intramural myoma, in which the tumor became smaller and both the hæmorrhage and pain were relieved. The third case was similar to the second. The author considers the method as being a safe one providing too strong currents are not employed. He has used electricity in six cases of fungoid endometritis, the hæmorrhage not being as quickly relieved as it generally is by the curette, but the effect was lasting. Five cases were cured,

the hæmorrhage disappearing in some after the first application, while in others six to nine applications were required. In some cases leucorrhœa was not entirely removed. He has used the method in order to dissipate old perimetric exudations in six cases. In three of these complete absorption took place—*i. e.*, the mass became contracted, but adhesions remained. The symptoms were relieved. In cases of diffuse exudates, old adhesions, and cicatricial tissue, his opinion is that the best means of promoting absorption is by massage and the application of the faradaic current. He has also used galvanism with success to combat constipation in women.

Dr. Engelmann's apparatus has been used by Dr. E. G. Orthmann, who reports ("Berliner klinische Wochenschrift," No. 21) a series of ninety-five cases treated in the clinic of Professor A. Martin, of Berlin, most of the patients being outdoor ones. Of these patients, thirty-six were suffering from perimetritis, most of them being complicated by chronic metritis and endometritis, or by retroflexion. Galvanic currents were the ones usually applied, of a strength of 60 to 80 milliampères. In order to relieve pain, the flat negative electrode was placed over the abdomen and the positive ball electrode was introduced into the vagina. In old cases where the pain was not so marked the order was reversed, the negative being inserted for its abortifacient effect upon the adhesions and residual exudates. When chronic metritis and endometritis were present a sound-electrode was introduced within the uterus. For special effect upon the endometrium a pure metallic electrode covered with cotton was passed in the uterus. The number of *séances* needed were from six to eighteen, two or three times weekly, lasting for five minutes. In one case a complete cure was effected in a sterile married woman who was suffering from perimetritis with chronic oophoritis upon the left side, ten sittings being required. In twenty-four other cases there was decided improvement, the pain being relieved. In the eleven remaining cases there was no change for better or worse.

In twelve cases of parametritis of the chronic variety which were treated as above described, the ball electrode being usually passed up to one or the other side of the vagina, no actual cure resulted. In eight there was more or less improvement. In five cases of parametric or perimetric exudates there was marked improvement among three of the patients after six to twelve *séances*, there being a slight diminution of the mass, relief of tenderness, and disappearance of subjective symptoms. In one case there was no change, while the condition of another was made worse, the patient suffering from a large exudate extending to the umbilicus. It was twice punctured with a platinum wire with a current of 100 milliampères. In six cases of chronic oophoritis, perioophoritis, and salpingitis there was a very good result in one case, the woman suffering from dysmenorrhœa with enlargement of the left ovary. There were twelve sittings, the negative electrode being used in the vagina with a current of from 50 to 100 milliampères. The ovary diminished in size and the infiltrations contracted. In three other cases there was some improvement, while another patient developed fever after the sixth sitting and the treatment was discontinued. In the latter a laparotomy demonstrated the existence of a purulent salpingitis and abscess of the ovary.

Among the menstrual disorders there were twenty-six cases of marked dysmenorrhœa; eight of these caused by chronic endometritis, metritis, oophoritis, perimetritis, or retroflexion; in sixteen the trouble originated in stenosis of the cervical canal. In all these cases, as in the preceding ones, other methods of treatment had proved useless. The negative sound-electrode was usually introduced within the uterus, the strength of the current varying from 30 to 50 milliampères. A small number of sittings, repeated once or twice weekly, usually effected some improvement. A cure followed in six cases due to stenosis, and in all cases there was marked improvement in the pain. The stenosis frequently diminished, even in patients in whom previous dilatation had proved useless. In two cases of membranous dysmenorrhœa there was great improvement; in one no membranes had passed for seven months. The author has never observed any dangerous results.

In four cases of amenorrhœa a cure was effected, the menses being brought on in each case. In one case of profuse menstruation every two weeks, with endometritis, the menorrhagia was relieved in five sittings, beginning with 50 and increasing toward the last to 75 milliampères. In all these cases the electricity was used as a last resort, and Dr. Orthmann strongly recommends the use of electricity in the treatment of dysmenorrhœa. In other cases it is harder to determine its exact value, as we are compelled to depend upon the subjective feelings of the patients.

The Treatment of Constipation by Electricity.—The following we take from the "Medical News" of July 13th: Dr. Hammond, says the "Revue de thérapeutique médico-chirurgicale," has successfully treated forty-one cases of habitual constipation with a galvanic current. The negative pole is placed in the anus and the positive pole is applied to the abdomen. Faradization was found useful in promoting a healthy tone of the muscles of the abdomen. In connection with the treatment, saline aperients should be administered.

Electrical Excitability of the Columns of the Cord.—From a series of experiments ("Univ. Med. Magazine") Dr. E. T. Reichert infers that when the spinal cord is directly irritated by electrical currents the fibers of the posterior columns constitute the part excited; and, since the roots of the spinal nerves are so highly excitable, it is more than likely that these impart to the posterior columns the property of direct electrical excitability.

Electro-cataphoresis.—Dr. J. I. Pennington, of Baltimore, read before the Baltimore Medical Association, May 13th ("Maryland Medical Journal," July 6th), a report of a case of deep-seated gluteal abscess which, after being opened, refused to heal properly, leaving a sinus about two inches long, which gave much trouble. As the patient, a lady, refused to be operated upon without anæsthetics, while her husband would not allow her to be given chloroform, Dr. Pennington washed the part with a little chloroform to remove the oily particles from the skin. He then saturated some absorbent cotton with the anæsthetic and applied the positive pole of a Barrett battery, using a current of twenty cells for fifteen minutes, after which he introduced a director, then a curved bistoury, and made a cut two inches long with several smaller ones. The lady asserted that she had felt no pain.

A Cure of Nocturnal Incontinence.—Dr. R. Jamin reports ("Abeille médicale," May 13, 1889) favorable results from the electrical treatment of a case of nocturnal incontinence of urine in the case of a young girl aged fifteen, in whom he and others had obtained no amelioration by prolonged medicinal treatment. He employed direct faradization with an olive-tipped bougie applied to the urethra, after the advice of Guyon. The girl had urinated in bed nearly every night for a number of years. After eleven applications she only micturated in bed once during a period of four months.

The Electrolytic Treatment of Œsophageal Stenosis.—Dr. J. A. Fort ("Gazette des hôpitaux," March 19, 1889) treated a patient suffering from fibrous stricture of the œsophagus situated from three to four centimetres from the cardia. The man had been reduced from a hundred and forty-six pounds in weight to a hundred and fourteen. Only an olive of five millimetres could be forced through, and with difficulty. The œsophagus was not dilated. The patient was fed with a tube and somewhat improved. Dr. Fort at the first sitting employed a current from eight Gaiffe cells during two minutes. One plate was placed over the left part of the stomach, the other at the seat of the stricture. The pulse rose from 72 to 90. He only complained of a dull feeling during the day. The next day he was able to partake of soup and boiled eggs without the stomach tube. The second application consisted of sixteen cells, giving a current of thirty milliampères. No blood appeared, the patient vomited, and the reflex nervous symptoms were rather marked. He had some dull pain during the day. The day after this he was able to eat light food. Finally a sound of forty-two millimetres was introduced by Dujardin-Beaumetz. The result will probably be temporary, but is a very useful one.

On the Effect of the Galvanic Current upon the Gastric Secretions.—Dr. A. Hoffmann has established from experiments on men and animals the fact that an electrical current stimulates the excretory apparatus of the stomach. To test this fact the patients were galvanized, the broad anodal electrode being placed on the back and the cathode upon the stomach ("Berliner klinische Wochenschr.," April 1, 1889). A current of fifty milliampères was used. The contents of the stomach were then removed by gastric expression with a tube. They were then examined and compared with those obtained on the previous day, when no electricity had been used. The patients were not allowed any food

for some time before the experiment. The author obtained the following results:

1. In gastric cancer the electricity, having been applied during twenty minutes, three to five hours after meals, caused no increase of hydrochloric acid in any of the patients.

2. In nervous dyspepsia: In one case in which no free hydrochloric acid could be found in the gastric contents electrization caused its appearance. In another case, although no free hydrochloric acid could be demonstrated, the acidity of the stomach contents was increased.

Electrolysis in Stricture of the Urethra.—This matter is one upon which there has perhaps been more controversial discussion than upon any other application of electrolysis. Excellent observers have reported successes in large numbers of cases, but the matter is still considered by many to be *sub judice*. Mr. Lavanne, after a long series of experiments, concludes ("Abeille médicale," Feb. 11, 1889) that electrolysis in urethral strictures gives results which are no more lasting than internal urethrotomy or divulsion. He is in favor of rapid dilatation. M. Fort, in the "Journal des sociétés scientifiques," reports having operated in two cases during the past year without any return of the trouble. In the "Gazette des hôpitaux" he reports another successful case of urethral electrolysis in a man that had had a stricture since 1882. The writer calls attention to his method of linear electrolysis, which is not a prolonged application of currents of a low intensity, but a regular urethrotomy without incision, giving a cut by molecular destruction, which is followed by a soft, non-retractile scar. Dr. Chapiet, in the "Gazette des hôpitaux," reports having personally suffered from a stricture since the year 1863, due to an old blennorrhagia. Until recently he suffered from retention, and at one time had a false passage. Being predisposed to hæmorrhage, he feared a cutting operation, and had recourse to electricity. Dr. Fort passed upon him a No. 15 electrode, later a No. 18, with the result of curing the vesical catarrh from which he suffered, and of improving his general health.

Electricity as a Therapeutic Agent.—Under this title, in the "Medical News" for March 30th, Dr. M. Allen Starr makes the following statements, some of which are not in perfect accord with the generally accepted opinion:

1. Static electricity offers nothing beyond an interrupted galvanic current, and fails to furnish those effects which are most desirable in the treatment of disease.

2. A constant galvanic current can produce chemical changes which aid nutrition or destroy tissue, according to the strength employed.

3. A constant galvanic current can transfer medicines into the body from without.

4. An interrupted galvanic current, or a faradaic current, can excite various organs to functional activity, thereby aiding their nutrition.

5. It is questionable whether the pathological state causing organic diseases is in any way influenced by electricity.

6. If functional diseases are benefited, it is in an uncertain manner, it being undecided whether it is by influencing the molecular condition, the chemical changes, or the electrical state of the organ affected, or by the state of mental expectation induced. The agent is therefore used empirically, and the physiological indications for it are as yet uncertain. As a therapeutic agent its use is very limited, and carefully balanced scientific observations are still needed to establish its proper sphere.

Professor Starr says that he can not close his paper without stating that, after the constant use of electrical treatment for the past six years, he has been disappointed in the results obtained. His experience coincides with that of Gowers—that the therapeutical effects of electrical applications have been much exaggerated, and are really very limited and quite uncertain.

Miscellany.

The Health of Connecticut.—According to the State Board of Health's "Monthly Bulletin," the total number of deaths reported from 166 towns during the month of July was 1,329, including 10 from measles, 4 from scarlet fever, 7 from cerebro-spinal meningitis, 35 from diphtheria and croup, 7 from whooping-cough, 21 from typhoid fever, 15 from malarial fever, 8 from typho-malarial fever, and 6 from puerperal fever. There were also 127 deaths from consumption, 24 from pneumonia, and 17 from bronchitis.

Sulphonal.—In his Croonian Lectures, an abstract of which is given in the "Lancet," Dr. T. Lauder Brunton says: "Sulphonal appears to be one of the most effective of all the newly introduced hypnotics, and, although it does not, like morphine, compel sleep, it induces sleep in a pleasant manner, and has few disagreeable effects and little or no danger." It will be seen by Messrs. Schieffelin & Co.'s advertisement that the cost of sulphonal has been materially reduced—a fact well calculated to encourage its more general use.

ANSWERS TO CORRESPONDENTS.

No. 282.—An examination has to be passed. For permission to appear before the board, and for information as to the time and place of its session, apply to the Secretary of War.

No. 283.—Filter the solution.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

WHAT IS VERITABLE PARALYSIS OF THE POSTICUS (POSTERIOR CRICO-ARYTENOID) MUSCLE?*

BY DR. JELENFFY,
BUDAPEST.

THE arytenoid cartilages must be fixed in order that the crico-thyreoid muscles should be enabled to stretch the vocal cords. The fixation can not be effected by the ligaments, because they are too long, would soon be dilated yet more, etc.

The fixation can be done by muscular force only. This force must be exerted in the direction from before backward. There is only one muscle which acts in this direction—the posticus. But the lateral muscles must likewise be in full action in phonation. If both muscles were antagonists, and antagonists only, the posticus would not be able to fix the cartilage, because the antagonist muscles would paralyze each other. Therefore these muscles must be so arranged anatomically that, when contracted simultaneously, their concerted action, instead of paralyzing each other, would result in a force antagonistic to that exerted by the crico-thyreoid muscle. That is possible only if the insertions of the posticus and lateralis correspond to the annexed diagram (Fig. 1)—that is, if the insertion of the posticus falls totally or partially *inward* of the insertion of the lateralis. In that case, when the two muscles are in simultaneous contraction, the posticus finds its hypomochlion in the insertion of the lateralis, *b*, and this draws (*a b* being the rigid cartilage) the vocal process (*a*) in the direction of *d*, producing the requisite force antagonistic to the crico-thyreoid muscle.

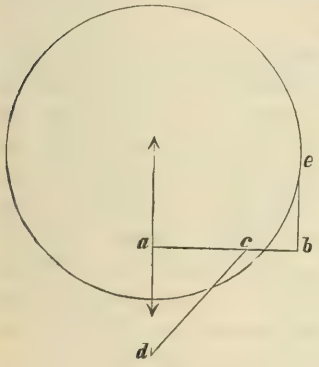


FIG. 1.

But this force is not comprised in the contraction of the posticus alone. The contraction of the lateralis combines with that of the posticus to the same end, the lateralis muscle, on the other hand, finding its hypomochlion in the insertion of the posticus, *e*, and so drawing the vocal process again in the same direction toward *d*.

There exists *no other possibility of the fixation of the arytenoid cartilages during phonation.* Therefore the anatomical arrangement of the muscles *must* be conformed to this supposition. And so it really is. The insertion of the whole internal portion of the posticus, which takes its origin from the crista of the plate of the cricoid cartilage, is effectively situated inward of the fibers of the lateralis. This is best seen on inspection of a larynx of greater dimensions than the human larynx—for instance, in that of an ox. The mutual relations of both muscles appear most clearly when all the other muscles are removed from the cartilage, and only the lateralis and the internal portion of the posticus (the external portion being removed also) are left untouched. To facilitate still better the direct inspection of the insertions, the superior part of the arytenoid cartilage is to be cut away horizontally at the level of the upper margin of the insertion of the lateralis. Then one can absolutely satisfy himself that the insertion of the internal portion of the posticus really lies inward of the insertion of the lateralis. If the origins of both muscles are now detached from the cartilage, and the whole cartilage taken out of the articulation, the vocal process goes inward if both muscles are pulled.

In consequence of the anatomical arrangement of these muscles, the arytenoid cartilage is inclined backward in still another way. While the fibers of the internal portion of the posticus adhere, in the whole, in a horizontal line, those of the lateralis go downward on the whole length of the muscular process. In consequence there is developed another variety of the above diagram, standing here vertically, but with the same results (Fig. 2).

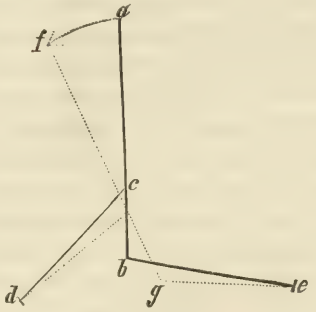


FIG. 2.

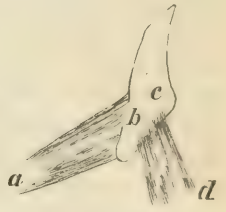


FIG. 3.

The external portion of the posticus is in no wise able to hinder this mechanism, because the only question for that portion is that its insertion should be rotated. Its insertion and its fibers running almost completely vertically downward, while the most rotating fibers of the lateralis run almost horizontally, it is not in the least able to hinder the rotation (Fig. 3).

The external thyreo-arytenoid muscle participates in producing the tension of the vocal cords principally in the same manner as the lateralis.

The insertions of the posticus and of the thyreo-arytenoideus internus being situated *vis-à-vis* of each other (Fig. 4), by the simultaneous contraction of both muscles the arytenoid cartilages are approximated to each other. Thus, even in associated action with this muscle, the posticus becomes a closer of the glottis.

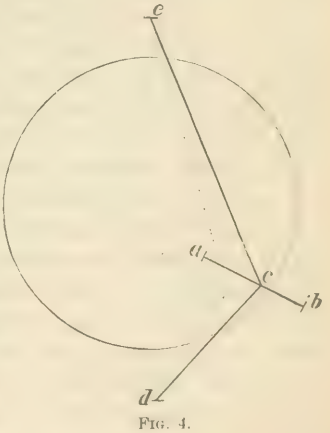


FIG. 4.

* Read by J. Solis-Cohen, M. D., before the Laryngological Section of the American Medical Association, June, 1889.

If the contractions of the muscles are imitated with threads, the effects described become manifest.

Physiological facts correspond with the deductions based on anatomical grounds. In looking into the singing larynx, we see that the arytenoid cartilages become the more erect the higher the pitch of the tone made. There is no other muscle to effect this than the posticus.

When the pneumogastric nerve is irritated by very strong electric currents, the vocal cords become extraordinarily stretched between the anterior and the posterior stretching forces (Krause). In spite of this, the arytenoid cartilage is not drawn forward and downward by the posticus, but backward. That this muscle, too, is acting simultaneously is proved by a direct experiment we made with Regeczy. Irritation of the recurrent laryngeal nerve produces an energetic occlusion of the glottis. But, if we then cut the closers (*internus included*), the larynx is *opened* with equal energy on irritation of the recurrent nerve.

As the experiments of Hooper, of Donaldson, and of Semon and Horsley show, feeble irritation of the nerve causes opening, and stronger irritation causes closing of the glottis. (The most recent experiments of Donaldson prove the same, because irritation with slow rates of interruption is only a feeble irritation.) In the animal narcotized very deeply, irritations of the recurrent nerve cause opening. The narcosis becoming less deep, closing of the glottis occurs again. This shows that the posticus is more irritable than the closers, and that the narcosis has no influence on it, its action manifesting itself both before and after the development of the influence of narcosis. If the animal dies from an overdose of ether, irritation of the recurrent nerve still causes opening during some short time, and then closing is produced again. This fact has induced the false interpretation that the irritability of the posticus is soon exhausted after death. But we have, with Regeczy, cut the closers here again, and again irritation of the recurrent nerve produced energetic opening. This experiment, in both its variations, might be regarded as decisive of the whole question—perhaps still more so if it is associated with the cork experiments of Krause. If, after the stabilization of the vocal cord in the middle line, the closers are cut through, the arytenoid cartilage immediately moves outward, the posticus making unweakened energetic movements on irritation of the recurrent nerve. Thus it is proved that here the posticus is not paralyzed, but that all the muscles are in primary contraction. The consequence of these laws is that, with paralysis of the posticus, the voice can not be normal, because then the force $d\,c$ (Fig. 1) would fall out of the category, and the whole line $a\,b$ (the arytenoid cartilage) is drawn forward by the forces $a\,f$ and $b\,e$, in physico-formulary sense, without resistance—in reality, with so much resistance as the lax capsule and its ligaments are able to develop. The vocal cord can then only be stretched so much as on the dead larynx without special fixation of the cartilages—*i. e.*, only to a very slight degree. The physical consequence must be feeble vibrations of a low, very little variable rate; in other words, a feeble, deepened, monotonous voice if the affection is on both sides, a troubled voice if it is on one side only.

In the descriptions of cases of so-called "paralysis of the posticus" many instances are to be found supporting my law, although the observers thought that they saw paralysis. They are to be seen, even if the pathological situation is created artificially (Krause). If the animal is narcotized, its glottis is somewhat less narrow; if it awakes, the glottis becomes narrowed—actually, the animal endeavors to open the glottis by a contraction of the posticus, but, the closers being contracted at the same time, the posticus, too, becomes (in accord with our formula) a closer. This is the true explanation for the narrowing of the glottis on inspiration, in cases of disease also, which made the impression of "something active" upon more than one observer (Hansen, Schnitzler, Rosenbach, Krause), as is evident from their expressions.

This explains at the same time why the glottis is only closed the more firmly if, in the cases of "paralysis of the posticus," that muscle is irritated by electricity.

Besides these, there were yet other symptoms of irritation in these cases—for instance, the laryngeal spasms, the laryngeal crises that preceded the stabilization of the vocal cords in the middle line, forming *acute examples* of the malady.

It is clear that "sonorous inspiration," too, can only have the signification of "inspiration between approximated and stretched vocal cords," which, again, is possible only with an intact posticus.

The most important symptom of irritation is the contracted state of the transverse muscle, which will be again alluded to.

In what we have just exposed lies the cause of the consecutive atrophy of the posticus. By its contractions, which are simultaneous with contraction of the closers, the dyspnœa only increases. To make this cease, both man and animal contracts only the more this same muscle—the only one that opens the glottis under ordinary circumstances. The muscle in this "circulus vitiosus" becomes overworked, and the atrophy is the result of the overstraining of its forces. The atrophy of its nerve fibers is then consecutive only. This atrophy can commence at the point of irritation (as in cases of aneurysm, cancer, etc.).

When atrophy is already developed, the arytenoid cartilage bends forward and the voice is troubled, as shown in the descriptions of many cases.

The greater irritability of the posticus is a proved fact, and a particularity of this muscle, which it possesses in community with the other muscles of organic life. But the supposition is false that the posticus or its nerve fibers should be more vulnerable than the closers. It is a false supposition that the posticus should die earlier after death than the lateralis, because, if immersed in oil that is maintained at a temperature of 35° to 37° C., both muscles die in the same time, as is proved by our experiments with Regeczy. We have recently made three new experiments. In two cases the posticus again lived as long as the lateralis, and in the third case it outlived the lateralis on one side by five minutes, and on the other side by twenty minutes.

We have studied the influence of maintaining warmth upon the intercostal muscles and the diaphragm also, that

are akin to the posticus, and found that the irritability of the pieces kept warm considerably outlasted in general that of the pieces allowed to cool off.

That the diagnosis "paralysis of the posticus with consecutive antagonistic contraction of the closers" is groundless, can even be demonstrated from the standpoint of its champions. Antagonistic contraction is created thus: One muscle makes a contraction and moves the part on which it has its insertion. Relaxing, it has not the power to return to its former length, if it is not stretched mechanically by the weight and elasticity of the parts, or actively by the antagonistic muscle. If it is not stretched, its tissue accepts the new length, establishes itself conformably, and the antagonistic contraction is ready. That is, antagonistic contraction is sometimes absolutely passive. It accomplishes no labor, but is the result of circumstances over which the antagonistically contracted muscle has no power at all. But if the vocal cords are durably fixed in the middle line, there *is* labor accomplished and maintained, because the arytenoid cartilage, with the soft parts adhering to it, must be pulled upward on the steep upper margin of the cricoid cartilage. Here must be overpowered the weight and elasticity of the arytenoid cartilage and its soft parts. The transverse muscle, therefore, must be contracted actively. If this contraction ceases, the arytenoid cartilage, in consequence of its own weight and elasticity and that of its soft parts, must glide immediately down as far as the articulation allows it—as far as the cadaveric position. And this is another clew to the situation, which is indubitably characterized as a primary contracture, the nerve fibers of the transverse muscle being subjected to the same irritating influences as the nerve fibers of the other muscles.

It is thus clear that, if the vocal cords are fixed durably at the middle line, all muscles that are supplied by the recurrent laryngeal nerve are in primary contraction, the posticus included, and that this last muscle, if contracted simultaneously with the closers, becomes itself a closer, but, in community with these muscles, forces the arytenoid cartilage in a direction antagonistic to the action of the cricothyreoid muscle.

The symptoms of veritable paralysis of the posticus are, if on one side only, with phonation: Voice more or less hoarse, arytenoid cartilage of the affected side bent forward, its posterior surface seen extraordinarily well, its summit lying more forward than that of the sound side. The vocal cord is in the middle line, sometimes even somewhat overstepping it. The process with the vocal cord lies somewhat deeper. The vocal cord appears to be less broad, shorter, and rectilinear. The false vocal cord is much advanced inward, and rectilinear too.

In respiration, the affected vocal cord goes back only as far as the cadaveric position; and the true and false vocal cords remain less broad and rectilinear.

The thinness, rectilinearity, and shortness of the true vocal cord, as well as the inward excursion of the false one, are signs of the antagonistic contraction of the internal and external thyreo-arytenoid muscle, there being no force to draw the arytenoid cartilage outward beyond the cadaveric position. The lateralis, too, is established in this length; that is to say, it is also in antagonistic contractions. In my article, "Zur Anatomie, Physiologie und Pathologie der Larynxmuskeln," I constructed the symptoms of veritable paralysis of the posticus partly theoretically. When I admitted them spontaneously, I had not thought of some of the above conditions which must follow the paralysis of the posticus as mediate symptoms, as being caused by the inevitable antagonistic contraction of the internal and external thyreo-arytenoid muscle. Since then *I have studied them on the living subject and have cured all symptoms completely by faradization of the posticus.*

When the affection exists on both sides, the same symptoms should be observed on both sides. The voice should be weaker, deeper, and monotonous. Respiration might be impeded, but much less so than in contracture. I have seen as yet no such case.

The above symptoms of antagonistic contracture of both thyreo-arytenoid muscles are present also if the cricothyreoid muscle is paralyzed or weakened; but in this case the position of the arytenoid cartilages is symmetrical. Here the symptoms disappear after faradization of the crico-thyreoid muscle.

Concerning details, see my articles: 1. "Ueber die Fixation der Arytänoidknorpel während der Phonation" ("Wiener med. Wochenschrift," 1872). 2. "Ueber die electrische Contractilität der Larynxmuskeln nach dem Tode und den 'Aether Effect'" ("Berliner klin. Wochenschrift," 1888). 3. "Zur Anatomie, Physiologie und Pathologie der Larynxmuskeln" ("Berliner klin. Wochenschrift,'" 1888).

THE PROGRESS OF THE MEDICAL SCIENCES IN OUR OWN TIMES.

By HENRY S. STARK, A. B., M. D.

Through the light of modern reason and research the advances made in the medical sciences in our own times have been so great and rapid as to inspire even the most sanguine doubter with the hope that medicine, as based on the "inductive" method of discovery, will soon reach the dignity of an "exact and positive" science, and that its mission, the preservation of man in health and disease, will be fulfilled ere many decades elapse.

Such marvelous changes has time wrought on the art of healing that the principles and practice of medicine of to-day is a transformed science dealing with methods and material different in many respects from that of previous centuries—a science, in short a creation, whereof it may truly be said "the child has been father to the man."

This reformation had its origin in the beginning of the present century with the Parisian school of medicine. The changes this school instituted were so radical, and so completely annihilated the old methods, even to their very roots, that in the course of ninety years the medical sciences suffered a complete transformation and purification.

It was in the beginning of this century that the Parisian school of medicine rose into prominence. Among its leaders were Corvisart, Cruveilhier, Laennec, the discoverer of the method of auscultation and, according to some authori-

ties, the founder of the study of pathology, and later on Magendie and Trousseau. These men based their investigations on the study of pathology, on chemistry, which had gradually replaced alchemy, and on physical diagnosis, a new study, by means of which they attempted to interpret the signs and symptoms of disease to the five senses.

The school adopted methods which must have appeared Utopian to their predecessors; it founded the study of pathology, and gave it an impulse still felt to-day. It exercised for the time an influence over medical minds all over Europe and America, inasmuch as they based all their observations and discoveries on the study of pathological anatomy, seeking for the seat of disease among the simplest structures of the economy and in the ultimate elements of the body, in the firm belief that perfection in the study of morbid anatomy meant perfection in diagnosis and in therapeutics.

The Parisian school was succeeded by the Vienna school founded by Rokitansky. They took up the work begun by the Parisians, added brilliant discoveries, and were succeeded by one who was so great in his works as to form a school by himself, and who is justly considered the greatest pathologist of our times—Rudolph Virchow. Virchow's marvelous work on "Cellular Pathology," the fruit of careful observation and experimentation, appeared in 1858, and was received all over the medical world with enthusiasm. It was especially of inestimable value in ranking the study of medicine among the exact sciences. The aim of the work, as Virchow himself says, is "to offer a view of the cellular nature of all vital processes, both physiological and pathological, animal and vegetable, so as to distinctly set forth the unity of life in all organized beings."

Thus to-day, with the data derived from the study of pathology, we can proceed on rational principles at least to account for the changes in the nutrition, in the arrangements, in the secretions and excretions of the structures of the body in health and disease; we can clearly comprehend the nature of diseases and their lesions, and can interpret and combat the symptoms of the same.

The medical sciences of ancient and middle ages we now consider to have been heretical and wedded to religion, while the more modern medicine—that which extended from the middle ages down to the time of Vesalius in the sixteenth century—we now consider to have been empirical. Vesalius marked an era in the history of medicine—a renaissance, as it were—for by his indefatigable zeal and labors the study of the human anatomy first became firmly established. His personality and those of his contemporaries and immediate successors—Falloppius, Asellius, Harvey, Morgagni, etc.—were influential throughout the scientific world, and it must be admitted that their researches have greatly enhanced the medical sciences. Before his time heresy and empiricism were the fashionable doctrines of the medical charlatans, while their most effective remedies were the amulet and the abracadabra. Since his time down to the present day the medical sciences have been suffering a slow process of evolution, so that to-day we are dealing with a science divorced from priesthood and founded on facts and phenomena revealed by clinical observation and physiological experiment.

The fallacy of the old medical "systems" of which Boerhaave, Van Helmont, and Brown were founders is now acknowledged, and the attempt to explain the causation and treatment of disease on the "pneuma," * "vital forces," "humors," and the "archæus," has been frustrated by the more accurate and better equipped laborers of the nineteenth century, while the theories advocated by these brilliant intellects have fallen into disrepute, and the knowledge they left behind is interesting in so far as it marks an item on the pages of history, standing there solely as a legacy of the past.

It is fortunate that these old "systems" of medicine, and the wild speculations that accompanied them, have nearly all disappeared. One "system" still incumbers the onward march of the medical sciences; I refer to homœopathy. It is indeed strange that this system of dogmas and sterile doctrines is still suffered to exist, and even to flourish. Yet, if we may correctly judge the future from the past, the fate of this system is inevitable; the same factors that eradicated the others will be likely, in due course of time, to consign this one to oblivion.

In the medical sciences of to-day we no longer look for the "pneuma," the "vital forces," the "humors," or the "archæus," but rather inquire into disordered functions, impaired nutritions, structural derangements—in short, our knowledge of to-day is not based on heresy and empiricism, but on physiology and pathology; light and reason have succeeded ignorance and superstition.

It is far from my intention to depreciate entirely these old "systems" or to denounce their authors, for, however great their errors, their efforts have resulted in permanent improvement, not alone in medicine, but in other departments of knowledge. The theories of these giant medical thinkers, developed and elaborated at a time when the facts of science were few, the technicalities of detail scarce, the methods of investigation crude, were far in advance of the times in which their authors lived; their doctrines were believed by their contemporaries to be the consummation of the ideal of medical knowledge, and formed a basis for the classification of diseases which, however unscientific when submitted to modern tests, was a marvel of ingenuity and originality of thought. The errors of these "systems" served later investigators as a practical school for in-

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* "Pneuma," *πνεῦμα*, "vital principles or forces." "Terms used probably by Hippocrates *et al.* to denote a something different from the immortal soul on the one hand and the mortal body on the other, endowed with intelligence and appointed as a sort of internal guardian angel to avert danger and cure the maladies of the body over which it presides."—J. R. Russell, "Art of Medicine."

"Archæus," *αρχαῖος*, of Van Helmont. The archæus is the curative spirit which, working upon the raw material of water or of fluidity by means of a "ferment," excites all endless actions which result in the growth and nourishment of the body.—J. R. Russell, "Art of Medicine."

Humors of Hippocrates were black bile, yellow bile, the blood, and phlegm. Out of the excess or deficiency or misproportion of these four humors there arise diseases; by restoring the correct proportion, diseases are cured.—J. R. Russell, "Art of Medicine."

struction, guiding them to the advancement of a more exact science and arming them against the unscientific tendencies of the times.

In tracing the progress of the medical sciences of our own times, and in contemplating the changed complexion of events in medical thought and methods, it will naturally suggest itself to our minds to inquire, firstly, into the influences to which we attribute the marvelous results achieved by men of our own day, and, secondly, into the extent in which these sciences have fulfilled their ultimate mission.

I venture to state that the progress of the medical sciences in our own time has depended directly and proportionately on the corresponding progress made in the sister sciences; to physics and its correlative branches—mechanics, optics, acoustics, electricity; to organic chemistry; to biology; to natural history, and all the other sciences, abstract or concrete, practical or theoretical. The association between the sciences, moreover, is so universal and inseparable that the gradual development of any one depends on the correlative development of the others. This relationship becomes apparent when we study the history of medicine through its various eras—the primeval, mediæval, modern, and contemporaneous—for we then see that the progress in medicine has been simultaneous and running in the same channel as the improvements made in the other sciences, and that the great discoveries in the one branch have depended on the great discoveries in the general sciences. For instance, the discovery of the laws of reflection and refraction of light led later on to the construction of the microscope, spectroscope, ophthalmoscope, etc., and their subsequent application to the art of healing; the discovery of the laws of the conduction of sound-waves gave birth to the stethoscope; so the urometer depends for its employment on the principles of specific gravity, and so the broad principle is applicable not only to clinical apparatus, but to all branches of the medical arts and sciences. We see it exemplified in physiology, where our knowledge regarding the functions of nutrition and the nature of reproduction has been wonderfully enriched by comparative studies in biology; in therapeutics, where the introduction of new medicaments has depended on the brilliant discoveries in organic chemistry and in botany.

The lesson that these observations teach is that a great discovery often requires the experience of generations for its practical application to the arts and sciences, nor can we estimate the value or importance of it at the time it is made, for while a particular discovery may appear insignificant *prima facie*, yet it may stimulate and encourage experimentation so as to lead to other discoveries, which latter may prove of inestimable value. The properties of the loadstone and of amber were known to the ancients, yet centuries elapsed before the wonders of magnetism and electricity were revealed and put into practice; the laws of the transmission of sound-waves through different media were known long before the methods of auscultation and percussion were employed in diagnosticating the condition of subjacent parts of the body.

To the inquiry to what extent the medical sciences have reached their ultimate mission I would answer that it has been established beyond all question that the recent appliances of intellectual sciences and the great increase in human knowledge have placed at our disposal means with which the physician can lessen human suffering and mitigate pain, can maintain health and abort disease. Secondly, some of the epidemics and plagues that formerly depopulated countries and baffled all human skill have been robbed of their terrors through our elaborate system of quarantine and our improved laws of hygiene; thus the ravages of typhus and typhoid fevers, of Asiatic cholera and yellow fever, occur less frequently, and are almost unknown in certain quarters that were visited at regular intervals. Thirdly, the treatment of other diseases has been so modified and improved that the great sacrifice of life that formerly attended them has considerably diminished; thus the dreaded disease smallpox claims few victims since the brilliant discovery of Jenner; the progress of tuberculosis of lung or of bone can be ofttimes retarded by the judicious administration of cod-liver oil in the former and the early resort to the knife in the latter; the frightful mortality that formerly accompanied puerperal fever has given way to absolute safety in the lying-in chamber, while the frequency of surgical diseases—as septicæmia, pyæmia, gangrene, and erysipelas—has been diminished by the recent improvements of modern surgery; and so throughout the whole category of diseases improvement in the method of treatment has been followed by improvement in such rapid succession that it has been computed by some English observers, from a comparison of hospital reports and census statistics, that the term of human life of the individual and of the masses collectively has actually been lengthened.

Despite our brilliant researches and our ever-increasing successes, we have not attained perfection, nor can it be expected that we ever should, for that would mean life everlasting, a principle at once at variance with the laws of nature. Life is a cycle beginning and terminating in death, and death is as necessary for the perpetuity of the human race as life itself is. We must ever bow to Nature's laws and never defy her. Since the vast fabrication of human knowledge has been built upon her teachings, it is well to remember the words of the French philosopher Condillac: "All our knowledge we owe to Nature, that in the beginning we can only instruct through her lessons, and that the whole art of reasoning consists in continuing as she has compelled us to commence."

The ideal of the medical sciences, therefore, is still a desideratum. There are medical problems which are no nearer solution to-day than they have been for generations past. There are still mysteries connected with medicine which are as deep as the Sphinx and as dark as the Sibyl. Nor can we as yet have hopes of that millennium when disease shall cease to exist and the physician's vocation shall be a lost art. Hippocrates's aphorism will ever hold true: "Life is short, art is long, experience deceptive, and judgment difficult."

While I purpose now to describe briefly some of the most important events in the history of medicine in our own times, yet I do not intend that this shall form a chronological recapitulation of all noteworthy events, nor a

biography of the half dozen great men who have played leading parts on the world's medical stage. It will be convenient for my purpose to divide the subject into general medicine and general surgery, using the terms in contradistinction.

Foremost in importance among the brilliant innovations of the nineteenth century is the rise and development of the "germ theory of diseases" and the new science it has given birth to—bacteriology—a study which now occupies a place in the regular course of study in many of our medical schools of learning.

Perhaps no biological theory or problem has ever attracted a greater share of the attention of the medical world, nor has resulted in more lasting benefit to mankind, than the theory that certain diseases owe their specific character to the presence in the system of minute organisms derived from without. The germ theory is not the production of mere chance nor the result of accidental discovery, but is the inevitable outgrowth of a long chain of experiments covering a number of years, carried out by Schwann, Tyndall, Pasteur, Lister, and others on the theory and nature of the parallel processes of fermentation and putrefaction.

Just how much the germ theory has accomplished it is difficult at the present time to determine on account of the uncertainty of many of the data and because we do not know what bearing our knowledge of to-day may have on future discoveries, especially since the pathogenic relations between bacteria and diseases are not yet clearly understood.

We can not assume that a particular disease is caused by a particular micro-organism simply because that bacterium, bacillus, or what not, is invariably found in that malady. There are still other conditions to be fulfilled before the chain of thus reasoning by analogy can be complete. Klein has formulated several laws governing the relation between micro-organisms and diseases which seem to cover the ground. He says: 1. "It is absolutely necessary that the organism in question is present in the blood or diseased tissues of man or of an animal suffering from the disease." 2. "It is necessary to take these organisms from their *nidus*, to cultivate them artificially in suitable media outside the body; . . . to go on cultivating them from one culture to another for several generations, in order to free them from every kind of matter derived from the animal body from which they have been taken in the first instance." 3. "After having thus cultivated the micro-organisms for several successive generations, it is necessary to re-introduce them into the body of a healthy animal susceptible to the disease, and in this way to show that this animal becomes affected with the same disease as the one from which the organisms were originally derived." 4. "It is necessary that in this so affected new animal the same micro-organisms should again be found." (See "The Practitioner," London, March, 1884.)

The number of diseases for which micro-organisms have been discovered is legion, but only a few of these—such as malignant pustule, relapsing fever, tuberculosis, and perhaps hydrophobia—have fulfilled the requirements of Klein's laws, and only for these can the germ theory be said to be established.

What we do know, is that the germ theory offers a satisfactory explanation of the morbid agencies by which certain of the infectious diseases are communicated, and that the treatment of these diseases has undergone radical changes in conformity with our advanced views.

If we estimate the value of the germ theory, not by what it *has* accomplished but by what it *promises* to accomplish, we are inspired with the hope that we shall soon understand the nature of the morbid agencies that create disease, and shall be able to destroy their power of communication and of propagation.

Another event which marked an era in the medical history of our own times was Schönlein's discovery in 1839 that the contagiousness of the disease of the scalp called favus was due to a vegetable parasite or fungus. This was the first of a series of brilliant discoveries on parasitic diseases of man, of animals, and of plants. The constant presence of fungi in herpes tondens, pityriasis versicolor, aphthæ, and other diseases has since been established.

Other discoveries in general medicine which may be mentioned *en passant* were: The establishment of the non-identity of the two affections typhoid and typhus fevers by Louis in 1839; before this date, the specific difference in ætiology, pathology, and symptomatology between the two diseases was unknown; the true and certain character of many of the diseases of the kidney was first announced by Bright in 1837; important contributions have been announced in our knowledge regarding the localization of diseases of the brain and spinal cord. Recent additions to nosology are Addison's disease of the suprarenal capsules, first announced in 1855; Graves's disease, exophthalmic goître, to which attention was called only within the last few years; Hodgkin's disease, pseudoleucæmia, first described in 1832.

Gerlach's experiments to show that consumption may be contracted by drinking the unboiled milk of tuberculous cows deserve also to be mentioned here as a comparatively recent discovery.

In the domain of therapeutics the same activity has been manifested as in the other branches of medicine. The great number of new drugs and remedial agents that have been added to our therapeutic resources is certainly encouraging evidence of the great reform in medicine which recent times have realized. The discovery of these drugs, which have taxed organic chemistry and botany to their utmost, is a healthy indication of the great benefit that is to be derived from the application of the "experimental method" to the medical sciences.

Yet, when we examine the list of these new drugs, we can not help remarking how few of them will stand the test of time and experience, and how few there are which might be considered in the light of specific remedies to counteract particular diseases. It is a well-known fact that most of the new medicaments that are destined to stay in the materia medica never reach organic disease, but only palliate the symptoms incidental to such disease. This is true of the new antipyretics, anæsthetics, analgesics, hyp-

notics, and cardiac stimulants; an exception to this rule is, however, found in the new antiseptic medications based on the germ theory of disease.

The deplorable scarcity of specific remedies was already recognized as early as the beginning of the seventeenth century by the great scientific luminary, Sir Francis Bacon, in his "Novum organum." In this work he states that he finds a "deficiency in the receipts respecting the cure of particular diseases, . . . and that medicine was to be improved by the discovery of remedies for the cure of particular diseases, which discoveries were made, not in years, but in ages."

Our most important therapeutic resources are acquisitions of the last fifty years. To this category belong the inhalent anæsthetics—ether, chloroform, nitrous oxide; the local anæsthetics—cocaine and methyl chloride, which last gives promise of a great future, especially in the treatment of neuralgias; the cerebral sedatives—the bromides and chloral; the use of the salicylates in rheumatic affections; the antiseptic medicaments especially employed in gastro-intestinal and pulmonary affections; the new antithermic remedies and cardiac tonics, which are too well known to require enumeration here. Of remedial agents other than drugs we would cite hypodermatic medication, the numerous precious uses of water and of electricity, artificial digestion by mouth or rectum, the pneumatic differentiator in pulmonary complaints, stomach irrigation (lavage), forced feeding into the stomach (gavage), intestinal irrigation *per rectum* (enteroclism), and a horde of others too numerous to note in this paper.

Surgery, as an art and science, may with propriety be said to have witnessed the greatest improvements of all branches of medicine. The history of surgery of the nineteenth century is the history of an uninterrupted series of successes, culminating in a new modern system. This flourishing and improved system of modern surgery owes its existence to (1) the use of the anæsthetics, (2) the application of the Listerian principle, (3) the introduction of Esmarch's elastic bandage to control profuse hæmorrhage during operations, (4) the elaboration of surgical appurtenances, (5) the extensive yet perfect method of reporting the results of observation through that great avenue of communication, the medical press, and through society reports, personal intercourse, and international congresses.

It is fair to assume that, as far as the saving of human life or misery is concerned, the anæsthetics have played the most important *rôle*. Their practical application is one of the wonders of science. Hippocrates's saying that "to relieve pain is a divine work" is most beautifully demonstrated here. I would consider the three most brilliant achievements of modern surgery the use of the inhalent anæsthetics, the application of the antiseptic theory, and the use of the elastic constrictor for the production of artificial anæmia.

Many of the crowning triumphs of modern surgery are due to the Listerian principle. To the eminent author of this method of treatment mankind owes a debt of incalculable gratitude for having, more than any one before or after him, advanced operative surgery to so high a degree of perfection. The aseptic method initiated by Lister in 1865 is briefly nothing more or less than an exact method founded on a special theory. The exact method is the prevention of putrefaction in wounds, whether surgical or traumatic, by destroying the septogenic power of the aerobic micro-organisms by means of certain antiseptic drugs—carbolic acid, originally—and certain antiseptic precautions. The special theory is the germ theory. Listerism is thus one of the branches of bacteriology.

Lister was not the first to demonstrate the noxious effects on wounds of micro-organisms suspended in the air; the experiments of Pasteur, which preceded Lister's—especially those which led the eminent Frenchman to discover the yeast plant and its relation to alcoholic fermentation, and his later discovery of the lactic-acid fermentation—formed the basis of Lister's discoveries and labors. Pasteur, therefore, was the first who demonstrated the living nature of fermentation and its kindred process, putrefaction, while Lister was the first to systematize a method of wound-treatment based on these discoveries.

At a lecture delivered by Sir Joseph Lister, on October 10, 1876, at the Charity Hospital, New York, he frankly acknowledged this, and said: "When Pasteur showed that putrefaction was a fermentation, it occurred to me that here was a chance for improvement; we may prevent putrefaction if the cause is not the access of air, but of living organisms developed in the air, and which in the blood are the causes of putrefaction." ("Medical Record," 1876.)

Listerism is the *sine qua non* of modern surgery. Time and experience have demonstrated the soundness of the principle, while the results alleged for this practice have been more than realized in the certainty of success with which operations are now undertaken which hitherto were regarded as unwarranted and unjustifiable. It has almost abolished suppuration, secondary hæmorrhage, and erysipelas, while, on the other hand, it has increased the proportion of recoveries after operations, so that, in amputation of the extremities alone, the percentage of recoveries has increased, on an average, from sixty-five to eighty-five per cent.

To the introduction of the aseptic method we owe those remarkable achievements in intra-abdominal, intra-cranial, and intra-spinal surgery which are now every-day occurrences in our hospital wards. Among the many successes attributed to this method are: primary healing of sutured wounds; the substitution in selected cases of exsection and resection of joints for amputation; plastic operations, including skin-grafting and transplantations; operations for deformities and operations in special branches of surgery; union by suture of nerves, tendons, muscles, bones, with complete restoration of functions; exploratory operations for diagnostic purposes, etc.

This, then, is a *résumé* of the more important innovations that have signalized the latter half of our century. In the race for advancement the medical sciences have outstripped many of the other sciences, proving that medicine is not stationary but eminently progressive, while the results achieved demonstrate that medicine is no longer theoretical and speculative, but practical and experimental. The ex-

perimental method of research and the inductive method of discovery have been mainly influential in creating and developing medicine on its present renovated basis. Irrational speculations, sterile theories, and dogmatic systems have fallen into insignificance when compared with the importance that now attaches to the *clinique*, the microscope, and the test-tube as fields for study.

Our knowledge of to-day is as nothing when compared with what we soon shall know. The present is a stirring, hopeful age; the future, however, is pregnant with grander inspirations. The spirit of the times indicates an everlasting struggle of science and humanity for *light, more light.*

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EXPERIMENTS RELATIVE TO THE THERAPEUTICAL VALUE OF THE EXPRESSED JUICE OF THE TESTICLES WHEN HYPODERMICALLY INTRODUCED INTO THE HUMAN SYSTEM.

By WILLIAM A. HAMMOND, M. D.,
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At a recent session of the *Société de biologie* of Paris Dr. Brown-Séquard created considerable astonishment by describing certain experiments which he had performed upon himself with the expressed juice of the testicles of dogs and guinea-pigs. This juice, mixed with a small quantity of distilled water, he injected by means of a hypodermic syringe under the skin. He stated that the effect was such that he felt as though he were at least ten years younger; his capacity for mental and physical work was greatly increased. Peristaltic action of the intestines, which had been absent for several years, returned, and he likewise regained power over the bladder and its sphincter. I do not dwell longer upon his experiments, for the details of them have been published in nearly every medical journal of the country, as well as in probably every newspaper in the United States. It will be sufficient to say that they were confirmed by Dr. Variot, who experimented upon three old men, and who obtained nearly identical results with those which followed Dr. Brown-Séquard's injections upon himself. Dr. Variot made use of rabbits and guinea-pigs.

My own experiments began on July 24th, and my method of procedure was as follows: I used the testicle of the young ram, stripped it of its coats, cut it into small pieces, and crushed them in a Wedgwood mortar till they were reduced to a pulp. A quantity of pure water equal to about half the bulk of the crushed testicle was then triturated with it, and the mixture was then filtered through Swedish filtering paper. The liquor, previous to being injected, was examined microscopically; it was always found to consist of oil globules in small quantity, red blood-corpuscles, white blood-corpuscles, numerous cells having very much the appearance of the blood-corpuscle-holding cells of the spleen, a large amount of morphological matter, consisting of the tissue of the testicles, and very generally spermatozoa. In one instance some of these latter were alive; in all the others they were dead. I injected from fifteen to thirty minims each time. Usually the place selected was the anterior portion of the forearm; at other times it was the arm near the insertion of the deltoid muscle.

In nearly every case the liquor was injected under the skin within an hour and a half after the death of the animal. In no case was it used at a later period than three hours after the animal was killed. In some of the cases it was injected within three quarters of an hour.

Case I.—The first experiment was performed upon myself; not that I thought I required the injection for any infirmity, but simply in order that I might experience in my own person any ill effects of the injection before proceeding to use it in the cases of other persons. I can not say that I experienced any particularly strengthening effects or any marked degree of mental exhilaration, but a result ensued for which I was entirely unprepared and to which my attention had not been in the slightest degree directed.

In May, 1888, while attempting to get on a railway train which was in motion, I found that it was going so rapidly that I could not keep my footing long enough to make a spring to the platform. I was obliged to let go or run the risk of being killed. I was thrown some thirty feet, striking on my left shoulder and bruising my left side. The left arm, as a consequence of the fall and the straining it had received while holding on to the car, became almost useless for certain purposes. Up to the time of the injection it had been the seat of constant pain. I could not put it behind me or place it on top of my head, nor put on my coat without assistance. The injury seemed to have been mainly concentrated upon the deltoid, coracobrachialis, triceps, and latissimus dorsi muscles. The symptoms had not been mitigated in the least up to seven o'clock on July 24th, when I took the hypodermic injection. I went to bed at about eleven o'clock that night. When I awoke in the morning the pain was gone and I could move my arm in all directions as well as ever I could in my life, and it has remained perfectly well ever since, up to this date, August 26th. I can perform any movement of the arm of which it is capable, and it is absolutely free from pain under all circumstances.

The local effects of the injection were scarcely noticeable; there was a little diffused erythema, but nothing else.

I took a second injection on July 26th, but I observed no general effects therefrom. Locally, however, there was a good deal of disturbance. At the point where the syringe had entered, a swelling as large as a walnut appeared, and the parts around were inflamed and painful. Suppuration followed; the abscess was opened several days afterward and about a drachm of pus was evacuated.

Case II.—The patient, a man, aged sixty-five, had suffered for several years with insomnia and feeble heart. His pulse was weak, averaging ninety-five in a minute, irregular both in rhythm and in strength, and intermitting regularly every third beat. There was no valvular disease, and I regarded the heart trouble as being one of simple cardiac weakness probably due to fatty degeneration. An injection of the fluid, prepared as described, was made under the skin of the left forearm on August 4th, at about ten o'clock in the morning. I failed to note the effect upon the heart at the time, as my mind was directed toward the relief of the insomnia and some marked depression of spirits under which he labored. But at about three o'clock that afternoon I felt his pulse. The intermittence had disappeared, the cardiac impulse was stronger than I had ever noticed it in him, and it had fallen in frequency to eighty-five. He told me that he felt more cheerful than he had for a long

time. He walked more erect, and could mount a staircase without his respiration becoming accelerated. That night he slept well, but there was no after-relief of the insomnia. His pulse, however, remained regular and strong till August 24th, when the irregularity reappeared and the heart again became weak. This patient, aware of the abscess in my arm, preferred not to take another injection, and I did not press the matter on him.

Case III.—A man, aged thirty-four, had been for several years affected with impotence and at times great mental depression, both apparently resulting from excessive sexual indulgence. He had not been able to accomplish sexual intercourse for over a year, owing to the impossibility of obtaining sufficiently strong erections. The first injection was made on August 10th at about eleven o'clock in the morning. In a few minutes the pulse had risen in frequency from 78 to 96, and there was marked mental exhilaration. During that night and the following night there were strong erections, and the improvement in the mental condition continued. On August 12th a second injection was made, without apparently increasing the intensity of any of the observed phenomena. On the 14th the third injection was made. Mental exhilaration was still well marked, and repeated erections occurred during the day and night. On the 16th he had sexual intercourse, which he described to me as being entirely satisfactory. There were no further injections. To-day he informs me that there has been a slight decrease in his sexual power, but he attaches very little importance to this fact, as he thinks he has enough in reserve.

Case IV.—A man, aged thirty-six, with sexual impotence; in other respects apparently in normal condition. Erections have been very feeble with this patient for several years past, although sexual intercourse has not been impossible. The first injection was made on August 10th, with the immediate effect of increasing the frequency of the pulse from 80 to 92. During the day he repeatedly informed me that he had never felt better in his life; that he felt strong and in perfect health. No notable effect, however, was produced upon the sexual organs. On August 12th the second injection was made. Mental exhilaration was not so strongly marked as after the first, though there were some feeble erections during the night. The third injection, on August 14th, was followed by stronger erections. On August 18th the patient had sexual intercourse, the erection being somewhat more vigorous than upon recent occasions. On August 21st the fourth injection was made, and there was sexual intercourse that night, of improved character. No further injections were made in the case of this patient, as he was obliged to return home on the 23d.

Case V.—A man, aged fifty, suffering from cardiac weakness, nervous dyspepsia, spinal irritation, and general physical debility, with a strong tendency to hypochondria. The first injection was made on August 10th. He experienced at once some degree of cardiac excitement. That afternoon he walked a distance of four miles, a feat he had not been able to accomplish for over a year. There was also a noted improvement in his appearance, and he became altogether more cheerful than he had previously been. The following day his condition still remained improved, the cardiac impulse was stronger, and the pulsations were fifteen fewer in a minute than they had previously been. On August 14th the second injection was made. His physical strength was still markedly better than it had been, as shown by his ability to walk farther and with less fatigue than before being placed under this treatment. His stomach had also got into a greatly improved state, though I do not attribute this entirely to the injections, as on the day that he began taking them I also began washing the stomach out every morning with warm water.

Case VI.—A man, aged fifty-six, a stone mason by occupation, had suffered for a year with lumbago, during the greater part of which period he had been unable to work at his trade. On August 4th I made an application of galvanic electricity to the lumbar muscles, with the effect of giving immediate though temporary relief. He came back on the morning of the 5th somewhat improved, but not able to stoop over as he would have to do at his occupation. He received his first injection at about ten o'clock. Within ten minutes he was entirely free from pain and could move his body in any direction, bending his spine backward, forward, and sideways with entire ease and comfort. The next day he went to work at his trade and has remained well ever since.

Case VII.—A man, aged eighty-three, with hemiplegia, the result of cerebral hæmorrhage two years previously. He had some use of the right arm, but dragged the corresponding leg at every step. The first injection, on August 14th, was followed by immediate improvement in his walking, the right foot being lifted clear of the ground at each step. He returned on the 16th, with the left arm (into which I had made the injection) inflamed and swollen with indications of the formation of a small abscess. The improvement in walking, however, still continues and he says he feels better than he has for a long time. I thought it better for him to take no further injections until the inflamed arm was well, and he has not yet returned.

Case VIII.—A woman, aged sixty-five, had suffered from melancholia and fixed delusions for three months. The first injection, on August 12th, produced no apparent effect except inflammation at the point of injection, with indications of the formation of an abscess, which, however, did not go on to suppuration.

Case IX.—A man, aged fifty-four, of good general health, but suffering from muscular rheumatism, chiefly manifested in the lower extremities, causing pain, stiffness, and difficulty of walking, had also slight lumbago. The first injection was made on August 12th. He returned on the 14th and stated that the pains, stiffness, and difficulty of locomotion had entirely gone, and that he felt in better condition than he had for many years past. The second injection was made on that day, and the third on the 16th, but on this occasion, instead of using the liquor prepared as I have described, I, without his knowledge, substituted water. On Sunday, the 18th, he returned and stated that the last injection had done him no good, and that he was not quite so well as when I had last seen him. Without telling him of my proceedings, I gave him an injection of the testicular juice. On the 22d he reappeared with the statement that he was entirely well and that he did not see the necessity of continuing the treatment, and I have not seen him since.

Case X.—A man, aged sixty, suffering from the effects of excessive mental work and from cardiac asthma. He entered my consulting-room gasping for breath and almost exhausted, though he had walked less than fifty paces. On examination, I found cardiac irregularity and weakness, with a pulse of 96. On August 21st he received the first injection. His heart immediately became stronger and more regular and his pulse fell to 80. The difficulty of breathing disappeared. On the 23d he returned. The heart and respiration were regular; the pulse was 82 and strong. He then received his second injection. To-day, August 26th, I saw him for the third time. He states that his health is good and that he experiences no difficulty in breathing, in walking, or in climbing staircases. At his first visit I prescribed some pills for him, consisting of licorice and magnesia, and impressed upon him the idea that whatever improvement he experienced would come from these pills. He did not know until to-day what the injection was, and he attributed the manifest change in his health to the inert medicine I had prescribed.

It is not necessary for me to draw any conclusion from these experiments, as they speak for themselves. It will be seen that there is evidence to show that we have in the testicular juice a valuable addition to our materia medica, the precise worth of which, however, it is not yet in our power to establish. It is only the sensational newspapers that speak of it as an "elixir of life" or as an agent capable of making an old man permanently young again. It seems to be the chief object of some of these mediums for communicating intelligence to distort the truth, not only by the use of sensational headings printed in large letters of a grossly misleading character, but to misinterpret, misconstrue, and misquote the medical information given them at their solicitation. The venerable originator of the method of treating certain infirmities and diseases to which this paper relates has been abused, not only by an irresponsible press, but by physicians who ought to have exhibited more consideration and decency than they have shown; and they have done this not in the medical journals but in any newspaper to which they could obtain access. If they had had the intelligence and the forethought to be the first to make use of his discovery, we should have had no such exhibitions as we have had during the last few weeks.

One point further seems to call for some consideration. I have observed that some of the experimenters sterilize the testicular juice before using it. If there is any virtue whatever in the liquid, it would be entirely destroyed by such a process. It might as well be boiled as sterilized. Experiments with such a substance are absolutely valueless. Sufficient immunity against the propagation of disease can be obtained by examining the fluid microscopically before it is injected into the system. Whatever is capable of killing the germs of disease would be equally capable of killing the vital germs upon which the testicular juice depends for whatever efficacy it may possess.

In conducting these experiments I have been assisted by Dr. E. L. Tompkins, who made several of the preparations and injections.

SOME UNUSUAL MANIFESTATIONS OF TUBERCULOSIS OF THE LARYNX.*

By CLARENCE C. RICE, M. D.,
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The object of this short paper is simply to cite several cases of laryngeal tuberculosis which have come under my observation during the past year. None of the pathological conditions to be described are entirely unique. In quickly reviewing the vast amount of literature which has been written on laryngeal consumption during the past two years, I have found laryngeal lesions somewhat similar to those observed in my cases described by writers. And these writers are, with few exceptions, members of this association. In fact, it would be difficult to find any subject pertinent to laryngology which can not be found thoroughly treated in the "Transactions" of this society.

It is not altogether an Hibernianism to say that unusual manifestations of laryngeal tuberculosis are rare, because tuberculosis of the larynx manifests itself with but little variety in pathological conditions. We know where to look for its first appearance; we can predict the mode of its extension; and the stages of its destructive process follow one another with remarkable regularity. It is well to tabulate cases of any disease which present lesions at all unusual, because these are the cases which are somewhat difficult of diagnosis. It would be worse than a waste of time to cite the different opinions and the reasons on account of which they are held at the present time. As to the ætiology and pathology of laryngeal phthisis, we believe that in five years from now there will remain but very few of the minority who to-day think that the name of tuberculous laryngitis does not describe the pathological condition in, we were going to say, all cases of laryngeal disease associated with pulmonary phthisis. The question as to the existence of *primary* tuberculosis has been fully discussed by this association. And we know, too, the opinion of nearly every leading laryngologist as to the curability of laryngeal consumption. In addition to the very truthful description of this disease in Cohen's text-book, published nine years ago, but which requires but little revision to-day, we find in the first volume of the "Transactions" of this association a paper on "Bucco-pharyngeal Tuberculosis," by Bosworth; in the second volume, "Primary Tuberculosis of the Larynx," by Cohen, and "The Therapeutic Value of Rest in Phthisical Laryngitis," by Robinson; while such papers as "Tubercular Ulceration of the Tongue," by Bosworth, "The Progress of Laryngeal Phthisis," by Porter, and "The Laryngeal Affections of Pulmonary Phthisis," by Robinson, are published in the third. In the fifth (1883), "Treatment of Laryngeal Phthisis," by Ingals, and "The Healing of Ulcers in Laryngeal Phthisis," by Jarvis. De Blois cites "Cases of Buccal Tuberculosis" in the sixth report. Robinson contributes a paper on "Alimentation in Laryngeal Phthisis" in the seventh. In the eighth we find a paper by Delavan on "Buccal and Lingual Tuberculosis." At last year's meeting we heard two papers pertinent to the subject—viz., "A Specimen of Stricture of the Larynx with Extensive Cicatrization from a Case of Ulcerative Tuberculosis," by Cohen, and "Residence at Certain High Altitudes as a Means of Cure for Laryngeal Phthisis," by Wagner.

In addition to these, valuable monographs have been published outside the "Transactions" by members of this association. This much and more has this association accomplished in the way of investigating laryngeal tuberculosis. And nothing new can be stated at this meeting.

There is one clinical point relative to laryngeal tuberculosis which I think has received too little attention, and that is the frequency of the active co-existence of tuberculous and syphilitic laryngitis. This is, of course, especially true in hospital and dispensary practice. Many cases of larynx disease which it is difficult by their lesions to classify are combinations of tubercular and syphilitic disease. It is a mistake to try to relegate such cases solely to either one of these diseases. The prognosis will depend upon which one of these two diseases is the more active. Students who ex-

* Read before the American Laryngological Association at its eleventh annual congress.

pect to find the laryngoscopic illustrations of text-books easily corroborated by the laryngeal mirror should be taught the coexistence of tubercular and syphilitic laryngitis, and should consequently expect to find the characteristic laryngoscopic appearances of either of these diseases marked by a case in point:

Mr. F. Y., aged thirty-five, superintendent of a manufactory, came to me in 1886. He had suffered with throat symptoms for six months. Soreness over larynx and pain in swallowing had been excessive for a few weeks at a time, and had then become much less troublesome. One parent had died of pulmonary phthisis. The history pointing to syphilis was obscure, though he had had venereal disease other than gonorrhœa. He had lost twenty pounds in weight, and had a slight cough. His temperature was about 100° F. Slight dullness over one apex and change in quality of respiration. The appearance of the larynx at his first visit is shown in Fig. 1. I was struck with

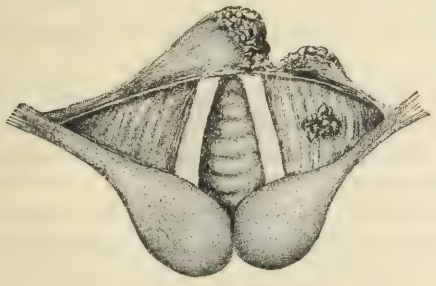


FIG. 1.

the extensive destruction of the epiglottis as compared with the intralaryngeal degeneration. The arytenoids presented the typical semi-œdematous swelling, and there was slight ulceration on both sides of the larynx, but the larynx as a whole presented a much healthier appearance than would have been expected if the destruction of the epiglottis had been occasioned by tubercular infiltration and ulceration. The man, though a little emaciated, seemed to me to have sufficient vitality to recover. None of the tubercular bacilli were found. He was put on increasing doses of the saturated solution of potas. iodid.; the ulcerated surface of the epiglottis was treated with iodoform in ethereal solution every day. The ulceration of the epiglottis was controlled as if by magic, and complete cicatrization took place. The ulceration in the laryngeal cavity also healed, but the arytenoid remained enlarged. His general health improved. The loss of the epiglottis gave him little discomfort. He regained his weight. He remained in good condition for almost a year, when he caught another cold. His cough increased, and in two months his larynx was the seat of a typical ulcerative tuberculous process. These ulcerations were confined to the cavity of the larynx. He lived about six months. There was also rapid degeneration of the lung tissue.

Here undoubtedly was a case where syphilis and tuberculosis were blended. The epiglottis was destroyed by syphilitic ulceration, but the interior of the larynx was tuberculous. The epiglottis was healed by appropriate treatment, but the club-shaped arytenoids remained.

Had the entire process been tuberculous it would have been impossible to control the extensive ulceration of the epiglottis. Deep contractile scar tissue, so characteristic of syphilitic ulcerations, covered the epiglottis. I think this combination of tuberculosis and syphilis is far more common in the larynx than is supposed. Some of the cases of cure which have been credited to the tuberculous process should, I believe, be placed under the head of syphilis. The results of treatment will in some of these cases of ulcerative laryngitis be the only way of determining the quality of the inflammatory process. A second case, quite similar to the above, I have seen this winter; the same great destruction of the epiglottis was present, but the tubercular indications of the larynx were more marked than in Case I. The effect of appropriate treatment on the syphilitic portion of the lesion is wonderful in these cases, and for a time the physician is almost deceived into the belief that he can heal the larynx, but the tuberculous process soon asserts itself and the end is only shortly delayed.

A second pathological condition which frequently complicates to a small extent the usual laryngoscopic appearances of a tubercular larynx was present in a remarkable degree in a case which I saw one year ago. The pathological condition referred to is the proliferation of the so-called granulation tissue from the bases and edges of the ulcerations of phthisical laryngitis. This condition is fully described by Dr. John N. Mackenzie,* and is called by him one of granular hyperplasia. I believe that he is correct in the impression that this growth from an ulcerated surface "may be regarded as representative of a connection process —as a natural step toward cicatrization." I would go a step further and say that the degree of vitality remaining in the laryngeal structure may be measured by the amount of this granular tissue which nature is able to construct. The most rapidly destructive cases of laryngeal tuberculosis, and consequently those in which the vitality of the tissues has been more markedly impaired by tubercular infiltration, do not—so far as my experience goes—show much tendency toward the formation of connective tissue. The surfaces melt away without any attempt at repair. The rapidity of the pulmonary and laryngeal process may also be measured somewhat by the presence or absence of this tissue. I cite the following case only because the larynx contained so much of this granular tissue:

W. M., a Hebrew, about forty years old, merchant. Previous or family history of little significance. Though of moderate means, he had denied himself proper food and care, and was in impaired general condition when he contracted the cold some eight months before he came to me. His laryngeal symptoms had come on very slowly—only slight pain and tenderness over larynx. Increasing hoarseness and dyspnœa were his most troublesome symptoms. When I first saw him he did not present the general appearance of a phthisical patient, but the look of a person who had had too little nourishing food, together with the anxious facial expression of one suffering from dyspnœa; a moderate amount of cough was present. Slight rise of temperature. Fig. 2 represents the laryngoscopic appearances of the larynx; they were as follows: Epiglottis slightly reddened and thickened, but not ulcerated. Arytenoids moderately enlarged but not typical. The interarytenoid commissure was filled with a papillomatous outgrowth seen frequently in both tuberculous and syphilitic laryngitis. The dyspnœa was found to be partially due to the lack of abductive power of the vocal bands, but more to the blocking of the laryngeal cavity with both granular tissue and tissue which was papillomatous

* Mackenzie, J. N., "Archives of Medicine," vol. viii, p. 108.

in appearance. There was little ulcerated surface to be seen, although the sides of the larynx presented the dull-green appearance common to tuberculous ulceration. From the sides of the larynx above the ventricular bands, from the ventricles themselves, and from the vocal bands proper, there could be seen, not only the small, grayish-red, slightly elevated tissue common to ulcerative laryngitis, but tissue much more prolific in appearance like that springing from the interarytenoid depression. This latter tissue did not, I believe, grow from an ulcerated surface, but was covered by epithelial elements. The case was demonstrated to a class of students, and I intended to remove portions of the obstructing tissue with forceps, both to relieve the dyspnœa and for examination microscopically. The case fell into other hands at the college two days later, and as a strong solution of nitrate of silver was applied to the laryn-



Fig. 2.

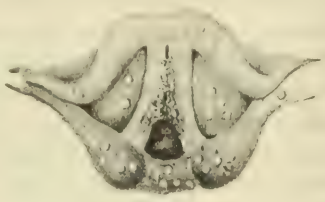


Fig. 3.

geal cavity, the appearances as described above were never again seen. When I next saw the case some months later, it was found that the degeneration of lungs and larynx had progressed rapidly, and the larynx presented the usual appearance of a tuberculous process. I saw him a few times and he then disappeared, and I dare say he died within a short time.

In this larynx there were, I believe, two conditions present—(1) a granular hyperplasia, ingrafted upon an ulcerated surface, and (2) a proliferation of those papillary excrescences which are eminently characteristic of the tuberculous process when they are found upon the interarytenoid fold, and which spring oftentimes from the posterior wall of the larynx and trachea. The presence of tissue ingrafted upon ulcerated laryngitis oftentimes renders the diagnosis somewhat difficult, and the appearance may very much resemble a true growth of the larynx, either benignant or malignant. It will be necessary to weigh all the evidence before deciding upon the nature of the disease.

3. Another pathological condition, and to me an unusual one, was seen in a tuberculous patient who is at present under my care. The condition is pictured in Fig. 3. It represents the larynx as it was first seen by me a month ago. I need only say a word as to his history. A tailor, aged thirty-five, good family history, emaciated, cough, considerable dyspnœa. Evidences of pulmonary degeneration on both sides. The vocal bands were adherent along their anterior half. There was but slight respiratory movement of the vocal bands. This loss of motion was not due to the adhesion, but probably existed before the adhesion, and was one of the factors which rendered this adhesive inflammation possible. The loss of motion was due to the enlarged arytenoids, and also to the proliferation of granular tissue, which the figure does not represent, but which existed both above and below the vocal bands. This sprung from the sides of the larynx, and, jutting into the caliber of the glottis, furnished lateral support for the formation of the web of tissue which held together the vocal bands anteriorly. All the conditions were in this case favorable to adhesive inflammation. How long this adhesion had existed I do not know. I found that the tissue was not strong, and could be broken through with an ordinary blunt laryngeal applicator. I have broken it through several times, but the gap soon refills because the vocal bands remain immovable and near together. I have seen and operated upon two cases of syphilitic membranous adhesion of the vocal bands anteriorly. In both the web of tissue was so tough that it could hardly be cut or burned. Cohen * describes and illustrates a somewhat similar case. Speaking of granulations of the larynx, he says that "when occupying both vocal bands, the attrition of the ulcerated surfaces may excite adhesive inflammation, culminating in the formation of an organized web between them." In the particular case cited, he shows the manner of development of that solid web, commencing first from a number of fine membranous bands. And Ingals † speaks of the possibility of adhesive inflammation between the cords resulting from tuberculous ulceration.

This condition must be rare, since phthisical ulcerations show such slight disposition to heal and cicatrize. The very fact that cicatrization is present is a strong argument in favor of a syphilitic process.

Von Ziemssen, ‡ however, treated two cases where the cicatrix could be demonstrated post mortem, but he adds that "it is true that new ulcers generally develop afterward."

Adhesive inflammation in a tuberculous process will rarely if ever be found, unless all the favorable conditions mentioned in my case are present; and even then the bridging across from one vocal band to the other is accomplished more by a filling in of granulation tissue from the sides both above and below the vocal bands, rather than by the formation of a membranous web.

In my case it may become necessary to employ a tracheotomy tube. An O'Dwyer's tube, coated with a gelatinized astringent remedy, might serve the double purpose of dilating the glottis and healing the ulcerations.

I will speak of but one more pathological condition, which I have lately seen in a tuberculous larynx. This condition can hardly be said to be unusual, as it is frequently associated with the ordinary lesions of tuberculosis; but the case to be mentioned is worthy of remark, because this lesion was the only manifestation of disease of the larynx, and because there was some doubt as to the diagnosis.

I saw the case three times in consultation with Dr. H. M. King, who kindly allowed me to manipulate the larynx fully. I obtained the following history:

P. L., Russian Hebrew, aged twenty-nine. In 1886 he swallowed a fish-bone, which fact added to the doubt of diagnosis. In June, 1888, pain in swallowing commenced, followed by hoarseness, increasing dyspnœa, and cough. When I saw him he was but little emaciated or anæmic. His breathing was noisy, and his chief complaint was difficulty in swallowing. I found the condition of the larynx present represented in Fig.

* Cohen, "Diseases of the Throat," etc., p. 505.

† Ingals, "Diseases of the Throat," p. 355.

‡ Von Ziemssen, vol. vii, p. 842.

4. I may add that the swelling involving the left arytenoid was less regularly rounded, somewhat larger, and extended outward more than is pictured by the drawing. The color of the arytenoid indicated that an active inflammatory condition was going on. I at first thought that it might be an abscess due to the swallowing of the fish-bone. The swelling could be indented deeply by the pressure of a probe. It was somewhat painful to the touch. I punctured the swelling with a laryngeal lancet several times to ascertain if there was pus, but found none. I also scarified it with the object of diminishing the inflammation. All this produced no benefit, but rather increased the pain in swallowing. The size of the swelling remained the same. I had now arrived at the opinion that I was dealing with a tuberculous perichondritis, as syphilis could be excluded, and because there were slight evidences of commencing pulmonary degeneration. As Dr. King left town at this time, the patient visited the various dispensaries, and finally went to the Mount Sinai Hospital, where he was attended by Dr. A. G. Gerster, of New York, who performed a laryngo-pharyngotomy for the removal of the growth. Dr. Gerster has written an instructive account of the case and the operation, which was read before the February meeting of the Laryngological Section of the New York Academy of Medicine, and published in the April 6th number of the "New York Medical Record." I need not describe the steps of the operation. Dr. Gerster says he decided to operate because of the steady growth of the swelling. Tracheotomy above the isthmus was performed on October 19, 1888, and the tampon cannula employed. The growth, involving the left arytenoid and a portion of the posterior extremity of the left vocal band, was freely excised. The tracheal cannula was removed on October 22d, and the external wound sutured. Union of the soft parts was readily obtained, but not of the thyreoid and cricoid cartilages, and a fistulous opening remained. A plastic operation for its closure was performed on January 4, 1889, with good success, I believe.



Fig. 4.

The foregoing is obtained from Dr. Gerster's account. I saw the patient next when he was presented at the academy. He was very much emaciated, and gave every appearance of a person in the last stages of consumption. He died shortly after. I believe there was ulcerative degeneration of the larynx during the last few months. Whether Dr. Gerster supposed the swelling was tubercular in character before the operation I do not know. The microscopical examination of the growth was done by Dr. Cunningham, of the Mount Sinai Hospital, and was as follows:

Several sections were made, and they all exhibited a lymphoid structure with giant cells; tubercle bacilli were present in abundance. Dr. Gerster lays special stress on the fact that this was a localized solitary tumor, the sole manifestation of tubercular disease of the larynx. He does not maintain that the tubercular deposit was primary in the larynx. Dr. King, who saw and examined the patient often, could never satisfy himself that there was any pulmonary disease until after the operation, and believes that the laryngeal process was primary. I myself believe that deposition of tuberculous material had already taken place in the lungs.

I can not but believe that this was a case of perichondritis of the crico-arytenoid joint, the exciting cause of which was the deposition of tubercle. It seems to me that it is not to be classified with those rare cases of "solitary tubercular tumors" of which Dr. John N. Mackenzie* mentions two cases, the growth being solitary and in the trachea in one and marked by a formation of submucous nodular growths in the laryngeal cavity in the other. Hennig,† of Königsberg, says that aside from one case of solitary tubercular tumor which he reports, only six additional cases could be found in medical literature. In Hennig's case three tumors, which were afterward found to be tubercular, were removed by the thermo-cautery after laryngotomy. Patient died of pulmonary tuberculosis, as demonstrated by post-mortem examination thirty-seven days after the operation.

The interest in *this* case lies in the obscure manner in which the tubercular infection was received and its strictly localized deposition. I can not believe that extirpation of such growths by external laryngeal operation will add to the patient's comfort or prolong his life. The shock and the exhausting effects of the operation, the annoyance of the tracheal cannula, all hasten the pulmonary degeneration. Skillful endolaryngeal treatment, both medical and surgical, will furnish the most benefit to the patient. Illustrative of what can be accomplished by such treatment, I must before closing cite one case more which the association will, I believe, consider of interest. Figure 4 almost exactly represents the case also, except that the tumor involving the left arytenoid was much larger. It occluded nearly the entire glottis, and the dyspnœa, when the man first called at the office, was so dangerous that I forbade his going home and sent him to the hospital. The air could be seen to suck through the larynx at each inspiration. It was agreed, on consultation, to wait until evening, and then do tracheotomy if the dyspnœa continued as urgent. Moist inhalations acted badly and were discontinued; hot compresses on the outside of the neck gave more benefit than cold. The great relief, however, was obtained by the use of a two-per-cent. solution of cocaine. This was tried with some misgiving, as we feared an increase in the swelling when reaction took place, but there was no reaction, and nearly all the reduction in the size of the swelling obtained by the cocaine was permanent. I learned this clinical point in this case, that it is far safer to employ cocaine in a greatly obstructed larynx, when the swelling is partly œdematous, as it was in this case, than when the swelling is entirely made up of actively congested tissue. In the one the water is driven out not to return, but the expulsion of the blood from the inflamed region can hardly be more than temporary, and the last condition is likely to be worse than the first. The swollen arytenoid was reduced to one third of its size in a

* Mackenzie, Dr. J. N., "Archives of Medicine," vol. viii, p. 109.

† Hennig, "Berliner klinische Wochenschrift," 1888, No. 28.

week. It was then punctured with the galvano-cautery, and by this means was still further reduced in size. It is at present considerably larger than its fellow, but it is not troublesome to the patient. What the character of this swelling is I do not know. I excised a portion of it with a snap guillotine for microscopical examination, but the sections showed only normal elements. I can find no evidence of syphilis. The patient is a very large, stout, flabby man, weighing more than two hundred and fifty pounds, thirty-two years old, complexion a dirty green; no evidence of pulmonary disease can be found. Patient has been a man about town and has drank and smoked to excess. I do not at all advise extirpation of the growth by external incision, neither do I think removal by cutting forceps would be productive of good results. This case, which may be somewhat irrelevant to the subject of this paper, is cited because it so closely resembles the previous case, which was found to be tubercular. The great size of the swelling, the urgency of the dyspnœa, and the beneficial effects of the cocaine, are its interesting features.

"The unusual manifestations of tuberculosis of the larynx" mentioned in this paper are as follows:

1. In those cases where tuberculosis and syphilis coexist, the lesions of one process mask those of the other. The syphilitic ulcerations, even when combined with a tubercular process, are frequently controlled by appropriate treatment, while the phthisical ulcers defy all efforts to heal them.

2. The typical appearances of a tuberculous larynx are sometimes greatly hidden by the proliferation of two varieties of tissue—the one being ordinary granulation tissue springing from an ulcerated surface, and the second a papillomatous growth made up of normal elements, very much resembling the ordinary papilloma of the larynx—and existing, perhaps, as a mere coincidence, but probably occasioned by the chronic inflammatory condition of the larynx.

3. Adhesive inflammation at the anterior ends of the vocal bands may occasionally take place in a tuberculous larynx, but only when such favorable conditions are present as immovable cords and a general proliferation of tissue.

4. The deposition of tubercle may be localized in one arytenoid, giving none of the typical signs, the larynx as a whole remaining perfectly normal in appearance.

A CASE OF SYRINGOMYELIA.*

By HENRY S. UPSON, M. D.,
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Two problems present themselves for solution in the diagnosis of every case of disease of the nervous system: first, what is the nature of the lesion? second, where is it located?

The first of these questions is the more important one to solve, except in certain cases of brain and spinal-cord disease in which surgical interference is practicable; at the same time we must not forget that in spinal-cord affections an accurate localization may throw great light on the nature of the lesion, and may, in fact, aside from the rate of progress of the disease, be the only indication to guide us in determining the nature of the disease process.

In locating a lesion in one or another part of the spinal cord, it is necessary to frame a theory which is in accordance with all of the symptoms which are present; in considering the case before us we will follow this plan, and, after bringing out the clinical features of the case, consider what may be deduced from them with certainty and what with probability.

The following is the history given by the patient:

William M., aged thirty-one, box-maker. The patient two years and a half ago began to notice a tired feeling in his legs and pain in the small of his back. About two years ago he fell thirteen feet and struck on his back. He was considerably hurt, but not unconscious, walked home, and was laid up for three weeks. After this he considered himself well, and went to work as usual.

Six months later there began to be manifest a weakness of both legs, rather worse on the right side, with twitchings of the whole limb which were troublesome but not painful. The patient had more or less pain in the back, with pricking and burning sensations in his legs. The feet and legs have swelled very often. There have been no pains or loss of power in the arms. He has had slight frontal headache occasionally. Has never had double vision.

The patient has had gonorrhœa several times, and has had a good deal of retention of urine, which he has drawn with a catheter. The bowels are constipated. There is no abnormity of the sexual function. No history of syphilis. No insanity or other nervous ailments in the family.

On examination, the pupils are equal and react to light, and with accommodation. The face is very slightly deviated to the left, the tongue protruded straight. In hands and arms good muscular power; no anæsthesia. Triceps reflexes fairly marked on both sides. There is considerable loss of power in the lower extremities, especially in the flexors of the legs and feet. The quadriceps extensor is slightly weaker on the left than on the right side. There is a good deal of twitching of the thighs and legs, partly of the fibrillar kind, and also jumpings and jerkings of the whole limb; these seem to be spontaneous, and not to depend on mechanical or reflex irritation; the patient says these jerkings persist sometimes for a half or three quarters of an hour.

The left thigh is somewhat smaller than the right; the legs are of good size and about equal. Right thigh, 19⅛ inches; left thigh, 18⅝ inches; right leg, 12⅝ inches; left leg, 12⅜ inches; giving a difference of an inch and an eighth between the two thighs, and of an eighth of an inch between the two legs. The right knee-jerk is rather weak; the left knee-jerk is absent, even when tried by the Jendrassik method. There is no ankle clonus. The plantar and abdominal reflexes are lively; cremasteric reflex not obtained. All of the muscles of the lower limbs respond well to the faradaic current. With the interrupted galvanic current, KCC > AnCC, and the response is prompt and quick. There is no deformity of the spine, but slight tenderness on pressure over the lower lumbar vertebræ.

Tactile sensibility is slightly diminished in the lower limbs; pinching is appreciated as painful, but not very acutely. Sensitiveness to heat and cold is much blunted in the lower extremities, especially over the back of the right thigh and the right buttock; in the latter area the patient is not at all able to distinguish between hot and cold objects, and even pinching is not recognized as painful, but is confused with impressions of heat

* Read before the Ohio State Medical Society at its forty-fourth annual meeting.

and cold. This area of thermanæsthesia is bounded by a line running about on a level with the upper border of the sacrum, and above this line distinctions between heat, cold, and pinching are prompt and invariably correct. Below the line the patient sometimes hazards a guess, usually an incorrect one, but often says he can not tell. Over the rest of the surface of the lower limbs correct answers are occasionally given, especially if there is a great difference in temperature between the two objects; distinguishing moderate degrees of heat and cold is quite impossible. In making these experiments, test-tubes of equal size were used, filled with hot and cold water respectively, and the patient was not allowed to see the tubes. Urine: amber, acid, 1·027; no albumin; no casts.

We are able in this case to affirm with a good deal of certainty the existence of an organic lesion, from the absence of the knee-jerk, and the nutritive changes which have taken place. The same symptoms enable us to exclude lesion of the brain or of the upper part of the spinal cord as the cause of the paralysis, since loss of power caused by disease in those regions is accompanied by exaggerated reflexes and only slight wasting from disuse. The possibilities are therefore limited to disease of the lumbar portion of the spinal cord and disease of the peripheral nerves of the lower extremities.

We will first attempt to ascertain the location of disease of the spinal cord so situated as to be capable of producing all of the symptoms which we have found to exist. Let us, then, consider the symptoms a little more in detail, and first as to the reflexes, especially the knee-jerk; this takes place in the following way: A tap on the patellar tendon causes an excitation of the sensory nerves, which is carried through the posterior nerve roots to the posterior horns of the gray matter in the cord; it is transmitted thence to the motor cells in the anterior horns, and from there along the motor fibers of the peripheral nerve to the quadriceps muscle, which responds by a contraction.

Omitting now any reference to the question whether the knee-jerk is a real reflex, all authorities are agreed that it is dependent for its existence on the path above described, which is called the reflex arc. Excluding a few cases of irritative lesion of the brain, which may for a short time suppress reflexes by inhibition, a loss of the knee-jerk always means disease at some point in the reflex arc.

When the lesion is situated in the sensory part of the arc, as is the case in locomotor ataxia, the quadriceps muscle is ordinarily not paralyzed. When, on the other hand, the motor part of the arc is affected, the same lesion which causes the loss of reflex causes greater or less diminution in the power of the muscle. This tends to show that in this case a lesion of the cord producing the loss of power must be situated in the motor cells of the anterior horns, or in the anterior nerve roots. This theory is strengthened by the presence of a moderate degree of atrophy, which is regularly indicative of a lesion either of the trophic centers in the anterior horns of gray matter, or in the nerves between those centers and the muscles.

The motor symptoms, then—the wasting, the loss of reflex, the paralysis, as well as the twitching—would all be accounted for by a lesion affecting the large motor-ganglion cells in the anterior horns of the gray matter of the cord. Another possible explanation is this: that the reflex arc is cut by the disease at a point between the anterior and posterior horns of gray matter, and the paralysis caused by an affection both of the anterior horns and of the pyramidal tracts in the lateral column, which, taking place very slowly, would account for the considerable paralysis without the reaction of degeneration.

The sensory symptoms are somewhat peculiar. What is ordinarily called the sense of touch is made up of the ability to distinguish between four different kinds of impressions—those, namely, of pain; of temperature; tactile sensibility, by which we know the forms of objects; and the so-called muscle sense, by which we appreciate the weight of objects and know the positions of our limbs. Although these appear to be parts of the same function, it has been shown that they are represented in different tracts of the cord, so that one of them may be affected by disease, the others left intact. The sensory paths have not all been made out with certainty, but, according to the latest researches, fibers which convey tactile impressions run in the posterior columns of the cord; those of temperature run, probably, in the gray matter, not far from the central canal, or, at any rate, cross from one side of the cord to the other in this region; the same is true of the fibers which convey impressions of pain; fibers devoted to the muscle sense run in the lateral columns.

In this case the temperature sense is in the most affected area quite abolished; sensibility to painful impressions almost or quite so; tactile sensibility only slightly diminished. To cause these symptoms, a lesion of the cord must be in the gray matter, about or near the central canal, encroaching slightly on the posterior columns. A central lesion, then, invading to a slight extent the adjacent anterior horns of gray matter and lateral and posterior columns, would account for all the symptoms which we have found in this case.

The case presents a greater superficial resemblance to locomotor ataxia than to any other disease of the cord—from the defective gait, the loss of knee-jerk, and swaying when the patient stands with his eyes closed; but, on closer examination, the gait is seen to be not at all the typical one of ataxia; there are not the heel-pound and wild excursions of the legs which are seen in an ataxic of this advanced stage; there is no history of the characteristic lightning pains; and these, with the presence of undoubted paralysis and the peculiar affection of the sensibility, preclude the idea of the case being one of locomotor ataxia.

If it were not for the sensory symptoms the case might very well pass for one of amyotrophic lateral sclerosis; this disease is, however, a purely motor affection.

We have now to consider the possibility of the existence of a lesion of the peripheral nerves of the lower extremities which would account for the symptoms; such a lesion would have to exist on many of the nerve trunks, as the symptoms are quite widespread; such a lesion is, as a matter of fact, usually inflammatory, and is called multiple neuritis. Its causes are many, and the course which the disease runs varies a good deal in individual cases. We may say, in general, that the inflammatory process affects

the motor and sensory filaments of the nerve, and that the result is paralysis with atrophy and anæsthesia in the districts supplied by the affected nerves, giving a clinical picture not very different from the one before us. As a rule, however, the different forms of sensibility are affected about equally, so that when we find a marked loss of the temperature sense without a corresponding diminution in tactile sensibility, we must look for the lesion in the cord, where the paths for these two forms of the sense of touch are separated.

The form of neuritis which is most apt, from its chronic course and the unequal way in which it affects sensibility, to lead to confusion with cases of the kind before us, is that occurring in leprosy; this can, I think, be excluded in this case.

We must suppose, therefore, disease of the central portion of the spinal cord, near the central canal, and extending as far as the motor cells of the anterior horns, and probably involving to a slight extent the lateral and posterior columns. Experience has shown that a slow lesion in this region is almost invariably of the nature of a tumor, composed of a finely reticular structure with scattered cells, of the same appearance as the normal supporting substance of the cord; it is, in fact, a glioma.

The new tissue is soft and highly vascular, and almost always breaks down in part, so as to form one or more cavities, and from this peculiarity the process takes its name of syringomyelia, or cavity formation in the cord.

The cavity may or may not communicate with the central canal, but is never simply an enlargement of the same, as is the case in the condition known as hydromyelus.

Syringomyelia has long been known as a pathological condition, which was usually first recognized at the autopsy. It was a few years ago pointed out by Schultze, of Heidelberg, that many of these cases might be recognized during life. The present case is atypical, in that it affects the lumbar instead of the cervical portion of the cord, but, although the latter is the usual starting point of the disease, cases of its occurrence lower down are by no means unknown. The only case of this affection heretofore put on record in this country was reported by Dr. M. Allen Starr, in the "American Journal of the Medical Sciences" for May, 1888.

The disease is characterized by its long course and the frequent remissions of its symptoms; it is sometimes ascribed to traumatism as a cause, but whether this plays a part in the present case is perhaps an open question; the fall upon the back is at any rate an interesting feature in the history of the case.

No treatment has been discovered which is likely to affect the disease process, although remissions sometimes occur in connection with electrical treatment.

The Mississippi Valley Medical Association.—The fifteenth annual meeting will be held in Evansville, Indiana, on the 10th, 11th, and 12th of September. Those who attend are advised to take receipts for full fare, that they may secure return tickets at one third fare. We learn that the titles of nearly a hundred papers have been received for the programme, and that the meeting promises to be larger than any yet held by the association.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
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NEW YORK, SATURDAY, AUGUST 31, 1889.

ALCOHOL IN FEVERS.

The July "Forum" contains a paper by Dr. Austin Flint on "Late Theories concerning Fever," in which the question of administering alcohol in fever is discussed with frank fair-mindedness and simple directness. If querulous sentimentalism could be silenced by the contemplation of facts, and the ideal of the situation be taken as the standard of duty, what Dr. Flint says in regard to the use of alcohol in disease would forever settle all controversy as to its morality or immorality. The fever patient is one who is burning up nutritive material so rapidly that, unless an increased assimilable food-supply is provided, he is quite likely to die of starvation. Sustaining measures are imperative. At work a man needs more heat than in repose, and more food. Although the fever patient does no work, he produces an excessive quantity of heat, and this involves of necessity an oxidation of matter. Food or some oxidizable material must supply this much-needed matter, or else the tissues are consumed. Exactly to the degree that the fever feeds on food is tissue saved and subsequent convalescence promoted. It is, however, the condition of the organs and the capability of assimilation that renders the introduction of food a problem which taxes the judgment and skill of the physician to the utmost. What food? And how administered? This must give us pause. A rational consideration of the subject is possible only from the scientific standpoint. Those who would abolish alcohol from the sick-room must first prove their moral right to risk starving a man because he has the misfortune to fall ill. And these same sentimentalists, with their narrow view of alcohol, cry out against vivisection and abstinence from food for purposes of scientific investigation! O perverse and penny-wise generation!

Dr. Flint's own words deserve to be quoted entire and made a part of every reason-loving mind, be it that of layman or that of physician. The preachment comes home to all who love the truth. It would seem that only willful blindness could fail to see and be convinced. Thus says our author: "In the face of the difficulty which exists in supplying matter for oxidation in the body to feed the exaggerated calorific processes, the use of any agent which will meet this want can not logically be condemned on sentimental grounds alone. Even if alcohol be regarded as a poison, it must be remembered that poisons are often useful in medicine and save life. From a purely scientific point of view, it may be admitted that, in perfect health, alcohol is not useful and is deleterious. As physicians study the poisonous action of certain remedies in learning how to use them with happy effect, so what may be called the physiological effect of alcohol may be studied as a prepara-

tion for its use in disease. The symptoms of alcoholic intoxication are due to certain peculiar effects upon the nerve-centers of actual alcohol circulating in the blood. In perfect health, a very small quantity of alcohol will produce some effect of this kind; but this passes away when the alcohol is eliminated by the breath or otherwise, or when it is oxidized. In certain diseases, particularly in fever, very large quantities are tolerated, and this is because the alcohol is promptly oxidized, and makes no impression, as alcohol, on the nervous system. In disease, as in health, even a slight development of alcoholic intoxication is followed by a reaction more or less injurious." The author goes on to state that certain conditions in fever, and these alone, are indications for the use of alcohol—persistence of high temperature, great feebleness, rapid pulse, etc., showing intense and alarming general depression. The value of the agent depends not upon its stimulating effect on the nervous system, but upon its rapid oxidation. Being promptly taken up by the blood, it requires no preparation by digestion, and is oxidized even more rapidly in fever than in health, supplying material for combustion just in proportion to its oxidation. Thus the normal tissues of the body are saved from degeneration and destruction. "There is a theory," says Dr. Flint, "that the carbohydrates of food are deposited in the liver, discharged into the blood as required, in the form of a substance called glycogen, which is converted into alcohol and then oxidized. There are many strong facts and arguments in favor of this view; and, if it be true, the administration of alcohol in fever is simply the introduction of a carbohydrate in such a form that it can be promptly used in supplying material for heat, the digestion of carbohydrates being difficult and slow. A calculation of the heat value of alcohol shows that one quart of French brandy, when oxidized, produces as many heat-units as a man of ordinary size would make in twenty-four hours. As a matter of actual observation, a quart or even more of brandy has been given in cases of fever in twenty-four hours, without any indications of alcoholic intoxication, and with the effect of actually reducing the temperature."

The possibility of confirmed alcoholism growing out of the use of alcohol in fever naturally suggests itself. The possibility of the morphine, chloral, cocaine, chloroform, or other habit exists whenever and wherever one of these drugs is administered. Yet those who withhold these agents risk the sacrifice of a life now and then—a sacrifice to what the more intelligent portion of the community regards as prejudice. So, too, with alcohol. It would be difficult to find an instance of the alcoholic habit directly and solely due to the use of alcohol in fever. The fact is, drunkards are made in the nursery far oftener than is suspected. The pretty baby that is not taught self-control fails to manifest toughness of fiber when adult life demands it. "The child is father to the man." Greed, efforts for gain out of all proportion to physical strength, overworked ancestors, the desire for oblivion from grief, chagrin, and disappointment, are individual and collective factors that help fill the ranks of all forms of inebriety. Diseases of the will far more than diseases of the body lead to intemperance. Because one whose unwise parents failed to train him and guide him in baby-days becomes a drunkard and dies a drunkard's death, shall we starve our child because he lies ill of a fever? The sophistry of the argument is apparent when deprived of tin trumpets and all silver-gilt tinsel. Yet such is the reasoning of the sentimentalists—those who don't know—concerning the use of alcohol in disease. However great the pride of science, it sinks into insignificance beside the pride of complaisant ignorance. The physiologist, the chemist, and the philosopher alone are capable of expressing a thoughtful opinion upon the questions of the day, of which the use of alcohol is possibly the most important. Dr. Flint's arguments, based upon the facts of the case, are incontrovertible and merit the most careful consideration of all interested in rational living.

PRIVATE MEDICAL LIBRARIES.

The books of the average physician are bought to be read and are bought at the time they are needed. An emergency having arisen, as in a case of difficult diagnosis, the necessary book is purchased, read, and laid upon the shelf, perhaps indefinitely. This will not apply to the buying of "systems" and cyclopædic volumes; the motives that lead to the purchase of these have their root in the idea of a possible future need, as well as an intention to give time to some favorite subject coming within their scope. Private libraries of this class are quite apt to be close counterparts of each other, and will be found to be made up largely of the publications that go through several editions. Many times books are bought for the sake of the authors' names, in order to have either a full or a good representation of the works of some favorite writer, rather than from the impulse of a present want. But the consecutive collection of a favorite author's writings is not frequent, for, when this feature is observed in a physician's library, the instinct of the collector is under process of development. The libraries of some show a partiality for journals, complete files being well cared for in sightly binding. Others contain a large proportion of the transactions of societies, along with other annuals. But these are not the average medical library, about which we are now writing. That type of library is void of any tendency to specialized addition, and must be considered, like the contents of advertised lost pocket-books, "of no particular value except to the owner."

Wherever the impulse of collection creeps in, the value of the library to others is enhanced. This is not truer during the lifetime of the collector than after his decease. The library that has few books which other physicians care to borrow has a painful lack of interest and value when the time comes for the disposal of them under the auctioneer's hammer or otherwise. It is mournful to attend the sale of some libraries, where the attendance on the part of the invited ones is extremely limited, where the responses are spiritless and the net results insufficient to meet the cataloguer's bill. An extreme case of this kind occurred quite recently in the rooms of one of the best of our auctioneers; the estate is actually in debt to the auction

house. A librarian of our acquaintance, who misses very few sales of medical effects, says that he has never seen anything but disappointment result from the disposal of the libraries of physicians. Further than that, he is continually compelled to view the disappointment of widows, who come to him for advice as to the best that can be done with "the late doctor's library." In general, the best thing to do with it is to add it to some established medical library.

MINOR PARAGRAPHS.

ETHYLATE OF SODIUM IN HYPERTRICHOSIS.

Dr. Arthur Jamieson in the "Practitioner" reports the case of a child who at three months of age had an unusual overgrowth of hair on the face. The hair was dark and in some places fully an inch in length. It grew on the right side to such an extent that, when that side alone was viewed, the observer could not refrain from a comparison of the infant with a Skye terrier. Dr. Jamieson had, before this case came up for treatment, noticed that when he had used ethylate of sodium for the destruction of nævi, the hair in the vicinity touched by an excess of the drug was apt to be killed. He determined to apply this to the face of the child, but he first made some tentative applications to several small hairy moles. These proving satisfactory, the child was anæsthetized and the ethylate was rubbed thoroughly over a portion of the hair-covered forehead until the skin took on an orange color. The hair-follicles, at the end of a month, were found destroyed, with a few exceptions here and there, and the skin was white. He again applied the caustic to the side of the face, leaving the parts adjoining the eye untreated until the child was a year old. The later treatment was slow and limited to isolated follicles that had resisted previous applications. The child, now six years old, is reported free from disfigurement as to the parts formerly overrun with hair, and the skin is said to be smooth and clear. Dr. Jamieson has photographs of the child's face, before and after the use of the ethylate, which sustain the title of that substance as an epilatory. He has used it for the removal of hairy moles, and regards it as superior to electrolysis in many ways. He has found that it removes the discoloration of the skin, besides destroying the hairs, which has not occurred in his practice under any other plan of treatment.

HAY FEVER AND MENTHOL.

Two recent communications to the "Lancet" have pointed out the dangers of the continued use of cocaine in hay fever, in respect of the formation of the cocaine habit. One was by Dr. F. de Havilland Hall and the other by Mr. William Hill. The latter has had occasion to resort to the use of menthol, locally applied, for the coryza vaso-motoria in cases where the addiction to cocaine has been established, and he believes that he has found in it an efficient and unobjectionable substitute. He says: "I think we possess in menthol an antiseptic remedy sufficiently resembling cocaine in its anæsthetic and astringent action, and having none of its disadvantages. A Cornish patient of mine, who has been prevented coming for a reapplication of the galvano-cautery, which has hitherto relieved only for a season, has written me to say that he would not be without menthol for worlds, and that he much preferred it to cocaine." Mr. Hill's method is in the use of a 10- to 20-per-cent. solution of menthol in olive oil or almond oil, to be applied to the sensitive area of the nasal mucous membrane in coarse spray or with a brush. He thinks it possible that in the asthmatic varieties of hay fever the distress may be relieved by insufflations of a strong solution in oil. The drug has been used with success in severe asthmatic attacks, not due to the hay-fever complication, by means of inhalations from the surface of a 20-per-cent. solution. The action is said to be prompt in the relief of bronchial spasm, and one patient stated that the medicine produced a feeling in the head resembling that caused by the inhalation of a few drops of chloroform.

PSEUDO-ACTINOMYCOSIS.

Dr. Fedor A. Loesch has given the name pseudo-actinomycosis to a condition observed by him in seven out of thirty-seven consecutive cases of pulmonary disease, the sputa of which he examined microscopically. His report is given in the "Transactions of the Third General Convention of Russian Medical Men at St. Petersburg," 1889. In these seven cases he found peculiar colorless and pale-yellow bodies resembling the grains found in actinomycosis, the resemblance being found both in their conformation and in their action under chemicals. The sputa in which he observed these grains contained also the bacilli of tuberculosis and elastic fibers. A closer examination proved that the grains were crystalline concretions of a substance allied to leucine. In every case save one where these pseudo-actinomycotic bodies have been found they have been associated with the tubercle bacillus, and there is a strong presumption that they will prove to be a degeneration from that organism. The point of diagnostic difference between the true and false bodies is seen when pressure is applied between two cover-glasses. The false grains break up under this compression into a shapeless detritus, while the true actinomycotic grain is spread out into a bundle of dichotomizing threads; the false grains differ from the genuine in being smaller and in having no central filamentous structure. Professor Afanasieff, of St. Petersburg, has accepted the chief propositions of Loesch in regard to these grains.

THE TENTH INTERNATIONAL MEDICAL CONGRESS.

Professor von Bergmann, Professor Virchow, and Professor Waldeyer give notice that, according to the resolution passed at the Washington meeting, September 9, 1887, the Tenth International Medical Congress will be held in Berlin. The Congress will be opened on the 4th and closed on the 9th of August, 1890. Detailed information as to the order of proceedings will be issued after the meeting of the delegates of the German Medical Faculties and Medical Societies at Heidelberg, on the 17th of September of the current year. Meanwhile they ask us to make this communication known in medical circles and add at the same time their cordial invitation to the Congress.

A NEW KIND OF COTTON.

A bad slip of the pen must have occurred in the writing of the following: "Soft corns are best treated by taking away pressure by means of the introduction of cotton wool—that directly off the sheep being the best—between the toes, and the use of some dry powder, etc." The "Montreal Medical Journal" says that this paragraph occurs in a "standard surgical text-book, well known in the neighborhood of Guy's Hospital."

CIRCUMCISION AND HEREDITY.

Dr. Levy, a dentist of Stettin, has written to the editor of the "Archiv für pathologische Anatomie und Physiologie und für klinische Medicin" an account of some occurrences in his

own family that have a bearing, he thinks, on a question raised by Professor Weismann at the sixty-first *Versammlung deutscher Naturforscher und Aerzte*—that of the hereditary transmission of acquired peculiarities, such as the lack of a foreskin in Jews. He states that, like his father before him, he was born without a foreskin—as he expresses it, "regelrecht beschnitten"—furthermore, that this was the case with his four brothers also, who died in childhood. An occasional natural Apella is to be met with among Gentiles, but this, of course, raises no question of heredity; such a group of them as Dr. Levy's communication mentions is a different matter, however, although not a very convincing evidence of evolution.

THE HIGH COST OF FIELD SURGERY.

Professor Goldwin Smith propounds the theory that one of the great checks to war in the future will be found in the costly nature of modern surgical field-service. In the Austrian armies during the last century there were very few surgeons. "The medical and hospital arrangements of the Federals in the Civil War were of the costliest and most perfect kind." The humane, "democratic conscience" of these times demands an outlay for the non-combatant part of the business of war which will discourage pugnacity and make for peace. In other words, the higher the development of military surgery, the less war will there be. Professor Smith's paper may be found in "Macmillan's Magazine" for July.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending August 27, 1889:

DISEASES.	Week ending Aug. 20.		Week ending Aug. 27.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	29	12	91	16
Scarlet fever	42	1	28	1
Cerebro-spinal meningitis	1	1	2	2
Measles	27	1	17	3
Diphtheria	79	19	70	19

Faculty Changes.—Dr. J. Richard Taylor, a graduate of the Medical Department of the University of Pennsylvania, of the class of 1878, has been elected to the chair of pathology, practice of medicine, and clinical medicine in the Medical College of the State of South Carolina, at Charleston, to succeed Dr. John Guitéras, who has resigned in order to accept the chair of pathology at the University of Pennsylvania.

The New York Polyclinic.—The annual announcement shows an attendance for the session of 1888–'89 of 383 physicians, making since 1882 a total of 1,883. These figures demonstrate beyond all doubt the popularity of the Polyclinic system of instruction. The most important feature of this year's catalogue is the Polyclinic Hospital. By the enlargement of their property the faculty have established an extensive hospital, which will afford at all times ample material for all clinical purposes. The Polyclinic and hospital buildings have been completely fitted out with all the modern appliances conducive to the healthfulness and comfort of the patients and physicians in attendance. The session of 1889–'90 will open on Monday, September 16th.

Changes of Address.—Dr. Henry C. Coe and Dr. G. A. Kletzsch, to No. 27 East Sixty-fourth Street.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending August 24, 1889:*

Scofield, W. K., Medical Inspector. Detached from the Lancaster.

Hibbett, C. T., Passed Assistant Surgeon. Detached from the Lancaster.

White, C. H., Medical Inspector. Ordered to the Pensacola.

Hesler, F. A., Passed Assistant Surgeon. Ordered to the Pensacola.

Curtis, L. W., Passed Assistant Surgeon. Ordered to the New Hampshire.

Jones, W. H., Surgeon. Detached from the Pensacola and placed on waiting orders.

Von Wedekind, L., Assistant Surgeon. Detached from the New Hampshire, and ordered to the Pensacola.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the two weeks ending August 24, 1889:*

Long, W. H., Surgeon. To proceed to Gallipolis, Ohio, as inspector. August 7, 1889.

White, J. H., Passed Assistant Surgeon. Granted leave of absence for thirty days, on account of wound. August 16, 1889.

Condict, A. W., Assistant Surgeon. Detached from Revenue Bark Chase and ordered to Louisville, Ky., for temporary duty. August 19, 1889.

Groenevelt, J. F., Assistant Surgeon. Ordered to South Atlantic Quarantine Station for temporary duty. August 8, 1889.

Society Meetings for the Coming Week:

Monday, *September 2d:* Medico-chirurgical Society of German Physicians; Morrisania Medical Society (private); Brooklyn Anatomical and Surgical Society (private); Utica Medical Library Association; St. Albans, Vt., Medical Association; Providence, R. I., Medical Association; Hartford, Conn., City Medical Association; Chicago Medical Society.

Tuesday, *September 3d:* Medical Society of Virginia (first day—Roanoke); Elmira Academy of Medicine; Buffalo Medical and Surgical Association; Ogdensburgh Medical Association; Medical Societies of the Counties of Franklin (quarterly) and Niagara (Lockport), N. Y.; Hudson, N. J., County Medical Society (Jersey City); Androscoggin, Me., County Medical Association (Lewiston); Baltimore Academy of Medicine.

Wednesday, *September 4th:* Medical Society of Virginia (second day); Medical Society of the County of Richmond (Stapleton), N. Y.; Harlem Medical Association of the City of New York; Medical Microscopical Society of Brooklyn; Bridgeport, Conn., Medical Association.

Thursday, *September 5th:* Medical Society of Virginia (third day); New York Academy of Medicine; Society of Physicians of the Village of Canandaigua; Obstetrical Society of Philadelphia.

Friday, *September 6th:* Practitioners' Society of New York (private); Baltimore Clinical Society.

Saturday, *September 7th:* Clinical Society of the New York Post-graduate Medical School and Hospital; Manhattan Medical and Surgical Society (private); Miller's River, Mass., Medical Society.

Letters to the Editor.

ROTTER'S SOLUTION.

34 East Thirty third Street, *August 21, 1889.*

To the Editor of the New York Medical Journal:

Sir: In a recent number of the Journal mention is made of a solution recommended by Rotter for use in operations and dressings in place of solutions of the bichloride of mercury. A brief account of my experience with it may save some of your readers from disappointment and perhaps from serious reverses.

Rotter's first publication was made in September, 1888, in the "Centralblatt für Chirurgie." I made a note of it, and laid it aside for corroboration. In January, 1889, he printed in the same journal a second paper, stating that the solutions, the "weak" and the "strong," had proved so successful clinically and so powerful that the "strong" had been entirely abandoned in favor of the "weak," which contained neither carbolic acid nor corrosive sublimate. In June I learned that Schede was using the weak solution and was satisfied with it. Thereupon I abandoned the use of carbolic-acid and sublimate solutions (to which there are certain theoretical and practical objections) at the Chambers Street and New York Hospitals, and for the past six weeks have used in their place the weak Rotter solution. It has brought disappointment: suppuration has been more frequent, sponges are more difficult to clean during an operation, and instruments have been discolored. Finally, experiments made by Dr. Ferguson at the laboratory of the New York Hospital to determine its antiseptic power indicate that it is far weaker than is maintained by Dr. Rotter. I can explain Schede's success with it only on the supposition that his associated antiseptic measures are so efficient that the strength of the solution used for irrigation is unimportant.

After this short flight afield in the company of an attractive but deceitful stranger, I have gladly returned to the quiet and security of old acquaintance. Lewis A. Stimson, M. D.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN ORTHOPÆDIC SURGERY.

Meeting of March 15, 1889.

Dr. A. B. Judson in the Chair.

Cicatricial Contraction of the Fingers.—Dr. A. M. Phelps presented a patient on whom he had operated four weeks before for restoration of motion to the fingers, which had been flexed in the palm by a cicatrix in the wrist of eight years' standing. He had freed each tendon from the cicatricial tissue and had secured healing by blood-clot, with the hope that new sheaths would be formed in the clot. The wound had been dressed antiseptically, and the first dressing had been changed at the end of three weeks. The prospect of recovery of motion was good.

Dr. R. H. Sayre said that Paget had long ago recognized the organization of blood-clot after subcutaneous tenotomy. The case presented by Dr. Phelps showed that advantage could be taken of it after open incision under antisepsis.

Hysterical Equino-varus.—Dr. N. M. Shaffer presented a patient, a girl of twelve years, who had been affected for ten weeks with hysterical equino-varus and rhythmical movements of the left foot. The talipes had been reducible manually, but the motions had been persistent. There was inability to walk, the result of the disability of the quadriceps extensor group. Before she had come under Dr. Shaffer's observation, plaster of Paris had been applied to the limb for several weeks, but without benefit.

The Chairman thought that choreic elements were seen when the patient attempted to walk. He recalled a case of rhythmical myoclonus reported by Dr. Peckham in the "Archives of Medicine" in 1883, in which the patient had been subjected to a great variety of treatment, and had finally recovered after the hypodermatic use of atropine.

Dr. S. Ketch suggested treatment by hypnotism.

Dr. R. H. Sayre thought that the case illustrated the fact that abnormal muscular contraction would produce degrees of deformity as marked as those caused by bony distortion.

Dr. L. W. Hubbard thought the case allied to chorea, being the result of nerve irritation or exhaustion. He suggested absolute rest or recumbency for a long period with efforts to improve the nutrition.

Dr. A. S. Hunter had treated with success a case of hysterical hip by the administration of ignatia. The use of this drug in a number of cases of the kind had led him to value it highly when the disturbance was limited to groups of muscles only; but he thought it was of little value in the treatment of general choreic conditions.

Dr. V. P. Gibney had had a favorable effect in a case of rotary spasm of the neck from the use of the fluid extract of gelsemium, given in five-minim doses and pushed almost to toxic effects.

Dr. H. W. Berg said that the contraction in the case shown could not be due to nerve lesion, because it yielded so readily to manual replacement. Where there was irritation of motor nerves, as in spastic paralysis, it was extremely difficult to reduce the limb to a proper position. He suggested the ordinary treatment of chorea with electricity to make an impression on the mind rather than on the nerves.

The Management of Hip-joint Disease from an Anatomical Basis.—The paper of the evening was read by Dr. Phelps, who believed, in regard to the pathology of hip disease, that it was a local tuberculous affection, due to accidental inoculation, and not to a constitutional or strumous condition. Following Volkmann, Albert, and König, he believed that the inflammation, at first simple, became tubercular by inoculation, and then purulent. The irritation of the peripheral extremities of the nerves in or about the joint produced muscular spasm, which in turn distorted the joint by trauma, aided by the bacilli of tuberculosis. In regard to treatment, he relied on mechanical treatment, believing that if we immobilized a joint and removed the intra-articular pressure, Nature would take care of the tuberculous material. His experiments on dogs had convinced him that immobilization of healthy joints did not produce ankylosis. Encouraging motion in an inflamed joint was a violation of the surgical law that an inflamed part required rest. He believed that the muscular spasm, which was a most serious element of destruction, should be overcome by extension, and that, while extension was necessary to secure immobilization, it was not sufficient by itself. He therefore resorted to a combination of extension and fixation, the extension always to be in a line corresponding to the axis of the neck of the femur.

Treatment, as a rule, should be begun in bed, extension being made in two directions—*i. e.*, toward the foot-board and laterally, the body and the sound leg being fixed to a long splint extending to the axilla. If the deformity did not yield to exten-

sion properly applied, the tissues at fault should be divided subcutaneously or by open incision. Abscesses were to be incised through their entire length, and thoroughly scooped out and washed, strict antiseptic precautions being observed. Distension of the capsule should be relieved by aspiration or incision; then traction would not produce pain.

He exhibited a patient in a portable bed, which was an ingenious substitute for the wire cuirass, made with a board cut in an outline of the body and plaster of Paris. The child was laid on the board, and then the whole was enveloped with plaster-of-Paris bandages from the foot to the axilla. The plaster was then cut away in front, the interior comfortably padded, and the patient held in place by lacings or bandages. Extension and fixation in bed were to be continued until the active symptoms and the deformity had entirely disappeared, and the spasm of the muscles was no longer present. Adults were then given crutches, and a portable splint which had a perineal crutch, extension by adhesive plaster, an abduction bar, and an upper (thoracic) ring to prevent flexion and extension at the hip. Children, after treatment in bed, were to have the portable bed, and then the portable splint, with or without the high shoe and crutches.

Dr. J. Ridlon was much pleased to hear the author of the paper take the ground that hip cases should be cured without deformity. He recalled the case of a patient in whom the muscular spasm had been relieved by pinching the muscle. The child had been very thin, and it had been found that, when the adductors were separated from the other muscles and the belly of the muscle was pinched, without any attempt at fixation, there had been as much relief as could have been afforded by lateral traction.

Dr. Shaffer said that the paper had suggested to him the importance of separating in our minds the disease from the deformity. It was a question how far we were justified in meddling with the deformity, which was simply an expression or, so to speak, a symptom of the disease. In his experience, attempts at speedy reduction of the deformity had been followed by disastrous results. Nature gave a very positive indication in the acquired position of the thigh—that in which the immobilization reached its maximum, and the diseased parts received the greatest relief from reflex muscular spasm. If we forcibly interfered with this effort on the part of Nature, we inflicted a distinct traumatism.

On the threshold of treatment the important question was, not whether traction was to be made in the line of the shaft or the neck, but how to secure an artificial immobilization in the position Nature assumed as the one that afforded the most protection to the inflamed parts. He believed that if the joint were protected from traumatism—in other words, if traumatic contact of the inflamed joint surfaces was removed, and this could readily be done by the use of portative apparatus without entailing immobilization of the entire body from the head down—the joint was placed in the best known local condition. The portative-traction treatment was compatible with fresh air, sunlight, and moderate exercise, which were the best means of combating the tubercular disease and the tubercular diathesis. More lives had been saved and better results had been thus secured than by any other method which had been thoroughly tested.

Dr. R. H. Sayre agreed with Dr. Shaffer as to the importance of maintaining the general health and the inadvisability of general immobilization of the body if the diseased joint could be controlled without it. He thought that complete immobilization of the hip joint in young children was very difficult to secure, and that the movement that stopped short of producing muscular spasm and pain was not harmful. For poor children particularly he thought the portable bed was an admirable contrivance. The relief obtained in some cases by pinching the muscle could be explained on the supposition that it stopped the reflex action of the muscle. It was known that firm constriction of the belly of a muscle would, in certain cases, abolish spasm.

Dr. Charles L. Scudder, of Boston, advocated a more frequent resort to the results of experiment on the cadaver. He recalled Dr. Bradford's experiments made in 1880, in which it had been found that in an adult a force of one hundred pounds had not been sufficient to separate the head of the femur from the socket, while in the shallow and not yet completely ossified acetabulum of a young child a moderate force had caused separation, and still less force had been required in the fœtus. Dr. Scudder believed that in hip disease of children a tractive force of from three to five pounds would separate the joint surfaces, as had been illustrated at the Children's Hospital in Boston in the case of a young boy who had had hip disease and night cries. The joint cavity was opened and a small quantity of pus let out. While the boy was under ether, it was found that traction made with the hand separated the joint surfaces to such an extent that the finger could be placed between the head of the femur and the acetabulum.

Dr. Hubbard thought that no one at the present time held the opinion that ankylosis was caused by immobilizing a joint affected with chronic inflammation. He had found it difficult to get ankylosis in cases where it was desirable, as in disease of the knee. The first object was to give rest to the joint, which was best done by traction; not to separate the surfaces, but to overcome articular pressure which led to muscular spasm. He believed the long hip splint gave sufficient immobilization for all practical purposes. It was more easily managed than the portable bed of Dr. Phelps, which from neglect would be likely to cause excoriations. As the disease seemed to be a struggle between the tubercle bacilli and the vitality of the organism, he thought it especially important to place the system in the best possible condition to resist attack. He had rarely seen constitutional disturbance from abscesses which had been let alone, although in exceptional cases acute and painful conditions were certainly greatly relieved by surgical interference.

The Chairman commended the title of the paper. It was an admission that hip disease was not to be cured by treatment, but so managed that the almost inevitable recovery by natural processes should be with the minimum of disability and deformity. He thought that more emphasis should be placed on the importance of protecting the joint from the traumatisms of standing and walking, as was done by the use of Hutchison's extra long crutches and high sole on the sound foot. But in every case there were long periods of exemption from pain, when this simple apparatus could be discarded. The ischiadic or perineal crutch of the hip splint, however, could not be willfully discarded; and when it was seen that the rack and pinion not only furnished traction, but also a convenient means of adjusting the length of the upright, the hip splint appeared to come very near perfection as an instrument for the management of hip disease. He had never recognized either the trauma said to be caused by reflex muscular contraction or the alleged mechanical counteraction of the muscles by traction. He believed, and had always held, that the hip splint mitigated reflex muscular contraction by allaying the inflammation which gave rise to it. This it did by arrest of motion and prevention of pressure—motion being arrested by traction brought about by the use of the key, and pressure being averted by the perineal or ischiadic crutch, which made the limb a pendent member. As the inflammation was resolved, the reflex muscular contraction ceased.

The last annual report of one of our orthopædic institutions contained a table from which it appeared that there had been under treatment 371 cases of disease in the hip, 6 in the shoulder, 85 in the knee, 3 in the elbow, 27 in the ankle, and 5 in the wrist—an aggregate of 483 in the lower and 14 in the upper extremity. Should we draw the inference that the incipient osteitic focus was found only or chiefly in the cancellous tissue of the lower extremity, or that a focus in the upper extremity more readily underwent resolution by reason of its comparative exemption from violence? If the latter view was correct, it followed that the limb was to be made a pendent member by the persistent use of the axillary or ischiadic crutch at the earliest recognition of the disease. In some cases an early diagnosis might be facilitated by the following simple method: Let the patient sit on a table, with the legs hanging and the knees separated; in this position, swinging the leg laterally was possible only with rotation of the femur; and if one leg oscillated in a smaller arc than the other it induced or confirmed a suspicion of the integrity of the joint.

He did not believe in treating abscesses and sinuses excepting indirectly through the general and local management of the bone disease in which they had their origin.

Dr. Gibney was in favor of securing absolute immobilization, but sometimes he would rather have less perfect immobilization, if by so doing he could secure a change of air and climate, with the consequent improvement in the general nutrition. Ordinary hip disease was managed satisfactorily with the portable traction splint, with or without the rack and pinion; and he had been agreeably surprised at the facility with which these patients ran around in the tenement houses. They came to his clinic only every three or four weeks for adjustment of the apparatus, and during the intervals engaged in the most active sports; they certainly did not lie in bed in dark rooms and die of pyæmia. It was unsafe to put these children in an appliance like a cuirass or the portable bed, unless one was certain of being able to see and attend to them at short intervals. It had been his lot to see cases in which he had been unable at times to obtain proper co-operation on the part of the patient's family. He had often seen abscesses burrowing up to the spinal column and down to the knee, and such cases seemed to baffle even attempts at surgical interference. We must be guided a good deal by circumstances, and if we could protect the hips from trauma and give the patient the benefit of outdoor exercise, abscesses would generally be insignificant. He believed in correcting the deformity speedily, if necessary by dividing tendons and bone under an anæsthetic, for by so doing we saved much time and lost nothing. In regard to aspirating a joint overdistended with fluid, it was almost impossible to diagnosticate an overdistended hip joint. The position of the limb did not depend on the quantity of fluid in the joint, but was due to reflex spasm and the efforts made by the child and Nature to secure fixation.

Dr. J. H. Girdner described an experiment on the cadaver in which great force had been applied without separating the surfaces of the hip joint. He also cited a case in which it had been necessary to keep the hand applied to the face for nine weeks in the course of healing after a plastic operation on the nose. At the end of this time there had been no limitation in the motions of the elbow and wrist.

Dr. Ketch believed that hip disease was so often characterized by exacerbations that all attempts at a division into stages were of no practical value. He thought that the hip splint could often be of use for the reduction of deformities, even in those periods when the patient was confined to his bed. In general, he believed it was a great mistake to make use of any apparatus which could be entirely left to the care of the patient or family for long periods. The explanation of the relief of pain by compression of muscles was to be found in an involuntary action on the part of the patient which secured fixation and traction at the same time.

Dr. Berg, speaking from the standpoint of the general practitioner, who frequently saw children in the very beginning of hip disease, related the histories of three patients who had presented the symptoms of early hip-joint disease, and yet had recovered perfectly after rest in bed for a few weeks. He now insisted on all such patients remaining in bed for several weeks before commencing any other treatment.

Dr. Phelps, in closing the discussion, said that many cases in tenement houses, whether treated by the long traction splint or by the portable bed, were deplorably neglected; but this did not argue against the use of either apparatus; it simply illustrated one of the difficulties with which all practitioners had to contend. He valued the portable bed because he desired immobilization of the affected joint, and this could not be obtained with splints having joints in them and not including the trunk. He could relieve his patients better in bed during the period of deformity, and so adopted this method of treatment. He had seen patients in England who had been in bed for several years, and were still in excellent health. He did not, however, advocate prolonged bed treatment. Believing that the cases in question were inoculations of the *Bacillus tuberculosis* on a previously inflamed surface, and not instances of constitutional tuberculosis, he explained the frequency of tubercular joint diseases in the lower extremity by the statement that the joints of the lower extremities, being more subject to traumatic inflammation, furnished good ground in which the bacillus of tuberculosis could more readily reproduce itself. He had presented his honest convictions, and hoped to report his cases hereafter in such a way that others could disprove his statements or he could substantiate his views.

Book Notices.

Cyclopædia of the Diseases of Children, Medical and Surgical. The Articles written especially for the Work by American, British, and Canadian Authors. Edited by John M. Keating, M. D. Vol. I. Illustrated. Philadelphia: J. B. Lippincott Company, 1889. Pp. xiii–992. [Price, $5.]

If the first volume is to be regarded as an earnest of the general character of the complete work, the subscriber for the "Cyclopædia" need entertain no misgivings as to the wisdom of his investment. The plan of the work is to combine in a systematic treatise the medicine and surgery of pædiatrics as well as certain specialties and general subjects relative to the conditions of childhood and adolescence. This is accomplished by collecting a number of monographs by authors well known as teachers and as contributors to the literature of pædiatrics. Also it is proposed that these articles shall reflect the views of the authors, in order that many confusing elements may be eliminated, and that the discussion of mooted points may not interfere with the practical treatment of the subject in hand.

The first volume affords a good example of the excellence of this plan. The several articles treating of the anatomy, physiology, and hygiene of infancy, childhood, and puberty, and of the fevers, miasmatic diseases, diagnosis, and therapeutics of the same periods of life, are concise, practical, and brief. Embryology and bacteriology, as well as the relation of race

and maternal impressions on the fœtus, are among the subjects included in its contents as collateral to the main subject. The condensed character of the several articles is truly refreshing to the reader when he is engaged in prospecting for a little information as to a minor point of diagnostic value or one of treatment. He has been accustomed to force his way through a thick chaparral of tangled verbosity which deals with ancient history, unimportant discussions of immaterial questions, and the relation of jejune theories, in his search for the location of the places he hopes to find—but never succeeds in the finding—when he has consulted one of the ordinary medical cyclopædias; and the marked departure from the conventional type presented by this work will, in itself, entitle it to the highest degree *cum summa laude* as a work of reference, as far as his estimation is concerned.

The individual articles present but little that deserves criticism; and even that is so effectually sheltered by the protecting wing of the general good character of the book that carping comment is unable to reach it. The task which has been undertaken by the editor and his collaborators is no light one, but they have made a beginning that is indicative of a brilliant success, and the prediction that a valuable addition to medical literature will crown their efforts in this instance requires no exercise or possession of occult power. With no desire to bestow fulsome praise, we pronounce it to be the best work of its kind we have ever seen.

The Diagnosis and Treatment of Extra-uterine Pregnancy. By John Strahan, M. D., M. Ch., M. A. O. (Royal University of Ireland), etc. Jenks Prize Essay of the College of Physicians of Philadelphia. Philadelphia: P. Blakiston, Son, & Co., 1889. Pp. 134. [Price, $1.50.]

There is no subject which has so engrossed the minds of gynæcologists and obstetricians during the past two or three years as this one has, and it is safe to say that no pathological problem is more formidable as to its results and its complications. It was to be expected that the Jenks prize essay committee, in giving out this subject, would elicit much valuable information, and the author of this essay is to be congratulated that his was found the most worthy of the seven which were offered in competition. We should criticise its repetitions and its want of finish but for the statement that is made that there was no opportunity for revision of proof, but even with this allowance we feel that it should have been reviewed with more care before it was sent to the committee. As a matter of fact, while the literature of the subject has been searched with commendable thoroughness, nothing new or original is offered as to either diagnosis or treatment. Tait's views, as expressed in his recent work on "Ectopic Pregnancy," are accepted almost without question, although the author states (p. 24) that he "does not slavishly follow whatever he (Tait) may say, unless he is well supported by himself or others," and *his* views are based almost entirely upon his own experience and practice (large, it is true) upon this subject. But even so extensive an experience as that of seventy-nine cases can not prove everything in regard to the pathology of this condition, or at least we believe it does not, as Tait with no little dogmatism would seem to insist.

Take, for example, the point which Tait insists upon—that all extra-uterine pregnancies must be primarily tubal (with the bare possibility only of ovario-tubal pregnancy); the cases of Chambers and Maticki (and we know of one other), in which the tubes showed no evidence of rupture by scar or otherwise—and it is hardly a satisfactory statement which the author, following Tait, adduces, that "either the tubes were not properly examined, or, if they really were intact, rupture must have occurred very early and contraction and healing had been very complete" (p. 40). Why should the Falloppian tubes form an exception to the fact that nature leaves the traces of repair in injured tissues? Again, why should we be expected to believe that a fœtus is so quickly *digested* after tubal rupture has taken place that an operation within a few days or hours of the accident reveals nothing but a mass of blood clots? We do not wish to detract from Tait's transcendent ability as an operator, nor from the enormous impetus which his work has given to abdominal surgery, but we are unwilling to accept without question his line of reasoning in some particulars, notably in the foregoing, and to the same extent must differ with his disciple whose essay is under consideration. It is one thing to have a theory; it is another to bend observations to fit that theory; and more than one brilliant man has perpetrated this fallacy.

Though the essay contains no original suggestions, it is not without merit and is to be recommended for consultation to those who wish to become acquainted with the present status of the subject as it is viewed by Tait. It is needless to say that no sympathy is expressed with the electrical treatment of extra-uterine gestation, and with good reason, we believe.

With all deference to the high authorities who advocate this treatment, it is not improbable that the day is near when it will become obsolete.

Outlines of Lectures on Physiology, with an Introductory Chapter on General Biology, and an Appendix containing Laboratory Exercises in Practical Physiology. By T. Wesley Mills, M. A., M. D., L. R. C. P. Eng., Professor of Physiology, McGill University, Montreal. Montreal: W. Drysdale & Co., 1886. Pp. 5 to 200.

"Do not step into the domain of one's soul" is a common Russian expression, hinting at the fact that there is always something that one is desirous to keep for himself. This is the thought brought forth by reading this valuable and original little book, proving an exception to the saying mentioned. While it is in the main a skeleton of lectures on physiology, the book contains some paragraphs of full definitions and explanations, thus showing where difficulty arises for even competent and eminent lecturers—a point that one is not always willing to display. The author fully deserves, on the part of advanced students and especially on the part of those whose work it is to teach students, the most profound thanks for his liberal views in publishing the outlines of his lectures. It is much to be desired that other lecturers should follow the same example.

Hand-book of Physiology. By W. Morrant Baker, F. R. C. S., Surgeon to St. Bartholomew's Hospital, etc., and Vincent Dormer Harris, M. D. Lond., Fellow of the Royal College of Physicians, etc. Twelfth Edition. Rearranged, revised, and rewritten, and with Five Hundred Illustrations. New York: William Wood & Company, 1889. Pp. xi–784. [Kirke's "Hand-book of Physiology."]

It is much to convince beginners in physiology of the complexity of the physiology of the human organism, and, by bringing face to face the physiology of such an organism and that of simple protoplasm, to demonstrate that there is no more mystery in the former than in the latter. For the scope of a text-book this object is fully accomplished in the work. The first chapter, treating of the phenomena of light, is of necessity followed by the study of the structure of the elementary tissues, and the structure and function of the blood, and the succeeding chapters are elaborately arranged in such a manner as to present a continuous and rational study of the various physiological phenomena as they are dependent upon each other. While it is sprinkled with the numerous new facts and theories of the last few years,

the text retains the character of having been written by a faithful and devoted teacher. The section on the blood is most fully dwelt upon and in accordance with the latest knowledge; and among the numerous illustrations in the text those of Gowers's hæmatocytometer and Ludwig's mercurial pump are worthy of notice. The text is closed by a very readable section "On the Relation of Life to Other Forces," revised by Mr. Baker.

Materia Medica and Therapeutics, for Physicians and Students. By John B. Biddle, M. D., late Professor of Materia Medica and General Therapeutics in the Jefferson Medical College. Eleventh Edition, revised and enlarged, with Special Reference to Therapeutics and to the Physiological Action of Medicines. By Clement Biddle, M. D., U. S. Navy, and Henry Morris, M. D., Fellow of the College of Physicians of Philadelphia, etc. With numerous Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1889. Pp. xix–33 to 607. [Price, $4.25.]

The most noteworthy of the changes introduced into the present edition of this work are the addition of new articles regarding the action of a considerable number of new drugs which have come into general use since the last edition was issued, and of practically new articles on the antiseptic use of mercuric chloride and iodide, and on electricity, and the omission of useless botanical descriptions. Twenty-one new cuts have been added. The revision has been thorough, and the high standard of excellence so long accorded to this work is ably maintained.

A Text-book of Pathology, Systematic and Practical. By D. J. Hamilton, M. B., F. R. C. S. E., F. R. S. E., Professor of Pathological Anatomy, University of Aberdeen. Copiously illustrated. Vol. I. London and New York: Macmillan & Co., 1889. Pp. xx–736.

It is not safe to express a decided opinion upon the merits of a work of which only one volume has appeared, but, if the second volume of this book is as good as the one before us, it will prove a very valuable contribution to pathology. Even if the work should never be completed, the present volume would be well worth having. The subject is treated as being one link of the chain beginning with morbid anatomy and ending with clinical medicine, and not as an independent branch of medical science. Sufficient space is devoted to the technique of the microscope to enable the student to dispense with a special treatise on the subject. Bacteriology receives adequate treatment, and the bibliography of each subject is large. The cuts are good and the index is full.

The Student's Text-book of the Practice of Medicine. By Angel Money, M. D. Lond., Assistant Physician to University College Hospital, etc. London: H. K. Lewis, 1889. Pp. xiv–458.

The first impression made by this book—that it is inadequate—is not lessened by a careful examination. It purports to be for "those who are beginning the study of medicine, those who are preparing for examination, and practitioners who have no time or inclination to peruse treatises."

Possibly it may be of advantage to these persons, but we incline to the contrary opinion. Young men beginning the study of the practice of medicine need a work which presents the subject to their minds as concisely as is compatible with perfect clearness and reasonable fullness. A work which passes rapidly from one disease to another, devoting on the average less than a page to each, does little more than indicate that such diseases exist, can be of no service to the student, and may do him harm by accustoming him to a superficial consideration of a subject. It may be of some value to the student after he has mastered a good text-book and is cramming for examination. Regarding the practitioner who has neither time nor inclination to read treatises we have only to say that probably he will not read this book either.

Elements of Histology. By E. Klein, M. D., F. R. S., Lecturer on General Anatomy and Physiology in the Medical School of St. Bartholomew's Hospital, London. Illustrated with 194 Engravings. New and enlarged Edition. Philadelphia: Lea Brothers & Co., 1889. Pp. xii–368. [Price, $1.75.]

A very handy treatise, which presents the main points of histology in small space and in a pleasing form. Although nominally intended for students, it will be found useful to any one who has not the time to go through the larger works upon the subject. The illustrations are good, particularly the microphotographs.

Transactions of the American Association of Obstetricians and Gynæcologists. Vol. I. For the Year 1888. Philadelphia: W. J. Dornan, 1888. Pp. xxxviii–347.

This new society has every reason for satisfaction as to both the matter and the manner in the first volume of its transactions. With the array of distinguished names in the list of fellows and the good work with which its career has been inaugurated, the society has reason to expect a useful and creditable future. We might select a number of papers or discussions from the volume and label them classical. The amplest justification for the existence of any society is furnished by work such as this.

BOOKS AND PAMPHLETS RECEIVED.

Congrès pour l'étude de la tuberculose chez l'homme et chez les animaux, 1er session—1888. President: M. le Professeur Chauveau (de l'institut). Comptes rendus et mémoires. Publiés sous la direction de M. le Dr. L. H. Petit, secrétaire général. Paris: G. Masson, 1889. Pp. 760.

Anatomie topographique du duodénum et hernies duodénales. Par Jonnesco, prosecteur provisoire de la Faculté, interne des hôpitaux. Avec 13 planches (21 figures) hors texte. Paris: Lecrosnier et Babé. [Publications du "Progrès médical."]

Recherches cliniques et thérapeutiques sur l'épilepsie, l'hystérie et l'idiotie. Compte rendu du service des enfants idiots, epileptiques et arriérés de Bicêtre pendant l'année 1888. Par Bourneville, médecin de Bicêtre, Courbarien, Raoult, Sollier, internes du service. Volume IX, avec 25 figures dans le texte. Paris: Lecrosnier et Babé, 1889. [Publications du "Progrès médical."]

A Laboratory Guide in Urinalysis and Toxicology. By R. A. Witthaus, A. M., M. D., Professor of Chemistry and Physics in the Medical Department, University of the City of New York, etc. Second Edition. New York: William Wood & Co., 1889. Pp. iv–75.

The Treatment of Syphilis at the Present Time. By Dr. Maximilian von Zeissl. The Treatment of Inebriety in the Higher and Educated Classes. By James Stewart, B. A. Manual of Hypodermic Medication. By Dr. Bourneville and Dr. Bricon. Vol. iii, No. 2. New York: William Wood & Co. [Wood's Medical and Surgical Monographs.]

Transactions of the Michigan State Medical Society. Twenty-fourth Annual Meeting, held in Kalamazoo, June 9 and 10, 1889.

On the Diagnosis of Pregnancy in the Early Months. By Llewellyn Eliot, M. D., of Washington, D. C. [Reprinted from the "Journal of the American Medical Association."]

Electrical Distribution of Heat, Light, and Power. By Harold P. Brown, Electrical Engineer. With Partial List of Deaths from Electrical Lighting Apparatus, and Address by John Murray Mitchell, Coun-

selor-at-Law, on Legislative Control of Dangerous Electrical Currents. New York : J. W. Pratt & Son, 1889.

Distended Gall-bladder simulating Floating Kidney. Cholecystotomy by the Lumbar Incision. By J. Ewing Mears, M. D., of Philadelphia. [Reprinted from the "Transactions of the American Surgical Association."]

The Soft Palate in the Domestic Cat. By T. B. Stowell, A. M., Ph. D., Cortland, N. Y. [Reprinted from the "Proceedings of the American Society of Microscopists."]

The Glosso-pharyngeal, the Accessory, and the Hypoglossal Nerves in the Domestic Cat. By T. B. Stowell, A. M., Ph. D. (Read before the American Philosophical Society, March 2, 1888.)

A Year's Record of Seventy-five Cases of Abdominal Section. By B. Curtis Miller, M. D., Charleston, W. Va. [Reprinted from the "American Journal of Obstetrics and Diseases of Women and Children."]

Reports on the Progress of Medicine.

ANATOMY.

By MATTHIAS L. FOSTER, M. D.

Supernumerary Mammæ and Nipples.—Sutton ("Am. Jour. of the Med. Sci.," March, 1889) tells us that supernumerary mammæ and nipples are more common in men than in women, are usually single, on the left side and on the thoracic wall. Occasionally they are arranged symmetrically and may be found on the abdomen as well as the thorax, following the course of the superior and deep epigastric, an anastomosis which has a close if not direct relation to the mammary gland. This is the primitive arrangement in mammals, and when supernumerary glands appear along this line they may be considered atavistic or reversionary; but when they are found elsewhere there must be some other explanation of their appearance. Sometimes in women we see a bifid nipple; at other times two mammæ coalesced, but with separate nipples. Such a condition is due to dichotomy, or abnormal division of the gland germ. Intermediate stages between two separate glands and a bifid nipple have been recorded. These are not reversions.

Aberrant mammæ are most frequently found in the axilla, where they may be found either with or without nipples. Champneys has found that the skin of parturient women often presents nippleless lumps in the axilla which may attain the size of a hen's egg. They do not possess any ducts or pores, and, though they may be noticed during pregnancy, more commonly attract attention on the third day after delivery. They enlarge with the breasts and, as a rule, decline on the fourteenth day after delivery. They may occasionally be made to furnish a milk-like secretion on pressure, but not spontaneously. He has also found mammæ with nipples, containing ducts and pores, lodged in the apex of the axilla, from which, after delivery, milk and colostrum could be expressed. Very rarely similar mammæ have been found on the acromion and thigh. In Ahfeld's "Missbildungen des Menschen" is mentioned a case in which a mamma occupied the labium majus. Barth has given an account of a nipple which grew on the face. It was just in front of the right ear and surrounded by an areola and pigmented skin. When handled it grew harder and gave rise to sensations similar to those produced by handling the true nipple. It was removed and it was found microscopically to conform to the structure of the true nipple, and that glandular tissue existed beneath it.

Supernumerary mammæ usually appear in situations which possess a goodly crop of hairs, large sebaceous glands, or both. If the milk gland is regarded as a modified sebaceous gland, these aberrant mammæ may be regarded as "sports" due to excessive development of the sebaceous glands. This assumption is supported by the discovery of very large sebaceous cysts in dermoid tumors of the ovary. The author has traced in these dermoids every stage from a nipple-like tag to a well-developed mamma with glandular tissue, ducts, and a nipple filled with a fluid microscopically identical with milk and containing colostrum corpuscles.

A careful analysis of the evidence seems to show that accessory mammæ may arise in three ways—viz., by atavism, by "sports," and, very rarely, by dichotomy.

The Vocal Cords and the Hyo-epiglottidean Ligament.—Sutton ("Jour. of Anat. and Phys.," Jan., 1889) concludes, from an extensive comparison of the larynx of man with that of a number of lower animals, that "the false vocal cords, with the cuneiform cartilages, are the degenerate representatives of the piece of cartilage by means of which the epiglottis and cornicula laryngis were originally united, and with the cornicula must be regarded as vestigial structures."

The true vocal cords he regards "as arising from the tendinous metamorphosis of those fibers of the thyreo-arytænoideus muscle subjacent to the laryngeal mucous membrane." To make the latter hypothesis complete it is necessary to find a case in which the vocal cords in man are composed in part or wholly of muscular tissue. No such specimen has yet been found, but the author does not despair of eventually finding one, especially as a patch of striated muscle has been detected in at least one case in the anterior flaps of the mitral valve in the adult.

The hyo-epiglottidean ligament is the fibrous representative of a well-formed muscle in many mammals. He has twice seen it replaced by a distinct muscle.

The objection that it is not likely that muscular tissue should metamorphose into such highly elastic tissue as is found in the true vocal cord he meets by quoting certain muscles in the wings of birds, some of which are entirely replaced by exceedingly elastic tendon—perhaps even more elastic than the true vocal cords of man.

The Angle of the Neck with the Shaft of the Femur.—Professor Humphrey ("Jour. of Anat. and Phys.," January, 1889), being in doubt in regard to the correctness of the generally accepted statement that the angle of the neck with the shaft of the femur becomes lessened and the level of the head of the bone consequently lowered in advancing years, undertook the examination of a large number of femora of subjects of various and known ages. His conclusions he formulates thus :

1. That the angle formed by the neck of the thigh bone with the shaft varies considerably in different persons at any given period of life.

2. That it is smaller in short bones than in long bones, and that it is also most likely to be small when the pelvis is wide, the combination of these two conditions rendering it usually smaller in women than in men.

3. That the angle decreases during the period of growth, but that after growth has been completed it does not usually undergo any change, even if life is continued to extreme old age. Some change may take place in exceptional cases, but, as a rule, the angle remains the same from the adult period till death, at whatever age that may occur.

4. That if during growth the limb be relieved of the weight of the body, as in the bedridden state in paralysis or in a stump, the angle of the neck with the shaft usually retains the open form of early life, or even may become wider.

The Musculus Sternalis.—Shepherd (*ibid.*) has traced the nerve-supply to ten of these muscles which occurred in anencephalous fœtuses with the following result:

All were supplied by the anterior thoracic; two received an additional supply from the intercostals. The latter were the only cases in which the great pectoral was not deficient. This would seem to indicate that there are two kinds of sternalis muscles. When the great pectoral is deficient it seems clear, even without regard to the nerve-supply, that the sternalis is the missing portion of that muscle, but when there is no such deficiency the homology of the sternalis is not so clear. Bardeleben describes what he calls the "typical sternalis," which extends from the sheath of the rectus abdominis to the sterno-mastoid, belongs to the muscular system of the rectus abdominis and pubo-hyoideus, and derives its nerve-supply from the intercostals. Shepherd is inclined to think that if the branch from the anterior thoracic were carefully searched for in these cases it would always be found.

The occurrence of this muscle so commonly in anencephalous monsters would rather point to its being a reversion rather than a new muscle appearing in man.

An Abnormal Arrangement of the Kidney and its Vessels.—Dr. Mahon describes the following anomaly (*ibid.*): The right kidney was small, lying in the right iliac fossa, its lower end over the right common iliac artery. In form it resembled a flattened oval and retained nothing of the characteristic uniform shape. The ureter arose from a depression on the anterior surface by four branches, which soon united and formed a single tube which descended on the anterior surface of the kidney. The organ was supplied by five arteries, thus arranged:

1. A large branch from the side of the aorta, at the usual point of origin of the renal artery, descended behind the vena cava and entered the kidney at the junction of the upper and middle thirds of its inner border.

2. A smaller branch, but larger than the remainder, from the aorta an inch and a half above the bifurcation, passed with all of the remaining branches in front of the vena cava and entered the kidney at its inner border.

3. A branch from the aorta a quarter of an inch below No. 2. This divided into two branches of equal size and entered the kidney at the depression on its anterior surface corresponding to the hilus.

4. A branch which arose from the front of the bifurcation of the aorta and entered the kidney at the lower third of its inner border.

5. This branch arose from the outer side of the commencement of the right common iliac artery, passed behind the kidney, and entered it by piercing the convex outer border.

Small veins accompanied arteries Nos. 3 and 5. What may be called the renal vein proper arose by three branches from the front surface of the kidney. They lay behind the ureter but in front of the arteries. The two lower branches quickly united to form a single trunk, which was joined by the ovarian vein of the right side. It passed upward and outward to the upper end of the kidney, then turned inward and was joined by the remaining branch. The trunk so formed entered the vena cava a little lower down than the vein of the opposite side. The renal and ovarian veins were both large and distended with blood.

The suprarenal body was attached by fibrous tissue to the under surface of the back part of the right lobe of the liver; it was hemispheroidal in shape and had no connection with the kidney.

In the same subject each common carotid artery bifurcated at the level of the cricoid cartilage, and there was a large thyreoidea ima from the innominate.

An Accessory Phrenic Nerve.—Larkin (*ibid.*) describes this variation. On each side there was an ordinary phrenic nerve in its usual position, with an accessory nerve, which arose from the fifth cervical. This accessory was from one fifth to one fourth the size of the normal nerve. It crossed the scalenus anticus a quarter of an inch external to and parallel with the ordinary nerve. In the chest, between the pericardium and pleura, the right accessory was from an inch to an inch and a half in front, while the left was one fourth to one half an inch behind its companion. On each side the accessory joined the phrenic just before it divided into its terminal branches. The accessory gave several branches to the pleura and pericardium, while the true nerve seemed to give none.

The Innervation of the Bladder, Rectum, and Genital Function.—Bernhardt ("Berliner klin. Wochenschrift," "Am. Jour. of the Med. Sci.," March, 1889) reports an accident which, although the exact pathological nature of the lesion was not determined, is of interest as contributing to our knowledge of nerve distribution.

A man fell from the second story, striking upon his buttocks. He immediately complained of pain in the back, and suffered from incontinence of fæces and inability to urinate, but not incontinence of urine. Nine days later he could stand alone, but with pain in the region of the seventh to the twelfth dorsal vertebræ, which seemed somewhat swollen and was painful on pressure. While lying in bed both legs could be moved in a normal manner without pain. The reflexes were normal; tactile sensibility, temperature, and muscle sense were undisturbed in the lower limbs, except on the inner half of the posterior surface of both thighs, beginning at the upper border of the lower third of the thigh and extending upward to those parts of the buttocks contiguous to the anal fissure. Over this area there was total anæsthesia. The anus, perinæum, scrotum, and penis were involved, but the inner surface of the thighs, the sacral region, the belly, and the groins were normal. The testicles were sensitive to pressure. Erections occurred, and coitus was effected with the natural sensations, but the semen was not ejaculated from the urethra. The inability to urinate or control the sphincter ani continued. Persistent treatment with electricity for four months produced very little improvement.

This case, taken in conjunction with several similar ones, goes to prove that the function of the bladder and rectum is dependent on a normal condition of the lowest end of the spinal cord and of the nerves arising from it. The same symptoms may be produced by a disease of the nerves of the coccygeal and pudendal plexuses without any involvement of the cord itself. The case shows that the nerves controlling erection are separate from those which preside over the rectum and bladder, and also from those controlling ejaculation.

An Amelus.—Chalmogoroff ("Ctrlbl. f. Gyn.," No. 50, 1888) reports the still-birth of a male child which was totally wanting in limbs. There were no rudimentary legs or arms present, but it is supposed that they were amputated early in embryonic life by amniotic bands.

Absence of the Uterus and Vagina.—Dr. Brunes ("Ann. of Gyn.," Feb., 1889) reports two cases in which the external organs of generation were normal in appearance and the breasts well developed, but the internal organs rudimentary or absent. In one the vagina ended just behind the hymen, and no continuation could be found. By bimanual examination the broad ligament could be marked out, and indications of the uterus. Falloppian tubes and ovaries could be detected. In the other no trace could be found of vagina, uterus, broad ligament, or ovaries. Both patients suffered from cardialgia and chlorosis. Several similar cases have been reported.

An Anomaly of the Lingual Artery.—Shepherd ("Ann. of Surg.," May, 1889) has found in one case the lingual artery given off in common with the superior thyreoid, opposite the upper border of the thyreoid cartilage. From that point it passed upward and inward toward the median line of the neck, resting upon the thyreo-hyoid muscle. It crossed the hyoid bone internal to the lesser cornu, almost immediately pierced the hyoglossus muscle, and thence proceeded to the tip of the tongue in its normal course. At the usual origin of the lingual was a very small branch, which ended in the hyoglossus muscle. It originated probably from enlargement of the anastomotic hyoid branches of the lingual and superior thyreoid arteries, and the consequent disappearance of the main trunk of the lingual.

It is important for surgeons to be acquainted with this rare anomaly, because the artery could not have been found by means of the usual curved incision, if it had been necessary to ligate it.

The Cranial Nerves.—The "Journal of Physiology" for April, 1889, is wholly given up to a very valuable article, by Dr. W. H. Gaskell, on the cranial nerves and the central nervous system. He treats of the nerves seriatim, commencing with the third, as the optic and olfactory do not conform to the type of the remainder. The oculo-motor ganglion he considers to be a typical motor vagrant ganglion peculiar to this nerve, and not a posterior-root ganglion, as a number of morphologists have supposed. It is not connected with any large-fibered sensory nerves from the fifth nerve, but is connected only by very fine efferent nerve fibers mainly from the third. The fourth is very similar in structure to the third; both are efferent and divisible into a large- and a small-fibered part. The large fibers of the fourth supply the superior oblique, but the destination of the small fibers is not known. In each are strands and clumps of fibrillar tissue, which, he concludes, are the remnants of nerve fibers and cells, which were of importance in by-gone animals, but have become useless and lost their protoplasmic contents. Originally they were complete segmental nerves, with both motor and sensory roots, but the sensory portions have degenerated, and their place has been taken by the sensory elements of the fifth nerve.

The fifth and sixth nerves are really three—two efferent and one afferent. The roots of the motor part of the fifth contain the remains of nerve fibers and ganglia precisely like those in the roots of the third and fourth. In the sixth he finds no regular ganglion formations, and hence concludes that primitively the motor part of the fifth and the sixth nerves together form a complete segmental nerve. The ascending root of the fifth is independent.

The seventh, like the motor part of the fifth, is essentially a splanchnic efferent nerve, as the striated muscles it supplies are all of the visceral group, being derived from the lateral plates of the mesoblast. It is divided into groups of large and small fibers, of which the larger pass as motor nerves to the facial muscles, while the smaller enter the geniculate ganglion. The majority of these fine fibers form a separate root known in man as the intermediate nerve. In some of the lower animals this intermediate nerve can not be demonstrated, but the bundles of fine fibers are found to have a strong tendency to be grouped apart from the rootlets containing the large fibers of the seventh nerve and pass directly into the geniculate ganglion. This ganglion he considers, like the oculo-motor, a vagrant efferent ganglion. The evidence of the structure and function of the seventh nerve shows that it corresponds to a complete segmental nerve in that its efferent root contains a large-fibered non-ganglionated splanchnic portion and a small-fibered ganglionated splanchnic portion with its vagrant ganglia—viz., the geniculate ganglion and the submaxillary ganglion. There is also evidence of a degenerated ganglionic structure close to the exit of the nerve from the brain. So in this group of cranial nerves formed by the third, fourth, motor part of the fifth, sixth, and seventh nerves there are four fully formed segmental nerves which for some reason have lost a certain portion of their original components.

In the next group—those which arise from the medulla oblongata—we again find all the components which make up a fully formed spinal nerve, or rather group of nerves, but with no sign of degeneration of any special group. There is, however, a scattering of the different components, so that the nerves form parts of a number of segmental nerves instead of each one forming a single nerve. The sensory portion of the trigeminal belongs to this group. The group consists of at least five complete segmental nerves which are both cranial and spinal in origin. A characteristic of this group is the extensive peripheral distribution of its nerves.

Gaskell submits this possible explanation of the ancestral history of the spinal cord:

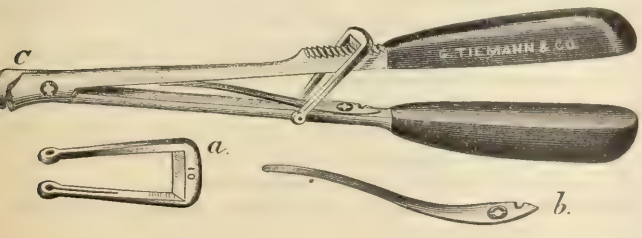
"It was originally composed of a bilateral chain of ganglia situated ventrally to a non-nervous tube, the parts of each chain being connected together by commissures also situated ventrally to the tube. By the increase and spreading round of the nerve cells and nerve fibers to the dorsal side, the original tube was so invaded by nervous elements as to have lost its original character and become the supporting structure of the spinal cord, leaving as the most marked indication of its original character the epithelial lining of the central canal and the peculiar structure of the substantia gelatinosa centralis."

New Inventions, etc.

THE UNIVERSAL NEEDLE-HOLDER, WITH HANDLES OF THE RUSSIAN MODEL.

By George R. Fowler, M. D.,
BROOKLYN.

Just prior to the death of my late lamented assistant at the Methodist Episcopal Hospital, Dr. W. M. Thallon, he had suggested to Tiemann & Co. that they make a needle forceps after the pattern known



as the aseptic universal, introduced by myself, substituting, however, for the ring handles those known as the Russian. He did not live to elaborate the details of the plan, and I was requested by Mr. Julius Pfarre, of the firm, to do so. The accompanying drawing shows the result of my endeavors. The complete instrument, with the universal jaw and French lock, is shown at *c*. In order to render the forceps aseptic, it became necessary to devise some plan whereby the catch which holds the instrument while grasping a needle should be readily detached for purposes of cleaning. This was accomplished by making the space between the legs of the catch, *a*, wider at the bottom than at the top and placing a groove upon the inner surface of each leg, this groove terminating in a hole to receive the pin placed upon either side of the handle of the forceps, upon which the catch works. At the point where the groove joins the hole for the pin, the former is slightly rounded off so as to allow the pin to readily engage in the groove when the forceps is taken apart for the purpose of cleaning. To take the instrument apart the catch is thrown as far forward as possible toward the jaws of the forceps and by simply pressing upon the catch it becomes at once disengaged by its points springing apart, when it may be slipped off the forceps at its further end. To replace it, this movement is reversed; the catch is slipped on from the end of the forceps and so placed as to bring the upper limit of the grooves opposite to the pins. By simply drawing upward upon the catch the pins glide along the groove; the legs of the former spring apart, to snap together again as the holes at the end of the grooves are reached. The spring, *b*, is easily removed and replaced by means of the French lock and pin.

This necessarily extended and seemingly prolix description would make it appear as if the instrument were a very complicated piece of mechanism; in reality, however, it is a very simple affair. I have recently learned to use the instrument without the catch, relying upon the grasp to hold the needle firmly. To those who have been accustomed to rely upon a catch this is at first slightly awkward, but there are advantages in this training of the hand, not among the least of which may be mentioned the advancement of the aseptic idea, which, in my judgment, should be the leading thought in the devising of any new instrument.

Miscellany.

The Diagnosis and Treatment of Extra-uterine Gestation.—At a recent meeting of the Obstetrical Society of Philadelphia Dr. William Goodell reported the history of a case of extra-uterine gestation, and exhibited the specimen. The patient had been married for a number of years without conceiving. Her catamenia had been regular up to the time when they ceased for nearly seven weeks and morning sickness set in. The next monthly period was free for a few hours, and then there was merely a show of blood which lasted several days. During this dribble severe intercostal pains, lasting two hours, followed a movement of the bowels. For several days there was great soreness of all the muscles. At irregular intervals these intercostal pains reappeared and were always followed by much muscular soreness. There were few pelvic pains, nothing like cramps, and Dr. Goodell was called in on account of a continuous dribble of blood which had lasted for three weeks. During this metrostaxis, membranes were twice passed, which were supposed to be fragments of an abortive ovum. Dr. Goodell found an irregular tumor to the left of the womb, closely adhering to it and pushing the fundus over to the right. In view of the history, a diagnosis of extra-uterine gestation was made, and the operation was promptly performed three months after the cessation of the last regular monthly period. There was no appearance of old or of fresh blood in the abdominal cavity, such as is found in many such cases when rupture has taken place. But blood escaped during the breaking up of numerous adhesions to the rectum and the broad ligament. The specimen showed the left ovary and the corresponding Falloppian tube greatly enlarged by a deposit of placental tissue. Dr. Osler, who had examined the specimen, had stated that the chorionic villi were unmistakably present. No fœtus was discovered, but it might have perished and become absorbed, or possibly it had escaped into the abdominal cavity through an opening made accidentally into the sac during the

process of enucleation. So vascular was the sac that a stream of blood spurted out from this tear as if it came from a large vessel. Apart from a nervous attack of vomiting, which lasted nearly twenty-four hours, the woman's convalescence was uninterrupted.

Dr. J. Price said that he was satisfied that Dr. Goodell's explanation of the absence of the fœtus was correct. He could cite two or three cases and an experience of his own which supported this view. Mr. Tait's first two patients had made tedious recoveries, and in both cases he had failed to find the fœtus. Some time ago the speaker had opened the abdomen in a case of doubtful diagnosis. Some one standing by asked him what he expected to find. He replied, "One of twelve things." He went on and removed a large adherent tube, ruptured, the abdomen being pretty well filled with clot. He then irrigated the abdomen. After using one pitcherful, the water returned perfectly clear. To make the toilet thoroughly satisfactory, he used the second pitcherful of water, and, in finishing the second toilet, washed out a little boy. In this case he was satisfied that the peritonæum could have taken care of the fœtus by digestion, as had probably occurred in Mr. Tait's cases.

Dr. Howard A. Kelly thought that this case illustrated how readily one could make a satisfactory diagnosis, given symptoms being present. With a certain order of symptoms and signs we could with the utmost certainty diagnosticate extra-uterine pregnancy in a certain proportion of cases. In another large proportion of cases it was a matter of mere conjecture until the abdomen was opened. He had operated recently in such a problematical case, one of the two possibilities being extra-uterine pregnancy. Such proved to be the condition, although no fœtus was found. He found the sac and the placenta within the ruptured tube. In a recent book on this subject, by Strahan, the author had unfortunately failed to notice some experiments on the disappearance of the fœtus after its expulsion into the abdominal cavity. Leopold had experimented by introducing fœtuses into the abdominal cavity of dogs. These had been digested, provided the period of the more distinct development of the bony tissues had not been reached. After that period they became sources of irritation and were cast off by suppuration.

Dr. M. Price did not think that a study of the cases on record would make a man perfectly satisfied that he could say when he had a case of extra-uterine pregnancy. The ablest men throughout the world had satisfactorily decided that question. They had made mistakes time and time again. They had cut for supposed extra-uterine pregnancy and found something else; they had cut for something else and found extra-uterine pregnancy. It was very difficult to decide until the abdomen was opened. A ruptured extra-uterine gestation sac could only develop in the broad ligament. If it ruptured into the peritonæum, there was not a single case on record where, if the operation was delayed a number of days, the fœtus had not disappeared. Hundreds of cases were on record. He had himself seen eight or ten where the fœtus could not be found, where the microscope positively showed the presence of extra-uterine pregnancy. The cases that went on to development were those in which there had been first a rupture into the broad ligament, and then development up to a certain time when the child could resist the digestive action of the peritonæum. There was no question in his mind that in these cases electricity had done a vast deal of harm, had aggravated symptoms already existing, and had imperiled the woman's life to a greater extent than if she had been left entirely to nature. The knife, as Dr. Goodell had used it, was the only means of treatment. Delay was not justifiable at any period, unless, when the case came into the hands of the surgeon, the child had passed to that degree of devell opment that warranted its being left to the period of viability. Al these cases demanded operative procedure at an early period, if they came into the hands of the operator.

Dr. Goodell agreed with those who held to the uselessness of electricity. He thought that there was only a single class of cases of extra-uterine gestation in which electricity might be valuable, and that was in the early weeks, before hæmorrhages had occurred. An examination of the specimen shown by him made it clear to his mind that hæmorrhages must have taken place in the tube, forming layers of organized clot. In such cases he did not see how it was possible for electricity to do anything but harm. In those occasional rare specimens in which the chorion had remained intact, as in an abortion without rupture, the ovum being nothing more than a delicate but shaggy bladder, with the fœtus inside, he could understand how electricity could do good by destroying the life of the fœtus. Then everything might readily become absorbed; but, as we could never know positively beforehand whether or not hæmorrhage had occurred, his own feelings were in favor of immediate section. While the difficulties of diagnosis were undoubtedly very great, this need not interfere with the treatment. We found a woman suffering from certain pelvic symptoms and we discovered an extra-uterine tumor of some kind. Now a painful pelvic tumor must be removed, whatever it was. The only change in the treatment would be to hasten on the operation were the symptoms pointing in the direction of extra-uterine gestation.

ANSWERS TO CORRESPONDENTS.

No. 284.—See our notice of the work, in this issue.

No. 285.—In regard to your first question, you had better write to the company, the address of which, according to the latest advertisement that we have seen, is No. 252 Madison Avenue, New York. Our impression is that the apparatus is still regarded with favor here.

No. 286.—See our issue for July 6th, page 12.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

THE OLFACTORY NERVE:

ITS QUANTITATIVE AND QUALITATIVE TESTS AND ITS PHYSIOLOGICAL IMPORTANCE; ITS INTRACRANIAL COURSE AND DISEASES.*

BY CHARLES L. DANA, M.D.,

PROFESSOR OF NERVOUS AND MENTAL DISEASES, NEW YORK POST-GRADUATE SCHOOL; VISITING PHYSICIAN TO BELLEVUE HOSPITAL.

INTRODUCTORY AND PHYSIOLOGICAL. — The rhinologist must be looked upon as the particular guardian of the first cranial nerve. It is the only organ of special sense which, in the division of medical labor, he may call his own. He must naturally regard it with more than ordinary interest, and may properly feel toward it a sense of proprietorship and special expertness. He has dealt chiefly, however, heretofore, with its peripheral portion, and I shall venture now to call attention to some points connected with its general functions and its deeper anatomy, which will, I trust, possess some novelty and interest.

Physician and patient are both apt to disregard disturbances of the sense of smell. These are only discomforts or deprivations of a minor kind. The rhinologist, besides, sees in the nose mainly a respiratory organ and treats it for its fluxions, its pathological incumbrances, and other interesting disorders. The subjects of anosmia, parosmia, and hyperosmia very naturally are regarded as of minor importance, and cut but a small figure in rhinological literature.

The sense of smell is one, however, that still subserves much useful purpose, and is as yet by far the most delicate means we possess of appreciating attenuated matter. The nose does, in fact, bring us closer to the spirit world than any other organ, for the trillionth of a grain of mercaptan, which awakens a sensation in the mind, has weight and dimensions so infinitely minute as to be quite beyond the power of the imagination to grasp.†

The sense of smell, or something akin to it, is well developed in fishes; it is fairly developed in reptiles; it sinks almost to nothing in birds, while in mammals it finds its highest development. Nearly all mammals have a keen sense of smell, except those which have acquired aquatic habits, like the whale, seal, dolphin, etc., in some of which the organs of smell are entirely absent. The sense of smell is much diminished in the anthropoid apes. In man it is a rudimentary sense, but still it shows a higher development than in the apes.

Some writers have asserted that the sense of smell is keener in savage races than in the civilized, and that olfaction is less perfect as racial types become higher. This is not the case. The negro or the Indian may cultivate the nose to a high degree of acuteness in certain directions, but in discrimination of odors, in appreciation of flavors, in æsthetic associations aroused by the stimulus of the cranial nerve, the civilized man is as far ahead of the savage as the latter is in advance of the anthropoid ape.*

Olfaction includes not only the sense of smell, but, in conjunction with the nerve of taste, the appreciation of flavor. It is a function that in times past served various types of animals—

1. For sexual purposes.
2. For selecting food.
3. For hunting prey.
4. For avoiding enemies.

In man it serves—

1. For selecting food and drink.
2. For arousing the sense of hunger.
3. For protection against injurious vapors.
4. For æsthetic and, in a measure, sexual purposes.

The tendency of modern civilization is to cultivate the æsthetic function of the olfactory nerve and bring it as much as possible into close association with pleasurable states of mind. A well-developed olfactory sense is thus part of a thoroughly cultured man's equipment. A diminution in the keenness of olfaction is found to be present in the criminal, lunatic, idiotic, and degenerate classes (Lombrosi, Ottolenghi).

The olfactory sense in man is, therefore, growing, and fortunately so. Every avenue to the brain which carries to it new impressions helps to develop that organ. The cultivation of the eye, the hand, the ear, all promote and enlarge mental activity. I feel very sure that by and by there will come educators and trainers of the sense of smell and taste in children by which greater keenness, power of discrimination, and capacity for æsthetic enjoyment shall be gained. The sense of smell has always been appealed to in religious rites, and women instinctively learn that to exhale a delicate perfume adds to sexual attraction.

CLINICAL.—The works on rhinology and neurology have quite exhausted the subject of the clinical disorders of the sense of smell. I do not propose to enter upon this subject except very incidentally.

In the last few years my attention has been struck by the frequency with which certain neurasthenic patients have complained of deficient sense of smell. Some of these had a moderate degree of nasal catarrh, but in other cases I could not satisfy myself that this was the sole cause.

I believe, however, that there is a neurasthenic anosmia and a hysterical anosmia, just as there are similar forms of asthenopia. A more careful and routine testing of patients

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* Read before the Section in Neurology of the New York Academy of Medicine.

† According to Valentin, we can perceive $\frac{1}{1200000}$, of a grain of oil of roses. According to Fischer and Penzoldt, one can perceive $\frac{1}{27600000000}$ of a grain of mercaptan.

I have found that one can perceive the odor from 4 c. cm. of a solution of oil of cloves 1 to 100,000.

* Civilized man, when through deprivation of other senses he is led to cultivate that of olfaction, often shows capacities more marvelous than any recorded of savage races.

I might instance those cited by Professor Stanley Hall in his account of the case of Laura Bridgman ("Mind," April, 1879, p. 149). He says: "Julia Brace and other blind deaf-mutes have been able to sort the freshly washed clothes of the inmates of a large asylum, and to select and give to their owners several dozen pairs of gloves thrown promiscuously upon a table, solely or mainly by the sense of smell."

might bring greater proof of this than I am able to present now.

Frequency of Anosmia.—I have had the sense of smell tested in one hundred adults, eighty of whom were patients in the wards at Bellevue Hospital. There were fifty men and fifty women. Among these I found two cases of anosmia—one in a man, from syphilitic disease of the nose; one in a woman who had suffered for years from menorrhagia, and who was ill-nourished, anæmic, and nervous, but had no catarrhal trouble, so far as I could learn. It would hardly be safe to infer that anosmia was present in one per cent. of adults, but it certainly is not infrequent.

Anatomical.—*General Arrangement of Sensory Nerve Tracts.*—Every sensory nerve, unless we have to except the olfactory, in entering the nerve-centers has to make certain connections with nerve ganglia before it reaches the cerebral cortex. All sensory nerves below the first and second (olfactory and optic) meet first with bipolar cells, as in the intervertebral ganglia; then with plexiform-process cells, such as are in the posterior horns of the spinal cord; then with still other collections of cells in the basal ganglia; finally, the fibers run up to the cortex. Some fibers do not make all these stops, but such is the general arrangement. No sensory impulse goes straight to the cortical cells.

The olfactory and optic nerves are somewhat differently arranged. They are both developed from the forebrain, which is embryologically pretty sharply distinguished from the mid-brain and hind-brain, out of which the other cranial nerves are developed. Still, both these nerves are developed as prolongations of the primary and secondary forebrain. They have analogous modes of development, and if the olfactory-nerve impulses passed directly to the cortex, it would be at least a unique physiological arrangement.*

Let us see if the olfactory apparatus can be put in the same category with that of other sensory nerves. We will take up its different parts in turn.

1. *The Peripheral End-organ.*—This is usually described as consisting of certain cells in the mucous membrane of the olfactory region. The nerve filaments here, however, are non-medullated and more like nerve processes, which I believe they are, arising from nerve cells in the olfactory bulb. The olfactory bulb and its nerve process (olfactory nerves), constitute, it seems most probable, a single end-organ,† which is comparable to the nervous structure of the retina. In some fishes, indeed, the olfactory bulb is, like the eyeball, outside the cranium. The peculiar structure of the bulb, its analogy to that of the retina (as will be shown later), and its entire dissimilarity to that of any cortical or basal nervous centers, are strong arguments for this view.

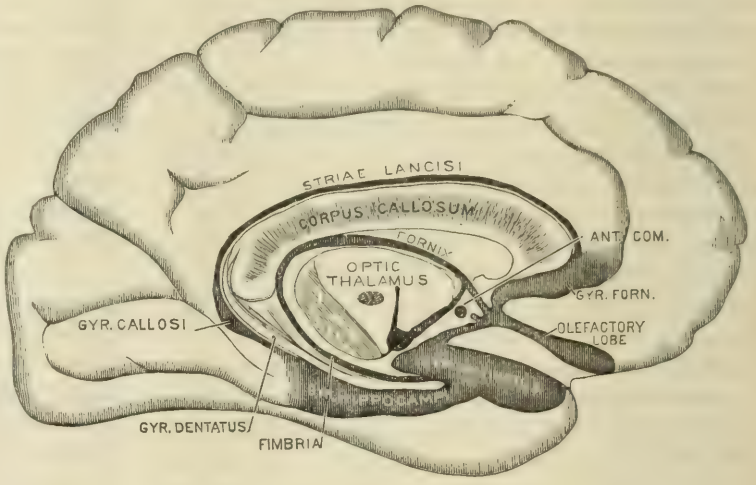
2. The second part of the olfactory apparatus consists of nerve fibers connecting the nerve cells of the olfactory bulb with those of the olfactory tract and olfactory areas in the temporal lobe, to be described below.

3. The third part consists of the cells in the olfactory tract, which is not so much a nerve strand as it is a modification of brain cortex and of other cortical areas.

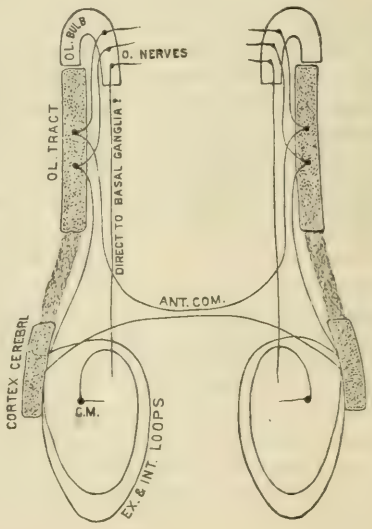
Then, cortical areas are widely distributed in the lower mammals. They are much atrophied in man. My description of them is based largely upon the descriptions of Broca and the recent elaborate monograph of Zuckerkandl.

They consist of the uncinate gyrus, hippocampus, and cornu Ammonis—all of which are parts usually described as belonging to the inner and lower part of the temporo-sphenoidal lobe.

There are still other olfactory areas, however, in the lower



animals; in man they are rudimentary. These are the anterior end of the gyrus fornicatus, which is connected to



the olfactory tract by the inner root of the olfactory nerve. From this part their strands of gray matter pass up (gyrus

* Von Monakow ("Archiv f. Psych.," Bd. ii, Heft 3) shows that the afferent fibers of the optic nerve take their origin peripherally in the multipolar cells of the retina; thence they pass to plexiform-process cells in the external geniculate body, then to large multipolar cells in the same ganglia and the pulvinar, thence to the cortex.

† Alex. Hill, "Plan of the Nervous System."

geniculi) and over the upper surface of the corpus callosum. These are known as the striæ mediales and laterales of Lancisi. They end posteriorly in a small convolution, described by Zuckerkandl as the *Balkenwindung* or callosal gyrus, and in the fascia dentata, which latter is itself intimately related to the cornu Ammonis.

Another strand of olfactory tissue—but in this case mostly composed of fibers—starts from the cornu Ammonis as the *fimbria;* it passes back up under the corpus callosum, when it is known as the *fornix.* It passes forward till it reaches the anterior part of the corpus callosum, when it descends as the pillars of the fornix, forming here boundaries of the fifth ventricle. Some fibers pass forward over the anterior commissure and connect with the outer root of the olfactory tract. But others probably continue with the fornix pillars, and pass down to end with them in the corpora mamillaria. From there fibers apparently pass up into the optic thalamus.

Both from the outer root and from the hippocampal region fibers bend inward and pass through the anterior commissure, which is in part an olfactory commissure.

It will thus be seen that the olfactory cortex consists of three deposits of gray matter in (1) the olfactory tract, (2) the hippocampus and adjacent parts, (3) the anterior end of the gyrus fornicatus. These parts are united by two loops, one passing outside and over the corpus callosum, the other beneath it. The parts on each side are united by the anterior commissure. There is between the two olfactory areas on each side of the brain but a commissural connection, no decussation of fibers as yet, and, unlike the optic chiasm, impulses excited in the nose on one side pass directly to the cortical areas described on the same side.

In man the outer root of the olfactory tract is the only one that practically exists. The center in the gyrus fornicatus and the connecting loops of gray matter (stripes of Lancisi) are rudimentary. The olfactory area in the human brain, then, is practically (1) the olfactory lobe and tract, (2) the outer root of this tract, (3) the hippocampus, uncus, and cornu Ammonis. It has a commissural union by the anterior commissure, and further connections by the fornix and association fibers in the temporal lobe.

Now, so far, the olfactory impulses have reached but two collections of ganglionic cells—those of the bulb and those of the lobe, tract, and hippocampus, uncus, and Ammon's horn. These centers are also on the same side as that of the peripheral nerve. But there are many facts in pathology which compel us to believe that olfactory sensations, like other special sensations, cross.

In addition, it is, as we have shown, contrary to physiological homologies to suppose that a sensory-nerve impulse can pass directly from the periphery to the cortex. It would be like supposing that a nerve from the retina passed without break in continuity to the occipital lobe.

Finally, the cell structure of the cortical areas referred to seems inadequate to the demands of a highly specialized and extraordinarily delicate sense-organ.*

The problem of olfaction is not, then, satisfactorily settled by finding a center in the hippocampus and its adjacent areas. Nor does it explain some curious facts in comparative anatomy. The question might be left as it is; but, following the ingenious suggestions of Dr. Hill (*loc. cit.*), I would propose some such explanation as this:

The olfactory tract, hippocampus, and uncus are not really parts of the temporal lobe, but are atrophied remnants of a special lobe, the lobus limbicus, which at one time held an equal prominence functionally with other cerebral lobes. As the olfactory nerve declined in importance, the lobe became atrophied and finally rudimentary; just as the optic lobes, so large and visually important in birds, have become atrophied till they are the corpora quadrigemina in man.

The gray matter of the hippocampal region and olfactory tract is decidedly different from that in the rest of the cerebral areas (see note). It resembles a rudimentary and atrophied cerebral cortex. These regions, therefore, are imperfectly developed centers. They may be the seat of the sense of smell, but not of ideas of odor or flavor; just as there are lower visual centers.

All the special senses have, it is believed, some kind of representation in the optic thalamus.* If this is so for olfaction, it must be through the lateral or outer root of the olfactory tract, the fimbria, fornix, and corpus mamillare, as suggested by Hill. It is certain that the fornix is connected with the carrying of olfactory impulses, for it is atrophic in animals like the dolphin that have no olfactory organs, and it is hypertrophied in those animals which have a keen sense of smell (Broca, Hill). Furthermore, the atrophy experiments of Gudden show that it carries impulses *from* the hippocampus and uncus and not to it.

Having got the fibers to the optic thalamus, we must suppose that they pass to the cortex in the radiations from that ganglion.†

* "The gyrus uncinatus and the cornu Ammonis are peculiarly constructed and show but a meager variety of cortical nerve-forms. The cornu Ammonis contains principally cortical elements of the pyramid type. Essentially the same is true of the olfactory lobes. The olfactory bulb exhibits a special kind of cortical stratification."—Meynert, "Psychiatry," p. 70. Meynert thinks that the olfactory nerves pass directly to the cortex.

Structure of the Olfactory Centers in Detail.—From without inward one finds in the *cornu Ammonis*—

1. A molecular layer.
2. A reticular layer somewhat like the small pyramidal cell-layer of the cortex elsewhere.
3. A radiate layer containing the processes of the large pyramidal cells of the next deeper layer and some pyramidal cells.
4. The pyramidal cell layer, containing cells measuring about one six hundredth of an inch in diameter.
5. The stratum oriens, containing some spindle-cells, like the corresponding layer of the cortex elsewhere.
6. The alveus or *Muldenblatt* layer.
7. The ependyma of the descending horn of the lateral ventricle.

The hippocampus and olfactory tracts resemble the foregoing very much in their cortical structure.

* Luys collects four cases—one by Hunter, three by Voisin—in which anosmia was caused by focal lesions of the thalamus.

† The connection can not be by the tænia semicircularis, as stated by Luys, for that goes to the caudate nucleus (Meynert).

C. Winkler and J. Timmer have recently reported the case of an idiot with atrophy of the left occipital and posterior part of the temporal lobe and partial atrophy of the fornix and corpus mamillare and Vicq-

I will conclude this anatomical discussion by referring in some detail to the histological analogies between the layers of the olfactory bulb and nerve and the four outer layers of the retina:

1. In the mucous membrane of the nose we have olfactory cells and pigment, and even a limiting membrane, all of which resemble the pigment, rods and cones, and limiting membrane of the outer layer of the retina.

2. The next or second layer of the olfactory bulb (stratum glomerulosum) contains groups of nucleolated nuclei with nerve fibers running among them, the whole forming "glomeruli." The nuclei of these glomeruli resemble closely those of the inner nuclear layer (fifth layer) of the retina.

3. The third layer of the bulb (stratum gelatinosum) consists of a very fine felt-work of fibers with small stellate cells. This resembles the inner granular layer (sixth) of the retina.

4. The layer of ganglion cells in the bulb resembles the ganglion-cell layer of the retina (seventh).

5. The layer of nerve fibers.*

This similarity has been noted by several observers (Babuchin, Meynert, Obersteiner). It tends to show that the retina, like the olfactory bulb, is like a modified spinal ganglion.

Bibliographical.—The anatomy of the olfactory tracts has been studied by von Gudden by the atrophy method; by Broca, Zuckerkandl, and Alexander Hill, by the comparative anatomical method; by Ferrier, Luciani, and Sapilli, by the experimental method; and by various other anatomists (Meynert, Ferrier, and Obersteiner), to whose works I am indebted.

The views of Luys and others that the olfactory nerve is connected with the amygdala, and those of Meynert which connect it with the caudate nucleus, seem disproved by the researches of Zuckerkandl.

The descriptions of von Gudden apply to the rabbit, and it does not seem to me that his scheme of the internal relations of the nerve is carefully worked out or can be applied to the human brain.

The Examination of the Olfactory Sense.—An interesting fact in connection with this comparison are the investigations of Professor Haycraft upon the sense of smell ("Brain," July, 1888).

He finds that there is a similarity between the molecular weight and vibration of bodies and the odor they exhale, and he shows that probably the sense of smell as well as that of taste must depend upon the rate of vibration of gaseous particles, just as the variations in color depend upon the vibration rate of the ether. It may yet be possible, therefore, to construct scientifically harmonies and discords of smell and to produce actual symphonies in odor which shall awaken as deep emotion as the music of Beethoven or the paintings of Corot.

As a preliminary and very remote approach to this, I have constructed a qualitative olfactometer by which the quality of the sense of smell can be tested just as we test the sight for color-sense or the hearing for musical pitch. It consists simply of two sets of phials:

The first contains monatomic alcohols of gradually increasing molecular weight—viz.:

1. Methyl alcohol (CH_3OH), faint alcoholic odor.
2. Ethyl alcohol (C_2H_5OH), faint alcoholic odor.
3. Propyl alcohol (C_3H_7OH), alcoholic odor, with flavor.
4. Amyl alcohol ($C_5H_{11}OH$), less alcoholic odor and more flavor.

The second set is like the first, but contains another group of bodies—viz., the fatty acids:

1. Formic acid (CHO.OH), acetic odor.
2. Acetic acid ($C_2H_2O.OH$), acetic odor.
3. Propionic acid ($C_3H_5O.OH$), acetic odor, with flavor.
4. Butyric acid ($C_4H_7O.OH$), slightly acetic, with well-marked flavor.
5. Valeric acid ($C_5H_9O.OH$), no longer acetic, the flavor alone present.

These solutions must be diluted considerably.

Now, a person with a normal sense of smell should be able not only to smell all these substances, but distinguish them and their relations, just as a person with normal vision should not only see forms but distinguish colors.

It is probable that the investigation of the sense of olfaction by this means will show that there are persons whose sense of smell is keen but who are odor-blind, just as there are persons with keen vision who are color-blind. And it is in this qualitative perception of odors that the human odor-sense is developing.

For quantitative tests of the sense of smell I have an instrument devised by Zwaarback, which is satisfactory enough, but which is expensive and is constantly breaking.

For ordinary use, I prefer this collection of six phials containing + oil of cloves, + in purity and in watery solution or mixture of 1 to 10, 1 to 100, 1 to 1,000, 1 to 10,000, and 1 to 100,000. These proportions are used in accordance with the Weber-Fechner psycho-physical law that a sensation increases in accordance with the logarithm of the stimulus. The law is approximately true for sensations of low and medium intensities at least, and it may be applied in a measure to the sense of smell.

We have, therefore, qualitative and quantitative olfactometers. In testing, the phials in each set should be mixed up and the patient should be made to sort them and make his own discoveries regarding their intensity and quality.

It may be remembered that the sense of smell is exhausted in about three minutes for a single odor, but returns in a measure after one minute's rest (Aronsohn, "Arch. f. Anat. u. Phys.," 1886, 321).

Pathological.—I have left but little space to consider the subject of the pathology of the olfactory tracts. Fortunately there is no need of saying much, for our present knowledge is sufficiently summarized in standard works.

d'Azyr's bundle on the same side ("Neurol. Centralblatt," 1889, p. 362). This looks against an olfactory function for the fornix; but it shows that it carries impulses to the thalamus and that the corpora mamillaria are connected with the thalamus. Meynert indeed considers them as belonging to that ganglion.

* Summarized, the arrangement is as follows:

The 1st layer of the olfactory bulb, including cells, etc., of mucous membrane = 1st (outer) layer of retina.

2d layer, strat. glomer. = 5th layer of retina, int. nuclear.

3d layer, strat. gelatin. = 6th layer of retina, int. gran.

4th layer, ganglionic = 7th layer of retina, gangl.

5th layer, nerve fiber = 8th layer of retina, nerve fiber.

The intracranial olfactory tracts and centers are affected *primarily* by—

1. Degenerations in locomotor ataxia and general paresis and in the course of senile decay.

2. Inflammation. Very rarely there is actual olfactory neuritis (Althaus).

3. Functional paralysis and irritations, as in hysteria.

Secondarily by—

4. Injuries, hæmorrhages, inflammations (meningitis, abscesses), and tumors.

5. Necrotic and atrophic processes, as in softening from thrombi, etc.

The location of the pathological process is usually at the base of the brain and in the anterior fossa.

Lesions causing olfactory disorder have also been found in the hippocampus, in the thalamus (four cases cited by Luys), in the posterior part of the internal capsule on the opposite side (Féré), and in the pons (one case of tumor cited by Benedict).

Syphilis is probably the most frequent of the causes of anosmia.

If careful testing of the sense of smell were made in all cases of central organic disease, it is quite likely that its disorders would furnish us more important data in diagnosis than we now gain, since the intracranial distribution of the olfactory tracts is so extensive.

As we must, however, in these cases always exclude peripheral causes, the rhinologist will be called upon to determine positively the value of the test. Hence it may be most important to be able to do this with the utmost skill, and the introduction of the qualitative olfactometer may for this reason prove of value.

In conclusion, allow me to say that I have aimed in this paper to show that the first cranial nerve is not in its senility, but is a developing sense clinically, and that there are many unsolved problems of its physiology, anatomy, and pathology which the specialist in nasal and throat disorders can do much to solve; and that an interest in these problems is justified not only by their scientific importance but by their practical value.

A NEW METHOD OF DRAINAGE OF THE BLADDER AFTER SUPRAPUBIC CYSTOTOMY

(CAPILLARY DRAINAGE).

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Every surgeon who has attempted to maintain continuous and efficient drainage from the bladder after suprapubic cystotomy will agree with me as to the difficulties inherent to and inseparable from such attempts. It is not intended here to discuss the indications present in each case pointing to the necessity or otherwise of suturing the bladder and depending upon permanent or occasional catheterization on the one hand, or a perineal section and drainage by this means on the other. These procedures relate to cases where the surgeon may have a choice as to the method to be pursued, and in which the conditions present after a prostatectomy, the removal of a calculus or a neoplasm, will guide his judgment as to which direction he shall choose for drainage, or as to whether he will drain at all or not. The present communication is intended to call attention to the inconveniences experienced by both the patient and the surgeon in carrying out drainage from the suprapubic wound itself.

In the first place, it must be admitted that there is no position in which the body can be placed, short of the knee-chest position, which will bring the site of the suprapubic wound upon a lower plane than the rest of the bladder. Unless this be accomplished, drainage by means of tubes is an impossibility. The lateral decubitus suggested by Petersen does not accomplish it, even when aided by the use of the T-shaped tube of Trendelenburg, or further facilitated by making the suprapubic incision transverse, instead of parallel to or in the median line, as suggested by the last-named surgeon. The substitution of the + -shaped tube is of very slight if any advantage over the T tube, for the reason that the projecting portion, which is intended to dip down into the bladder, if sufficiently long to reach the *bas-fond*, becomes a constant source of irritation; on the other hand, if this is not accomplished, even the advantage which is supposed theoretically to accompany this device is lost. Surely, water will not run up hill, and a siphon action can not be maintained where the source of supply to the siphon is not constant. The nearest approach to the ideal (knee-chest) position is the latero-abdominal decubitus. Experience has shown me that it is almost impossible to maintain this, even with more or less constant changes from side to side; in some cases, unless the nurse holds the patient by main force in this position, it is absolutely impossible to maintain it.

The natural position for an old person (and permanent suprapubic drainage is required oftenest in old men) confined to his bed by any illness is upon the back. Whether he is partly elevated in bed (half-sitting posture), or whether his head and shoulders are lowered almost or quite to a level with the rest of his body, the result is the same—the base of his bladder remains its lowest part. To place him in any position other than the dorsal or some of its modifications, and attempt to keep him there for any length of time, is to elicit from him constant complaint, and finally inflict upon him cruel torture if the attempt is persisted in.

The thing to be desired is a method of drainage whereby a continuous flow of the contents of the bladder may take place and the patient still maintain any position in which he may be comfortable. At the same time, this should provide against infiltration of urine into the anterior abdominal walls. If the patient lies upon his back and reliance is placed upon tube-drainage, infiltration, to a greater or less extent, will almost inevitably occur; at least, such has been my experience.

In order to overcome these objections and difficulties, I have recently pursued a plan that has given me great satisfaction. The plan is that of capillary drainage, and the method of carrying it out is simplicity itself. I select hygroscopic cheese or butter cloth, and, first sterilizing by heat, dip it in a hot milky mixture of oxide of zinc and

distilled water to which a trifle of glycerin has been added. Any sterilized gauze or cotton wicking will answer the purpose without the addition of an antiseptic if changed frequently. Either oxide of zinc, bismuth subnitrate or iodide, or even iodoform if used with caution, will answer as an antiseptic; the non-poisonous and non-irritating qualities of the two first-named, however, render them the most desirable for the purpose. The folded squares of the material selected for the purpose are placed in the hot mixture, which is kept agitated to prevent precipitation. They are then wrung out and packed in air-tight jars (fruit jars), which have likewise been sterilized by exposure to heat. Another plan, and one which I prefer, particularly when the packing is to be intrusted to a nurse, is to have the gauze prepared in strips of the proper width—say, about two inches—and rolled up as a roller-bandage. This is dipped in the zinc milk while the latter is being stirred, and then wrung out. This is then unrolled, and at the same time packed in the sterilized fruit jar.*

Adopting the plan of Galvani, of Athens, of securing the walls of the bladder by two stout lateral ligature loops for the purpose of identifying the same during the first few days after the operation, or until the structures forming the edges of the wound in the abdominal wall have become consolidated, I retract the parts and pass the end of a strip of gauze into the bladder. By means of a dressing forceps this is carefully carried to and gently packed at the *bas-fond*. This may complete the procedure, or, in addition to this, the gauze may be fed in and loosely packed, or allowed to adapt itself rather to the cavity of the bladder. The end is allowed to project two or three inches, when the dressing is finished by laying a few folds of the gauze between the edges of the wound. The projecting end of the gauze strip is laid upon a piece of rubber macintosh, which is so disposed as to carry off the urine to a basin placed beside the bed, or a large towel, made into a compress and the end of the gauze drain allowed to rest upon this, will answer the purpose admirably.

Should the fear arise that the suprapubic wound will close prematurely or become too small to allow the strip of gauze to pass readily, the difficulty may be obviated by using a very short rubber drain of rather larger caliber, having a flange to prevent it from slipping into the bladder, or, what answers the purpose equally well, a large safety-pin passed transversely through its walls in such a manner as not to interfere with its lumen, and thus prevent the gauze strip from passing readily through the same. This rubber simply answers the purpose of a thimble, to prevent closure of the wound. The drainage strip is passed through this into the bladder, a towel folded, with a square of macintosh in its folds, and placed in position, the whole being secured in place by means of a binder such as the obstetrician uses after child-birth. With the dressings so arranged the patient may assume any position or even walk about without much inconvenience.

It is useless to attempt to prevent the contact of the urine with the wound in the abdominal wall. It is far better to neutralize the evil effects of this contact by providing uninterrupted drainage and keeping the urine free from irritating qualities by means of an efficient antiseptic than to attempt to place a rubber tube in position and depend upon packing between its outside walls and the wound edges to prevent contact or infiltration. In fact, the latter condition would be somewhat favored by pursuing such a course.

To sum up, therefore, the method of capillary drainage of the bladder offers the following advantages:

1. It allows the patient to assume any position most comfortable to him.

2. It is not easily displaced, and its action is not interrupted or interfered with by any accidental circumstance, such as sudden movements on the part of the patient, etc.

3. It furnishes an antiseptic to the urine, thereby lessening its irritating qualities, and an antiseptic dressing to the bladder walls and edges of the wound at the same time.

4. It is simple, requiring no elaborate preparations and not depending upon the art of the mechanic. It is effective, as I have proved to my own satisfaction by actual experience. And, above all things in importance, it is conducive to cleanliness in a class of cases in which sensitive patients constantly complain of what they consider a deplorable condition.

* This zinc gauze, prepared in the manner described, I have used for a long time as a general surgical dressing, when such a one is required, in which any antiseptic substance has been incorporated.

THE INFLUENCE OF MUSIC AND ITS THERAPEUTIC VALUE.

By SEBASTIAN J. WIMMER, M. A., M. D.,
ST. MARY'S, PA.

From the earliest days—the very beginning of society—men, even in their savage state, signalized themselves on great occasions by a recourse to music; in songs they celebrated their various religious rites, lamented their public and private sorrows, expressed their great joy and grief, or excited one another to perform noble deeds. Simple as was this melody, it nevertheless possessed the power and expression necessary to call forth strong emotions, as a result of the wonderful influence it exerted on the mind. The Hindoos attributed supernatural power to its workings, and among the ancient Hebrews there was hardly an occasion arising above commonplace events of every-day life when they did not resort to it, even recognizing its therapeutic value. Man is a musician by nature, his emotions having created him such; and the power manifested in sound, partly from nature, partly from habit and association, so influences the fancy by pathetic impressions as to delight even those people of the most barbaric races. The marvelous powers of this soothing "language" upon the human family are at the present time even greater and more beneficial, because their effects are more thoroughly appreciated by the masses than formerly, and so great and rapid have been the strides made within recent years, comparatively speaking, that not only have the public generally noted it and commented thereon, but it has elicited the investigation by medical men as to its value as an auxiliary in the treatment or management of certain nervous complaints.

Music has indeed great power in influencing the habits of people; it soothes the wrinkles of a hard life of business, elevates our minds from thoughts of money, enterprises, anxieties, intrigue, hatred, weaning us from low and demoralizing pleasures. It is an educator; its subtile pleasures can impart only good impulses, which, causing an appreciation of its effects, can not be otherwise than at once beneficial and lasting. I firmly believe that the taste for music is inherent in every child born. Was there ever yet a babe which could not be sung to sleep? The domestic history of every family attests that. How, then, can we account for these phenomena? In very sensitive nervous centers, which are readily impressionable, located either in the cerebrum or spinal cord, the effect is discernible; and in those who are readily susceptible to all its power we find it principally manifested, for it acts with great effect on the majority of nervous systems. The brain is not alone affected, although direct impressions are powerfully transmitted through the auditory center. Slow, monotonous music, provided it is not too sluggish, has a calming influence over the individual, because it is then in accord and harmony with the nerve habit of the person who listens; if these essentials are wanting, it then may do more harm than good by causing irritation. Again, it is also essential to the ultimate success of any endeavor to bring the brain under this control that it should first arrest the attention, either by its power or sweetness, and then gradually conduct the organism into harmony with itself. Unless, say, a measured cadence begins with a powerful appeal to the brain in a key which accords with that in which the cerebrum is at the moment itself working, the sort likely to calm the mind, a negative result ensues, and, instead of allaying irritation, we find it to be more likely augmented. To arouse the spirits by music, plaintive sound is required, and this must be in the key of melancholy, which blends in harmony with the brain state of the person. The so-called brain state may be immediately changed by the attention being arrested and the cerebrum reached through the auditory center, the key being gradually and surely modulated.

On July 18, 1877, the "Lancet" states that M. J. Rambossam read a paper before the *Académie des sciences morales et politiques*, at Paris, on this very subject, and he attempted a new application of the theory of the transformation of mechanical movement into psychological and psychical movement, with the idea of securing music as a means of curing, or at least assuaging, disease, both of body and mind. Rambossam then mentions some maladies or affections which can be alleviated by this influence, explaining the action scientifically, together with its power on the development and functional play of the moral and intellectual faculties, and on the physiological state of individuals. His conclusions are as follows: (1) That there is a music which has a special action on the intelligence and on the motor nerves; (2) a music which influences specially the nerves of sensibility and the sentiments; (3) a music which acts all at once on the motor nerves and on the sensitive nerves, on the intelligence and on the sentiments. He further believes that between the effects of music and those of the aliments which modify the nervous system there are such analogies that the laws which regulate the one and the other may be arranged in the same terms. We might assuredly profit by these musical effects in the treatment of mental and nervous affections, for they certainly have a marked influence on the sympathetic nervous system—namely, by producing a soothing effect; and this great influence exercises its power over all, whether of the educated or uneducated class, for a fine appreciation of even the grandest and noblest music is by no means a criterion of mental activity or elevation, it being enjoyed alike by all individuals. The relative and specific effects of rhythm, melody, and harmony upon persons suffering from certain maladies, such as melancholia and acute and chronic mania, have been noted, and with beneficial results in many cases; but different modes and various kinds of music have affected individuals and groups of individuals in peculiar and different ways.

In 1878 some very curious and interesting experiments were carried on in New York city, at the Randall's Island Asylum. Fourteen hundred females (insane) were congregated in the large entertainment hall of the institution and subjected to a strain of piano music for half an hour, when the general effects were noted as follows: the pulse was raised, the patients became restless, and there was a marked desire to keep time with the music. They were all susceptible to the rhythm, and its effect was decidedly stimulating. Melody without any very decided or certain tempo was without effect excepting in those cases where the force of association was still active. In a case of chronic melancholia the playing of "Home, Sweet Home" invariably brought the patient to her knees, where she began to recite the Lord's Prayer in an apparent ecstasy of devotion. In another case—one of acute mania—the patient's pulse was elevated from 78 to 106 beats, the patient not showing any other signs of excitation save the involuntary twitching of the facial muscles. Cantabile music seemed to have an effect, in the worst cases, similar to that which it exercises upon certain animals, the person being disposed to lie down and go to sleep under its influence. The results of all these experiments were markedly beneficial, and, by frequent repetitions, many of the patients showed great improvement. The effects, in almost every instance, of the pronounced rhythm were involuntary, the movements of the limbs and facial muscles being attributed to reflex action. It seems plausible to me that music can exert a wonderful influence over an individual whose nervous system has been shattered in any way by gradually soothing that system and bringing it into harmonious accord with the spirit of the composition interpreted.

Many persons, to worry off the cares and anxieties of this life, seek succor and renewed life in the concert hall, where harmony reigns supreme and stamps its individuality indelibly upon the sensitive nerve organism of the individual, refreshing and stimulating it, and thus paving the way to mollifying the effects of many complaints. Music seems to quiet the sympathetic nervous system, and by so doing penetrates the soul and brings the relief which is lasting. Some authorities go so far as to suggest a place in the materia medica for music, for it certainly is a remedy for such complaints as neurasthenia, insomnia, nervous prostration,

and other diseases. There is indeed solace in music, for this world has its work and troubles made pleasant by the cheerful notes which emanate from harmonious compositions laden with the fragrance which permeates the very recesses of the soul with all its curative effects, for upon the mind does the responsibility of the rest of the organism depend for its support and existence—*mens sana in corpore sano*. The sounds produced by various harmonies blend so readily with the human organism that their effects are readily appreciated by all, for few people are altogether devoid of a capacity for appreciating good music, even when not gifted with any great natural taste. Work, which sooner or later becomes mental strain, finds relief in an atmosphere impregnated with music, for it vibrates the nervous fibers of the listener in sweet sounds, resulting in anything but evil. It is the one art alone which can afford peace and joy to the heart where *medicine* can not, for sorrowful anxieties and restless troubles flee before the sweet harmonious tones, and many a heart, full to overflowing, has been refreshed by music when sick and weary.

"Music exalts each joy, allays each grief,
Expels diseases, softens every pain,
Subdues the rage of poison and of plague."

Spontaneous Rupture of the Heart.—Dr. Mallet, of Paris, described before the *Société anatomique* of that city a case of this accident which occurred last May in the Hôpital Tenon. The patient was a man, aged seventy-nine, with pulmonary disease. He died suddenly after rising to micturate. A rent, almost vertical and over two inches long, was discovered in the anterior aspect of the wall of the left ventricle. The pericardium was full of blood, the aorta atheromatous, and the left coronary artery nearly oblitèrated. All the valves were normal. Dr. Mallet quotes Odriozola's statistics of spontaneous rupture of the heart. That observer could only collect one hundred and seventy-six authentic cases. In many instances the patient was old, being between sixty and seventy in thirty-six, and between seventy and eighty in forty-five. The accident appears most frequent in women. As a rule, the escape of blood into the pericardium is considerable. The rent in the wall was unusually large in Dr. Mallet's case. In nearly every instance in Odriozola's statistics the rupture was in the anterior part of the left ventricle. The original report of the case deserves study. The rupture apparently took place fifty-three hours before death, when the patient was seized with dyspnœa and epileptiform convulsions marked in the upper extremities; his face turned pale. The exertion of rising to micturate caused immediate death, probably by sudden escape of blood into the pericardium. A similar history has been recorded in other cases of spontaneous rupture of the heart.—*Brit. Med. Jour.*

The Tendon Reflexes in Leprosy.—S. M. Suzuki, M. R. C. S., L. R. C. P., contributes a paper to the "Sei-i-Kwai" (May) upon the "Tendon Reflexes in Leprosy." His attention was called to this subject by finding to his surprise that the reflex was increased in a case of anæsthetic leprosy. In five other cases since observed by him, including both the anæsthetic and tubercular forms, the reflex was similarly exaggerated. A like result appeared from the examination of seventeen cases from a leper asylum and among Mr. Suzuki's out-patients at the Tokio Charity Hospital. He remarks that the change in leprosy is that of interstitial neuritis, and that the bacillus of leprosy has been found in the new-formed connective tissue. Yet in other forms of multiple neuritis the tendon reflex is abolished. Moreover, in leprosy muscular strength is well preserved, paralysis being of rare occurrence, even in advanced cases. He concludes, therefore, that in this disease there must be other changes in the nervous system besides multiple neuritis, and intends to report at a future date upon the electrical reactions.—*Lancet.*

THE ASEPTIC SUIT.

By J. L. ROLLINS, M. D.,
AUBURN, CAL.

An aseptic suit, so far as the writer is aware, has hitherto been unknown to the medical world.

In presenting this article, the new application of an old truth, viz., that cotton is impervious to germs, is all that is attempted. Without entering into details of the evolution of this idea, I will proceed at once to a brief description of it.

This invention consists of an aseptic suit or dress, the object being to provide means of protection to physicians and others against contagium while attending persons afflicted with contagious diseases.

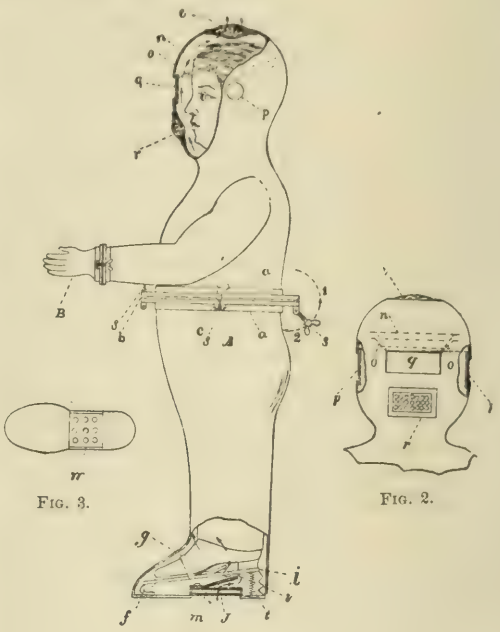


Fig. 3. Fig. 2.

Fig. 1.

The device consists essentially of a suit or dress adapted to be readily adjusted over the ordinary clothing, so as to entirely cover the wearer, said dress being made almost entirely of material impervious to atmospheric air, such parts as do admit the passage of atmospheric air consisting of germ-proof material.

A further object of this device is to provide said dress with mechanism adapted to be actuated by the wearer for supplying an ample quantity of filtered air for respiration, and to provide said dress with the necessary facilities for using the stethoscope and laryngoscope, and also with removable gloves, in addition to a suitable glass-protected opening in the front part of the head-covering, so that while protecting the wearer against contagium he may have the use of his eyes, ears, and hands.

With these ends in view, this invention consists in certain details of constructions and combinations of parts as illustrated in the drawings.

Fig. 1 is a side elevation of the suit or dress, showing the foot and face parts in section. Fig. 2 is a front elevation of the head part of the dress, and Fig. 3 is a plan view of the under side of the foot part of the dress.

Referring to the drawings, *A* represents the dress, which is preferably made of rubber goods and in two parts, joined together at the waist by flanges *a a'*, one of which is secured to the upper part of the dress and the other to the lower part thereof, said flanges being secured to the dress by cement or otherwise and clamped together, preferably by swing-bolts *S*, pivotally secured to the under side of the lower flange *a'*, and provided with thumb-nuts as shown, said bolts being adapted to swing upon their pivots, as indicated by the arrows 1 and 2, into slots provided for their reception in both flanges, as shown at *c*, Fig. 1, thus affording a ready means for clamping together or separating the two parts of the dress. (For the thumb-nut, an eccentric is substituted, which admits of a more rapid adjustment of the suit.) A flat rubber or other elastic band, *b*, is interposed between the two flanges for the purpose of making an air-tight or germ-proof joint.

Each hand of the wearer of the dress is protected by a removable covering or glove, *B*, secured to the sleeve of the dress by means analogous to that employed for securing together the two parts of the dress at the waist.

On the crown of the head-piece is secured a disc, *e*, consisting of two perforated metallic plates, made slightly concave toward each other for the purpose of securing in position between them a wadding of cotton or other germ-proof material, a similar disc being secured opposite the mouth in the face part of the head-piece, as shown at *r* in Figs. 1 and 2.

Near the ear is a circular opening, *p*, over which is cemented a very thin disc of rubber, backed, for the purpose of giving the requisite strength, with a piece of woven linen. This thin but air-tight disc, one of which is located on each side of the head-piece, as shown in Fig. 2, is to afford the required facility for using the ear and stethoscope, which is done by simply pressing the latter against the disc and the disc against the ear.

For the purpose of admitting light to the interior of the head-piece, the upper front part thereof is provided with a glass-covered opening, *g* (shown in Figs. 1 and 2), said glass cover being supported at the required distance from the face by a light metallic frame, *o*, secured to a brow-band *n*, which fits the upper part of the head like a hat, of which the crown is the germ-proof disc *e* (see Fig. 1).

It will be observed that the part of the dress below the waist is formed like a pair of trowsers and boots combined —that is to say, all in one piece. In each foot part is a bellows, of which the upper movable board *i* is adapted to receive the foot of the operator, which is secured thereto by an instep-strap, *g*. Said board, *i*, is hinged at *f* to the toe part of the dress, the rear part being free to vibrate upon said hinge in a vertical plane, the heel part resting upon the upper end of a spiral spring, *t*, of which the lower end rests upon the internal heel part of the foot of the dress, a little in advance of which is a germ-proof disc, *m*, similar to that in the crown of the head-piece and secured in the hollow of the foot part of the dress, as shown in Figs. 1 and 3. On the upper side of the germ-proof disc, *m*, is an inlet check valve, *J*, as shown in Fig. 1, and there is also a similar but smaller valve, *v*, on the upper side of the movable board *i*, just beneath the hollow of the foot of the operator.

Matters being thus, the wearer of the dress can supply himself, by an easy treading motion of the feet, with an ample quantity of filtered air, drawn in from beneath the feet and forced upward, thus maintaining an upward current of purified air for respiration, as indicated by arrows, and also driving out through the discs *r* and *e* the air that becomes vitiated in the head part of the dress. The movable upper bellows-board *i* needs only to be pressed downward, the upward stroke being accomplished by the resilient action of the spring *t*.

The mouthpiece of a funnel-shaped rubber tube, attached to a portion of the disc *r* (Figs. 1 and 2), may be placed in the mouth during any necessary inaction of the bellows, temporary respiration being conducted through the disc *r*, thus avoiding any condensation of pulmonary vapor on the glass-covered opening *q*, that might occur.

To the frame of the glass-covered opening *q* is attached a device to support an ordinary head mirror, for otoscopic, rhinoscopic, and laryngoscopic examinations and minor operations.

A pair of suspenders are attached to the trowsers within and supported by the upper flange *a* (Fig. 1). For ladies a rubber skirt may be provided.

The discs are composed of cotton treated antiseptically, and may be removed at will and sterilized by heating in an oven.

The aseptic suit in the treatment of isolated cases of contagious disease is designed to be transported in a convenient casing to within safe limits, when the dress is adjusted, the patient visited, and the exterior of the suit disinfected by the atomizer, when it is removed after having left the premises.

In epidemics, such as yellow fever, that scourged the Southern States in 1888, the residence of the physician may be subjected to sanitary measures, the aseptic suit adjusted on issuing therefrom, and the exterior disinfected on returning.

The aseptic suit, it is believed, offers to the wearer immunity from all specific causative agencies productive of contagious disease.

It will be observed that the end for which this invention is designed is secured by the exclusion of specific contagium, thus placing the operator in effectual insulation, regaling his being in atmospheric air as pure as that of the Alpine heights, safe behind the barrier of impregnable cotton that repels the attack of miasmata and cannon-ball alike.

The aseptic suit, while preserving every sense for accurately diagnosticating and treating all contagious diseases, and offering positive immunity to the wearer and to transportation of infecting germs to others, may it not be reasonably expected that in this invention is found a device which in the hands of intelligent physicians will absolutely stay the spread of contagium?

The Paris International Congress of Dermatology and Syphilography.—Dr. A. R. Robinson, of New York, has been appointed by the committee on organization to open a discussion on the subject of lichen.

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CERTAIN CAUSES OF ILL-HEALTH AMONG WOMEN.

Corsets, high-heeled shoes, late hours, irrational eating, a deficiency in mental discipline, the absence of sufficient individuality, the want of some object of vital interest in life, together with the carking cares of our cruel American housekeeping—what the Indian called "too much house"—have each, in turn, served as texts for preachments many and fierce concerning the alleged physical degeneracy of women. While it is painfully true that the present system of domestic life is in many particulars defective, it is impossible to specialize and indicate any given point as the weakest in a chain that is pretty generally open to criticism. The physical degeneracy of American woman—if it exists—is due to causes quite outside the pale of heels, corsets, or even mince pie.

The dissipations of the grandmothers in the matter of household prowess and the general hardships of life in a new country are responsible, to a certain extent, for the bodily frailties of our girls. Superhuman and inhuman tasks are the sour grapes that our feminine ancestors did eat, and they have set on edge the teeth of modern young women. Though home life to-day too often is a tyrannous, heart-breaking affair, in comparison with that of Puritan womanhood in colonial times it appears a sea of heavenly rest. The only superiority of that age over our own is to be found in the firm conviction in the minds of Puritan matron and maid that life was really worth living. Now there is doubt upon that point, not loud but deep, among an overstrained and always tired latter-day femininity. The condition known as being "half dead" engenders narrow views.

But to return to our muttons—those hitherto unrecognized causes of feminine insufficiency in the matter of health. A prolific source of overstrain, with its consequent weakness, and, possibly, disease, is the size and weight of all household appliances. They are invariably too big for women to use with ease and comfort. Pots, pans, brushes, brooms, coal-scuttles, etc., are all too large and too heavy for the ordinary woman. Every household article is of the pattern best suited to the strength and inclination of the average man. The flat-iron, the ironing-table, and the clothes-basket were made for man; also the wash-boiler and the stationary tub. There is seldom any hint in point of size and weight that scrubbing-brushes and mops are feminine weapons. In the house and out of it, this is a man's world. His dominion includes not only the beasts of the field, but also the host of inanimate objects that pertain to civilization. Desks and stools in offices, seats in cars, theatres, ferry-boats, churches, everywhere, were designed exclusively for men. Women can not even fill the chairs at home, and, at best, only rattle around in them with more or less discomfort. Occasionally a chair is encountered that fits—not too high, too deep, or too broad. Then the spirit of peace dwells for a time in that reposeful structure.

Here is certainly a state of things. Who is to blame for all this? The manufacturers? Ourselves? Our neighbors? Our friends? Our enemies? Who is responsible, and with whom does the fault lie? Painful as it is to speak the truth, let every man nerve himself for the ordeal. Women themselves are to blame. Persistent hints from household workers would have revolutionized their tools long ago. Women's burdens are for the most part self-imposed. They exist because of tradition, want of thought, and a deficiency of inventive faculty. The feminine mind is apt to find expression in tenderness, encouragement, sympathy, and that heavenly patience which makes it possible to do the petty tasks of daily drudgery unflinchingly and persistently. The world can ill afford to lose even the minutest fraction of these divine gifts. The joy of life is by no means an exhaustless store. There is every reason to protect women from unnecessary wear and tear. The tyranny of things presses so heavily upon the better sex that looking on the world with level eyelids is too often an utter impossibility. The machinery of home could be made simpler and better suited to the requirements of the situation; and the gain would be an all-round affair, preserving beauty, maintaining health, and bringing about an increase of sweetness and light. Self-interest is a good enough incentive for instituting domestic reforms; and generosity is not a bad motive, either, after the fashion of Pepys, who gravely records, in the immortal "Diary," that he presented a new gown to his wife on Christmas day, in order to give the poor wretch pleasure! There is a sure reward for the hero who brings about a harmony of size, weight, and fitness between household appliances and the modern woman. The gratitude of the poor wretch is certain to equal the measure of her intelligence.

MINOR PARAGRAPHS.

DR. OLIVER WENDELL HOLMES AT EIGHTY.

Dr. Holmes celebrated his eightieth birthday recently. His house was filled with children and flowers and the mementoes of friends. He was serene and happy, with just a slight infirmity in respect of his organs of hearing. He was able to illustrate, in his own person, his dictum made some months before, that it was "better to be eighty years young than forty years old."

The year 1809 was no mean year, for it gave us Holmes, Gladstone, Tennyson, Lincoln, and Darwin. A newspaper paragraph has appeared stating that Holmes, the genial, has grown cynical in his eightieth year, and the writer sees fit to offer Dr. Holmes the suggestion that he should take up his own early writings and thus revert to his original type of thought. In the first place, we beg to doubt the allegation concerning Dr. Holmes's cynicism, unless, perchance, he had been reading some of his own books and then reading some of those "just out"; almost anybody would feel like uttering a caustic word or two under those circumstances. In the second place, the advice to him to read his own books has no sting in it, as it might have to some authors who began by writing in a cynical vein and

repented of it afterward. A characteristic little story about Holmes's early days at the Harvard Medical School has found its way into print lately. Holmes, it is said, was about to give one of his anatomical demonstrations—he had only recently come from the Dartmouth school to take his professorship—and he was surrounded by a small company of his colleagues, most of them of great stature in comparison with him; and he seemed for the moment or two at a loss for words. But finally he said: "Why, gentlemen, do you know that I feel a little strange here? I feel like a small silver coin rattling round among just so many great big coppers." That broke the ice, the constraint was dismissed, and the lecture went smoothly on. Holmes had no fear of giants, as was seen when he measured foils with Hodge and Meigs regarding puerperal fever as an infectious disease. As he himself has said, "I had a savage pleasure, I confess, in handling those two professors—learned men both of them—skilled experts, but babes as it seemed to me in their capacity of reasoning and arguing."

THE SAMUEL D. GROSS PRIZE.

In a recent issue of the Journal appeared the advertisement of the first competition for the Samuel D. Gross Prize, the value of which is $1,000. The will of Dr. Gross provides that there shall be an award of this amount every five years for the best essay in surgical pathology or practice. The Philadelphia Academy of Surgery will have charge of the conditions and terms of the competition. The successful competitor must be an American citizen. All essays, in the first contest, must be forwarded to the Academy before June 1, 1893.

A NEW "TRI-STATE" MEDICAL ASSOCIATION.

A call has been issued for a meeting of the physicians of Alabama, Georgia, and Tennessee, to be held in Chattanooga on the third Tuesday in October and the following day, for the purpose of forming an association. The call is signed by committees from the Jackson County (Alabama) Medical Society, the Chattanooga (Tennessee) Medical Society, the Cleveland (Tennessee) Medical Society, the Cartersville (Georgia) Medical Society, and the Dalton (Georgia) Medical Society. The membership is to be restricted to graduates of regular medical colleges in good standing, and it is announced that papers of interest have already been promised by prominent men.

THE AMERICAN SOCIAL SCIENCE ASSOCIATION.

The proceedings of the association's meetings have generally included papers and discussions having more or less to do with medicine. There is now a Department of Health, of which Dr. H. Holbrook Curtis, of New York, is the chairman. At the recent annual meeting, held at Saratoga, the programme of the department included papers by Dr. Pliny Earle, of Northampton, Mass., and Dr. Stephen Smith, Dr. Louise Fiske Bryson, Dr. Frederick Peterson, the Rev. Charles R. Treat, and Dr. Charles A. Harvey, of New York.

ST. MARY'S HOSPITAL, BROOKLYN.

We learn that this institution must very soon make an increase in its accommodations in order to keep pace with the demands made upon it. Although it already has nearly two hundred beds, a new ward will soon be arranged for and added. An out-patient department has been established near the hospital during the past year.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending September 3, 1889:

DISEASES.	Week ending Aug. 27.		Week ending Sept. 3.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	91	16	112	19
Scarlet fever	28	1	21	2
Cerebro-spinal meningitis	2	2	3	2
Measles	17	3	21	1
Diphtheria	70	19	66	22

The American Gynæcological Society will hold its fourteenth annual meeting in Boston, at the Massachusetts Institute of Technology, on Tuesday, Wednesday, and Thursday, the 17th, 18th, and 19th inst., under the presidency of Dr. H. P. C. Wilson, of Baltimore. Besides the president's address and an address of welcome by Dr. J. P. Reynolds, of Boston, the programme includes the following titles: "A Case of Interstitial Pregnancy—Rupture of the Uterus and Laparotomy," by Dr. R. Stansbury Sutton, of Pittsburgh; "The Use and Abuse of Antiseptic Injections in Obstetric Practice," by Dr. H. J. Garrigues, of New York; "A Digest of Twenty Years' Experience in the Treatment of Cancer of the Uterus by Galvano-cautery," by Dr. John Byrne, of Brooklyn; "The Nature and Limitation of Operative Treatment for Uterine Fibroids," by Dr. Paul F. Mundé, of New York; "The Diagnosis and Treatment of Fibroid Tumors," by Dr. W. Gill Wylie, of New York; "A Case of Sloughing Intra-uterine Fibroid," by Dr. Ely Van de Warker, of Syracuse; "A Case of Abdominal Lipoma simulating Ovarian Tumor," by Dr. Reeves Jackson, of Chicago; "Electrotherapeutics in Gynæcology," by Dr. G. Apostoli, of Paris; "Death from Visceral Lesions following Ovariotomy," by Dr. Henry C. Coe, of New York; "Renal Disease caused by Disease of the Pelvic Viscera," by Dr. George J. Engelmann, of St. Louis; "Pelvic Congestions *versus* Pelvic Inflammations," by Dr. S. C. Gordon, of Portland, Me.; "The Relation of Uterine Retro-deviation to Pregnancy," by Dr. A. Martin, of Berlin; "Nephro-lithotomy," by Dr. James R. Chadwick, of Boston; "Results of Repression of Menstruation," by Dr. E. C. Gehrung, of St. Louis; "Intermediate Trachelorrhaphy," by Dr. H. J. Boldt, of New York; "A Contribution to the Clinical History of Cystic Degeneration of the Ovaries, with a Report of Cases and Specimens," by Dr. R. B. Maury, of Memphis; "Partial Rotation of the Ovum in Early Pregnancy as a Cause of Placenta Prævia, suggested by Two Cases in Practice," by Dr. Edward Warren Sawyer, of Chicago; "The Protective Influence of Vaccination during the Intra-uterine Existence of the Fœtus," by Dr. Cornelius Kollock, of Cheraw, S. C.; "The Value of Laparotomy in the Diagnosis and Treatment of Minor Forms of Intra-abdominal and Intra-pelvic Disease," by Dr. T. A. Ashby, of Baltimore; "A Brief Report of my own Abdominal Work for the Year ending September 1, 1889," by Dr. R. Stansbury Sutton, of Pittsburgh; "The Surgical Treatment of Posterior Displacements of the Uterus," by Dr. W. M. Polk, of New York; and "The Effect of Ergot upon the Parturient Uterus," by Dr. John Goodman, of Louisville.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from August 11 to August 31, 1889:*

By direction of the Secretary of War, a board of medical officers—to consist of Heger, Anthony, Lieutenant-Colonel and Surgeon; Skinner, John O., and Morrill, James C., Cap-

tains and Assistant Surgeons—will assemble at the U. S. Military Academy, West Point, N. Y., on August 25, 1889, or as soon thereafter as practicable, to examine into the physical qualifications of the candidates for admission to the Academy. Par. 9, S. O. 185, A. G. O., August 12, 1889.

Gardner, William H., Major and Surgeon, Washington Barracks. Leave of absence for one month is hereby granted. Par. 1, S. O. 183, Headquarters Division of the Atlantic, Governor's Island, New York city, August 13, 1889.

Matthews, Washington, Major and Surgeon. Promoted to Surgeon, with rank of Major, to take effect from the tenth day of July, 1889, *vice* Town, promoted. War Department, Washington, D. C., August 14, 1889.

Havard, Valery, Captain and Assistant Surgeon. Leave of absence for one month, to take effect about October 1, 1889, with permission to apply to Division Headquarters for an extension of one month, is granted. Par. 3, S. O. 86, Department of Dakota, St. Paul, August 10, 1889.

Porter, Joseph Y., Captain and Assistant Surgeon, now at Jacksonville, Fla., will, if the state of his health will permit, proceed to Jackson Barracks, Louisiana, by direction of the Secretary of War, and report to the commanding officer of that post for temporary duty and by letter to the commanding general, Division of the Atlantic. Par. 16, S. O. 186, A. G. O., August 13, 1889.

Baily, Joseph C., Lieutenant-Colonel and Surgeon, Medical Director, Headquarters Department of Texas, San Antonio, is granted leave of absence for one month. August 17, 1889. S. O. 54, Headquarters Department of Texas.

Pope, Benjamin F., Major and Surgeon, is granted leave of absence for one month, with permission to apply through Division Headquarters for an extension of two months. Par. 7, S. O. 54, Department of Texas, August 17, 1889.

The commanding officer at Jackson Barracks, New Orleans, La., telegraphs the Adjutant-General of the Army that Brown, Harvey E., Major and Surgeon, died at Jackson Barracks on August 20th at 1.40 P. M.

Tremaine, William S., Major and Surgeon, now on sick leave of absence at Buffalo, N. Y., will, by direction of the Acting Secretary of War, report in person to the commanding general, Department of the Missouri, for assignment to temporary duty at the post of Fort Leavenworth, Kansas. Par. 4, S. O. 198, A. G. O., August 27, 1889.

The resignation of Porter, Joseph Y., Captain and Assistant Surgeon, has been accepted by the President, to take effect August 29, 1889. Par. 11, S. O. 200, Headquarters of the Army, A. G. O., August 29, 1889.

Promotions.

Matthews, Washington, Captain and Assistant Surgeon, to be surgeon, with the rank of major, July 10, 1889, vice Town, promoted.

To be assistant surgeons with rank of captain, after five years' service, in accordance with act of June 23, 1874:

Ewing, Charles B., Assistant Surgeon, July 5, 1889.

McCaw, Walter D., Assistant Surgeon, August 20, 1889.

Society Meetings for the Coming Week:

Monday, *September 9th:* New York Academy of Medicine (Section in Surgery); New York Ophthalmological Society (private); New York Medico-historical Society (private); Boston Society for Medical Improvement; Gynæcological Society of Boston; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private); Baltimore Medical Association.

Tuesday, *September 10th:* Mississippi Valley Medical Association (first day, Evansville, Ind.); New York Medical Union (private); Medical Societies of the Counties of Chemung (quarterly—Elmira) and Rensselaer, N. Y.; Newark, N. J., and Trenton (private), N. J., Medical Associations; Baltimore Gynæcological and Obstetrical Society.

Wednesday, *September 11th:* Mississippi Valley Medical Association (second day); New York Pathological Society; American Microscopical Society of the City of New York; Medico-legal Society; Medical Societies of the Counties of Albany and Montgomery (quarterly), N. Y.; Worcester, Mass., District Medical Society (Worcester); Philadelphia County Medical Society.

Thursday, *September 12th:* Mississippi Valley Medical Association (third day); Society of Medical Jurisprudence and State Medicine; Brooklyn Pathological Society; Medical Society of the County of Cayuga, N. Y.; South Boston, Mass., Medical Club; Pathological Society of Philadelphia.

Friday, *September 13th:* New York Academy of Medicine (Section in Neurology); Yorkville Medical Association (private); Medical Society of the Town of Saugerties.

Proceedings of Societies.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

(*Continued from page 191.*)

Dysphonia Spastica.—Dr. F. I. Knight, of Boston, read a paper on this subject. (To be published.)

Dr. G. W. Major, of Montreal: I have had one case of aphonia spastica and two of dysphonia spastica. The case of aphonia occurred in a boy of fourteen years of age with a well-marked history of hereditary syphilis. The two cases of dysphonia spastica were met with in adult young men, and in both Hutchinson's teeth were observed. In the case of aphonia the vocal cords closed spasmodically on phonation, and altogether acted much in the same manner as in defecation. I noticed in this case also a spasmodic action of the diaphragm synchronous with the closure of the cords. Under treatment no satisfactory improvement occurred. The thought has more than once suggested itself to me that there may be some relation between syphilis and spastic aphonia.

Dr. S. W. Langmaid, of Boston: I reported one case fifteen or sixteen years ago, and in that case everything I tried was unsuccessful. The patient always prescribed for himself a little whisky when he had to use the voice, and that answered for the time being. The condition seems to be about the same as at that time.

Dr. D. Bryson Delavan, of New York: In one of the cases referred to by Dr. Knight the same phenomena were observable as in the case mentioned by the last speaker. The patient, after fortifying himself with a stimulant, would talk tolerably well. I had him under treatment for two months, and he seemed to improve under local applications to the larynx and vocal training, especially directed to the management of the breathing, and it seemed that if the training could have been continued long enough the trouble might have been done away with.

Dr. F. I. Knight: I really believe that more cases have been seen than have been reported. I should like to have had some opinion upon the idea of Lennox Browne that these cases are not infrequent.

Dr. C. E. Bean, of St. Paul: About two years ago a case was

referred to me by a physician in St. Paul. The patient was a man, twenty-five years of age, with a syphilitic history, suffering with aphonia spastica. I had him under observation two months, using galvanism, faradism, strychnine, etc., without the slightest benefit. He is now in about the same condition as at that time.

Some of the Manifestations of Syphilis of the Upper Air-Passages.—Dr. T. A. De Blois, of Boston, read a paper with this title. (To be published.)

Dr. F. H. Bosworth, of New York: I am sorry that the speaker did not touch more upon bone lesions, which I consider the more important feature of the tertiary syphilitic manifestations in this portion of the air-tract. There is still one question undecided, and that an exceedingly important one, and that is, How far is the bone involved in these deep ulcerations of syphilis? Of course the ulcerative process means ultimately a necrosis of the bones to a great degree covered by the original gumma, and the question is not only how far is the bone involved, but also what is the ultimate tendency? My own view is that the syphilitic manifestation in the deep layers of the periosteum of the hard palate expends its virulence in the primary deposit of the gummatous material, and that the morbid process now becomes mainly a local one, which consists in the development of an endarteritis, as has been shown so clearly by Schüster and Sänger, under the action of which localized necrosis or ulceration of the soft parts ensues, purely as the result of a shutting off of the normal blood-supply. As a final result, the nutrition of the bone is interfered with and bony necrosis takes place. The primary deposit of gummatous material limits the extent of the necrosis, so that the idea of the extension of the ulceration is not correct.

Taking this view, I think that the ulceration is not the important thing; it is the bone. Deal with the bone and the ulceration will take care of itself. After the primary breaking down of the gummatous material, the maintenance of the ulceration is dependent upon the necrosis of the bone, so that removal of the diseased bone is an important part of the treatment.

The point which I desire to make here is that the original gummy deposit occurs as the result of the constitutional disease; the ulceration is a local process, the necessary result of the pathological features of the gummatous material causing an endarteritis; furthermore, the ulceration is limited by the original gummy deposits, and no new gummy matter is deposited later, except as a new explosion of the disease, as it were; a gummy deposit occurs suddenly, and is not progressive. Bony necrosis results from the gumma, and, a bony sequestrum being formed, this becomes the prominent feature of the local disease in that it keeps up the ulceration by its mere presence, as of a foreign body.

I indorse Dr. De Blois as regards the treatment in the administration of potassic iodide and not the use of mercury until the lesion has disappeared. After the syphilitic lesion has disappeared, then mercury should be given for the removal of the syphilitic virus. As regards operative treatment, it had better be let alone until the syphilitic virus is thoroughly under control.

Dr. C. C. Rice, of New York: In regard to operation in cases of adhesion of the soft palate to the posterior wall of the pharynx, one point must not be forgotten—viz., that in some of these cases there is extensive cicatrization and contraction in the post-nasal pharynx above the line of adhesion; consequently, after the lower adhesions have been separated, we do not get the good results, so far as nasal respiration is concerned, that we should expect. The reason of this failure is that the cicatrization in the post-nasal pharynx still remains. This part of the operation should be attended to, and is as important as the freeing of the lower adhesions. It has been said that we should not operate until the "force of the specific disease has spent itself," but it is difficult to determine when this point has been reached. I have had a case within a year where there was complete adhesion and in which there had been no manifestation of a syphilitic process for many years. The patient had taken medicines, and was apparently cured. I separated the adhesions with the galvano-cautery, but the ulceration produced by the operation refused to heal kindly, and extended somewhat, in spite of all that I could do in the way of constitutional and local treatment. I have found that there was less tendency to readhesion where the galvano-cautery was used with a low grade of heat than when cutting instruments were employed. I have lately heard of an operation which has been tried in New York for the relief of these adhesions. An ingenious physician has made a perforation through the line of adhesion with the galvano-cautery, and a ring has been passed through this and worn until cicatrization has taken place, and then he has freed the adhesions in the circle of the ring. This, it is maintained, will prevent readhesion.

Dr. J. N. Mackenzie, of Baltimore: Dr. De Blois has referred to the dangerous symptoms from the extension of the ulceration into the accessory sinuses, principally the antrum. I would like to caution the members of the association, if they have not had a similar experience, against the too vigorous removal of diseased bone from the nasal passages. You frequently pull out more than you want, and from dangerous regions. I have not had this occur in my own practice, but I have seen it in that of others. I have seen a portion of bone drawn out, and some of the brain membranes with it.

I had a very sad case on my hands a few years ago—that of a lady who had acquired or inherited syphilis. I removed nearly everything in the nose—the turbinated bones and the sides of the antrum of Highmore, and finally the perpendicular plate of the ethmoid became so loose that I removed it. The plate of the ethmoid which had been removed had attached to its upper surface a portion of membrane, but I am in doubt as to its nature. I placed her on the use of iodide of potassium and stimulating and nutritive treatment, and she remained well for two years. She was then taken with a violent headache and a profuse fœtid discharge from the nose. This headache passed off in a few days, and she did not consult me until two weeks after the headache had first appeared. I found that the process had broken out again and had invaded both antra. Offensive pus was discharged through the mouth and throat and every possible way of escape. I began vigorous antisyphilitic treatment, and did everything that I knew of to relieve her, but she finally went into a state of coma, and had general convulsions. Symptoms of meningitis set in, from which she died. I am of the opinion, from my examination and digital exploration of the case, that the process extended to the brain, not through the nasal passages, but that ulceration had penetrated through some other avenue. A post-mortem examination was not allowed, so that I can not prove this point.

I fail to comprehend the point made by Dr. Bosworth. Do you leave the ulceration alone and just pay attention to the bone?

Dr. Bosworth: The original deposit of gummatous material limits the extent of the ulceration. The ulceration does not extend beyond. I do not believe that it invades the antrum unless there has been a primary deposit in the antrum. Of course, the ulcer is to be treated, but it can not be cured until the prominent perpetuating cause has been removed—viz., the necrosed bone.

Dr. Mackenzie: What are the clinical facts to support this view?

Dr. Bosworth: Syphilis shows a tendency not to transgress anatomical boundaries. It extends only so far as the original deposit of gummatous material. The syphilitic ulceration does not extend from one place to another. Furthermore, I believe that clinically the extent of the swelling, tumefaction, and redness indicates the extent of the gummatous deposit.

Dr. Mackenzie: I am not prepared to accept or deny this view, which, if it can be proved, marks a decided advance. It would almost revolutionize our treatment.

Dr. W. H. Daly, of Pittsburgh: I am somewhat surprised at the statement of my friend, Dr. Rice, that he, a man of acknowledged ability, had used the galvano-cautery knife in freeing the adhesions of syphilis. I am very glad that he has brought this up as a warning to others. I should consider it a very bad method of practice to use the galvano-cautery on any adhesions of such low vitality as syphilitic tissues. There is also a great tendency to the readhesion of cauterized tissues. I believe that the galvano-cautery is a very much abused instrument, but abused by its friends. I believe that it is often used by skillful practitioners from an unfounded fear of hæmorrhage in the use of the knife. I feel satisfied that we can always obtain better results in the fauces, in the nose, in the larynx, and, in fact, in any operation anywhere, if we do it with a sharp cutting instrument and allow as free hæmorrhage as is consistent with good judgment and safety. In other words, the freer the hæmorrhage within certain limits, the more certain are we to have immunity from septicæmia and the more certain to have rapid union with satisfactory results. While I think that the galvano-cautery knife is a useful instrument, I think that it is a very much abused instrument. I am glad that my eminent and able friend, Dr. Rice, has made this honest confession. It may be a warning to others less experienced than himself.

Dr. H. L. Swain, of New Haven: I should like to hear if there is any way of proving the statement that ulceration takes place only in the portion where there has previously been a gummatous deposit. It would seem that we have a contradiction of this view in the secondary ulcerations which occur in the course of treatment where everything is apparently healthy and there is no evidence of gummatous deposit. These new ulcerations come in different places from those in which ulceration first occurred.

Dr. J. C. Mulhall, of St. Louis: I can scarcely let the statement of Dr. Bosworth pass without question. How does he explain the cases of tertiary syphilis in which almost every portion of the bony framework of the nose is involved? Does he say that there are gummatous deposits involving the nasal cavities *en masse?* Every one of us has seen cases of tertiary syphilis where hardly any portion of the boundary of the nose was uninvolved. I therefore take issue with his assertions, first, that gummatous deposit must take place before ulceration; and, second, that the limits of the ulceration will not extend beyond the first deposit of gummatous material.

Dr. F. H. Bosworth: The investigations of various observers have shown the cause of the ulcerations of syphilis. It has been shown to be due to the gummatous deposit. That is the only explanation that we have of the ulceration. The explosion of syphilis consists in the deposit of gummatous material under the mucous membrane, and the explosion exhausts itself in that deposit, but the local process goes on. There is no subsequent deposit until there is another explosion. The thing exhausts itself for the time being. Syphilis involving the whole nasal cavity is not due to extension. I have looked for it, but I have not found it. Ulceration occurs only where the original deposit took place. Subsequent deposits may involve other portions of the nose. I think there is no clinical evidence showing the extension of a syphilitic ulceration of the variety under discussion.

Dr. A. T. De Blois: The discussion has taken so wide a field that it is difficult to touch upon the points that have been brought up. I would only say in regard to the assertion of Dr. Bosworth that we should remove the bony structures and let the ulceration take care of itself, that it is very difficult to say how far the ulcerative process in the bone has extended. I have seen these ulcerations heal after a very slight scraping, while in other cases the whole bone has had to be removed. When ulceration occurs in the soft parts, we can not let it absolutely alone. It will heal, but it will heal open, and you will have all of the distressing results which follow that condition.

Some Unusual Manifestations of Tuberculosis of the Larynx.—Dr. C. C. Rice, of New York, read a paper on this subject. (See page 234.)

Dr. W. H. Daly, of Pittsburgh: There are two points with reference to tuberculous disease of the larynx which I believe are worth noting. I have demonstrated to my own satisfaction in several cases—three or four—that tuberculous ulceration of the larynx can be cured. In these cases I could discover no syphilitic complication either inherited or acquired. I have arrived at this belief contrary to the teachings that I had received from men in whom I had confidence as teachers and authors. In so far as the treatment was concerned, it was the most approved constitutional treatment, but I do not believe that the constitutional treatment had as much influence as the persistent careful local treatment. If I were to be denied one or the other in the treatment of tuberculous ulceration of the larynx, I should certainly elect to be deprived of the constitutional treatment. The local treatment resolved itself into a question of cleanliness and antisepsis, and to this end one can use what he pleases. In the cases referred to, recovery took place under the persistent use of alkaline sprays and inhalations followed by the free use of iodoform—not iodoform modified by any medicament to correct the odor, but iodoform pure and simple.

There is another point. It may seem like rank heresy, but I believe that tuberculous ulceration of the larynx occurs as a local disease—that is to say, it may occur in patients with no evidence of tubercular deposit elsewhere. There are in Pittsburgh two such cases; one of them I saw a day or two ago. The patient is a clerk in a jeweler's store, an occupation anything but favorable to the maintenance of a cure. For over a year that young man has been working hard at long hours. The voice is somewhat affected by the diseased action and changes in laryngeal structure which took place before he came under my care, and a part of the epiglottis is gone. After he was placed under treatment there was little further destruction. He is now ten or twelve pounds heavier than before his illness and twenty or twenty-five pounds heavier than when he came under my care. I regard the case as a cure. The diagnosis was confirmed by the microscopical examination made by a competent young gentleman after the method of Koch. There was no evidence of lung disease. Being a strong believer in the theory that tuberculous, strumous, and scrofulous diseases are the offspring of syphilis, I investigated this point very closely in this case to place it where it belonged.

Dr. J. C. Mulhall, of St. Louis: I am glad to congratulate Dr. Daly on having cured laryngeal phthisis. I, however, think that his position is a hard one to maintain, for this reason: It is easy enough to get microscopical proof of phthisis in the presence of the bacillus without phthisis existing, for in the secretions of the mouth and throat of even healthy individuals this bacillus is sometimes found. Again, I do not doubt that there is such a thing as catarrhal ulceration of the larynx. If we take

these two facts into consideration with the fact that catarrhal ulceration can be cured, we can understand how one might readily fall into error.

That laryngeal phthisis is ever primary is also difficult to prove. That it is sometimes the first sign of the condition there can be no doubt. We also know very well that tubercular disease may exist in the lungs and not be accessible to physical examination. Post-mortem examinations have proved this. Post-mortem examinations have also proved that in every case of laryngeal phthisis there is pulmonary phthisis. It is said by experts in lung disease that unless the lung is diseased in a portion of the size of a silver dollar, its presence is readily overlooked. It is therefore easy to be deceived.

That laryngeal phthisical ulceration can be healed I have no doubt, but that it can be cured I do doubt. After our attention was called to the value of lactic acid I at once made use of it in tubercular ulceration of the larynx, and I have seen the ulceration heal on one side and appear on the other side. I went one step further than the one who recommended this agent, Krause, and applied the pure lactic acid after spraying with cocaine. Clinically I know that laryngeal ulcerations of a phthisical character will heal under the influence of pure lactic acid. I have seen them heal in the pharynx in a dying patient. I, however, can not say that I have ever seen life prolonged to any appreciable extent.

I was once a firm believer in the theory that ulceration never occurred in chronic catarrhal disease. I have had two physicians under my care. One had a terrible cough for two years, his health had run down, and he had quite a large ulceration in the larynx, which rapidly healed in the course of a month under lactic acid. The cough lessened and he improved in weight and constitutional condition and was entirely cured. This was not a tubercular ulceration.

Dr. F. I. Knight: How do you know that it was not tubercular?

Dr. W. H. Daly: What are the characteristics of catarrhal ulceration?

Dr. J. C. Mulhall: Catarrhal ulcers occur usually in some part of the larynx where there is a great deal of friction and come on after a distinct history of severe laryngitis. The ulcer has clean-cut edges and not the creeping edges of the tubercular ulcer; is single and unaccompanied by other familiar signs of laryngeal tuberculosis.

Dr. F. I. Knight: The first point raised by Dr. Rice is certainly interesting. I have had a great deal of trouble in the diagnosis of these cases. It is hard enough to make an accurate diagnosis where we have only one disease to deal with. In some cases where I have been almost sure enough of my diagnosis of tuberculous disease of the larynx to let the patient go without constitutional treatment, I have been happily disappointed in seeing the ulceration disappear under specific treatment. These mixed cases are certainly annoying, and the only thing that we can do in endeavoring to make a prognosis is to find out if we can which disease predominates, for, although there may be evidences of tubercular disease elsewhere, the effect of specific treatment may be very satisfactory if that element has entered into the case.

In regard to the possibility of tubercular ulceration being cured, I have not the slightest doubt that such ulceration in the larynx has got well just as in other parts. That it will heal under mild treatment I have proved by the effect of alkaline applications and iodoform. I have no question that lactic acid will heal tubercular ulcerations more quickly and certainly than anything yet proposed, but after we have them healed they do not stay healed, unless we happen upon the time when the patient is ready to recover and the ulcer of the larynx is the last point to be cured. If the pulmonary disease is in a quiescent condition and the digestion is good, and there is this one lesion in the throat which is the particular thorn, I believe that in some cases, if we heal that, we get what is practically a cure. If the disease in the lung is active and the patient is miserable in other ways, the cure of the ulcer in the throat is not going to do much good.

I have seen what I suppose Dr. Mulhall calls catarrhal ulcerations. They are catarrhal. I should call them abrasions occurring in acute inflammatory conditions; but where there is loss of substance, as in the case referred to by Dr. Daly, I should, in considering the diagnosis, rule catarrhal ulceration out of consideration.

In regard to the occurrence of tubercular ulceration as a primary affection in the larynx, I see no reason why we should doubt that it may occur there as well as anywhere else. I think, however, that all who are familiar with this class of cases and are tolerably competent in physical diagnosis will agree that in the vast majority of cases careful examination will prove that there is disease in the lung, and in other cases, where we do not get positive physical evidence, we find rational symptoms which would lead us to infer that there is pulmonary disease. I have had many cases brought to me as illustrations of primary tubercular disease of the larynx, but, on careful examination, I have found good evidences of disease at the apices of the lungs. In other cases I have failed to get physical signs, perhaps because they did not exist. Sometimes a condition of glottic rigidity prevents us from getting the signs that may be present.

The earliest signs of tuberculosis of the lungs are by no means changes in resonance on percussion and in the respiratory murmur which many seek for, but they are localized râles which are only obtained upon coughing, and a cough properly made. In my experience this is an early sign. Many physicians examine a patient without asking him to cough. I once saw a distinguished professor of Vienna make this mistake. He examined a patient in my presence and said there was no phthisis. I asked him to try the cough, and he found an abundance of localized high-pitched râles, and corrected his diagnosis. Most patients when asked to cough take a deep inspiration, cough, and at once breathe. The deep breath which they take before may spoil the râle, or, if they breathe too soon after the cough, the râle may not be heard. The patient should cough from a rest and not breathe immediately before or immediately after he coughs. In that way in many cases we get an explosion of râles, which we should not otherwise hear. I have seen very few cases in which it seemed to me that the tubercular disease was primary in the larynx. If we get a case where the disease is primary and localized, and cure the ulceration, I do not see why it should not remain cured, unless there is subsequent infection.

The other points in the paper are interesting. I have seen anterior adhesions occur from other causes, but not from tubercular ulceration. I had recently a notable case—one of cut throat.

I have not seen an isolated tubercular tumor such as Dr. Rice describes.

Dr. W. E. Casselberry, of Chicago: I wish to support the position of Dr. Mulhall with reference to catarrhal ulceration. A year or so ago I saw a physician of Chicago who had suffered from recurrent attacks of laryngitis, suspected to point toward tuberculosis, for which reason he had spent three winters in the South, much to the detriment of his affairs. At this time he had an elongated uvula, occasioning a good deal of cough, and the larynx and naso-pharynx were in a catarrhal state. I first excised the uvula. There were no ulcers at this time. A few weeks later he appeared with a small but pronounced superficial ulcer on the epiglottis, not much more than an abrasion,

but still with distinct loss of substance, and a smaller ulcerated spot on the false vocal cord. I told him that these were catarrhal ulcers, and did nothing for them beyond keeping the parts clean, and in a week or ten days they disappeared. He has since been perfectly well.

I am glad that Dr. Rice called attention to the rather common coexistence of tuberculosis and syphilis. It has been my conviction that the existence of either one of these diseases predisposed to the other; that one of the dyscrasiæ having attacked the larynx, a favorite site for the manifestations of either, predisposed that organ more than ever to the invasion of the other disease.

Dr. J. N. Mackenzie, of Baltimore: I fully indorse the statements of Dr. Knight concerning the presence of localized râles as indicative of incipient tuberculosis, and I have found that where they can not be heard over the apices they can often be heard behind the scapula. By this means I have often been able to make a very early diagnosis of tuberculosis.

The question of the existence of primary tuberculosis of the larynx has been raised. This is a question which can only be determined by the scalpel. Dr. Orth, professor of pathological anatomy in the University of Berlin, in a work published some years ago, describes such a case. All the organs of the body were examined, but the larynx was the only one in which tubercles were found. I think the patient died of the tuberculosis. Primary tuberculosis of the larynx has been demonstrated in the same way by other observers.

Dr. Mulhall has already stated what I was about to say, that while undoubtedly tubercular ulceration of the larynx will heal, yet the healing of the tubercular ulcer in the larynx by no means indicates the cure of the disease. The same thing may be said of tubercular ulcers of this region as was said of syphilis by Vidius, "They make many truces, but never peace."

As regards isolated tubercular tumors, which were first brought to the notice of the profession by myself, I should like to refer to one of the cases in which death occurred from carcinoma of the stomach and liver. At the post-mortem examination tubercular cavities were found in the lung. In the trachea there was a small tumor, which I described, and which I took to be an isolated carcinomatous nodule in the trachea, of which only a few cases had been reported. I removed the nodule carefully and submitted it to microscopical examination, and was astonished to find that it was of a tubercular nature. It presented distinct miliary tubercles in all stages of degeneration, set in a dense network of fibrous connective tissue. In this case a nodule, resembling in structure the tracheal growth, was found in the pericardium. The patient died, not of tuberculosis but of the carcinoma. The tuberculous process in the lung was, however, well marked.

I have several times seen the coexistence of syphilis and tuberculosis of the larynx, and the diagnosis is one of great difficulty. In all such cases we have to resort to the test of treatment.

With reference to catarrhal ulceration of the larynx, while I should not like to absolutely deny the existence of such a condition, I have never seen it. By ulcer I do not mean the erosion or abrasion of the larynx which results from coughing or the application of an instrument, but I mean a well-marked, distinctly excavated ulcer—a true ulcer. In my experience such an ulcer is indicative of some constitutional trouble, whether it be syphilis, tubercle, or what not; it is generally indicative of a dyscrasia.

In regard to the treatment of laryngeal tubercular ulcers by harsh methods—such as the application of lactic acid, which is, perhaps, less harsh than some others, the application of the galvano-cautery, and the treatment of Schmidt, of Frankfort-on-the-Main, by incision of the infiltrated tissues—I am glad to say that the common-sense, conservative element of American laryngology is decidedly opposed to such measures, which I believe do more harm than good. I have never had a patient in private practice who would have allowed me to resort to such measures, even had I desired to do so.

There is a form of ulceration which occurs in the later periods of tubercular disease which is found principally in the lower part of the trachea and near its bifurcation and in the bronchi, but which may be found higher up in the larynx and in the pyriform sinus. In 1881 I published a paper in Berlin in which I dealt in an elaborate way with this question. These ulcers resemble the so-called aphthous ulceration of the old Rokitansky school, and the so-called diphtheritic ulcer. The tissue becomes invaded with a rapid cell proliferation, necrosis occurs, a slough follows, and ulceration is the result, but it presents none of the characteristics of the true tubercular ulcer. I mean by a true tubercular ulcer one that is formed by the breaking down of myriads of miliary tubercles. These ulcers may or may not contain bacilli. Orth speaks doubtfully upon the subject, but seems to regard them as tubercular. Dr. Osler has found the same ulceration in the rectum, and has been at work upon the subject, but I do not know what conclusions he has reached. It is, however, readily conceivable that these ulcers may easily heal. I have no doubt that many of the so-called healed tubercular ulcers are nothing more than healed aphthous erosions which have been produced by the corrosive action of the sputa in the later stages of the disease.

Dr. William C. Glasgow, of St. Louis: A good many years ago I stated my belief that tubercular ulceration of the larynx was never healed. My experience since then confirms me in that belief. I have heard a great deal and read a great deal about tubercular ulcerations being healed. There is a common belief that any ulceration in the larynx, not syphilitic or lupoid, is tubercular. I have seen many ulcers of the larynx heal. I have seen them heal in cases of pronounced phthisis where the physical signs demonstrated phthisis, and I have seen them heal where there were few or no physical signs of this disease. I do not consider these ulcers tubercular. They heal under the simple treatment of which Dr. Daly speaks and which I have used for fifteen years—that is, iodoform and morphine by insufflation. I recall one case in which a man in the last stages of phthisis, with large cavities in the lungs, hectic, etc., was unable to swallow on account of a large ulcer on the posterior portion of the larynx. Under the use of iodoform he was able to swallow, but died in a short time. I did not consider this a case of tubercular ulceration. I have used lactic acid, but have not found it as useful as others claim. I think that iodoform has given me better results.

One remedy that I have used with great success in the last two years is peroxide of hydrogen. I have seen these ulcers heal almost miraculously under a simple spray of peroxide of hydrogen. A case came to me last spring with two thirds of the epiglottis destroyed. The lungs were examined with negative result; no bacilli were found. Under the use of peroxide of hydrogen the ulceration or seeming ulceration, for I do not think that it was true ulceration, entirely disappeared, and the patient was able to swallow. The destructive process took a fresh start on the ventricular bands—first on one side and then on the other—and this continued until death. Repeated examination of the lungs and of the sputa developed nothing until September, when bacilli began to appear. This man died of marasmus, and at the time of his death the râles of which Dr. Knight spoke were appreciable at the apex of one lung. His death occurred within a month of their development.

I do not believe in primary tubercular disease in the larynx.

In all the cases that I have seen there has been more or less disease of the lung. In addition to true tubercular ulcers, I have seen catarrhal ulcers and others which I have not been able to define, but I do not consider them tubercular. Some of these ulcers occur in the condition of septic œdema described in my paper. In true miliary tuberculosis of the larynx I have always found some evidence of disease in the lungs, and these cases have never recovered.

Dr. W. H. Daly: What is the value of the tubercle bacillus as a means of diagnosis? Dr. Glasgow states that it was present in one of the cases to which he has referred.

Dr. Glasgow: Its presence demonstrates tuberculosis. Its absence does not demonstrate anything.

Dr. C. C. Rice: The different points in the discussion have been thoroughly covered. I have been particularly impressed with one thing, and that is the radical change in the opinion expressed to-day as compared with that expressed by this association four or five years ago. If the gentlemen will take the pains to compare this discussion with that on the same subject four years ago, they will find that there has been a radical change in the opinion of this association in regard to the curability of tubercular ulceration. I refer to the discussion on Dr. Cohen's paper. The opinion expressed at that time was to the effect that these ulcerations were rarely if ever cured. The prognosis, so far as the laryngeal manifestations were concerned, was exceedingly bad. I have been surprised during this discussion to hear of the number of cases of laryngeal ulceration that have been cured. I am at a loss to understand the character of the large number of ulcerative cases referred to by Dr. Glasgow which he believes to be neither syphilitic nor tubercular. Ulcerations which belong to neither of these affections are exceedingly rare in my opinion. The catarrhal ulceration spoken of is a very uncommon manifestation. I do not refer to slight erosions. I do not believe that a catarrhal ulcer can occur unless, in addition to the acute inflammatory condition, there is a direct traumatic cause, such as friction and an explosive cough. We often see erosions. They occur on the tip of the epiglottis where it comes in contact with the tongue. They occur on the vocal bands where they rub against each other. I do not believe that catarrhal ulcers are seen on the sides of the larynx. If ulcerations of any size are found in that location, I should look upon them with suspicion. We know that primary tuberculosis of the larynx is very rare. In the treatment of laryngeal tuberculosis I think that more reliance is to be placed on milder drugs than upon the use of acids and surgical measures, etc. Cleanliness and the use of cocaine to allay irritability of the larynx is important. This, with iodoform, seems to me to furnish the best means of benefiting these patients.

Report of Two Cases of Buccal Tuberculosis.—Dr. C. E. Bean, of St. Paul, read a paper with this title. (To be published.)

Dr. D. Bryson Delavan, of New York: As Dr. Bean referred to a case which I reported, it may interest the fellows to know that the patient is still living. I heard from him three months ago, and there has been no recurrence of the tubercular disease. I reported my experience in the paper referred to. In regard to lactic acid I can only substantiate the statements made by Dr. Knight—that it does have a marked influence in certain of the milder ulcerations, which are neither deep nor extensive. It heals them for a time. In the more severe ulcers, while it improves, cleanses, and enlivens them for a time, it is not curative. In a case recently seen there was what appeared to be a large tubercular ulcer at the tip of the tongue of the size of a ten-cent piece. The unusual feature of this case was that pain was entirely absent. Syphilis was carefully looked for, but there was no evidence of its presence, while there was extensive pulmonary disease. Microscopic examination proved that the ulcer was not tuberculous, but epitheliomatous, thus illustrating the difficulty of making a positive diagnosis in ulcerative lesions of the tongue.

Dr. C. E. Bean: There is nothing more to be said. The subject has been thoroughly gone into in the previous discussion. The treatment, aside from the use of the curette, is in no wise different from the treatment of tuberculosis of the larynx.

The Local Treatment of Diphtheria.—Dr. J. C. Mulhall, of St. Louis, read a paper on this subject. (To be published.)

Dr. William C. Glasgow, of St. Louis: I am one of those who believe that diphtheria is a blood disease rather than a local affection, and the only objects of local treatment that I see are cleanliness, disinfection, and the loosening of the membrane. There is one remedy which I have found valuable in loosening the membrane. It is the peroxide of hydrogen used as a spray. Last winter I was called in consultation to see a young girl where the membrane had invaded the larynx. The symptoms were so urgent that I advised the gentleman in charge to stay all night, and stated that I thought tracheotomy would be needed. As a preliminary, I recommended the use of the peroxide of hydrogen by the atomizer. After a few applications a large piece of membrane was thrown out. The next day the larynx was much clearer, although there were still portions left. That was the only local treatment employed in this case. Every hour a gush of the peroxide was thrown into the larynx. It produced a veil of foam, as it always does, and it seemed to lift up the membrane by the formation of gas. This patient entirely recovered. I look upon the local treatment simply as an adjuvant. I think that the constitutional treatment is the main thing. The constitutional treatment that I have found most successful is that by bichloride of mercury and benzoate of sodium. This is combined with very simple local treatment. There are cases of diphtheria where more local treatment is necessary. In these cases the method which Dr. Mulhall has described would be of value.

Dr. D. Bryson Delavan, of New York: I think that not only the general practitioner but also a great many specialists can not receive too much warning as to the importance of the early detection of the extension of diphtheria to the nasal passages. I have seen case after case in the hands of well-known specialists where any chance that the patient may have had was lost by the neglect of reasonable precautions.

During the past ten years I have used the bichloride and the cyanide of mercury in the treatment of diphtheria, with increasing confidence in the value of these drugs. As is now well established, the bichloride of mercury is the most active destroyer of the streptococcus known.

Dr. W. H. Daly, of Pittsburgh: I do not know that I should transgress the bounds of this discussion if I were to allude to the treatment that I brought to the notice of this association in Philadelphia in 1887.* I think that it is probably as active and efficient as a local remedy as it is active and efficient as a constitutional remedy. Of its constitutional action I shall not speak. I refer to large and oft-repeated doses of calomel, untriturated, unmixed with sugar. I have in my possession large numbers of personal letters, from general practitioners from distant and near parts of this country and abroad, thanking me for having given to the profession my experience in the use of calomel in the treatment of diphtheria, and I take the liberty of again bringing it to your notice in connection with this paper

* "The Simplest and Most Efficient Treatment of Diphtheria," "Transactions of the Amer. Laryng. Assoc.," 1887, read at the Philadelphia meeting.

more especially with reference to its local effect. I believe that a large part of the valuable therapeutic effect of calomel administered as I recommend it—that is, two, three, four, or five grains every two hours to a child one and a half or two years old—is due to the local action of the drug upon the diphtheria poison in the fauces. I feel sure that the gentlemen who try that treatment will not be disappointed. I presume that it is your experience, as it is my own, that many cases of diphtheria that come under our observation are in an advanced stage and are in the hands of the general practitioner, and we do not have that full control of the case that we should if it were in our own hands; but if you will investigate this treatment and try it, I promise you that you will not be disappointed. The treatment is very simple and easy—simply floating the calomel on a teaspoonful of ice-water and opening the child's mouth and putting it in. If it is swallowed, well and good; if a portion remains in the mouth and fauces, well and good. I hope that you will pardon me for again bringing this to your notice. This is a valuable and tried therapeutic measure and not a new one.

Dr. Harrison Allen, of Philadelphia: I have found trypsin useful in removing the membrane. It is purely a local agent. I apply it directly to the membrane, and it is best used where you can see the membrane, but I have not hesitated to carry it by curved probes to the lower part of the pharynx and to the larynx. It is of a pasty nature when mixed with mucus and readily adheres. A piece of absorbent cotton is put on an ordinary holder, slightly moistened, and dipped in the trypsin, lying on a watch glass. A large portion adheres, and this is then carried to the affected surface. The ordinary act of deglutition will not dislodge it.

A lady, the wife of a physician, was under my care last winter. She appeared to have had an ordinary tonsillitis. I plunged a lancet into the mass but found no pus. At my next visit I found the whole tonsil covered with diphtheritic membrane. The lady was extremely ill. In this case I had the happiest effect from trypsin, and I believe that it saved her life. The membrane did not extend beyond the point first affected.

Dr. S. Johnston, of Baltimore: In the discussion on Dr. Daly's paper I called attention to trypsin and stated how valuable it had been in the cases in which I had used it. I then predicted that it would be used universally as a local measure in this disease. Since then, in several instances, I have found it a most useful solvent of diphtheritic membrane. I am glad to hear Dr. Allen's remarks.

Dr. J. C. Mulhall: I am sorry that the main object of my paper has been overlooked, and that was the method of carrying out the application, not of using any particular remedy. I may therefore presume that my method is peculiar to myself.

I purposely omitted to touch upon the constitutional treatment of the disease. I am afraid that the effect obtained by Dr. Daly from calomel is a constitutional effect. Looking into the throat when the membrane is beginning to separate, we find a good deal of catarrhal secretion, and I do not see how the application of any powder could affect the tissues underneath without first the complete removal of the secretions above.

Peroxide of hydrogen is certainly a valuable local agent. I have used it as well as trypsin and other solvents extensively, but I think that I get more rapid solvent effects from papoid.

I am sorry that more was not said about getting rid of the poison in the throat. This was the prime object of the paper.

Some Manifestations of Lithæmia in the Upper Air-Passages.—Dr. F. W. Hinkel, of Buffalo, read a paper on this subject. (To be published.)

Dr. William C. Glasgow, of St. Louis: I have listened with pleasure to this paper, and I think that such papers are what we particularly need in directing attention to the constitutional origin of local troubles. There is no doubt that a great deal of local trouble is due to constitutional changes. I have seen the cases referred to, but I have not looked upon them as lithæmic. I have not been able fully to explain them. I have understood them so far as not to use local treatment. The success that has attended remedies directed to the constitutional condition and to the stomach and digestive organs has been sufficient. These cases I have called gastric, from the occasional eructations of gas and fullness after meals; but in some of them there have been slight evidences of dyspepsia. An abnormal fermentation may be the provoking cause. In all of them I have found the use of bichloride of mercury in minute doses with bismuth and bicarbonate of sodium efficient. An old lady, who had suffered for two weeks with a trouble of this kind, recovered in a few days under this simple treatment. I have seen many such cases. Perhaps they are lithæmic, but I have looked upon them as due to a disorder of the stomach or viscera. The paper is valuable in drawing attention to the possible constitutional nature of these local disorders.

Dr. Harrison Allen, of Philadelphia: This is certainly a most excellent paper. There is need of defining this notion of lithæmia more accurately. In the paper referred to as written by myself, I attempted to separate the signs by which lithæmic sore throat could be separated from the gouty. There is one phase of the subject which has not been alluded to; that is, that in adolescents you get a type of throat which is very puzzling. Young, vigorous people, especially young men, will have a lithæmic sore throat which is very puzzling. These cases resist local treatment. Reverting to the discussion of yesterday on Dr. Roe's paper, suppose such a condition existed and you used the bistoury or cautery, you would at once excite a traumatic pharyngitis. The throat is of the color of a boiled lobster. I find this condition generally in those living in luxurious homes; I believe that they are over-fed and under-exercised. In Philadelphia we have a great deal of luxury, and there is a large class that eat too much. This is a matter of common comment among school-teachers. The testimony of teachers is that many of these young persons do not get along in their studies as well as they should on account of foolish luxury in their homes. If this is the case, we can understand that in its crude form this added material is useless if not injurious. It seems to me that the use of too much sugar, starch, and rich wine would produce the condition of which Dr. Hinkel speaks. We, however, can not prove this position, for it is impossible to control the habits of these patients.

Dr. D. Bryson Delavan, of New York: These cases are commonly met with among the over-indulged children of wealthy and injudicious parents. The average child will not select the most wholesome varieties of food if allowed to choose for himself, so that sweets must be interdicted. Unless we can control the diet, the management of these patients is difficult. It is valuable to have attention called to it, so that a sentiment may be excited against this over-indulgence which we find among the richer classes. Among people of more moderate means such troubles are not so common. Until these cases can be put upon a proper regimen, which it is easy to suggest but difficult to carry out, I do not think that medicine or local treatment will be of much avail.

Dr. F. I. Knight, of Boston: This class of cases is familiar to most of us now. It is only recently that the peculiar irritability under the topical measures struck me very forcibly. Within the past year I have noted it particularly in a number of cases. The gentlemen may remember that a number of years ago there appeared an article in the "Popular Science Monthly" by, I think, a layman, in which catarrh was attrib-

uted to the disproportion between the amount of food ingested and the amount of exercise taken. Although the views were exaggerated, there was a good deal of truth in the article. I can say that where I have been able to make patients carry out the proper treatment I have usually been rewarded by very good results. The treatment has consisted in cutting down the diet at once, the cutting off of the excess of sugars and starch, the almost complete elimination of pastry and potatoes, and, in addition, the free use of alkaline drinks. In cases where the urine has shown a good deal of oxalate of lime, particularly where there is irritative cough, I have several times seen extraordinary results from the administration of hydrochloric acid. I have in several cases seen a cough which had persisted for several months cease in a few days under this treatment. The exercise is a part of the treatment which it is hard to induce the patient to carry out; unless you lay down some definite means, unless you insist upon a man buying a horse or a young man going to the gymnasium, it will not be done. In most large cities there are men who will take charge of such discipline. We have now a Swedish gentleman of good education who is doing a great service for some of our patients in this way.

Dr. W. H. Daly, of Pittsburgh: This question has been brought to our notice before by Dr. Allen and, I believe, by Dr. Ingalls, and to-day, in a very instructive manner, by Dr. Hinkel. It makes one rather proud of being a laryngologist to see these practical and substantial lines of thought branching out in various directions. It certainly promises well for the future of medicine, and especially for laryngology. I confess that my attention was first called to it by Dr. Allen's paper, and I have since read his paper once or twice, and I must further confess that I am very much at sea as to any definite belief as to the pathology of these cases, whether they are primarily a digestive disorder, or a liver disorder, or whatever else it may be.

In this connection I wish to say a word with reference to Murchison, and there never lived a higher authority on questions connected with disease of the liver and some forms of lithæmia and gout; but a man who wrote so much and taught so much could not avoid making some errors. Of these I do not intend to speak. It is not safe to follow Murchison through all the mazes of his theories. I say this with all due respect, for I enjoyed a personal acquaintance with Murchison during his life, and feel proud to have known him.

As we are, in a practical way, more interested in dealing with these patients in a curative way than any other, it may be well for me to refer to a simple method which I have resorted to with probably more satisfaction than any other. In my experience with salicylate of sodium I have never been able to get patients outside of hospitals to take it longer than twenty-four hours at a time within the past year in such cases as have been referred to by Dr. Allen and Dr. Hinkel. I have ordered equal parts of salicylic acid and bicarbonate of sodium to be mixed, and of this the patient takes from a half to a whole teaspoonful, in a small, strong lemonade, half an hour before each meal. Patients will take the drug in that way longer than in any other. I do not continue it more than four or five days at the furthest. Good results are obtained in a fair proportion of cases very quickly.

Dr. F. W. Hinkel: I am glad to receive the corroboration of the gentlemen present. I knew that they had all seen this condition in some form. I wanted particularly to point out the fact that there are some cases in which the digestive disturbance is not due to great excesses on the part of the patient, and also that there are a few symptoms—such as a patchy appearance of the mucous membrane—which I have seen associated with the general condition frequently enough to think that it is a local sign of some significance, and might lead one to suspect lithæmic complications where the appearance of the patient might not suggest it. As Dr. Glasgow has said, there is frequently gastric derangement. Frequently there is a chronic gastric catarrh, which must be relieved by the physician before the laryngologist can hope to relieve the condition in the upper air-passage. Whether this gastric condition is not due to the underlying constitutional condition is a question.

When we give bicarbonate of sodium and salicylate of sodium, we are really making use of remedies which will check the fermentative action which goes on in the intestinal tract, and prevent that acidity which I am perfectly sure frequently stands in a causative relation to the nerve storms which sweep over such individuals. In this way the local conditions are relieved by removing the source of irritation from the intestinal tract.

NEW YORK CLINICAL SOCIETY.

Meeting of May 23, 1889.

The President, Dr. L. Bolton Bangs, in the Chair.

Diabetes of Tubercular Origin.—Dr. M. Allen Starr presented a specimen of peculiar interest. It was the medulla oblongata of a man whose only symptom of disorder had been diabetes. A miliary tubercle about one centimetre long was situated in the medullary fibers just below the point where an experimental puncture produced diabetes, in a tract figured in Tierce's book which was supposed to take a downward direction.

Solid Œdema of Traumatic Origin.—Dr. J. W. Murray presented a patient of whom he gave the following account: Thirteen months previously the man, a worker in an iron foundry, had had his arm drawn through a pair of iron rollers, up to the elbow, and the skin stripped up from the hand nearly to the shoulder. Afterward the skin about the elbow had sloughed away, and, two months after the accident, there had been swellings, running into abscesses, in the hands and arms, and from one of the palmar abscesses a piece of cartilage had been discharged. After this, new skin had grown in nearly as far up as the elbow. Owing to the congestion of the injured part, and especially to the destruction of the skin and soft parts (including the lymphatics) about the elbow, the hand and forearm were in a condition nearly equivalent to elephantiasis The whole limb was very large and heavy, and entirely useless. Judging from the deformity, it was probable that some fracture of the bones also existed. There was very slight motion in the fingers. There was no anæsthesia; on the contrary, there was marked tenderness on pressure. Dark patches of pigmentation were to be seen in different parts of the forearm. There was great and constant pain in the limb, also neuralgias, a "pins-and-needles" sensation, and flushes of heat and cold. Cellulitis was common enough after a crushing injury, but in this case, instead of gradually passing away, the swelling or growth was slowly increasing. He was about to perform amputation at or just above the elbow.

Dr. J. W. Wright said that we might suppose it a case where there had been a nerve lesion of some obscure sort which was followed by the formation of an enormous quantity of new connective tissue. The prognosis, so far as restoration of the injured limb to a healthy or useful condition was concerned, seemed to him unfavorable, and the only treatment to be amputation. The man's hands reminded him, in their swollen appearance, of the prepuce of a man he had once seen in the early stages of a very severe attack of gonorrhœa; this patient had had an unusually long foreskin, and the inflammation had caused a degree of œdema which had disfigured the penis most

effectually. The œdema in a few such cases failed to subside with the usual promptness, and continued on a few weeks, or months, or even years. Now, in the present case, we could also assume that the condition was one of solid œdema, due to the destruction of so many of the lymph spaces and the non-absorption of the effused products of inflammation. When one cut into such tissue it was like cutting into a bowl of very thick jelly. An incision was followed by no outpouring of fluid. The material effused had enough reparative material combined with it to become practically organized and so to remain *in situ* indefinitely without further change. In several such cases where the prepuce was involved he had been obliged to make an extensive plastic circumcision, but had never seen any fluid escape. He thought that in the case of the patient now before the society the arm would be found to be in this same condition. He had never seen any treatment succeed in restoring tissue in which this change had taken place, and did not believe anything could act on it reparatively.

Dr. R. Abbe had seen one case where such an enlargement had taken place in the foot of a man suffering from necrosis of the tibia. He should think that probably a nerve-lesion existed, although he must admit that the causation here was very obscure. The condition was not one of true elephantiasis, evidently.

The President had met with accounts, in his readings, of a similar condition sometimes developed in the scrotum, which some writers considered due to an increased formation of cellular tissue. Sir James Paget called it a solid œdema due to a true lymphatic obstruction and engorgement, together with a formation of new tissue by cellular hyperplasia.

Dr. Murray said that his study of the case had convinced him that its essential features were not the result of a nerve lesion, but arose from the destruction of the lymphatics in and above a granulating surface (in this case at the elbow), and also from the general congestion. It was not unlike a suppurative cellulitis of the arm, especially one spreading upward from the hand to the forearm, only that the latter affection slowly subsided as the lymphatics gradually came into action. Here that provision was cut off.

A Cortical Motor Center for the Human Larynx.—Dr. D. B. Delavan presented the results of observations made by him in connection with an obscure case of cerebral disease, with specimens. (See vol. xlix, p. 673.)

Dr. Starr thought it an especially interesting feature in Dr. Delavan's investigation that it tended to disprove the theory of Krause that cortical lesions, and they only, produced paralysis of one vocal cord. Krause had made his affirmation as a result of experimentation. The speaker had thought it a cortical lesion in Dr. Delavan's case until the autopsy was made. In Sims's experiments, published in 1882, the conclusion had been reached that cortical lesions produced bilateral paralyses, and that extirpation of the diseased area would not cure such paralyses entirely. The lesion in Dr. Delavan's case must have had its seat in the medulla or in the nerve itself. He had a case in his clinic illustrating the same thing—a unilateral laryngeal paralysis, with a slight paralysis of the tongue. A difference of half an inch in the position of the lesion in Dr. Delavan's patient would have been accompanied by a corresponding paralysis of the tongue.

A Large Psoas Abscess.—Dr. B. F. Curtis presented four photographs of a very large psoas abscess which he had opened the week previous. It was the largest he had ever met with. About six quarts of pus had been taken away from the contents of this tumor, and about two quarts remained in. The patient had had some hectic fever for a few days, but was at the time very comfortable.

The Surgical Treatment of Inveterate Tic Douloureux.—Dr. R. Abbe read a paper with this title. (See p. 121.)

Dr. Delavan had met with one of the patients operated on by Dr. Carnochan (twenty years before), and had been assured that there had been no return of the old pain.

Dr. Starr said he had had two interesting cases of the same kind, but in neither had it been necessary to make the section at a point so deeply placed as in Dr. Abbe's cases. Dr. Hall had operated on one of these patients (an old lady) in 1885, after she had suffered intense agony in the infra-orbital branch of the fifth nerve for six years. The incision had been made parallel to the inferior orbital line, and, as the face contained many wrinkles, it had been possible to make the scar scarcely noticeable. An inch of the nerve had been exsected. After three years there had been no return of the pain.

The other patient had been operated on by Dr. Hartley, the right inferior dental nerve being the one affected. A slight incision having been made, the lower jaw had been trephined over the site of the dental canal and half an inch of the nerve exsected, after stretching it. There had been no pain in the nerve after the first twenty-four hours following the operation. Here were two cases in which, apparently, it had not been necessary to go so far in as Dr. Abbe had found desirable. It would be well if we found some means of determining at how deep a point the section needed to be made. This point might be somewhat elucidated by the injection of cocaine into the nerve at its point of exit from the bony canal. He had recently had two cases of *tic convulsif* in which an injection of cocaine had shown which branch of the nerve was involved. In both cases the exsection of a portion of the nerve had resulted in a cure. If the injection of cocaine stopped the pain in a nerve, this showed, of course, that the lesion was peripheral. If not, then operation at that point would be a vain procedure.

Dr. Wright remarked that he had met with a large number of instances in which tic douloureux had proved absolutely unmanageable by medical treatment. In attempting, before operating, to differentiate as regarded what branch of the nerve was involved, it was very important to get a careful statement from the patient as to the seat of his pain. He had seen several cases where the nerve had been taken out as far up toward the brain as it was possible to reach without any result. This indicated that the nerve was affected throughout its length. But, where the use of cocaine would tell us that some single branch of the nerve was affected, a portion of that branch could be removed and the more formidable operation not gone into. He had seen a number of cases where the partial operation had been without effect, and had done some of these operations himself. So he had come to look on the operation as one which was certainly successful if thoroughly done—*i. e.*, if Meckel's ganglion was taken out, as he had often had to do.

Dr. Abbe, in reply to a question from Dr. Emerson, said that he had found the nerve redder than was natural, and swollen, but could not say whether this had been due to the operation or not.

Masked Perityphlitis in a Child.—Dr. H. C. Coe presented a perforated vermiform appendix and a fæcal concretion which he had removed from the body of a child dying suddenly in whom no such lesion had been suspected until the autopsy. The whole history of the case had not furnished a significant symptom. The child had merely complained of constipation. There had been no pain. Vomiting had been slight; the temperature not above 102° F. The bowels had been moved freely, and the temperature had then subsided. Afterward, when looking bright and well and playing actively, the child had suddenly fallen back dead. At the autopsy he had found a perforation, an escaped fæcal concretion, and a very fœtid, purulent peritonitis. There

had been no tenderness over the abdomen, and yet the process must have been going on for forty-eight hours. Could such a condition be suspected with such slight symptoms?

Book Notices.

A Treatise on Surgery, its Principles and Practice. By T. Holmes, M. A. Cantab., Consulting Surgeon to St. George's Hospital, etc. With Four Hundred and Twenty-eight Illustrations. Fifth Edition. Edited by T. Pickering Pick, Surgeon to and Lecturer on Surgery at St. George's Hospital, etc. Philadelphia: Lea Brothers & Co., 1889. Pp. xxiii–33 to 1008. [Price, $6.]

This work is a compendium of the author's more elaborate "System of Surgery," and appears to have been pretty thoroughly revised and brought up to the period of its issue. Though the surgery of the eye has been omitted in this edition, for reasons which seem sufficient to Mr. Holmes, the book is not reduced in size, the added matter being required in dealing with the recent advancement in operative procedures. Though excellently written and carefully compiled, the book suffers somewhat from paucity in detail. This is a shortcoming of which Mr. Holmes is fully conscious, as he touched upon the fact in his preface to the first edition. Turning to the subject of abdominal surgery, with the latest and safest methods and details of which it is the desire of every ambitious surgeon to acquaint himself, one is disappointed to find that this volume has been issued before the author had the opportunity of introducing a description of Senn's decalcified-bone plates or the ingenious "catgut-ring" modification thereof by Abbe. Devices which it is already maintained lower the mortality rate after intestinal resection from 87 to 8 per cent. must surely soon find place in surgical text-books. In the work under notice the subject is thus summarily dismissed: "Little success has as yet attended the operation of resection of a portion of the alimentary canal, but there seems no reason to doubt that, with more improved methods of operating, a great success may attend it in the future, and that in certain cases the justifiability of such operations is unquestionable." Then, again, one must take issue with the deductions of the author that amputation of limbs for extensive joint disease offers better prospects than excision. Cases, such as recently reported in this country by Dr. Wyeth and others, of resections under strict aseptic and antiseptic precautions and the use of steel drills, surely negative such conclusions. The book is profusely and creditably illustrated.

Diseases of Women: A Manual of Non-surgical Gynæcology designed especially for the Use of Students and General Practitioners. By E. H. Davenport, A. B., M. D., Assistant in Gynæcology, Harvard Medical School, etc. With Numerous Illustrations. Philadelphia: Lea Brothers & Co., 1889. Pp. xiv–25 to 317. [Price, $1.50.]

The absence of practical details and minor points of gynæcological manipulations in the standard text-books has induced the author to offer this work as a means by which the deficiency may be supplied. The methods of examination, the diagnostic significance of signs and symptoms, and the mode of treatment of the more common forms of pelvic disease, as well as the general principles on which the gynæcological art is based, are treated of in a clear, detailed, practical fashion, supplying to the tyro what experts have learned from experience. The author has succeeded as well as could be expected under the circumstances, if not better, but in a few instances he has been a little injudicious in recommending certain semi-operative procedures, such as digital exploration of the bladder through the urethra and dilatation of the cervical canal.

The chapter on pessaries should do much to disabuse the mind of the general practitioner of the belief that these unappreciated instruments are delusive snares in hard rubber, for it certainly explains the method of employing them in a very clear manner, and in one which should be well understood.

The chief criticism which might be made on the general character of the book is that, in portions, it savors of the style of literature now so rife in the land. We refer to the "vest-pocket" treatises and "compends" which are supposed to contain all the "essentials" of a department of medical science, and which are dear to the student's heart. When applied to such a department as that of gynæcology, this would be analogous to including stenography in the curriculum of a kindergarten, and fitting pupils for reporting speeches before they had learned how to write. No such idea could have possessed the author's mind, but a few isolated parts of the work do suggest the existence of such a vicious tendency. This is not, fortunately, a prominent feature, nor is it even apparent except when the contents are compared with the plan of the work. In other respects the author has done well.

Exploration of the Chest in Health and Disease. By Stephen Smith Burt, M. D., Professor of Clinical Medicine and Physical Diagnosis in the New York Post-graduate Medical School and Hospital, etc. New York: D. Appleton & Co., 1889. Pp. xiii–7 to 206. [Price, $1.50.]

The name alone of the author of this compact little volume will commend it to any who are looking for a lucid statement of the principles upon which the physical exploration of the chest in health and disease is based, or for practical directions and hints in regard to the applications of the art in clinical medicine. The style is graphic, sustained, and forcible. Facts which present a natural contrast are constantly set in apposition to each other with that skill which only long training as a teacher gives. The author's efforts to convey exact ideas are well supplemented by the exquisite paper, printing, and illustrations, which furnish a continuous satisfaction to the eye.

Lectures on Massage and Electricity in the Treatment of Disease (Masso-electro-therapeutics). By Thomas Stretch Dowse, M. D., Fellow of the College of Physicians of Edinburgh, etc. Bristol: John Wright & Co., 1889. Pp. xix–379.

Introducing his subject, the author states that he has endeavored to deal with it in a spirit of scientific research, claiming no special merit for originality or the working of any "wonderful cures." Twelve lectures are devoted to teaching his methods and to the therapeutical application of massage to the innumerable diseases for which it is "an infallible cure," the allegation being vaunted in a spirit strikingly at variance with the modest terms of the preface.

Further comparative analysis demonstrates equally glaring incompatibilities, as, for instance, the following statements: "Massage is endowed with wonderful power, not only in arresting muscular, atrophic, and nerve degenerative changes, but it possesses an ability unique which no other agent does possess in restoring the nutrition and regenerating the growth of nerve and muscular fiber; and when I tell you that cases of progressive muscular atrophy which have been given up as hopeless have been cured by massage under my own daily observation, I am quite sure you will agree with me that it should receive a definite place as a therapeutic agent of the utmost value."

As an offset to this sweeping statement comes the following: "We can not hope to cure a sclerosis of the brain or cord; to think of it is utterly preposterous; but we can possibly arrest its spreading and start compensatory processes, and we can relieve nutritional and functional nerve troubles (usually peripheral), which frequently give patients much more distress, pain, and discomfort than the disease itself."

The subject of electricity is summarily dealt with in two chapters, made up largely of extracts from the writings of De Watteville and Apostoli, the writer believing the value of electricity as a therapeutical agent second to that of massage. Barring the apparent incongruities, the book as a whole will be found useful to those wishing to test the merits of massage. The drawings are well done, clear, and explanatory, and add greatly to the value of the work.

The Essentials of Physical Diagnosis of the Chest and Abdomen. By J. Wallace Anderson, M. D., Physician to the Royal Infirmary, Glasgow, and Lecturer on Medicine, Royal Infirmary Medical School, etc. New York: Macmillan & Co., 1889. Pp. viii–156. [Price, 75 cents.]

Another effort to elucidate the mysteries of physical diagnosis added to the numerous treatises already before us. Dr. Anderson says in his preface, however, that he has found great difficulty in selecting for his junior students a simple, concise, and suitable text-book on the subject, and hence he was constrained to become the author of this work. While no exception can be taken to the little book, which is fairly written and accurate so far as it goes, still one is impressed with the idea that Dr. Anderson's junior students might have been supplied with books perhaps even better suited to their needs. The treatise is not illustrated. Now the junior student delights to revel in pictures of lungs, heart valves, and so on, though these may be for the most part but sorry misrepresentations.

Hand-book of Materia Medica, Pharmacy, and Therapeutics. Compiled for the Use of Students preparing for Examination. By Cuthbert Bowen, M. D., B. A., etc. Philadelphia: F. A. Davis, 1888. Pp. vi–366. [Price, $1.40.]

This little work fairly fulfills the object of its author. It contains a large amount of well-arranged and condensed information, and only that which the student or young practitioner will actually need. Being written entirely in the form of question and answer, it is particularly well adapted for those students who prepare for examination without a quiz-master. Many excellent prescriptions are incorporated.

GENERAL LITERARY NOTES.

Among recent foreign publications we note the following:

F. Alcan, Paris.—A. Boïcesco, "De l'érythème noueux palustre." —— F. Terrier, "Remarques cliniques sur une sixième série de 25 ovariotomies." —— Chobant, "De la tarsectomie antérieure, totale et partielle, dans les cas pathologiques." (3*fr.* 50.) —— O. Dinstrieff, "Le képhir, boisson médicinale du lait de vache." —— E. Thévenin and H. de Varigny, "Dictionnaire abrégé des sciences physiques et naturelles." —— J. Bœckel, "De la résection du genou, étude basée sur 64 observations personelles." (4*fr.*)

Asselin & Houzeau.—D. Labbé, "De l'ozone. Aperçu physiologique et thérapeutique." (1*fr.* 50.) —— P. Blocq and H. Gillet, "Des cirrhoses graisseuses considérées comme hépaties infectieuses."

O. Berthier, Paris.—P. Dubois, "L'art dentaire aux États-Unis. Rapport à l'Association générale des dentistes de France." —— Doit-Lambron, "Affections chroniques des voies respiratoires traitées par les eaux sulfureuses et particulièrement aux Thermes de Luchon." (4*fr.*) —— Moncorvo, "Sur les troubles dyspeptiques dans l'enfance et sur leur diagnostique chimique."

J. B. Baillière & fils, Paris.—M. Conan, "Traité d'homo-homœopathie. Médicaments réunis par séries et groupes physiologiques." (10*fr.*) —— L. Edinger, "Anatomie des centres nerveux." (8*fr.*) —— A. Imbert, "Les anomalies de la vision, avec une introduction par E. Javal." (3*fr.* 50.) —— A. Kelsch and P. L. Kiener, "Traité des maladies des pays chauds.—Région prétropicale." (24*fr.*) —— V. Nivet, "Rapport sur l'épidémie de fièvre typhoïde de Clermont-Ferrand en 1886." (2*fr.* 50.) —— J. Arnould, "Nouveaux éléments d'hygiène." 2d ed. (20*fr.*) —— R. Blanchard, "Traité de zoologie médicale." 3d part. —— E. R. Coni, "Progrès de l'hygiène dans la République Argentine." —— C. Vieillard, "Étude chimique de la goutte et son traitement par le vin Duflot." —— Mattéi, "La médecine simplifiée ou l'homœopathie complexe." (6*fr.*)

Bureaux du Progrès médical, Paris.—B. A. Edwards, "De l'hémiplégie dans quelques affections nerveuses (ataxie locomotrice progressive, sclérose en plaques, hystérie, paralysie agitante)." (4*fr.*) —— Lejars, "L'enseignement de la chirurgie et de l'anatomie dans les universités allemandes." (2*fr.*) —— Georges Guinon, "Les agents provocateurs de l'hystérie." —— P. Cornet, "Traitement de l'épilepsie." (2*fr.*) —— Babinski, "Grand et petit hypnotisme." —— Sevestre, "Études de clinique infantile." (2*fr.*) —— L. Urckham, "Lettres d'Angleterre." (50*c.*) —— U. Popoff, "Recherches sur la structure des cordons postérieurs de la moelle épinière de l'homme." (50*c.*) —— H. Napias, "Bibliothèque d'assistance publique." (1*fr.*) —— Jonnesco, "Anatomie topographique du duodénum et hernies duodénales." (2*fr.*)

H. Coccoz, Paris.—Malibran, "L'atonie intestinale et ses complications." (5*fr.*) —— Paul Benard, "Quelques particularités relatives à la nouvelle installation balneothérapique de Saint-Christan." (1*fr.*)

O. Doin, Paris.—A. Auvard, "Traitement de l'éclampsie puerpérale." (3*fr.*) —— G. Chopin, "Élimination de l'acide salicylique suivant les divers états des reins, ses transformations dans l'économie, son action sur les principaux éléments de l'urine." (2*fr.*) ——A. Dufour, "Contribution à l'étude des auto-intoxications, des manifestations morbides du surmenage physique." (3*fr.*) —— Dujardin-Beaumetz, "Annuaire de thérapeutique." (2*fr.*) ——M. Legrain, "Hérédité et alcoolisme. Étude psychologique et clinique sur les dégénérés buveurs et les familles d'ivrognes." (7*fr.*) —— M. Natier, "Fièvre des foins (pathogénie et traitement)." (3*fr.*) —— M. Natier, "Contribution à l'étude du mutisme hystérique." (1*fr.* 75.) —— F. Raymond, "L'étude des maladies du système nerveux en Russie." (3*fr.*) —— M. Rivière, "Pathogénie et traitement de l'auto-intoxication éclamptique." (5*fr.*) —— Rodrigues dos Santos, "De l'influence de l'impaludisme sur les femmes enceintes." (2*fr.* 50.) —— F. Viault and F. Jolyet, "Traité élémentaire de physiologie humaine." (16*fr.*) —— Delétang, "Du traitement des fibrômes utérins par la méthode d'Apostoli." (1*fr.*) —— La Torre, "Fibrômes utérins, leur traitement par l'électrolyse (méthode Apostoli) et leur élimination fréquente sous-muqueuse par l'action de l'électricité." (1*fr.* 50.) —— Dunn, "Nouveau traitement chirurgical des maladies inflammatoires des reins et des uretères chez la femme." (3*fr.* 50.) —— Garel, "Electricité médicale, éclairage et galvanocaustique." (1*fr.* 50.) —— P. Budin, "Leçons de clinique obstétricale." —— P. Tissié, "L'hygiène du velocipédiste." —— E. Berger, "Anatomie normale et pathologique de l'œil."

Imprimerie Ve. Cadoret, Bordeaux.—E. Faivre, "Contribution à l'étude des injections hypodermiques et parenchymateuses d'acide phénique."

H. Lauruns, Paris.—P. Degnat, "Histoire de la médecine et des médecins à travers les âges."

Lecrosnier & Babè, Paris.—P. Lacombe, "La famille dans la société romaine." (Vol. VII of the "Bibliothèque anthropologique.") (7*fr.*) —— Ch. Letourneau, "L'évolution de la propriété." (Vol. VIII of the "Bibliothèque anthropologique.") (8*fr.*) —— E. Goubert, "Nouveau traitement de l'épilepsie, sa guérison possible." (75*c.*) —— Koenig, "Traité de pathologie chirurgicale spéciale." Transl. by J. R. Comte. Vol. II, 1st fascic. (7*fr.*) —— A. Hovelacque, "Les nègres de l'Afrique sus-équatoriale." (8*fr.*) —— G. Sée, "Traité des maladies du cœur (étiologie et clinique)." (12*fr.*) —— Benedeckt, "Manuel technique et pratique d'anthropométrie craniocéphalique." Transl. by Dr. Keraval. (5*fr.*) —— Remy, "Manuel des travaux pratiques d'histologie." (7*fr.*) —— Garrod, "L'acide urique, sa physiologie et

ses rapports avec les calculs rénaux et la gravelle." Transl. by H. Cazalis. (2*fr.*)

G. Masson, Paris. — G. Gradenigo, "Contribution à l'anatomie pathologique et à la pathogénie de l'otite sclérose." —— "Association française pour l'avancement des sciences." 17th session. Oran, 1888. 1st part: Official documents. *Procès verbaux.* 2d part: Notes and memoirs. —— Bertin-Sans, "Hygiène." —— Garcin, "Étude sur la valeur du traitement de la tuberculose pulmonaire par les inhalations d'acide fluorhydrique." —— Ch. Monod and O. Terrillon, "Traité des maladies du testicule et de ses annexes." —— Roussy, "Les alcaloïdes animaux devant la médecine légale." —— Roussy, "Ptomaïnes et leucomaïnes."

C. Reinwald, Paris.—Daviller, "L'alcool et l'alcoolisme." —— A. Dubarry, "Contribution à l'étude de la vie des microbes pathogènes dans l'eau." —— V. Gilbert, "Étude sur les diverses médications de la tuberculose pulmonaire et en particulier sur le traitement par les inhalations d'acide fluorhydrique." —— E. Bitet and H. Lamarque, "Un cas d'hystérotraumatisme chez l'homme."

G. Steinheil, Paris.—Th. Tuffier, "Études expérimentales sur la chirurgie du rein (néphrectomie, néphrorrhaphie, nephrotomie, urétbrotomie)."

H. Le Soudier, Paris.—A. Lévy, "Méthode pratique de langue allemande," 2d part.

Sylberberg, Kharkoff.—P. J. Kovalewsky, "Ivrognerie, ses causes et son traitement." Translated by Woldemar de Holstein.

G. Fischer, Jena.—L. Edinger, "Vergleichend-entwicklungsgeschichtliche und anatomische Studien im Bereiche des Centralnervensystems. Ueber die Fortsetzung der unteren Rückenmarkswurzeln zum Gehirn."

Hygien. Institut, Berlin.—G. Cornet, "Die Verbreitung der Tuberkelbacillen ausserhalb des Körpers." —— G. Cornet, "Ueber das Verhalten der Tuberkelbacillen im thierischen Organismus unter dem Einfluss entwickelungshemmender Stoffe."

G. Civelli, Milan.—"Atti della terza riunione d'igienisti italiani."

Enrico Detken, Naples.—Cantieri, "Su ne casi di ulcera cronica simplice e sul carcinoma dello stomaco."

Tipografia cooperativa, Florence.—G. Gradenigo, "Il valore pratico dell' esame elettrico del nervo acustico."

Vallardi, Padua.—G. Gradenigo, "Le affezioni del nervo acustico nel riguardo clinico."

Vincenzi & Nipoti, Modena.—C. Bergonzini, "Sulla ricerca dei bacilli tubercolari negli sputi."

Imprenta de Domenech, Valencia.—Colvée y Rovora and Peset Corvera, "Experimentos sobre el alcoholismo agudo."

Imprenta de El Ñuble, Chillan.— R. Garcia, "Epidemia de cólera en Chillan."

Reports on the Progress of Medicine.

GYNÆCOLOGY.

By ANDREW F. CURRIER, M. D.

Ligation of the Uterus per Vaginam, and its Indication in Cases of Retroflexion and Prolapsus of the Organ. — Schücking's paper ("Anales de Obst., Gin. y Ped.," March, 1889) was read at the sixty-first Congress of German Naturalists and Physicians. The author has been contemplating for years a secure and safe method of reducing a retroflexed or prolapsed uterus, and one which should be permanent in its results. One plan which suggested itself consisted in passing a ligature from the cavity of the uterus to the abdominal wall, but this involved the danger of wounding the intestine and also the possibility of infection. Besides, if adhesion of the uterus to the abdominal wall were secured, the line of adhesion would probably be insecure by such a method. Hence, it seemed evident that the desired end could be attained only by a suture which should fix the fundus uteri to the abdominal wall at its top and sides, the peritoneal covering of the uterus being fixed to the vesico-uterine fold and to the peritonæum contiguous to this fold. This would fix the uterus in a position of acute anteflexion. As to the danger attending the perforation of the fundus uteri through the antero-lateral portion of the vagina, the author asserted that there was no danger if all the genital tract were thoroughly disinfected and a proper needle were used. Perforation of the uterus has been done without bad results too frequently, and with instruments also which were not aseptic, to fear much from such a procedure. The bladder need not be wounded, as it can be pushed aside with a sound while the suture is being passed. In three cases in which the bladder was perforated by the author no harm followed. The intestines will not be injured, as they do not lie in the area traversed by the needle. The operation has not been tried in cases in which there were firm adhesions. The needle was made as small as possible consistently with strength—small enough to pass into the virgin uterus with the sheath which guarded it, and properly curved to pass from the fundus of the uterus to the abdominal wall.

Twelve patients with retroflexion have been operated upon, eight of them without using an anæsthetic; also three cases of prolapse have been operated upon without an anæsthetic. The operation is performed with the patient in the dorsal posture, and, after the uterus has been replaced with the sound, the ligature of carbolized silk is carefully passed, the uterus being drawn downward as near the vulva as possible before its cavity is entered. The ends of the ligature are tied with a surgeon's knot (external to the body?), and then an iodoform tampon is introduced into the bladder and another into the vagina. The ligature may be cut after six to twelve days, an iodoform tampon being again introduced into the vagina. The author says there was no rise of temperature in any of his cases, but that there were slight pains in some of them. In the three cases of prolapsus the ligature was allowed to remain three weeks. In all the author's—except the first, in which the ligature parted too soon—the retroflexion or the prolapse was cured, and not only that, but the symptoms depending thereupon were also cured.

Affections of the Falloppian Tubes and Ovaries in their Clinical and Anatomico-pathological Aspects.—Mignon (*ibid.*, April, 1889) gives the following conclusions as the results of his clinical and histological investigations:

1. The anatomico-pathological forms do not exactly correspond to the different clinical ones in connection with diseases of the tubes.

2. The diagnosis of tubal diseases does not offer very great difficulties. Should the tumor not present the characteristic form of the distended tube, and the bimanual exploration fail to give clear results, the diagnosis may be made from the history and the course of the disease.

3. The variation in the volume of the tumor is a matter of great importance in making a diagnosis, this condition being dependent upon the processes of ovulation and menstruation. This variability is especially characteristic of small tubo-ovarian tumors, and will assist in distinguishing them from neoplasms.

4. The tubal disease tends to propagate itself to the neighboring organs and tissues.

5. This tendency of extension of the tubal disease to the neighboring organs is very variable. In some cases the process is limited to the tubes, causing great changes, in which there may be large collections of serum or pus in the distended tubes, but no false membranes or adhesions to neighboring organs. On the other hand, there may be false membranes in abundance, agglutinating the uterine annexa together, while the organs themselves may not be much altered, or may show only secondary alterations.

6. The tubes may become diseased in different ways, either by extension from the mucous membrane of the uterus or, secondarily, in consequence of inflammatory processes in their vicinity transmitted through the lymphatics.

7. Tubal disease is usually bilateral, though it may differ in degree on the two sides.

8. The anatomo-pathological changes may be varied, depending upon the coincidence of many conditions—such as the intensity of the process, its duration, the cause, the point of departure; again, the changes may be primary or secondary, as in cases in which there is muscular hyperplasia, or atrophy of the walls in consequence of the pressure of the contained fluid.

9. The phenomena of atrophy and hypertrophy are those which ordinarily attend inflammation with such consequences. There are changes in the vessels, the emigration of white and red corpuscles, swelling of the tissues, and the new formation of connective tissue.

10. Effusions of blood sometimes take place into the tubal walls, but the presence of blood in the cavity of the tube does not necessarily indicate the existence of hæmorrhagic salpingitis.

11. In many cases the tube is divided into cavities of varying capacity, lined with cylindrical epithelium. Some of these cavities may communicate with the general lumen of the tube, while others are separated from it. These cavities are sometimes found in tubes which are enlarged, and at others they are in tubes which have walls of normal dimensions.

12. The ovaries almost always participate in tubal disease, especially in cases in which there is cystic degeneration, cicatricial contraction, or atrophy of the ovary with disappearance of the glandular tissue, while they are rarely implicated in cases of abscess, follicular degeneration of the tubes, etc.

13. Atrophy of the ovaries is found in some cases in which the uterine annexa are imbedded in solid and extensive false membranes.

14. Should disease of the uterine annexa persist for a long time, it will excite certain reflex phenomena of the nervous system, the gastro-intestinal tube, etc.

Massage in the Treatment of Pelvic Disease.—Boriakovsky read a paper (*ibid.*) before the Third Congress of Russian Physicians, the conclusions being as follows:

A. In prolapse of the uterus:

1. Massage applied after Brandt's method will effect a cure in some cases.

2. It can not be decided whether such a cure will be a permanent one. In some cases recurrences have been reported.

3. The method of treatment is tiresome both for the physician and the patient, and may influence the nervous system of the patient unfavorably.

4. It is doubtful whether it will be possible for this method to supplant operative treatment for prolapse of the uterus.

B. Inflammatory exudates in the pelvic cellular tissue:

1. The results of the treatment of parametric exudates by massage are more favorable than those which have attended similar treatment of prolapse of the uterus.

2. The use of massage in the treatment of chronic exudates in the pelvic cellular tissue implies a shorter course of treatment than the means which have heretofore been in vogue.

C. Intraperitoneal exudates: With reference to intraperitoneal exudates, circumscribed hæmorrhages, flexions and versions of the uterus, inflammations of the uterine parenchyma and of the ovaries, the paper reports no reliable cases. For retro-uterine hæmatoma massage is not indicated, as it might encourage suppuration. In general, this subject requires more extensive investigation, and, as its irrational use would result in harm, it should be studied in hospitals and clinics under the direction of one who is thoroughly acquainted with it. The following are conclusions deduced from other papers on the same subject as the foregoing, which were read at the same convention:

1. Massage is undoubtedly a powerful method for the treatment of disease of the female pelvic organs.

2. The indications and contra-indications for its use are far from being definitely settled.

3. The method can only be studied experimentally.

4. Massage irritates the nervous system only in exceptional cases of hyperæsthesia of the sexual organs.

5. It is not very probable that it encourages sexual excitability.

6. It is not important that the person using this method should be of the opposite sex as regards the patient.

7. Electricity has a much more exciting effect upon the nervous system than massage.

Salpingo-oophoritis and its Relations to Abdominal Exudate.—Terrillon ("Jour. de méd.," March 3, 1889) remarks that the history of circumuterine inflammations has made a great advance, and many points have been elucidated since surgeons began to make bold investigations concerning the ovaries and tubes by means of laparotomy. These operations have demonstrated that the tube and the ovary were the origin of those affections known under the name of parametritis. They have also supported the statement of Aran and Bernutz, that pelvic peritonitis, which is secondary to tubal and ovarian disease, is a late phenomenon of the disease, but the most important one from a clinical standpoint. From these discoveries it has resulted that the so-called phlegmon of the broad ligament is no longer recognized, or at least that it is of very rare occurrence. It is therefore reasonable that the theory concerning phlegmon of the broad ligament, and also that concerning adeno-phlegmon of the same region, should be abandoned as causes of error in the interpretation of certain symptoms. In pelvic or circumuterine inflammations one frequently finds an indurated exudate near the pubic arch and the region of the broad ligament, which is an important diagnostic and prognostic sign, and which extends to a greater or less distance from the umbilicus. This exudate indicates the extension of an inflammation deeply situated behind the pubes, and frequently starting from the vicinity of the uterus. It is the ordinary expression of the extension of the primary disease, but it is sometimes the herald of fluctuation which is the guide to the surgeon for the opening of a deeply seated abscess. This exudate has usually been misunderstood as to its origin, mechanism, and significance. Writers have always considered it an extension of a phlegmonous inflammation beginning at the base of the broad ligament, developing between its layers and reaching its upper portion. From the latter point it was supposed to infiltrate the tissue between the peritonæum and the pelvis, stripping up the peritonæum and forming a mass between the Falloppian tube and the abdominal wall. Guérin believed it was the result of an adenitis situated at the level of the obturator foramen; that the peri-adenitis developed around this point could raise the peritonæum and form a mass behind the abdominal wall, and that the peritonæum became thickened to prevent the effusion of pus into the abdominal cavity. Laparotomies upon living subjects have demonstrated the error of these views, and have given the anatomical proof of the cause of the abdominal exudate and of its practical importance. In cases in which this exudate exists, laparotomies have shown that the tubes and ovaries do not always occupy the same position in the pelvis, and that they may even be found at a great distance from their normal situation. Most frequently they are retroposed in the *cul-de-sac* of Douglas and massed at the sides of the uterus, but sometimes they are fixed by firm adhesions behind the symphysis pubis at their normal level. They may also be displaced to the level of the border of the superior strait, or even to a higher level, coming in immediate contact with the abdominal wall. In the latter position the tubes and ovaries may be firmly adherent and be inaccessible by immediate palpation. If they become much enlarged and their connection with the abdominal wall is extensive, an examination of the abdominal wall gives one the impression of an exudate. The tumor may become as large as the hand or larger if the inflammation becomes diffused and forms thick masses of false membrane. This effect is the more extensive and perceptible if the omentum becomes thickened, inflamed, and adherent, and is combined with the thick false membranes, thus adding to the thickness of the supposed abdominal exudate. Five cases are narrated in which laparotomy was performed, and the foregoing statements were verified. The author believes, therefore, that primary subperitoneal phlegmasia is very rare, and that most of the peritoneal inflammations originate from the tubes and ovaries.

The Relations of General Paralysis in Women to Certain Disorders of Menstruation.—Petit ("Gaz. méd.," Feb. 23, 1889) says that writers are not in accord concerning the condition of menstruation in women suffering from general paralysis. Some believe that this function is not deranged; others, among whom are the Germans and Italians, believe that the cessation of the menses is a frequent cause of general paralysis which would thus be essentially a disease of the menopause. The author thinks that menstrual troubles observed in paralytic women, instead of being always the cause of the cerebral disease, may, on the contrary, be the direct or the sympathetic consequence. Petit's investigations confirm this view. In fifty-nine paralyzed women he has observed in fifty-two of them disturbed menstruation, and in seven normal menstruation. In all cases the menstrual troubles were subsequent to the beginning of the general paralysis. In sixty-four cases of insan-

ity of different varieties he has only found disordered menstruation nine times, while it was normal in the other fifty-five. The most important of his conclusions are the following:

1. The development of general paralysis in women often leads to disorders of menstruation.

2. These disorders are characterized at times by sudden and definite arrest of the menses, at other times by marked irregularity in the menstrual epochs, though the function may have been previously performed with the greatest regularity.

3. When in the course of general paralysis in women there is a remission, the effect of this remission seems to be to restore the regularity of the catamenial function.

4. Patients who during an attack of diffuse meningo-encephalitis have developed no menstrual disorder, seem to resist such troubles longer than those who have suffered suppression or irregularity of the function.

Uncontrollable Vomiting during Pregnancy.—Quevedo ("Prog. Ginecol. y Ped.," Dec. 10, 1888) reports two cases in which this symptom was controlled by dilatation of the cervical canal after all other means had failed. The following conclusions are deduced:

1. In the present state of our knowledge, treatment by medicines is impotent to overcome the persistent vomiting of pregnancy.

2. The method of Copeman, which consists in the dilatation of the cervical canal by the finger, has given results which are rapidly attained, are harmless, and are easy of accomplishment.

3. Sponge may be used instead of the finger without fear of producing new complications, supposing always that the sponge is known to be free from septic elements.

4. Dilatation of the cervical canal should be performed as a last resort. If it fails in accomplishing the desired end, a miscarriage should be produced.

Curetting the Uterus for Puerperal Septic Endometritis.—Charpentier (*ibid.*) says that the cause of puerperal infection is an extraneous septic element which multiplies within the uterus or vagina, penetrates the blood, and produces grave or even fatal accidents. The development of this micro-organism produces a septic endometritis. General treatment in such cases is useful, but should only be auxiliary to local treatment, which is most efficacious. Intra-uterine injections are frequently useful, but they sometimes fail in producing the desired end. At such a time there is no means so efficient as curetting. The patient should be placed in the obstetric position, the vagina irrigated, and the uterus drawn down. If the cervix is not dilated, dilatation should be rapidly performed, and the uterine cavity irrigated with an antiseptic fluid. An antiseptic curette should then be applied over the entire uterine mucous membrane, the scrapings removed, the irrigation repeated, and a cauterizing antiseptic applied to the curetted surface.

Utero-ovarian Gout.—Mabboux (*ibid.*, Dec. 25, 1888) says that gout may be located in the female genital apparatus during or after the existence of sexual activity. There may be inflammation of the vagina, uterus, or vulva of gouty origin. Gouty phenomena may accompany menstruation in the form of dysmenorrhœa, or may occur during the intervals of menstruation. Utero-ovarian gout is to be treated by the same means which are efficient in other varieties of the disease, whether articular or visceral—that is, with alkaline mineral waters. The concentrated bicarbonate of sodium waters are indicated for plethoric patients when the inflammatory condition is not exaggerated, but are not indicated for the anæmic. The cold calcium sulphate waters are indicated in almost all cases on account of their resolvent, sedative, and tonic properties. They may be used with advantage when the pain is acute.

Treatment of Retroflexion of the Uterus.—Skutsch (*ibid.*) admits that an instrument has not yet been made which is adapted to the successful treatment of all cases of retroflexion, and yet the reason why pessaries fail to do well in the practice of many is that the instrument is not properly molded for each particular case, or else that the uterus is not relieved of those conditions which prevent its restoration to proper position. In many cases it is doubtless overlooked that there are resisting peritoneal adhesions and extensive scars in the parametrium. In such cases good results can be obtained by gradual stretching and methodical massage of the adhesions and scars. In the author's practice, in cases in which there are peritoneal bands, good results have been obtained by methodical attempts at bimanual reduction. In cases in which there are adhesions or considerable remnants of exudate in the parametrium, the bimanual method of massage advised by Brandt for treating chronic inflammation of the pelvic cellular tissue has achieved good results. This method will also accomplish the gradual stretching of cicatricial bands. Progress having been made by such means, the uterus can then be sustained by a pessary. Before such treatment is carried out it is presupposed that a clear and accurate diagnosis of the condition of the pelvis has been made, bimanual exploration having been practiced. A long anterior vaginal wall is necessary in order that these manipulations may be successfully carried out, and this condition may be obtained by means of transverse incisions if the natural conditions are not satisfactory. With regard to operative treatment, the author feels that laparotomy is the only means by which certain results can be assured.

Vaginal Hysterorrhaphy.—Candela (*ibid.*, Jan. 10, 1889) describes an operation consisting in suturing the fundus of the uterus to the abdominal walls, through the vagina, without resorting to laparotomy. The operation has been performed by the author only upon the cadaver, but no great difficulty attended it. The three considerations concerning the operation are the preliminary precautions, the operation itself, and the subsequent attention. Under the first consideration is the treatment of those conditions which have arisen from prolapsus or retroversion, including endometritis and parenchymatous or perimetric congestions. Such treatment will include rest, the horizontal position, hot vaginal douches, intra-uterine irrigation, intra-uterine applications and curetting, closure of fissures of the cervix, and amputation of the cervix when that is indicated. The author's operation should not be done until the uterus and its surroundings are in a condition of physiological integrity. A day or two before the operation the uterus should be thoroughly and antiseptically dilated. One of the important means for performing the operation is the needle, which is made after the author's plans. It consists of a cylindrical cannula of about the length and curve of a uterine sound and three to four millimetres in diameter. Within this cannula is a metallic spring, at the superior extremity of which is fixed a lance point with an eye in the middle. The spring and its needle are controlled by a button at the lower extremity of the cannula. Before the operation is performed the sound must be passed within the uterus, and it must be ascertained how nearly that organ can be brought into contact with the abdominal wall, which is to be depressed to a sufficient extent behind the pubes. If the tissues are all relaxed and the uterus is readily brought into contact with the abdominal wall, the operation may be done with the patient in the dorsal posture. Otherwise the genu-pectoral posture should be used as in operations for vesico-vaginal fistula. In the latter posture the intestines will be projected forward and upward, and will not be injured. The bladder and rectum must be empty and all the tissues in an antiseptic condition. The vagina is held open with retractors, the uterus is drawn down by means of a forceps in the lips of the os uteri, the cannula is introduced, the abdominal wall depressed, and the needle forced through the fundus and abdominal wall. It is then threaded with antiseptic silk, the needle is drawn back again through the cannula, and one end of the silk is secured at the abdominal wall, the other at the vulva. Another suture is then similarly passed, its location in the abdominal wall being three or four centimetres from the first. The bladder is avoided in these manipulations, its limits being ascertained by means of a sound within it. The sutures are tied together at each extremity, the abdominal wall being brought into contact with the fundus uteri, the vaginal ends being secured into a small plate of some suitable metal, after which the vagina is irrigated and packed with antiseptic gauze. Through the punctures in the abdominal wall two or three drops of tincture of iodine are injected in order to excite adhesive inflammation. After the operation the pain may be relieved by enemata of chloral or the suitable use of opium. Liquid food should be given for six days, and if the bowels are inclined to move, an enema of warm water should first be administered. If there is rectal or vesical tenesmus, a blister should be used over the hypogastrium. The sutures may be removed on the eighth to the tenth day. Vaginal douches should be given daily for ten days, after each of which the vagina should be retamponed.

The author believes that this operation is applicable to most cases of prolapsus, and is superior to Alexander's operation for retroflexion. The dangers of laparotomy are avoided, and it is easy of performance. [This is essentially the same operation which has been advocated for several years by Schucking, and, so far as we know, has not been accorded a very favorable reception, either in Germany or elsewhere. Wisely, too, we think.]

Dilatation of the Cervix for Hæmorrhage from Myomas.—Kaltenbach (*ibid.*) remarks that Baker Brown and Nelaton observed independently and about the same time that thorough curetting of the cervix would diminish or prevent the hæmorrhage from interstitial myomata. Subsequently, and in the course of some ineffective attempts at enucleation, Baker Brown found that by scraping the circular muscular fibers of the os internum he was able to set up energetic contraction in the vicinity of the myoma, which became elongated and effectually tamponed the uterus. Others have observed favorable results in cases of submucous or interstitial myoma which extended to the os internum, or were prolonged into the cervical canal, by following Spiegelberg's recommendation of incising the capsule of the tumor, thus causing retraction of the tumor and of its vessels. Quite recently Kaltenbach has seen three cases of interstitial myoma in which the hæmorrhage did not cease until the cervix had been dilated. Stenosis of the cervix really favors continuance of the hæmorrhage, preventing free exit of the blood. In such cases there is pain during the first two or three days of the menstrual period, the blood accumulating in the cavity of the uterus, dilating it, and enlarging the area from which hæmorrhage proceeds. Dilatation of the canal by removing the mechanical obstacle relieves the unfavorable conditions.

Salpingitis and Castration.—Doléris ("Bull. et mém. de la soc. obst. et gyn. de Paris," January, 1889) says that salpingitis is not a recently discovered disease. It dates from Spronius, and is mentioned by Morgagni in his thirty-eighth letter. There are many cases in which the disease can be cured without ablation of the annexa, the author's experience demonstrating that the intratubal collections can be evacuated by extensive and permanent dilatation of the uterine cavity combined with curetting and drainage of that cavity. Certain well-settled points in connection with this subject must be remembered:

1. There is frequently distension of the internal segment of the tube and its uterine orifice when there is a chronic inflammatory condition of the tubal walls, combined with an encysted exudate in its middle portion and occlusion of the pavilion.

2. There may be a spontaneous evacuation of such collections, either at the time of the monthly period or as a result of some form of traumatism.

3. Diseased tubes are frequently alternately filled and emptied during months and years, a sudden and abundant flow marking each evacuation.

4. Cure has been obtained in many cases of supposed hæmatocele or circumuterine phlegmon which were, in fact, cases of hæmatosalpinx, hydrosalpinx, or pyosalpinx, by evacuation of the tumor *per vaginam*, by the aid of a knife, trocar, thermo-cautery, or electrolysis.

5. Some cases of tubal disease have been cured by laparotomy, with incision into the tube, evacuation, and drainage, its walls being fixed to the abdominal wound.

After reviewing the different varieties of salpingitis, with their causation, the following conclusions are offered:

1. Active means of treatment should not be used in cases of acute recent salpingitis, but one should wait several months until the existence of a tubal tumor is fairly demonstrated.

2. The ablation of the annexa should only be proposed after the failure of more conservative treatment.

3. The artificial evacuation of the tumor will suffice for the cure of the greater number of the forms of tubal cyst.

4. A hastily made diagnosis of salpingitis, followed by the removal of the annexa after a very brief delay, is the negation of every sound principle of gynæcology. The deliberate sacrifice of the essential organs of reproduction in a woman is an inexcusable fault.

The artificial dilatation of the uterus furnishes a good means for opening a passage for the secretions and assuring the permeability of the uterine and tubo-uterine canals, and this should be preceded by a careful curetting. Nine cases were treated in this way with satisfactory results. The author's method consists:

1. In slow and progressive permanent dilatation of the uterine cavity. This may require several days, and may be accomplished with disinfected laminaria tents or with disinfected sponge. It may be desirable to use the two agents successively.

2. In careful curetting of every portion of the uterine cavity.

3. In drainage of the cavity, which is tamponed with iodoform gauze, moistened with glycerin.

Chronic Tubercular Endometritis.—Jouin (*ibid.*, March, 1889) says that this form of tuberculosis is more frequent than tuberculosis of the other mucous membranes of the genito-urinary apparatus. This may be due to the fact that the mucous membrane of the body of the uterus is soft, spongy, and rich in tubular glands, these conditions being favorable to the development of an anaerobic parasite. It has been observed and described to a certain extent by Louis, Aran, Bernutz and Goupil, and Verneuil, but the primary form has not been distinguished with sufficient clearness from the secondary by any one of these writers. Fernet described primary genital tuberculosis in the female, and spoke of its origin from sexual contact with a tuberculous man. Cornil and Chantemesse have also produced it artificially in rabbits by the injection of bacilli into the vagina. The author's studies included nine cases, in two of which the disease followed sexual intercourse with men suffering from genital tuberculosis. In two others the husbands were tuberculous, but had no apparent genital tuberculosis. In three others the cause could not be ascertained, and in the remaining two the cause was also uncertain. The diagnosis was verified once by the microscope and twice by the peritoneal inoculation of guinea-pigs. The disease is primarily a tubercular degeneration of the endometrium, but the uterine parenchyma and the perimetrium may also be involved. The predisposing causes may be heredity and bad general condition, also ruptures of the cervix and repeated attacks of inflammation. The determining causes are the bacilli and sputa upon soiled linen, or even upon various instruments, and especially sexual relations with a tuberculous husband. The fungosities upon the endometrium in these cases contain bacilli, with which guinea-pigs have been successfully inoculated. As to symptoms, the patient is the subject of leucorrhœa, pain in the abdomen, scanty micturition, constipation, and sterility. After a time the uterus becomes much enlarged and very sensitive to the touch, also more or less fixed. The cervix is red and perhaps ulcerated, and a sanious matter is discharged from the canal. The patients are much more prostrated than in simple endometritis, and have emaciation, fever, sweating, and arthritic troubles. Without proper care this condition will extend to the lungs, but it may be arrested by local treatment. The diagnosis is to be made by histological and microbiological examination, but also by observing certain clinical phenomena. The disease does not begin after labor nor after blennorrhagia; the patient may not have had children, and the lungs may already present tubercular lesions. The primary form of the disease is not serious if properly cared for; the secondary form implies tubercular disease elsewhere.

In treating the disease the patient should first receive creasote. Curetting may be practiced, if thoroughly done, and the mucous membrane should then receive an application of creasote. Pencils of iodoform may also be introduced into the uterus, the organ having first been well dilated. This should be repeated every twelve days. Sexual intercourse should be abstained from as long as the disease continues. The hygienic and dietetic conditions must, of course, be as favorable as possible.

The Treatment of Uterine Fibromata. — Délétang ("Concours méd.," Dec. 22, 1888) states that since 1884 he has treated ninety-seven cases of uterine fibroid tumor, all of the interstitial variety, with intra-uterine electrolysis. Fibro-cystic tumors and pedunculated fibroids were considered unsuitable for this method of treatment. The immediate effects of the treatment consisted of the following:

A. A contraction of the uterus *en masse*, including the tumor, at the beginning of the treatment. This contraction was not constant.

B. A congestion of all the organs which were intercalated within the circuit. The congestion was nearly constant, and usually continued several hours with accompanying colic pains.

C. At times there was immediate disappearance of pre-existing

hæmorrhage. The subsequent effects usually were in the following order:

1. The hæmorrhage disappeared after recurring to a slight degree in some cases.

2. The pain and the functional troubles ameliorated, the phenomena not being dependent upon the size of the tumor, but rather upon the inflammatory zone which frequently surrounds such growths.

3. There was diminution in the size of the tumors, but two phases of this were distinguishable:

a. The peripheral inflammatory zone was absorbed, and the fibroma appeared smaller and less hard, but its retraction was at first only apparent. As a result of this absorption there was a segmentation into large masses, and a condition of mobility where there had previously been adhesion and immobility. At such a time the morbid phenomena were wont to disappear and the general condition to improve. In some cases there was a temporary aggravation of all the symptoms, which was due to congestion of the inflammatory zone.

b. The retraction of the fibroma was not constant. The influence of the electric current was far more pronounced upon metritis and the accompanying symptoms than upon the fibroma itself, but this does not diminish the value of the electrolysis. Notwithstanding the persistence of a tumor which is hard but well tolerated, women will frequently declare after such treatment that they are cured, and can not be convinced to the contrary.

In some of the author's cases an atresia of the cervical canal was produced by the electrical treatment, but this yielded readily to suitable dilatation. Currents of moderate intensity were used, one hundred milliampères being the usual strength, excepting in rebellious cases. The current was used five minutes at each *séance*, and the intervals between treatments were five or six days. All necessary antiseptic and other precautions were rigorously observed. In the 1,100 *séances* in which the author used this treatment there was but one accident, that being a slight phlegmasia. If currents of higher intensity had been used, it is possible that better results might have been obtained, and that they might have been obtained more rapidly.

Miscellany.

The Paris Universal Exhibition.—The "Lancet's" special correspondent writes to that journal as follows:

On Wednesday, August 7th, as announced in a previous letter, the members of the Congress were up betimes, so as to catch the special train destined to take them to Rheims. After a three hours' journey we reached the historic town. A number of brakes, vans, and carriages were waiting at the station, and we were conveyed some distance out of Rheims to view the sewage farm. This is quite a new institution, and only commenced to receive the sewage some four months ago. The town possesses 150 hectares, but can dispose, for irrigation purposes, of 500 hectares. This is amply sufficient, and when there is a storm, or when by some other cause there is more sewage than the soil under cultivation requires, the water may be thrown on some waste land. Thus the danger of flooding the ground is obviated and underground drains are not required. There is a pumping-station to send some of the water up to the higher grounds, which reach an altitude of twenty metres. Unfortunately, the chief utility of this sewage farm is to prevent the contamination of the river. It does not in any way solve the drainage problem. Rheims still drains into cesspools; the town has not water enough for water-closets, but when the water-supply has been increased then the existence of this sewage farm will enable the town to drain direct into its sewers. After duly investigating all these facts, the Congress was entertained at lunch at the Château des Maretz, which belongs to the company that has undertaken the management of the sewage farm. The lunch was served in a magnificent avenue of trees. Of course, there were some excellent speeches, notably by the director of the company, the prefect of police, the Mayor of Rheims, Dr. Napias on behalf of the French, and Mr. Adolphe Smith, who was specially requested to return thanks by the Swiss, Turkish, Russian, American, and English delegations. Madame A. Tkatchef, doctor in medicine, spoke for the ladies, and the utmost enthusiasm prevailed. The Congress then visited the cathedral, the Pommery champagne cellars, and were again entertained, this time by the municipality of Rheims, at a second lunch given in the Town Hall. Here more speeches were delivered. Those who participated in this pleasant journey will recognize that the study of serious subjects does not interfere with the spirit of mirth and the sense of enjoyment.

On the following day, Thursday, the Congress set to work again in good earnest. In Section 1, M. Delvaille (Bayonne) urged that the medical inspection of schools, as prescribed by the law of 1886, should be more rigorously applied, and that medical officers should be appointed for this purpose. Dr. Sevestre, of the Paris pauper children's hospital, urged that it was in its earliest manifestation that measles was most contagious, and that children suspected of this complaint should be kept away, but that the convalescents might be allowed to return earlier than was at present the custom. Dr. Layet (Bordeaux) related that, by exceptional severity toward the "suspect," they had avoided the necessity of closing schools, while Dr. Rochard insisted that the school teachers must be instructed in these matters. It was no use relying exclusively on the medical profession, for there were 28,000 communes in France which had no doctor. With regard to shortsightedness in schools, Dr. Motais (Angers) gave the results of investigation on 6,700 children. He found that shortsightedness was much more frequent in Germany than in France, but that it was growing to an alarming extent in France. He was anxious to see the course of studies varied and children prevented from looking for too long a period at some near object.

In Section 5, Dr. Alméras (Mentone) read a paper on the contagion of consumption, in which he complained that delicate persons were afraid to visit winter resorts for fear of contracting phthisis. He therefore asked that hotel keepers should take rigorous measures to disinfect rooms which had been occupied by consumptive patients. At the present time hotel keepers generally charged £12 in case of death, under the pretext that the room had to be purified; but it was rarely, if ever, properly disinfected. He proposed that the ceiling, walls, etc., should be submitted to a pulverization with a sublimated solution containing 2 of mercury per 1,000 of water and 12 in 1,000 of tartaric acid. When this was dry, then the same place should be similarly sprayed with a one-per-cent. solution of carbonate of soda. This would convert the sublimate into insoluble salts. This service of disinfection should be managed in winter health resorts by representatives of the public authority, and hotel keepers should receive written certificates from the municipalities that the work had been properly done. If this certificate could not be produced, strangers should refuse to hire the room or apartment.

Dr. de Valcour (Cannes) described three cases of scarlet fever following upon each other in the same room of a hotel where disinfection had not been practiced, and called upon Mr. Adolphe Smith to describe the English law on the subject. After the Congress had heard this explanation, Senator Dr. Pacchiotti related how a lady belonging to an aristocratic and influential family was taken away by the police from an Italian hotel (though she was in a very grave condition, and subsequently died), so that she should not infect the hotel with the small-pox she had contracted. The Italian law had armed medical men with sufficient powers to see that proper precautions were taken. Dr. Felix (Bucharest), on the contrary, was loath to ask too much from the state, and more anxious to so educate the people as to make them spontaneously and willingly take the precautions judged necessary. At Bucharest they had a disinfecting stove, and he was surprised to note how many persons came of their own accord and asked to use it. The declaration of infectious diseases was not obligatory in Roumania, but the police had ample powers over hotels. A Swiss delegate explained that only in some cantons was a notification of disease obligatory. Disinfection in towns was easy, but difficult in country districts, though there were epidemics in villages as well as in towns. The section concluded that in each sanitary district a disinfecting service should be organized, and that the carding of bedding in the streets or squares of towns should be prevented.

Dr. Devillers brought forward a motion against fairs held in large

towns. He related that in 1886, in the Belleville districts of Paris, small pox broke out immediately after such a fair, and in houses that faced the street where it was held. This present year it had been noted that there were six times as many cases of scarlet fever near one of these fairs as in other parts of Paris. In some provincial towns similar observations had been made. Apart from epidemic diseases accidents sometimes occurred, and the noise was most distressing to many persons, especially to invalids. Some speakers objected, on the other hand, that the special tax levied on these booths provided money for the elementary schools; nevertheless, the Section voted that such fairs should be held in open spaces outside large towns, and not in the streets.

Dr. Martin now read a learned dissertation on the condition of French sanitary legislation. He lamented that there was no law against infection. Theoretically the mayors had considerable powers, but, as they could not act without funds, and could not obtain funds without a vote from the municipal councils, their powers were rather nominal than real, especially in cases of emergency. Nor had the mayors received any support from the higher Courts of Appeal. For instance, during the cholera epidemic of 1885, the Mayor of Caen had suppressed a cesspool which caused a great nuisance and contaminated the subsoil. On appeal, the Higher Court, while recognizing that it might have been necessary to suppress the cesspool, decided that the mayor had no right to prescribe how this should be done, but should have left the work to the discretion of the owner. Practically, if the sanitary authority had no right of supervision, it would mean that the work would not be done, or would be done badly. Again, at Toulon, during the cholera, a man refused to whitewash his room; the municipal authorities thereupon sent their agents to do the work. The owner appealed to the local police court, and this court approved the action of the municipality, but when taken up to the Court of Cassation, this tribunal refused to confirm the decision of the Toulon police magistrate. Municipalities, after such judgments, are afraid to act. The French penal code, it is true, gives the right to sue for damages, but to apply this in cases of contagion would be so unusual that no court would grant a verdict. Yet there are laws in France that are very severe, especially against foreign epidemics, such as cholera, plague, yellow fever, and in some cases penalties of one year's imprisonment and even a sentence of death can be applied; but the utter lack of national feeling renders it impossible to apply the legislation that does exist. The French sanitary law had been justly described as the "freedom of suicide." But no one had a right to create such infection in his own house, as it was likely to travel to the houses of others. It was not always the landlord who was to blame. Often a tenant would hire a stable or coach-house and convert it into a dwelling. The text of the law was extremely vague. What constituted an unwholesome dwelling should be clearly defined, and not left to the discretion of judges, who very often were absolutely ignorant as to the rules of health. Many courts by their verdicts had set forth that they did not consider a supply of water in a house a necessity. A high court had condemned a local by-law ordering that houses should be supplied with water as an attack against individual liberty. The best method of action and of punishment was for the sanitary authority itself to effect the required improvements and charge the owner with the cost. Only this must be done promptly. As matters now stood, legal decisions sometimes were obtained months after the nuisance had ceased to exist.

The discussion on this important subject was resumed in the afternoon sitting, when the difficulty of uniting the commissions of hygiene and similar bodies composed of men technically qualified to deal with such questions, but possessing at present only the right to give advice and no executive powers whatsoever, with the mayor, the prefect, or other authorities who could act, was very fully debated. The facts also that the mayor had to consider his electors, and if it was a fashionable resort he had to be very careful not to spread alarm, were obstacles to the stringent application of prophylactic measures. Two bills had been before Parliament to create a sanitary law and a sanitary authority. The project presented by M. Siegfried was countersigned by no less than fifty deputies belonging to all parties, and yet it had fallen through, such were the purely political preoccupations of the National Assembly. Dr. Treille (Deputy of Constantine in the French Parliament) remarked that as the sanitary services had been transferred from the Ministry of Commerce to the Ministry of the Interior, and were in the hands of a man on whom sanitary reformers might rely, we could look forward to considerable improvement. Parliament would not resist a project if its necessity was clearly demonstrated, but he would suggest that the bill had better be first introduced into the Senate. Dr. Martin thought it was urgently necessary to alter the law of April 14, 1850, which had rendered the law of 1789 inoperative. The Belgians, it had been seen, had availed themselves of the law of 1789, with the most admirable results so far as Brussels was concerned. Here 12,015 lives had been saved in fifteen years. Taking the one year 1886, there were 628 deaths less than the average. Estimating every life at the modest sum of 1,000 francs, this represented a sum of 628,000 francs, and, as the Sanitary Bureau which had accomplished this result only cost 48,000 francs for the year, this was equal to an investment bearing an annual interest of 1,400 per cent. On hearing these details the Section burst into loud applause, and Dr. Janssens, the chief of the Brussels Sanitary Bureau, had to rise over and over again to bow his acknowledgments. After a few more observations from different speakers the Section adjourned.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

A CASE OF RUPTURE OF THE UTERUS AND A CASE OF CÆSAREAN SECTION.*

BY WILLIAM T. LUSK, M. D.

ON this the fifth anniversary of the Fifth District Branch of the State Association it is my pleasant duty to congratulate the members present upon the prosperity of the organization they represent. The rapid growth in membership, the zeal exhibited for the principles for which the organization stands, and the scientific merit of the work performed at these annual gatherings, are all prophetic of a long and useful life. But I will not take up your time with laudations of ourselves. With the permission of the society, I wish to occupy the attention of my audience with the relation of two cases, which I have hitherto refrained from publishing, that they might have at least the merit of freshness on this occasion.

CASE I. *Labor at Full Term; Undilatable Condition of the Cervix due to Cicatricial Tissue; Spontaneous Rupture of the Uterus.*—Martha G., aged thirty-three, was brought by ambulance to the Emergency Hospital, near midnight on the 10th of November, 1888. She exhibited signs of severe suffering. Temperature, 99·5° F.; pulse, 140. The features were pinched and the face was pallid. The patient was semi-maniacal. No history was sent with her, but, so far as could be ascertained from her somewhat incoherent statements, this was her second pregnancy. Her first confinement had been a prolonged one, and had been terminated by instruments. The present labor had lasted about thirty hours.

I was hastily summoned. On my arrival I found the membranes had long ruptured, and the uterus was firmly retracted upon the child. The body was apparently situated in an oblique position, with the head directed to the left. The uterine contractions were severe and rupture was regarded as imminent. On vaginal examination, I found that no dilatation of the cervix had taken place. By pressing the index finger slowly upward, the os internum was reached. To my surprise, I discovered that the non-dilatation of the cervix was due to firm cicatricial tissue situated at the internal os and extending somewhat over the lower segment.

With the impending danger of rupture I decided upon the Cæsarean section, and, with this object in view, the woman was removed to the isolation ward in the Sturgis Pavilion at the Bellevue Hospital. At the sight of the preparations for the operation the patient began to beg and implore most piteously to be left in peace until daylight. Her cries and importunities led to hesitation, and hesitation, as the sequel shows, proved fatal, for, while the question was under debate, she called for a chamber, saying she wished to pass urine. When placed upon the vessel she began, in spite of every attempt to control her, to make violent straining efforts. Suddenly she fell back unconscious. The pulse was almost imperceptible; the entire surface was intensely pallid, and the body was covered with clammy perspiration. It was evident that our worst forebodings had been fulfilled. Uterine rupture had taken place. The patient did not rally, and death followed in about two hours.

November 11th.—Autopsy made by Dr. T. Mitchell Prudden. In his report he says: "The body was fairly well formed and nourished; stature short; decomposition considerably advanced; abdomen much distended.

"On making the abdominal incision, the body of the child was found, corresponding to the long axis of the mother's abdomen, with the back directed to the front. The head of the child was bent sharply to the front. There was about 55 c. c. of soft red blood-clot in the abdominal cavity.

"The rent in the uterus extended obliquely across the uterus from the upper cervical portion to the right side of the fundus. The walls of the uterus were about one centimetre thick, and the ragged edges of the rent were deeply stained and infiltrated with blood.

"The placenta was firmly attached to the left upper segment of the uterus, which contained about 60 c. c. of dark, soft blood-clot.

"The *os externum* was lacerated from her previous labor. The upper portion of the cervical canal was narrowed by dense cicatricial tissue, so that its diameter was about 2 centimetres. Antero-posterior diameter of pelvis was 10 centimetres; transverse diameter, 14 centimetres.

"The anatomical diagnosis is accordingly: *Rupture of the uterus, with old, firm cicatricial contraction of the cervix uteri.*"

The case is rare, inasmuch as the cicatricial contraction was situated at the internal os and the lower uterine segment. Dilatation by incision or other artificial means was impossible. When cicatrices are limited to the lower part of the canal, which is of more usual occurrence, the obstacle to the birth of the child is usually removed by the employment of the knife to sever the limiting bands.

Again, the case furnishes a new illustration of the fact that in spontaneous rupture the laceration is not of necessity confined to the thinned lower uterine segment, as has been maintained by some of the extreme partisans of Bandl's theory.

The early performance of the Cæsarean section or of the Porro operation would probably have saved the patient's life. At the late period of her admission to the hospital either operation would have partaken of the nature of a forlorn hope.

As a supplement to the foregoing history, I hope I shall not be trespassing too much on ground familiar to my audience if I briefly review the usual mechanism of uterine rupture and the means at our disposal of combating the mischief done. Spontaneous rupture during labor is not so rare an event that those engaged in busy practice can afford to be ignorant of the means of combating the tendency to a fatal result by all the resources of modern science.

To Bandl belongs the merit of showing that nearly all ruptures begin in the lower uterine segment. In normal labors during each pain the fundus and body of the uterus thicken while the lower segment is stretched and thinned by the ovum or the presenting part of the fœtus. So long as no obstacle exists which hinders the descent of the ovum or the fœtus, this process ends in the conversion of the uterus and vagina into a continuous canal. Ordinarily in advanced

* Read at the fifth annual meeting of the Fifth District Branch of the New York State Medical Association, held in Brooklyn, May 28, 1889.

labor the lower circumference of the body is distinguished from the stretched lower segment by a thickened ridge termed the contraction ring, or the ring of Bandl. In easy labors this ring is often but slightly indicated and is found in the neighborhood of the pelvic brim.

When, however, the descent of the fœtus is hindered by any cause, the resistance of the ligaments which hold the uterus in position is overcome by the continued retraction of the fundus and body, and as a consequence the contraction ring is withdrawn upward, the lower segment is thinned, and in extreme cases nearly the entire uterine contents may occupy the distended passive inferior segment. Under these circumstances the contraction ring is strongly marked and may be felt through the abdominal walls above the pubes, or even in the neighborhood of the umbilicus. This movement upward of the contraction ring is limited somewhat by the pelvic and round ligaments and by the direction of the abdominal pressure. As these restraining agents operate more efficiently in first than in subsequent labors, it is not difficult to comprehend the relative frequency of rupture in women who have borne many children. Bandl reports nine cases of rupture in multiparæ to one in the primiparous woman. As a result of the continued retraction of the body of the uterus the lower segment may become so distended as to form little more than a membranous covering to the fœtus, and the conditions favoring rupture are established. It has been maintained upon theoretical grounds that spontaneous rupture is arrested by the contraction ring. This is certainly the rule when there has been no active intervention. My own case shows, however, that the rule has its exceptions.

Undoubtedly the popularization of Bandl's teachings has contributed greatly toward the adoption of an intelligent prophylaxis in difficult labors. Thus the physician knows that a dangerous attenuation of the lower uterine segment is liable to result from the presence of a hydrocephalic head, from a neglected shoulder presentation, or where the descent of the child is hindered by pelvic contraction, by cicatricial tissue, or by tumors obstructing the parturient passage. The situation of the contraction ring, which, when well defined, can usually be felt through the abdominal walls, furnishes in many cases an index of the degree of the threatened danger. The risks are further increased in cross-births and in lateral and anterior displacements of the uterus, owing to the augmented pressure exerted under such conditions upon a limited portion of the already overdistended tissues.

If rupture occurs under these circumstances we can not wash our hands of responsibility. We know that the faulty uterine positions should have been early corrected by judicious bandaging, that the hydrocephalic head should have been reduced in size by puncture, and that in all forms of obstructed labor there is a time when patient waiting ceases to be a virtue and active intervention is demanded. This is not the place for the complete consideration of the resources of our obstetric art. But the new learning teaches us that when the uterine efforts have proved unavailing to fix the presenting part, and the increasing distance of the contraction ring from the pelvic brim points surely to a dangerous thinning of the uterine muscle, the physician must decide promptly upon the indicated measures of relief. These in head presentations are version, craniotomy, and the Cæsarean section. In neglected shoulder presentations only cautious attempts at version are justifiable. If turning is attempted, the operator should never forget to support the head with one hand through the abdominal walls in such a way as to relieve the strain upon the overdistended tissues. In case of failure, the persistent use of rude force is criminal. The alternatives from which choice should be made are decapitation of the child and the Cæsarean section.

My object in dwelling upon these points is the fact that I do not believe that uterine rupture is by any means so rare as statistics would seem to indicate. Statistics do not take into account innumerable cases buried out of sight by ignorance or by silence.

While insisting, however, upon a rule of personal accountability as regards the obstetric attendant, it is necessary to recognize that to Bandl's scheme there are exceptions. Now and then cases are reported in which primary rupture has occurred in the fundus and in the body, and where the lower segment has given way without antecedent signs or warnings. Thus I once witnessed an instance of spontaneous rupture in a woman with an ample pelvis who had previously given birth with ease to nine children. The head of the child presented and no abnormal condition of the soft parts was recognizable. There was nothing to account for the occurrence excepting a supposed vulnerability of the uterine tissues.

Rupture may be complete or incomplete. In the latter the tear is confined to the muscular structures and the peritonæum remains intact. This is more likely to occur in lateral tears at the site of the folds of the broad ligaments, though, owing to the relatively loose attachment of the peritonæum at the lower segment, incomplete ruptures are not necessarily confined to these points. In most instances the hæmatoma resulting from the bleeding vessels dissects up the peritonæum for a certain distance beyond the tear.

In the complete form the peritonæum likewise gives way, but often to a less extent, and in these cases dissection of the peritonæum from the uterine muscle beyond the borders of the tear would seem in many instances to show that a certain interval had existed between the rupture of the muscular tissues and that of the peritonæum.

When the shock, the sudden stoppage of the uterine pains, the recession of the presenting part, the bloody discharge, and the lateral tilting of the fundus or its apparent disappearance in the case of the passage of the entire child into the abdominal cavity have led to a diagnosis of rupture, the first indication for treatment is the speedy removal of the child. In selecting the manœuvre by which this is to be accomplished—*i. e.*, whether by forceps, by version, by craniotomy, or by laparotomy—the important consideration to be kept in view is that it shall to the least extent possible increase the dimensions of the already existing rent.

In general terms it may be stated that with an undilated cervix, or in cases of extreme pelvic contraction, or after the passage of the head and arms through the rupture,

and in all cases where the child passes entirely into the abdominal cavity, laparotomy is the more conservative measure. Not only is there less shock, but the opening of the abdomen enables the operator to remove effused blood and amniotic fluid from the peritoneal cavity. Still, the not uncommon impression that the ruptured uterus furnishes a promising field for abdominal surgery does not take into account that in so many of the cases where laparotomy is clearly indicated the patient is practically moribund. Even our most enthusiastic salpingotomists are disposed to restrain their benevolent impulses in the presence of impending death.

The employment of the suture to close the uterine wound, in view of recent Cæsarean successes, sounds reasonable, but it is to be borne in mind that with ragged borders infiltrated with blood, with the peritonæum stripped off, and sometimes with emphysema of the subperitoneal connective tissue, the conditions for union are in no wise comparable to those which exist in the Cæsarean section. The Porro operation promises fairer results, though the deep situation of the tear makes it difficult to secure a healthy pedicle. Godson collected seven cases, all of which terminated fatally, but Slavjansky and Fontana have each more recently reported a recovery after the Porro operation.

When the abdomen is opened, even if hesitation is felt about the deep suture or complete extirpation, there should be none concerning the suturing of the peritoneal surfaces. The rupture is thus converted into an incomplete one with its more favorable prognosis.

When the child can be removed by the natural passages without increasing the extent of the rupture, and the latter is confined to the lower segment, laparotomy is of doubtful value. In many such cases recovery *quoad vitam* has been obtained by the employment of antiseptic irrigation and filling the gap with antiseptic gauze. Drainage at the same time should be secured by means of iodoform wicking, or the bent rubber tube passed for an inch or two beyond the torn borders. Drainage and packing are most effective when the tear is situated in the posterior wall. The plan of treatment recommended is, of course, only effective where no infection of the abdominal cavity has taken place at the time of rupture. The best results are obtained, therefore, in cases of incomplete rupture. At the same time that drainage is used, compression of the fundus and body should be employed by means of the hands through the abdominal walls, and, in case of hæmorrhage, effective aid can be furnished by pressure made upon the aorta. It may be necessary to maintain manual compression for hours. Finally, a carefully graduated compress should be placed around the uterus to maintain firm contractions. For this purpose I prefer to employ the hydrostatic bag, which I now show. It is of rubber, of a disc shape, and furnished with a tube by which it is partially filled with water. In the condition under discussion and in all forms of post-partum hæmorrhage I have found the bag most effective. It adjusts itself nicely to the contour of the contracted uterus, and sometimes has seemed to me to work as intelligently and as surely as the skilled hand of the operator.

I have stated that by drainage a fair number of recoveries have been reported so far as life was concerned. In a portion of them, in a recent discussion before the Vienna Obstetrical Society, it appears that there was not a complete *restitutio ad integrum*, an opening into an adjacent sac, either formed by the folds of broad ligament or by false membranes, persisting after removal of the dressings.

Case II. *Patient with Kyphosis; Pregnancy complicated by Pendulous Abdomen; Cæsarean Section, with Fatal Termination to Mother, Child living.*—Ellen M., aged twenty six, native of England, unmarried; father died of phthisis at the age of fifty-six; three brothers and five sisters living and in good health. Patient was a healthy child and had no sickness until she was six years old. At that time she fell down four stone steps, striking her back upon the corner of one of them. She could not raise herself and had to be carried to her bed. After three days she got up, but noticed pain on trying to straighten her back. Weeks afterward a swelling formed at the seat of injury. An abscess followed which discharged for about five years. It then healed, but subsequently broke out again, and has discharged intermittently up to a year ago. The consequent spinal deformity has increased continuously. There have likewise been psoas abscesses on both sides opening at the groin, and there are marks of old sinuses on the outer side of either thigh.

Patient was admitted to the hospital December 12, 1888. According to her recollection, she menstruated last in the early part of April. On examination, the patient was found to measure fifty-one inches. Owing to the extreme kyphosis, the three lower ribs overlapped the ilia. The space between the sternum and the symphysis was greatly diminished, so that the uterus in its development had been directed forward and outward. On admission, the fundus was four inches below the level of the pubic wall. For four months previous the patient had suffered constant pain in the back and on the left side; the bowels had been constipated, but no uneasiness had been experienced from pressure on the bladder.

The indication for Cæsarean section resulted not so much from the pelvic contraction, though the outlet was greatly narrowed, as from the faulty position of the uterus, which directed the head backward and high up above the promontory. Rectification was rendered impossible by the nearness of the sternum to the symphysis. With the limited space at our disposal, with the elevation of the presenting part, and with the acute angle formed by the body of the uterus with the cervico-vaginal canal, it seemed impossible to devise any plan of extraction by the natural passage which would not have subjected the utero-vaginal tissues to the certainty of fatal laceration.

At about eleven o'clock in the night of December 13th labor pains began quite suddenly and severely, recurring by twelve o'clock at five minutes' intervals. At midnight a hypodermic injection of seven minims of Magendie's solution of morphine was given with the view of delaying labor until daylight. The patient fell asleep and rested until seven in the morning, when the pains recurred. I was then sent for. The patient was bathed, and the bowels, which had previously been regulated with care, were emptied by a large enema.

December 14, 1888.—(*Notes taken by Dr. D. H. McAlpin, Jr.*) Operation by Cæsarean section. Operator, Dr. Lusk. Assistants on the operation, Dr. Greene and Dr. White. Ether by Dr. Maury. Instruments passed by Dr. Williams. Ligatures held by Dr. Anderton. Baby cared for by Dr. C. A. Smith.

9.57 A. M.—Hypodermically, Magendie's solution, ℥ vij; atropine, gr. $\frac{1}{150}$.

10.00.—Temperature, 98·6° F.; pulse, 142; respiration, 28.

10.05.—Ether started by Dr. Maury with Clover's apparatus; less than half a pound used during the operation.

10.09.—Chloroform, ʒ ij, given.

10.12.—Incision from left of umbilicus down to symphysis pubis.

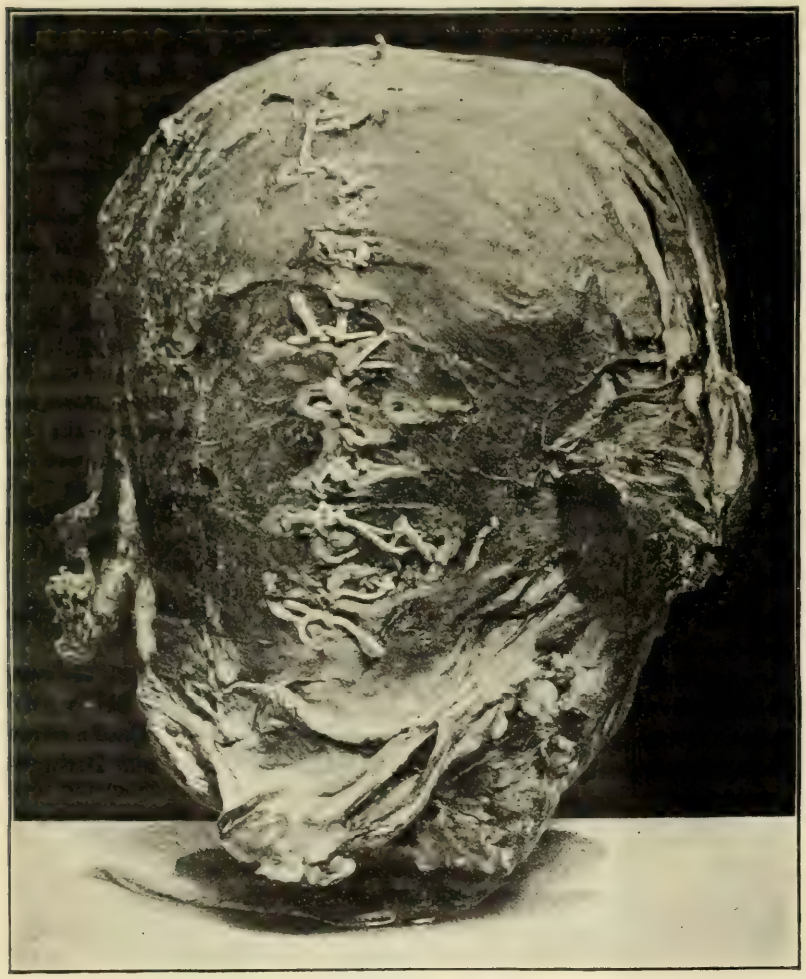
10.14.—Abdominal cavity opened.

10.16½.—Uterus drawn out of abdominal cavity.

10.17½.—Rubber ligature placed about uterus.

10.18.—Incision made into uterus.

10.19.—Left arm of baby presented; cried loudly; given to Dr. C. A. Smith.



Post-mortem appearance of the uterine wound.

10.19½.—Cord tied.

10.20.—Cord cut.

10.21½.—Placenta detached entire; a slight tear, less than an inch, at lower left side, starting from and at right angles to the vertical incision.

10.22.—Douche of Thiersch's solution used to cleanse the inner side of uterus, and passed through into vagina.

10.24.—Began suturing uterus; deep sutures of heavy silk, fourteen in all.

10.31.—Began tying sutures.

10.39.—Put in eighteen superficial sutures, five of which were of very fine silk.

10.52½.—Loosened ligature about neck of uterus.

10.53.—Hypodermic of ergotine, gr. ij.

10.56.—Ligature about uterus removed.

10.57½.—Returned uterus into abdominal cavity.

10.58.—Abdominal sutures of wire, twelve in all.

11.09.—Sponges removed from abdominal cavity.

11.17.—Finished tightening wire sutures. Operation ended.

11.34.—Ergotine, gr. ʃ, whisky, ♏ xx, hypodermically. Dressed and in bed.

1 P. M.—Temperature, 98·8°; pulse, 138; respiration, 19.

The operation was purposely performed in a leisurely way. The time occupied from the first incision to the introduction of the last suture was an hour and five minutes. The slight lateral tear mentioned in the report occurred in the extraction of one of the shoulders. Owing to the small amount of abdominal space, the uterus, even after the removal of the child, subjected the abdominal stitches to a severe strain. As the sequel will show, it was a mistake in this instance not to perform the Porro operation.

For the first four days subsequent to the operation all went well. The temperature varied between 99° and 101·5°, but the higher temperature was of short duration, lasting usually for an hour or two at midnight. The pulse ranged from 110 to 120, and was of good quality. The stomach behaved well. The kidneys secreted freely. The external wound presented a most favorable appearance. Save for occasional attacks of flatulence, there was little discomfort experienced. No doubt was entertained of a favorable result, the unruly disposition of the patient alone furnishing ground for anxiety.

The fifth day (December 18th) began in the same promising manner, but in the early afternoon the patient became restless, tossed about in bed, and tore at her dressings. Remonstrances were unheeded, vomiting set in, tympanites developed, and the pulse became very rapid. In spite of every form of stimulation, collapse was well marked by nine o'clock, and death occurred at eleven. The only high temperature reached was at 7 P. M., when for a brief period it rose to 103·5°.

It was not easy to account for the cause of this sudden change. It was presumed by those of us who had watched the case that an insidious form of septic peritonitis had closed the scene; but at the autopsy, which was made on the 20th inst., there was no serous or purulent exudation, and no trace of peritonitis except a slight redness at the line of the abdominal incision. The uterine wound had healed kindly, and the organ itself appeared healthy. The only disturbance evidenced in the process of repair was a slight superficial separation of the tissues at the site of the lateral tear mentioned in the history.

Of special organs, the intestines, the spleen, and the kidneys were healthy. The heart weighed eight ounces. On the right side the cavity was dilated and the walls were hypertrophied, and the left ventricle appeared contracted, whereas eccentric hypertrophy of the left ventricle is the rule in pregnancy. The aortic valves were normal; the mitral valves were somewhat thickened. The most sur-

prising result of the autopsy, however, was the size of the lungs. The diaphragm reached on the right side to the upper border of the third rib, on the left to that of the second rib. The right lung weighed six ounces, the left lung five ounces, while the combined weight in the healthy female is from thirty to forty ounces. The liver weighed three pounds and twelve ounces, was marked by the ribs, and showed evidences of fatty degeneration. At this stage it was concluded that death was the result of the patient's feeble resisting powers, due in part at least to the small size of the lungs, the unhealthy liver, and other consequences of extreme spinal deformity.

It was then decided to remove the pelvis. In attempting this, large abscesses were found, distending the sheaths of the psoas muscles, having their origin in carious bone at the site of the angle in the vertebral column. How far this condition was responsible for the fatal termination is, of course, a matter of conjecture. But, when one considers the small amount of space originally existing in the abdominal cavity, it seems probable that the encroachment made upon it by the pus collections must have contributed largely to gas accumulations in the intestines, to discomfort to the patient, and to interference with the processes of digestion and absorption—functions of the utmost importance for securing convalescence. I can not but feel that, had Porro's operation been performed, the increased room thereby obtained would have been of signal advantage. Still, from the outset the unruly disposition of the patient was a heavy weight in the balance.

DYSPHONIA SPASTICA.*

By FREDERICK I. KNIGHT, M. D.,
BOSTON.

I would like briefly to introduce this important subject, in the hope that, as so little has been published on it, I may perhaps be the means of drawing out some unpublished observations by members of this association, before whom the subject has not been presented in many years.

All of our members are probably familiar with the disturbance of the voice-production which has been variously named aphonia spastica, aphthongia laryngea spastica (Gottsheim), stammering of the vocal cords, spasm of the tensors, speaker's cramp, etc.

In this phenomenon there is evidently a spasmodic action of the muscles of phonation or respiration, or both, which gives rise in the majority of cases to a high-pitched, jerky, and feeble voice. There is sometimes a long intermission in the vocal sound, so that the term aphonia spastica might be appropriate, but in the cases which I have seen the term dysphonia spastica seems more suitable.

The fellows of the association who were present at the meeting in Boston in 1882 will remember a patient with this affection well marked, whom I presented to them. Since that time I have seen only four cases, which leads me to agree with Sir Morell Mackenzie, who considers the affection a very rare one, rather than with Mr. Lennox Browne, who considers it "so far from being rare, in its milder forms one of almost every-day occurrence." We do sometimes see a condition of somewhat similar nature in cases of acute laryngitis, and perhaps such a condition might be easily overlooked when a patient was suffering from acute inflammation of the larynx, and every effort was being made to prevent him from using his voice, but I am sure that as a chronic condition the phenomenon can not be overlooked, and consequently, in my experience, I believe that it is rare.

Three of my cases occurred in men, and one in a young woman of twenty years. One of the men was a physician, one was in mercantile business, and one was superintendent of a factory, where he was obliged to talk to men in the midst of much noise. His mother, moreover, was deaf.

The woman, whom I have recently seen, is a teacher, and the trouble developed while she was forcing herself to talk with a hoarse cold. This is the lightest case I have ever seen, and one in which it might appear that the prognosis was better than usual, though the condition has already existed a year. There is no obstruction in the nasal passages, but, on the contrary, a tendency to an atrophic condition, and a slightly offensive secretion. Under the use of cleansing solutions for the nose, strychnine internally, and cold douches, the spastic symptoms have improved, but they return, especially on conversation with strangers. Massage of the larynx or compressing the wings of the thyreoid improves the voice temporarily. There is nothing especially morbid on laryngoscopic examination, and I was not able in any of the cases to obtain a view of the spastic phenomenon. It seemed as if the simplicity of the required vocal effort prevented nervous excitement.

In the absence of post-mortem examinations it is impossible to say what the lesion is in these cases.

It seems natural in some, with Schech, to call the affection a co-ordinated neurosis of occupation, like writer's cramp, etc. Cases like that of Heymann * suggest a central lesion, while such cases as E. Hoffman's † and Hering's ‡ suggest a probable reflex origin.

The lesion and mechanism are probably not always the same.

My own experience in these cases would lead me to regard the prognosis as very unfavorable, but of course would be favorable in reflex cases dependent on a cause capable of removal, as in Hoffman's patient, who was cured by the removal of the hypertrophied anterior ends of the middle turbinates.

I have nothing to add to the long list of therapeutic measures laid down by Schech and others—viz., absolute rest of the voice, galvanism of the throat and brain, vocal exercises, tonics, and cold douches on the head and neck, which latter remedy cured one of Schech's cases after all other treatment had failed.#

I would like by this communication to draw out from

* Read before the American Laryngological Association at its eleventh annual congress.

* "Internationales Centralblatt für Laryngologie, etc.," vol. iii, p. 260.

† "Monatsschrift für Ohrenheilkunde, etc.," 1885, p. 428.

‡ "Internationales Centralblatt," vol. ii, p. 571.

"Monatsschrift für Ohrenheilkunde," 1885, p. 1.

the fellows of this association a report of every case of chronic aphonia or dysphonia spastica which has been cured or modified by treatment.

REPORT OF TWO CASES OF BUCCAL TUBERCULOSIS.*

By C. E. BEAN, M. D.,
ST. PAUL, MINN.

I am aware that during the past two years a great deal has been written on this subject and quite a number of cases reported, but I wish to add these recorded cases, for only by additional notes and evidence can data satisfactory and conclusive be obtained.

One of these cases is of especial interest, not only from the extent of the ulceration, but from the fact that it was developed in a female, this being, so far as I can learn, only the third case of the kind on record.

Case I.—Henry B., farmer, aged thirty-two, was seen in May, 1887, and gave the following history:

Up to four years before this time he was entirely healthy, with the exception of a slight cough. After working hard all of one afternoon, drawing water from a well with a bucket, he expectorated a slight amount of blood. This had continued at intervals ever since, though at no time was there any severe hæmorrhage. Up to a year ago he had not lost any flesh. In the fall of 1886, whenever he smoked or chewed tobacco, his tongue would sting and burn and get very red. This troubled him to such a degree that he was forced to give up the use of tobacco altogether.

Four months ago (January, 1887) a sore appeared on the right side of the end of the tongue, commencing like a crack. Two months ago (March, 1887) it began to grow larger, and has gradually grown ever since. At this time the tongue began to swell, and is now (May, 1887) about twice its normal size, while an ulceration extends on the right side from the tip back as far as the middle, three sixteenths of an inch deep, with shelving edges. On the 4th of July, 1886, he caught a severe cold, and, following that, his voice was a trifle hoarse. In the middle of March, 1887, his throat began to get sore, and his voice grew gradually worse until, about ten days after, his voice had entirely disappeared.

Two years ago his weight was one hundred and fifty-five pounds; one year ago, one hundred and forty-five pounds; now only one hundred pounds. Unable to swallow any solid food, and only a small quantity of liquids.

Examination of the Larynx showed thickening and ulceration of the right free edge of the epiglottis and ulceration of both vocal bands their entire length.

Examination of the Chest.—Dullness on percussion over entire right lung, with moist râles. Bronchial breathing and dullness in apex of left lung.

Family history: Both parents living, and over seventy years of age. Father's sister died of phthisis. His three brothers and two sisters are healthy.

Temperature, 101·2° F.; pulse, 124; respirations, 34.

As the patient resided at a distance and it was plainly evident that he had only a few days to live, I sent him home and advised morphine hypodermically and cocaine locally to ease his intense suffering.

Case II.—Mrs. S. was seen in August, 1887. Her history was as follows:

Family history: Mother died of consumption, aged forty-five, and a maternal aunt with the same disease, age unknown.

Patient's history: Up to three years before the time I saw her her health had been comparatively good. At that time, following a cold, she had protracted cough, with slight frothy expectoration. This continued for six months, when cough and expectoration almost entirely ceased, the cough being only in the morning and at night. About one year after the first symptoms she had, without any premonitory symptoms, a severe hæmorrhage; slight hæmorrhages followed, at intervals of from three to six months, up to the time I saw her. During the last two years the expectoration had been thick, firm, and yellowish-green in color.

Some time in the spring of 1887 (the patient thought in February or March) her tongue began to feel sore and stiff, with occasional severe pains, but mostly a dull aching.

About June there appeared, near the tip of the tongue on the right side, a small ulceration, which grew rapidly until, in August when I saw her, it had extended along the right side of the tongue, involving the lower portion of the tonsil and back wall of the pharynx on the corresponding side. The tongue was thickened, and the act of deglutition was accompanied by excruciating pain. The voice was thick and muffled, and it was only by an effort that any words could be articulated.

The ulceration was irregular in shape, with for the most part clean-cut edges. The floor of the ulceration was bathed in pus.

Examination of the larynx showed only a superficial inflammation.

Examination of the lungs showed extensive destruction of the right lung and consolidation of the upper lobe of the left lung. Temperature, 100°; pulse, 110; respirations, 28.

The following line of treatment was advised to the consulting physician:

Internally, cod-liver oil.

Locally, applications of oleate of cocaine (5 per cent.) made to the entire ulceration, and afterward lactic acid to be carefully applied.

This patient lived two months, but at no time was there any improvement in the appearance of the ulceration or relief from the pain.

Tuberculosis of the tongue is to be especially distinguished from carcinoma and syphilis. When it is secondary it is not a difficult question; but the development of it primarily has been so frequently demonstrated, although it is in a large proportion of cases secondary, as to render its existence no longer a question.

It is distinguished from carcinoma by the absence of the glandular enlargement and the sharp lancinating pains characteristic of the latter disease.

From syphilis, outside of a positive specific history, the internal administration of antisyphilitic remedies alone can settle the diagnosis.

Treatment.—In neither of the two cases reported was there any opportunity for personal attention to treatment; indeed, both cases were so far advanced that no amount of treatment could have been of any permanent benefit.

The three plans of treatment most advocated are curetting, with subsequent applications of the cautery, excision of the tongue, and lactic acid.

In a paper on this subject read before this association in 1886, Dr. Delavan reports a case cured by excision.

* Read before the American Laryngological Association at its eleventh annual congress.

Lactic acid has been very much vaunted, and one or two cases are reported as having been cured by means of this remedy, well rubbed into the ulceration; but the numerous failures to even afford temporary relief seems to demonstrate the fact that it is no more to be depended upon when the disease is situated in the tongue than when it has been developed in the larynx; and the result of treatment in that location has been disappointing.

Thorough and deep curetting, with careful and repeated applications of the Paquelin or galvano-cautery, offers the most efficient plan of treatment yet suggested for the primary manifestation.

When it is secondary to lung complications we are as powerless to arrest its progress as we have ever been.

NOTE ON THE OCCASIONAL TOPICAL USE OF SOLUTIONS OF SILVER NITRATE IN THE TREATMENT OF CHRONIC LARYNGITIS.*

By SOLOMON SOLIS-COHEN, M. D.,
PHILADELPHIA.

There are many subjects of greater scientific interest than the treatment of chronic laryngitis, yet very few of more practical importance to a large number of our patients.

The general questions of therapeutics, systemic and topical, of this affection have been so ably and thoroughly discussed in text-books and special articles by so many distinguished members of this body, that further elaboration now would be superfluous; and I simply desire to briefly communicate the results of personal experience during the last three or four years with a single agent, for the purpose of eliciting an expression of opinion from the competent observers present as to the real value of that agent—once overused, now over-neglected.

There is no necessity to report cases in detail. They have not been due to nasal disease or obstruction, nor have they been those in which all topical treatment is unnecessary. Where indigestion, constitutional disease, or diathesis have been present, these have, of course, received due attention—hygienic, dietetic, and medicinal. It is thus simply of topical applications for the relief of local conditions that I speak. We have all encountered cases of chronic laryngitis, especially in singers, clergymen, lawyers, traveling salesmen, public speakers, etc., in which, after all discoverable sources of irritation, local or general, have been removed, and approved topical treatment suited to the individual case has been faithfully employed for a longer or shorter time, improvement would take place up to a certain point and there stop. Perhaps all visible evidence of disease, except an irregular pinkish striping of the vocal bands, would have disappeared; or perhaps there would be a uniform faint coloration, or may be only a loss of luster; but something there would be that persisted and that prevented the patient from resuming with comfort full use of the voice in singing or speaking, or perhaps even in ordinary conversation for social or business purposes.

It is in such conditions as this, the last obstinate remnants of the disease, that I have derived considerable satisfaction from the topical use by sponge, cotton-wad, or brush of weak solutions of silver nitrate, about ten grains to the ounce, applications being made every day for two or three days until some congestive reaction was produced; after that at longer intervals. In the course of treatment, too, in some cases, before reaching the last stage above described, I have found recovery apparently hastened by occasionally substituting stronger solutions of silver nitrate, forty to sixty grains to the ounce, for the iodized glycerin, tannin, tar, or other routine application. A visible increase in congestion immediately follows the use of the silver solution; but this passes off quickly, and at the next visit great improvement is usually manifested. These applications are made once in about two or three weeks, according to circumstances. By thus using solutions of silver nitrate, not as a routine measure, but occasionally in the course of other treatment, as a topical stimulant—the strength of the solution being in inverse ratio to the progress of the case toward recovery—I believe that in very many of the cases in which topical treatment is indicated recovery may be hastened; and in particular that the troublesome final stage may be managed with greater ease than by the use of any other agent with which I am acquainted.

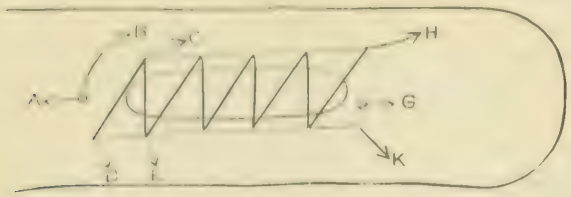
* Read before the American Laryngological Association at its eleventh annual congress.

A CONTINUOUS SUTURE FOR THE INTESTINE AND OTHER ABDOMINAL VISCERA.

By CLARENCE L. LEWIS, Jr., M. D.,
HOUSE SURGEON, BELLEVUE HOSPITAL.

I have noted that nearly if not all of the sutures employed to appose serous surfaces have the following objections brought against them—viz., first, that they are interrupted and do not hold the surfaces in close and even apposition; second, that all the tension of each stitch is placed upon a single thread; and third, but by no means the least, that the time required to place them jeopardizes the life of the patient. Meditating upon the possibility of obtaining a suture that would rectify these objections, and performing a few experiments, I have in the end secured a continuous silk suture that, in the opinion of many eminent surgeons, meets all the requirements. First, it is continuous and easy to execute, and holds the serous surfaces evenly in apposition; second, the tension, instead of being made by a single thread, is made by a side-stitch of an eighth to a quarter of an inch; and, third, it can be applied very rapidly. My only experiments have been upon the cadaver, with very happy results. This suture is especially adapted to wounds of the intestine and to complete resection of that viscus. The great difference between the sutures now used and the one I propose to describe is as follows: The stitches in my suture run along the sides of, as well as across, the wound. They are placed in position loosely until the suture is finished, and then the loops are caught and drawn taut. In its completed state the peritoneal surfaces, which are inverted, are supported by side pillows of silk, while the exterior shows cross retention threads. I use a small Hagedorn (curved) needle, threaded with small iron-dyed silk.

In a small wound of the intestine I first fix my suture with an ordinary Lembert stitch, and end it with the same stitch; but in a complete resection the suture finishes itself.



The drawing shows how simple the suture is. Commencing at the point A, we make an ordinary Lembert stitch. We next enter the needle at the point B, and, carrying it through the peritonæum and into the muscular coat, bring it out at the point C. We next enter the needle at the point D, and in the same manner bring it out at the point E, opposite the point C. In like manner we proceed to the end, leaving small loops in each stitch. Our next move is to tighten the loops, beginning at the point D. When the loops have all been taken in, a Lembert stitch, G, is made to fix the end securely. These Lembert stitches are not required in the complete resection suture, as it is easy to see that the points B and K would be opposite, and could be readily tied with a square knot. Now, the question for consideration is, What faults *could* be found with this suture? I underscore the word *could*, for I can think of but one—viz., Would there be any danger of strangulation of the tissues between the subperitoneal (dotted) lines and the edge of the wound? This is a question which I can not answer at present. But, even if it did occur, which is very improbable, the adhesion of the peritonæum would prevent any infection, for, when the loops are drawn taut, the points B and D and the points E and C would become approximated, thus shutting that portion within the caliber of the intestine.

A CASE OF
OVARIAN TUMOR IN A GIRL SEVEN YEARS OLD.

OVARIOTOMY; RECOVERY.

By W. D. HAMAKER, M. D.,

MEADVILLE, PA.,
LATE RESIDENT PHYSICIAN, UNIVERSITY AND PRESBYTERIAN HOSPITALS, PHILADELPHIA; MEMBER OF THE PATHOLOGICAL SOCIETY, PHILADELPHIA.

Cases of ovarian tumor before puberty are very rare. The youngest patient operated upon was that of Roemer, of Berlin, who removed successfully a congenital tumor from a child twenty months old, which proved to be a dermoid cyst as large as a child's head.* Roemer collected a number of additional cases. Dr. Neville, of Dublin, operated on a child aged two years and eleven months; Busch had a case at two years of age, and Alcott's patient was three years old. All of these cases were unsuccessful. Schwartz successfully removed a large proliferating tumor from a child, four years old, with precocious puberty. Barker had two cases, and Knowsley Thornton one case at seven years, while Spencer Wells, Cupples, and Chenoweth had each a case at eight years.* In addition to these cases collected by Roemer, Wegscheider reports a bilateral cystoma, in a girl twelve years old, which weighed about seven pounds, and Marjolin removed a multilocular tumor, weighing nineteen pounds, from a girl eleven years old. Gaillard Thomas removed, post mortem, a large tumor from a child aged three and a half years.† A second case, three years old, is reported, but the operator's name is not given.

Among one hundred and ninety-seven cases of dermoid cyst collected by Pauly, Lebert, and Olshausen, seven cases were in children under ten years of age.‡ A number of cases of sarcoma and carcinoma of the ovary, in those under twelve years, are reported by Olshausen and others. Lucas reported to the Clinical Society of London, in 1888, a case of round-celled sarcoma, which he had removed successfully in February, 1885, from a girl, seven years old, who had exhibited precocious puberty.#

To these cases I wish to add a report of the case which recently occurred in my practice:

I was called to see Annie A., aged seven years, on October 22, 1888, and learned that her family history was good, no hereditary disease having existed, nor had there ever been a case of ovarian tumor in the family. There was no history of injury, nor had she shown any of the signs of puberty. She had been in good health until April, 1888, when she began to fail gradually in health, with pain in the left side and a slight tendency to bend forward in walking. During the spring and summer she continued to fail in health, and had considerable dyspnœa. In August the parents first noticed abdominal enlargement, and also noticed the "blue veins" over the abdomen. During this time she had been treated for various diseases. When I first saw her she was anæmic and very much emaciated. She was unable to lie down, on account of the dyspnœa and pain just below the region of the liver. She was passing large quantities of limpid urine, which was low in specific gravity and without albumin.

At first, on account of extreme tenderness, the examination was very unsatisfactory. There appeared uniform enlargement of the abdomen, and the walls of the abdomen were quite tense. Fluctuation was made out, and dullness on percussion, except in the sides low down when she was lying on her back. I gave her an anodyne and a ferruginous tonic. Under these she was relieved of pain and seemed stronger in a few days. I aspirated her on November 4th, and drew off six pints of dark ovarian-like liquid, which, under the microscope, revealed the usual cells of ovarian fluid. After the aspiration a tumor of the size of a child's head could be made out, apparently growing from the *left* ovarian region. She was now quite comfortable, and in a few days was able to be about the house.

The operation of ovariotomy was now agreed to by the parents, and I placed her on a course of tonic treatment to prepare her for it. For two weeks she did very well, when the cyst began rapidly to fill again. The patient asked to have the operation postponed till after the holidays, and, although the tumor was enlarging very rapidly, this was agreed to, and the operation was set for January 3, 1889, when, at 11 A. M., I performed ovariotomy with strict antiseptic precautions. I was very kindly assisted by Dr. Eagleson, Dr. Cotton, Dr. Calvin,

* "Brit. Med. Jour.," April 12, 1884.

* "Brit. Med. Jour.," April 12, 1884.

† Olshausen, "Cyclo. of Obstet. and Gyn.," vol. viii, p. 80.

‡ *Ibid.*, p. 354.

"International Jour. of Surgery," July, 1888.

and Dr. Carmichael. After etherization, a short incision was made from the umbilicus to a point an inch above the pubes. A few adhesions were found at the point of aspiration, and also the omentum was found adherent at several points. These were easily broken up and the contents of the cyst drawn off. The sac was now drawn from the opening, and, instead of arising from the *left* ovary, as it appeared after the former aspiration, it was found to be a cyst of the *right* ovary. There were one large cyst and several "daughter" cysts, and the tumor was attached by means of a long pedicle. The cyst had the glistening appearance of the ordinary ovarian tumor. The pedicle was ligated with strong silk, cut off, and dropped. No bleeding point required a ligature, and the cavity was quickly cleansed and the abdominal wound closed with silk sutures. A strip of lint well covered with carbolized vaseline was laid over the wound, and over this was laid salicylated cotton. Over this was placed a large pad of absorbent cotton and the bandage applied.

The patient quickly revived, and showed very few signs of shock. At 5 P. M. the temperature was normal and she vomited slightly. She required no catheterization, and, beyond the restless condition to be expected, there was nothing to note.

January 4th.—Morning temperature was 100·4° F., evening temperature 99·4°, pulse 132. During the day there was some pain and she was quite restless. Some bromide of potassium was given. A half-ounce of milk was allowed every two hours.

5th.—Temperature 99·4° in the morning, normal at night. Nervousness had disappeared, and she was doing very well. Milk increased to one ounce every two hours.

6th.—Milk increased to two ounces every two hours. At 10 P. M., after crying violently for something to eat, she fell asleep and had a profuse cold sweat with symptoms of beginning collapse. The temperature had been 100·4° in the morning, with the pulse at 108. In the evening after the sweat the temperature was 97° and the pulse 90. No pain or tenderness was noticed. Applied heat and gave some whisky and milk.

7th.—Doing well. Morning temperature 98·4°, pulse 90. Slight tenderness was felt over the umbilical region. Tongue clean; slight inclination to have bowels moved. Added beef tea to the diet.

8th.—Temperature normal, pulse 90 and strong. Dressed the wound and found no tympanites and very little tenderness. Ordered castor-oil and syr. rhei aromat., āā f ʒ j.

9th.—Bowels moved well.

10th.—Doing well.

13th.—Removed the stitches.

24th.—Patient is in good condition and general health rapidly improving. No hardness or tenderness at any point. Allowed her to sit up.

From the last-mentioned date she rapidly improved and made a good recovery. At the present time (July 30th) she is in excellent health.

883 Water Street.

Laryngeal Ulcers in Typhoid Fever.—"Dr. Antonoff publishes in the "Ejenedêlnaya Klinicheskaya Gazeta" the result of a series of histological examinations of laryngeal ulcer occurring in typhoid fever. The earliest change, he says, is a hyaline degeneration of the membrana propria of the capillaries and smaller arteries, and in places of the connective tissue of the mucous membrane. The epithelium dies from coagulative necrosis. The reticulum formed becomes the seat of micrococci. There is no inflammatory infiltration in the broken-down tissue, but the process takes place on the border between healthy and morbid tissue. If the ulceration goes deeper, perichondritis with formation of pus, phlegmonous inflammation of the soft parts, and loosening of the fibers of the cartilage take place."—*Lancet.*

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. Appleton & Co. Edited by Frank P. Foster, M. D.
NEW YORK, SATURDAY, SEPTEMBER 14, 1889.

CONVENTIONAL MOURNING OR HEALTH?

Which shall it be? The time has come to choose. Unmitigated mourning must go. A movement has been started in England to put an end, if possible, to the present irrational mourning costumes that exact of women great personal inconvenience, physical injury, and disastrous expense. The conventional costume of a well-bred widow, for instance, possesses every known quality of unhygienic, non-æsthetic, and costly dress. Proper exercise while she is wearing it is out of the question. Seclusion is secured in ways less barbarous perhaps than inducing deformity of the feet, yet our occidental mourning customs effectually keep women within doors. The heart of the stoutest warrior might quail within him if a quiet stroll required the wearing of two crape veils, each six feet long originally and only slightly shortened, but not lessened in weight, by a hem half a yard deep—one veil to be worn over the face and the other to hang down the back! The widow's gown must be inconveniently long, the outside garment must cling, and both must be made of inelastic, non-inspiring material. Add to this that within, which passeth show, and the picture is pretty black. The husband who loses his wife escapes such outward trappings, not being forced to adopt any special habiliments that can incommode or injure him. A simple band around the hat announces the fact of his changed circumstances and secures freedom from idle questions. Strange inconsistency of custom that thus discriminates between men and women, and always to the disadvantage of women in point of health!

In this new crusade of common sense Lady Harberton takes the lead, setting forth in a recent article the reasons why existing mourning costumes should be abandoned by all sensible women. The materials now in use are in themselves injurious, the dyes being often of a poisonous nature and frequently injuring the skin and ruining the complexion. What woman who indulges in conventional mourning escapes the staining process resulting from damp crape? Only the victim can know the energy and perseverance required to remove from brow and neck the literal clouds that gather from such a cause. The harm to the exterior of the body is easily perceived. Not less injurious is the irritation to the respiratory tract caused by minute loose particles of poisonous crape. To the pang of separation is added the thought that our loved ones are condemned to suffer physical discomfort for a year or two, and, possibly, disease for an indefinite period.

Lady Harberton suggests that persons should provide in their wills that no mourning should be worn for them. This might have a modifying effect upon things as they are. But,

of course, the whole matter, like every other social and domestic question, rests entirely with oppressed womankind. Women are not driven into mourning at the point of the bayonet. The Quakers get along very well without wearing it at all. The sincerity of their grief is not questioned because they remain clad in every-day attire. If precedent is needed, it is pleasant to know that it already exists, and to realize the fact that scores of calm-browed, earnest-hearted nineteenth-century women have not needed mourning as a protection or a means of expression in the hour of affliction. Grief would seem to be a personal affair, sacred to the individual, needing no outward sign of its having taken the world into its confidence, and having thus cast something of a shade over the joy of living—said joy not being an inexhaustible mine in any community. Rather is the stock in perpetual need of increase.

The moral influence of mourning is even more to be deplored than its physical effects. Gloomy garments, darkened rooms, all the subdued life of the house of mourning, depress the powers, lower vitality, and absorb an undue quantity of domestic ozone. Such unwise fashions tend to stultify the wonderfully recuperative powers of time and nature. Hugging grief to keep it warm is a poor business, and so is the worship of sorrow. Speed the day when it shall be considered unbecoming to wipe our eyes upon the public or to dust our neighbors' shelves with any personal woe! All that Diogenes asked of Alexander was that the king should stand out of his sunshine. And we all have a right to demand of society that it take its mourning out of humanity's sunshine.

THE CAUSE OF SLEEP.

M. Brown-Séquard, as will be seen by an abstract in Dr. Rabinovitch's report on physiology, published in this number of the Journal, combats the theory that attributes the induction of sleep to a change in the state of the intracranial circulation leading to cerebral anæmia. He rests this contention mainly on his having frequently observed a hyperæmic condition of the base of the brain, and especially of the medulla oblongata and the spinal cord, during sleep, and on the regular recurrence of sleep in certain animals that have had the cerebrum removed. In place of the theory of cerebral anæmia he sets up that of peripheral irritation—somewhere and of some sort—exercising an inhibitory action on mental activity, on the action of certain muscles, and perhaps to some extent on the circulation and respiration. As regards their proximate cause, he places both natural and hypnotic sleep on the same footing.

It is to be noted that he admits that contraction of the blood-vessels of the retina and of the cerebral lobes, implying anæmia of the brain, is one of the phenomena of incipient sleep, although he looks upon it—for what reason we are not told—as one of the details that "confirm the existence of irritations." A diminished supply of blood to the brain may, therefore, have something to do with the induction of sleep, even in the light of the considerations brought forward by M. Brown-Séquard. Moreover, it is reasonable to assume that one of his arguments—that of the regular recurrence of sleep in animals deprived of the cerebral hemispheres—proves too much for the theory of inhibition of mental activity, unless it can be shown that mental activity has its seat in some other organ than the brain. Besides, it may well be doubted whether the abolition of mental action is all that goes to make up sleep, even with the addition of more or less inhibition of the cardiac and pulmonary functions, or whether mental processes are altogether in abeyance during sleep, leaving dreams to be accounted for as proceeding from some other part of the economy than the head. In addition, we may ask what the periodically recurring peripheral irritation is, and where it is located, that normally starts the nocturnal inhibition that leads to sleep. Evidently "there are more things in heaven and earth than are dreamed of in our philosophy," and M. Brown-Séquard, granting his demolition of the theory of cerebral anæmia, has not replaced it with one that is beyond cavil.

MINOR PARAGRAPHS.

THE SPREAD OF TUBERCULOSIS AND ACTINOMYCOSIS IN ANIMALS AND MAN.

The "British Medical Journal" contains an analysis of a report of the Royal Agricultural Department for 1888, dealing largely with four diseases—tuberculosis, actinomycosis, anthrax, and rabies—which have a direct relation to preventive medicine and human pathology. The report refers to a lack of power to confiscate certain kinds of diseased cattle, and recommends that authority be given to seize, in fairs, in markets, and in transit, all animals that come under the denomination of "mincers" or "wasters"—so called because they are bought up by the beef-sausage makers and because they are in the last stage of emaciation from tuberculosis. The report gives the latest available information as to the production of actinomycosis in man: 1. The evidence that it is readily transmitted from the food-animals to man has not been adduced. 2. Animals have the disease mostly in the tongue, at points which have been abraded by certain kinds of fodder. 3. Barley is the fodder which makes these abrasions with special frequency; and is, also, most abundantly infested with the ray-fungus. 4. That barley can produce the disease in man seems to be shown by one case, quoted from Soltmann by the authors of the report above referred to. A boy, aged eleven years, accidentally swallowed an awn of barley, and an intrathoracic abscess resulted, in the pus of which the ray-fungus ultimately appeared. The awn also was discovered at the time of the first evacuation of pus. Professor Crookshank is the author of that part of the report which treats of the actinomycotic disease in animals and man. He has written one of the fullest and best accounts of the disease that have yet been published. His article is copiously illustrated with microscopic and other lithographs, and it covers nearly eighty pages in the volume, which contains in all 336 pages. The amount of space accorded to this subject is an evidence of the growing importance accorded to it.

THE HOT-AIR TREATMENT OF CONSUMPTION.

The latest contribution on this subject is by Assistant Surgeon J. J. Kinyoun, of the Marine-Hospital Service ("Weekly Abstract of Sanitary Reports," Sept. 6, 1889), who took patients that presented about the same physical signs, the diagnosis having been verified in each by examination of the

sputum. Each sitting lasted an hour, the temperature of the inspired air varying from 120° to 230° C., though that of the expired air was only between 65° and 80° C.; there was not more than one degree difference in the rectal temperature taken at the beginning and at the end of the sitting. Sometimes there was a decrease of from five to ten beats in the pulse, and rarely there was an increase by as much as twenty beats. The respiration was sometimes quickened, sometimes retarded, never more than five respirations; sometimes there was no change. There was slight improvement in the patients, but in all of them it seemed due to increased chest expansion. A test experiment was made with a tuberculous patient that inspired cold air; the rectal temperature, pulse, and respiration curves in the chart accompanying his history are closely comparable to those in the charts of the patients that used Weigert's apparatus, and, like them, he improved while indulging in the pulmonary gymnastics. In the last analysis of all the reported cases treated by this method, the beneficial results seem consequent upon the increased expansion of the lungs; and all the reporters agree that the air when it reaches the lungs is so moderately hot that at best the germicidal effect is limited to the bacilli in the bronchi.

THE NEW VOLUME OF THE "INDEX-CATALOGUE."

The tenth volume of this great work takes the vocabulary from "O" to "Pfutsch." It brings the number of author-titles of volumes to 54,298, and of pamphlets to 93,002, and the number of subject-titles of books to 107,419, and of journal articles to 336,772. It continues the work with the same scrupulous carefulness that has been apparent in all the preceding volumes. A noteworthy article is the one headed "Periodicals," with references also to "Bibliography" and its subheadings, to "Journals," and to "Journalism." It is a list of the periodicals more or less complete files of which are contained in the Library of the Surgeon-General's Office, and includes 211 pages. The exact titles are given, with their changes from time to time, the names of the editors, and the places and forms of publication. Such a list is of incalculable value, especially to those engaged in editorial work.

THE HUDSON DISPENSARY.

This institution, which was started four years ago, has recently issued its first "Announcement and Report," by which it appears that its physicians are called upon nearly five hundred times a month, a fact which, as the report states, "sufficiently attests the necessity to which it ministers." The dispensary is situated at No. 425 West Forty-second Street. A pleasant feature of its organization is the fact that the gentlemen of the attending medical staff constitute the board of managers also.

TYPHOID FEVER IN BROOKLYN.

The meetings of the Medical Society of the County of Kings will begin again on the evening of the 17th inst., with a report of the Section in Medicine. Typhoid fever has been set down as the leading subject for discussion at two or more of the early meetings. The subject of autumnal typhoid fever in Brooklyn has come up from time to time before the society, but has not hitherto been systematically debated.

THE STATE BOARD OF HEALTH ON CIGARETTES.

The board's analyst, Professor Willis G. Tucker, of the Albany Medical College, has lately rendered an exceedingly sensible report on cigarettes. He shows the utter fallacy and absurdity of current allegations to the effect that the tobacco or the paper of which the best-known brands are made is adulterated with any poisonous or injurious substance whatever; but he justly alludes to the facility afforded by cigarettes of using too much tobacco and of inhaling the smoke, and deplores their unrestricted sale to mere boys.

ALOPECIA AREATA TRAUMATICA.

At the recent meeting of the Missouri State Medical Society, Dr. Dumesnil recounted a case of alopecia areata in which there was a history of traumatism. The patient, about a year before, at the age of fifteen years, was hit upon the head by a falling shingle, a small scalp wound being produced. This healed promptly, but about a month later the hair began to fall out in spots and has continued to do so until the alopecia threatens to become complete.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending September 10, 1889:

DISEASES.	Week ending Sept. 3.		Week ending Sept. 10.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	112	19	53	7
Scarlet fever	21	2	24	3
Cerebro-spinal meningitis	3	2	0	0
Measles	21	1	7	1
Diphtheria	66	22	62	12

The American Pædiatric Society will hold its annual meeting in Washington, at the Army Medical Museum Building, on the 20th and 21st inst., one afternoon session being held at the Johns Hopkins Hospital, Baltimore. Besides an address by the president, Dr. A. Jacobi, of New York, papers are announced as follows: "Notes on a Case of Ataxia in a Child of Ten Years," by Dr. A. D. Blackador, of Montreal; "A Study of some of the Bacteria found in the Dejecta of Infants afflicted with Summer Diarrhœa" (second communication), by Dr. W. D. Booker, of Baltimore; "Noisy Respiration," by Dr. Dillon Brown, of New York; "Prolapsus Recti due to a large Stone in the Bladder in a Girl Three Years Old," "Two Cases of Nystagmus associated with Choreatic Movements of the Head in Rhachitic Babies," "Septic Diphtheria with Unusual Sequelæ," and "Personal Prophylaxis in Diphtheria," by Dr. A. Caillé, of New York; "Subcutaneous Emphysema in Children," "The Necessity of Prolonged Rest after some Attacks of Diphtheria," and "Two Cases of Carpo-pedal Contraction," by Dr. Charles Warrington Earle, of Chicago; "The Treatment of Scarlet Fever and its Complications," by Dr. J. Henry Fruitnight, of New York; "Spurious Meningocele" and "Double Empyema," by Dr. Francis Huber, of New York; "Aneurysm in Early Life," by Dr. A. Jacobi, of New York; "A Contribution to the Summer Diarrhœas of Infancy," by Dr. John A. Jeffries, of Boston (by invitation); "Tuberculosis of the Testis in Childhood," by Dr. H. Koplik, of New York; "Cases of Spastic Paraplegia," by Dr. Thomas S. Latimer, of Baltimore; "Scarlet Fever," by Dr. I. N. Love, of St. Louis; "The Artificial Feeding of Infants," by Dr. Arthur V. Meigs, of Philadelphia; "A Case of Diaphragmatic Hernia, with Operation," and "The Apparent Physical Contraction involved in the Reinflation of a Collapsed Lung while an Opening remains in the Pleural Sac," by Dr. J. O'Dwyer, of New York; "A Case of Simple Muscular Atrophy of the Facio-scapulo-humeral Type" and "Cerebral Sclerosis

in Children," by Dr. William Osler, of Baltimore; "Diphtheria," by Dr. A. Seibert, of New York; and "Some Practical Points in the Diagnosis and Treatment of Malarial Disease in Children," by Dr. H. N. Vineberg, of New York. Papers of which the titles are not given are announced to be read by Dr. W. T. Northrup and Dr. J. L. Smith, of New York, and Dr. V. W. Vaughan, of Ann Arbor.

An Army Medical Board will be convened in New York on October 1st, for the examination of such persons as may be properly invited to present themselves before it as candidates for appointment in the Medical Corps of the army. Application for an invitation should be addressed to the Secretary of War, stating date and place of birth and place and State of permanent residence, accompanied by certificates, based on personal acquaintance, from at least two persons of repute, as to citizenship, character, and moral habits. Testimonials as to professional standing, from the professors of the medical college from which the applicant graduated, are also desirable. The candidate must be between twenty-one and twenty-eight years of age, and a graduate from a regular medical college, evidence of which, his diploma, must be submitted to the board. There are now nine vacancies in the grade of assistant surgeon. Further information regarding the examinations and their nature may be obtained by addressing the Surgeon-General, U. S. Army, Washington, D. C.

The Medico-legal Society will hold its next meeting at the Hotel Buckingham, on Wednesday evening, the 18th inst. Dr. C. A. F. Lindorme, of Florida, will read a paper on "The Hygiene of Interments"; Dr. Joseph Jones, of New Orleans, will read a paper on "The Classification of the Varieties of Insanity"; and the president, Mr. Clark Bell, will give a *résumé* of a recent trip to Europe.

Change of Address.—Dr. R. R. Martino, Brooklyn, to No. 530 Macon Street.

Society Meetings for the Coming Week:

Monday, *September 16th:* New York Academy of Medicine (Section in Ophthalmology and Otology); Medico-chirurgical Society of German Physicians; Hartford, Conn., City Medical Association; Chicago Medical Society.

Tuesday, *September 17th:* American Gynæcological Society (Boston—first day); American Association of Obstetricians and Gynæcologists (Cincinnati—first day); American Dermatological Association (Boston—first day); New York Academy of Medicine (Section in Theory and Practice of Medicine); Medical Societies of the Counties of Kings and Westchester, N. Y.; Ogdensburgh Medical Association; Connecticut River Valley Medical Association (Bellows Falls, Vt.); Baltimore Academy of Medicine.

Wednesday, *September 18th:* Association of American Physicians (Washington—first day); American Gynæcological Society (second day); American Association of Obstetricians and Gynæcologists (second day); American Dermatological Association (second day); Harlem Medical Association of the City of New York; Northwestern Medical and Surgical Society of New York (private); Medical Society of the County of Allegany (quarterly), N. Y.; New Jersey Academy of Medicine (Newark).

Thursday, *September 19th:* Association of American Physicians (second day); American Gynæcological Society (third day); American Association of Obstetricians and Gynæcologists (third day); American Dermatological Association (third day); New York Academy of Medicine; New Bedford, Mass., Society for Medical Improvement.

Friday, *September 20th:* Association of American Physicians (third day); Chicago Gynæcological Society; Baltimore Clinical Society.

Saturday, *September 21st:* Clinical Society of the New York Post-graduate Medical School and Hospital.

OBITUARY NOTES.

David Tilden Brown, M. D., formerly of New York, died at his home in Batavia, Ill., on the 4th inst., in the sixty-seventh year of his age. The deceased, who was a graduate of the College of Physicians and Surgeons, was for many years the superintendent of the Bloomingdale Asylum. About fifteen years ago, on account of ill-health, he resigned his position and went abroad. On his return, he made his home in Batavia, where he devoted his declining years to the pursuit of agriculture. He is remembered by the New York profession as an alienist of high attainments and as a man of extraordinary nobility and gentleness of character—qualities that endeared him to those who had friends in Bloomingdale and to those of the inmates themselves who were not too demented to recognize them.

Henry J. Menninger, M. D., died at his home in Brooklyn, on the 8th inst. He was a native of Germany, but came to this country while young, and was educated in New York. He graduated in 1863 at the University Medical College. He at once entered the medical corps of the army and served until 1868. From 1865 to 1868 he was surgeon-in-chief to the Marine Hospital at Newbern, N. C. He left North Carolina about 1874 and settled in Brooklyn. He was active in politics and was chosen coroner, a position for which he was admirably fitted.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

Meeting of May 11, 1889.

Dr. A. H. Smith in the Chair.

The Therapeutic Value of Oxygen Inhalation, with Experiments on Animals under High Pressure.—Dr. W. G. Thompson, in a paper with this title, dealt with the question of the actual effects of an oxygen atmosphere under various pressures, from the standpoint of scientifically conducted experimentation, and exhibited his animals and apparatus used in this work. He alluded to the great variety of opinions now current as to the beneficial effects of breathing extra amounts of pure oxygen. Some regularly gave it when dealing with any one of a number of common symptoms or conditions, such as anæmia, dyspnœa, albuminuria, vital depression, etc., and quite commonly oxygen was administered without any definite aim. He should, therefore, aim to present a clearer estimate of the real value of the agent.

By causing the inhalation of oxygen at a pressure of fifteen additional pounds to the square inch the amount of oxygen which was carried in loose combination in the blood-plasma could be slightly increased possibly, but it had not appeared experimentally that an increased oxidation was thus caused, or that any measurable increase of the amount of oxygen so carried took place. Under ten atmospheres of pure oxygen something over three per cent. of the natural volume of oxygen in the plasma was taken up, but even here the effects were vague, and probably a person was not conscious of them, such various symptoms had been reported by different patients. The tem-

perature was not elevated. Very high pressures, and especially any sudden variations in pressure, up or down, caused convulsions, heart failure, or circulatory disturbances. The same could not be produced by common air under the same pressures. In other words, more air-pressure than oxygen-pressure could be withstood, perhaps because in the former case the vitiated air made its exit more readily. In either case the patient would suffer more or less from the retention of nitrogenous waste matters (perhaps having convulsions), since there was little gaseous diffusion possible in the lung when the atmospheric pressure was changed much; and the carbon dioxide itself did not escape from the deeper air-vesicles. Hence the blood did not take up oxygen, and the carbon dioxide and other waste products accumulated. As had been said, this process went on more rapidly under a high pressure of oxygen than under that of ordinary air. Finally, the high pressure caused an increased solution of carbon dioxide in the blood.

He would next consider the effects of the inhalation of oxygen under pressure where the respiration was already abnormal. The speaker here passed in review the various causes of dyspnœa, including neurotic dyspnœa. His experiments had shown that pure oxygen under pressure would relieve dyspnœa due to foul air, as common air under pressure would not. When in any way the respiratory passages were narrowed to below their normal caliber and dyspnœa resulted, both air and oxygen acted to relieve it, but he was convinced that if given under high pressures the result was impaired. Congestion of the lung from the same cause he had found to be greatly relieved by oxygen inhalations. Dyspnœa due to diminished lung space for aeration of the blood was also greatly relieved by oxygen, if under pressures between four and ten pounds, but was made worse by high pressures (such as of thirty pounds). His conclusion was that oxygen under moderate pressures helped certain forms of dyspnœa. A moderately increased pressure of common air would lower the temperature of animals suffering from septicæmia; he therefore was quite ready to believe that a moderate degree of extra pressure in oxygen given by inhalation was of real advantage.

Now, as to the general therapeutic uses of the agent. Its actual employment in this city had grown to very considerable proportions, from two hundred thousand to three hundred thousand gallons being consumed every year. Not only was it used largely in poisoning by gases, drowning accidents, and various forms of dyspnœa, but also in anæmia and other altered or impure states of the blood. He was convinced that in anæmia, chlorosis, and other such conditions oxygen had but slight advantages over fresh air under slight pressure. It invariably failed to relieve the symptoms of blood poisoning or to remove cyanosis. Subjective dyspnœa, however, was commonly relieved. In innumerable instances it had failed to give any improvement of condition in diphtheria. In a case of poisoning by illuminating gas where he had seen oxygen tried it had neither helped the cyanosis nor saved life. In his own experience he had found little encouragement for using it in affections of the circulation due to defective heart action. But with a diminished respiratory surface, such as occurred in pneumonia, or where the entrance of air was impeded, as in asthma accompanied by much bronchial secretion, he had got very good results; also where from any reason expansion of the thorax was poorly carried on or painful. Uræmic dyspnœa was often relieved; here was a prompt and easy means of aid in one of the worst forms of suffering known, although without effect on the outcome of the disease.

Dr. J. W. Roosevelt took various exceptions to the theoretical conclusions of the author's, and in particular doubted that in increased pressure there was any regularly present advantage. As regarded the therapeutical value of the agent, he thought the active inhalations had much to do with the benefit resulting to the patient. In treating anæmia he had at different times tried iron alone, oxygen alone, and iron and oxygen together; the best results had come from the combination. He thought the mode of action which made this benefit possible might resemble that which came into play where diminution of lung surface was at the bottom of the trouble, and that in anæmia also the hæmoglobin might be not always or nearly saturated. Such must be the case whenever cyanosis was relieved by oxygen, as occasionally it was. It was rational to suppose that oxygen inhalations had a practical value in anæmia when we considered that there was a diminution in the amount of hæmoglobin, and that oxygen gas would increase the amount of oxygen carried into the circulation—as he believed it did—to an extent which was but slight, he would admit, and yet important in its results.

Dr. George L. Peabody remarked that it was very difficult to determine the effect of a single remedial agent or agency in chronic diseases, and especially where it was only one of several remedies being used. If the disorder was one having a tendency toward recovery, the problem was still more difficult. The value of oxygen must be considered as vague and unsettled still. The history of its entrance into modern therapeutics was of itself suggestive of uncertainty. Substances rich in oxygen had once been given by the mouth with the expectation of oxygen being liberated in the stomach (where their only possible action could be that of a caustic) and so reaching the general economy. Next came the idea of giving oxygen by the lungs, under pressure, so as to cause the plasma to absorb extra amounts of it. The fundamental fact remained that hæmoglobin could be trusted to satisfy its affinity for oxygen in common air. The amount of hæmoglobin in the blood was therefore of far more importance to the tissues, provided the air-passages were not obstructed. From a clinical standpoint also he doubted that any aid worth mentioning was obtained from the use of oxygen, as such, in a vast majority of the cases in which it was now administered. The pulmonary gymnastics incidentally involved in the taking of oxygen explained to him largely any good results which might be noticed.

Where secretions were thrown out in such amount on the sides of the air-passages as to give the same condition in the lung as if the air inhaled were unduly attenuated (as in severe catarrhs, emphysema, pleurisy, or diphtheria), it might have a definite usefulness. In asphyxia from chlorine or illuminating gas its use might be considered; but he could testify that it had failed to give any aid in many cases of this sort where he had tried it. Finally, patients suffering from anæmia and chlorosis were likely to recover anyhow, both with and without the many remedies so constantly appealed to. He thought the aid to be had from oxygen in this result was unproved and physiologically improbable.

Dr. Beverley Robinson differed decidedly with Dr. Peabody as to the utility of oxygen in the treatment of disease, having seen many veritable instances where absolute relief had followed its use. In anæmia, after trying vainly all the other remedies, he had met with unmistakable successes by using pure oxygen (and its purity was very important too). In the albuminuria of atrophic nephritis he had found oxygen inhalations of decided value, not in diminishing the amount of albumin, but in aiding the general nutrition. Whatever else it might or might not do, it helped digestion and assimilation, and certainly it had a very wide utility here. In phthisis it was good practice to use it, not only because it forced the patient to expand his lungs, but also because it acted as an antiseptic agent—did no harm, and might do some good; and finally it

improved the nutrition—always a good thing to accomplish. Oxygen should therefore be added to whatever other agencies we could bring to bear. Where we could not send phthisical patients out of the city, oxygen should be given. In view of certain clinical facts, it was rational to suppose that it might act as a stimulant to the formation of hæmoglobin where this was deficient. Purely experimental results in the use of oxygen were not the absolute tests for medical men; the effects on patients were. It was unfortunate that oxygen was expensive still, and that we were not always sure of its being pure. It was often necessary to give it for a long period of time. Finally, the old writers were not far from the truth in their statement that "quiet, peace, happiness, and euthanasia" could be secured by the use of oxygen at the end of phthisis or cardiac diseases.

Dr. W. Mendelson said he must take sides clinically with Dr. Peabody. In anæmia occurring in old men he had seen some remarkable results follow the inhalation of ten gallons of oxygen every day, but he believed that here the exercise involved, and the influence on the mind, had much to do with the benefits resulting. He had frequently seen dyspnœa relieved, and that too where the patient presently died; to relieve the distress of the last moments was certainly a good object to accomplish.

The Chairman remarked that the developments of the evening's discussion showed him that the results of his own work of twenty years ago still held good. There was one fact not yet touched on, in connection with the fact that under ordinary circumstances the blood was not entirely saturated with oxygen, namely, that the point of absolute saturation corresponded in the working economy of the body with the extreme of physiological demand for oxygen, such as might arise in a boat-race. This maximum demand was not made when quiet respiration was going on under an ordinary degree of bodily activity. So we had a rather wide margin between ordinary and extreme oxygenation of the blood and the conditions making either necessary; that is, we had a capacity for appropriating an additional supply of oxygen whenever the tissues made the demand.

If a pathological condition presented where enough oxygen was not being supplied to the blood, but would be if there was more expansion of the chest and a greater rapidity of respiration, and where the patient was unable to do the required amount of breathing himself, there oxygen gas might be supplied with benefit. He would thus also define the limit of the therapeutic value of oxygen, including within it, of course, cases where the access of air to the lung was impeded by obstructed passages. From an entirely clinical standpoint he had seen the most striking benefit follow the administration of oxygen gas to patients having suffocative bronchitis or poisoned by opium.

As regarded opium narcosis, he had once supposed that in that condition, owing to the slowing of respiration, not enough oxygen could be drawn into the lung to satisfy the hæmoglobin of the blood, so that the condition was largely one of poisoning from lack of oxygen. But subsequently he had fallen on cases of opium poisoning where the rate and depth of respiration were unchanged and yet the narcosis was profound, and where, nevertheless, the administration of oxygen had given prompt relief. He had seen eight or nine such instances. He must suppose that the blood did not here find itself able to take up oxygen from ordinary air with anything like the ease that it could from an atmosphere of pure oxygen.

In considering the questions connected with inhalation of oxygen under pressure, there were many factors to be regarded. The sudden lowering of atmospheric pressure at the end of each inhalation of a gas under pressure explained many of the effects; we then had either changes in the distribution of the blood in the lung and elsewhere, or a retention of certain gases in the blood.

Dr. Thompson objected to the chairman's inference as to partial and complete saturation of the blood with oxygen under ordinary and under extraordinary bodily exertion. Blood taken from an animal when in a state of repose was found to be saturated with oxygen; it would take up no more if placed in a chamber of pure oxygen.

In the case of the boat's crew in a boat-race, there we had an increase of respiration and heart-action and body metabolism simultaneously, but it had not been shown that the absorption of oxygen by the blood was increased in the proportions of volumes; the quickening of the circulation easily provided for an increased supply of oxygen to the tissues.

The Chairman added that in his experiments made years ago he had kept animals in a pure oxygen atmosphere for periods of four days at a time, and on taking them out had found no changes either in weight, appetite, circulation, or general nervous state which could point to any differences in the vital effects of pure oxygen and those of ordinary air.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN ORTHOPÆDIC SURGERY.

Meeting of April 19, 1889.

Dr. A. B. Judson in the Chair.

Psoas Abscess following Pott's Disease.—Dr. V. P. Gibney presented a patient, a girl fourteen years old, on whom he had operated for double psoas abscess following Pott's disease of nine years' duration. The carious vertebræ were evidently consolidated when, in last November, large abscesses were discovered, and the patient was brought under treatment. On the right side the tumor was incised in Scarpa's space, a long forceps was passed under Poupart's ligament through the iliac fossa and into the lumbar region, and a counter-opening was made on the forceps along the border of the erector spinæ muscle. Pieces of bone escaped with the pus. The cavity was curretted and the bone scraped gently. With antiseptic dressing and injections of carbolic-acid solution (1 to 40), and a one-per-cent. creolin solution, both wounds closed in a month. The left side was then operated on by simple incision and drainage. Large quantities of bone detritus were scooped out with the finger. A sinus still remained on the left side, from which a piece of bone was occasionally discharged.

The patient was exhibited as showing the advantage of Owen's method over attacking simply the sac and not the whole suppurating tract. The speaker believed it would have been better to treat both sides according to Owen's method; but in general he doubted the propriety of doing this operation during exfoliation, which would render a subsequent operation necessary. It was also important that the patient should be in pretty good condition.

Dr. R. H. Sayre had used injections of peroxide of hydrogen in large abscess cavities, with better results than he had seen from carbolic, bichloride, or boro-salicylic solutions.

Dr. Gibney said a similar experience had been reported by Dr. Vance.

The Chairman thought an objection to operating in these cases was that for the natural incarceration of the pus and detritus we substituted an artificial opening, requiring antisepsis to hasten cicatrization. If these accumulations were doing no harm, it was better to leave them for removal by natural processes; and, if in due time they perforated the skin, the general and local conditions were ready to promote evacuation and speedy cicatrization.

Dr. J. A. Wyeth said that an operation was indicated when large abscesses were situated on exposed parts of the body, and liable to injury and subsequent septic complications. He recalled the case of a woman who, thirteen years after being considered cured of Pott's disease, slipped and fell on a large gluteal abscess. The accident speedily gave rise to symptoms of sepsis with high febrile movements, and several operations under ether were necessary for the removal of bone detritus, which was spread through the gluteal muscles. The patient ran great risks, but finally recovered. He had had other similar cases. A psoas abscess behind the peritonæum causing no trouble should be left alone, but one pointing in the thigh, back, or other exposed situation should be operated upon, as the danger of the operation was almost nil.

Dr. N. M. Shaffer was reminded of the history of a patient with Pott's disease and an abscess occupying the gluteal region and the anterior part of the thigh. The child fell, striking the gluteal tumor. The immediate symptoms were alarming, but, without the adoption of any special treatment, the accident resulted in the entire disappearance of the abscess. If there were any means of determining with certainty when an abscess from Pott's disease contained bony detritus, it would be preferable to operate; but while spondylitis was still active it was better to postpone an operation as long as possible. He recalled a case of Pott's disease and hip-joint disease, which he had been watching for several years, where spicula of bone as large as the end of the finger were expelled in a sudden and violent attack of coughing. The bone came undoubtedly from the cancellous structure of the sixth or seventh cervical vertebra. The patient was relieved at once, and physical examination showed that very little trouble had been caused by the entrance of the bone through the lung tissue into the bronchial tubes.

Knock-knee; Club-foot; Deformity following Hip Disease.—In a paper on "Osteotomy" Dr. Wyeth related two cases in which he had corrected in-knee and out-knee in the same patient by double osteotomies. The patients were three and a half and four years old, respectively. Both were discharged entirely relieved. Strict antisepsis was followed and the limbs were dressed in plaster of Paris in a position of overcorrection. He preferred MacCormac's incision on the outer side and just above the capsule, since the saphena vein and anastomotica magna artery were not endangered, as in Macewen's operation on the inner aspect of the thigh. He also briefly related three cases in which patients, aged thirteen, eighteen, and twenty-six years, respectively, had been relieved of the deformity following hip disease and restored to good power of locomotion by operations on the femur. The method pursued was by Gant's osteotomy below the lesser trochanter. The after-treatment had been with Buck's extension and Hamilton's long splint. In one of the patients there had been double hip disease. Two months after the left femur had been operated on, the right one was operated on; and four months after the date of the first operation the patient was discharged cured, with good power of locomotion.

He also related two cases in which congenital talipes equinovarus of the most exaggerated type had been corrected with good recovery, and with the feet in excellent shape. Tenotomy of the tendo Achillis, tibialis anticus, and tibialis posticus was first done—the first two subcutaneously, and the last by open incision, the tendon being dissociated from that of the flexor digitorum and divided on an aneurysm needle. The operation was completed by an osteotomy as follows: An incision was made on the outer side of the dorsum, exactly over the point of greatest convexity; the tissues were lifted from the tarsus with an elevator, and a conical section, including portions of the calcaneum, astragalus, cuboid, and scaphoid, was removed. The rule should be to remove all parts which prevented replacement of the foot. The foot being brought into its normal position by eversion and rotation, aseptic dressing and plaster of Paris completed the treatment, the result of which had been excellent.

Dr. Gibney said that the anatomical point raised in the paper concerning supracondyloid osteotomies certainly commended the operation of MacCormac. Although in-knee and out-knee in the same subject were rare, he had seen many instances of multiple deformity among Bohemians and Italians. He had recently done a sextuple osteotomy at one sitting, and was treating an ununited fracture of the right tibia, all the others having united.

The Chairman thought that in congenital talipes the reduction of the deformity by mechanical or operative means was easy; but that was a small part of the necessary treatment. So long as the patient was growing, he must be under occasional observation, and, if necessary, made to wear for a few months, at intervals of two or three years, a brace fitted to the needs at the time, in order to prevent threatened relapses. In the deformities of the knee there was a special reason for preferring mechanical means of correction, because there was the advantage of the leverage found in the tibia and femur, while in club-foot there was only the tibia on one side and, on the other, the short and many-jointed foot.

Dr. H. L. Taylor said that late observation of the results of treatment was of special importance in orthopædic practice. If surgeons and orthopædists would report the condition of patients five, ten, or more years after their dismissal, a more intelligent choice of methods could be made.

Dr. Shaffer said that his experience with mechanical appliances in the treatment of talipes had led him to think that many severe operations were performed on patients who could be better treated by traction. He recalled a case in which there was confirmed equino-varus, although three or four tenotomies and five or six osteotomies had been performed. He had applied the "external lateral stretcher," and the patient was now walking on the flat of the foot. He referred to the interesting question whether osteotomy was advisable when there was some motion in the hip joint. In a patient on whom Dr. W. T. Bull had operated, some motion was found after etherization. The reduction of the deformity by osteotomy had been followed by persistent traction with the hip-splint, and good position and slight motion had both been retained.

Dr. Gibney believed that the presence of motion was not a contra-indication to the operation. About six months before, he had performed Gant's operation for a right-angled deformity. The flexion had been reduced from 90° to 15°, and the limb was retained at 15° of flexion by a traction apparatus for three or four months, when it was removed and the patient allowed to walk about with a high shoe. After about six weeks the flexion had increased to 25° or 30°. Traction was reapplied, and the limb was again being brought down. He recognized the necessity of protective apparatus in order to retain or increase the result secured by operation.

Dr. Wyeth had operated in several cases where there was motion, and had refused to do it in others. In a patient whom he had seen with Dr. L. A. Sayre there had been considerable motion, and he had done a tenotomy for temporary relief, postponing osteotomy.

Dr. R. H. Sayre said that, in the case referred to, improvement had followed the tenotomy, but an apparatus was necessary to prevent a return of the deformity. He thought that in some cases sufficient reduction of the flexion might be brought about by section of the psoas and iliacus muscles. This had been done in one case in which, although the operation was

subcutaneous, injury of the vessels had been avoided. By open section this danger would be avoided.

Dr. J. D. Wilson expressed surprise at the frequent mention of elevations of temperature in the history of Dr. Wyeth's cases, which had been treated antiseptically. Had our teachings been too absolute, or did such temperatures really indicate imperfect antisepsis?

Dr. Wyeth replied that "the temperature of reaction," occasionally as high as 102°, occurred in the first twenty-four hours, but it usually fell to normal in forty-eight hours. Traumatism, ether, shock, and the use of sublimate combined to produce this reaction, which might still be called an aseptic temperature.

He closed the discussion by saying that the simplicity and safety of osteotomy had been shown by the cases he had reported. While no case of equino-varus treated during the first two years of life should require tarsotomy, neglected cases would present themselves where nothing but tarsotomy would give relief. The operation might give considerable foreshortening to the foot, but one could certainly correct the deformity, however great, by removing enough bone; and, if this was properly done, he believed it to be real conservatism.

JEFFERSON COUNTY, ALABAMA, MEDICAL SOCIETY.

Meeting held at Birmingham, August, 1889.

W. E. B. Davis, M. D., in the Chair.

Ileo-colostomy in which Davis's Catgut Mats were used for Approximation.—Dr. John D. S. Davis reported the history of a case.

On July 16, 1889, at 8 P. M., his brother, Dr. W. E. B. Davis, had been called by Dr. Charles and Dr. C. T. Drennen to operate on W. G., a negro, aged forty-two years, a furnace-tender, for intestinal obstruction. He had found the patient *in extremis;* temperature 101° F., pulse 135. He had made a diagnosis of perityphlitic abscess, suppurative peritonitis, and fæcal obstruction in the ileum in the region of the ileo-cæcal valve, and had expressed the opinion that the man would die in a few hours, regardless of any operation. He had opened the abdomen from the symphysis to midway between the umbilicus and the ensiform appendix, and had found a perityphlitic abscess; general peritonitis, due to rupture of the abscess sac; compound flexion of the ileum bound by strong adhesions in the region of the ileo-cæcal valve; fæcal impaction, accompanied by great distension of the intestine above the seat of obstruction. The abdominal cavity and abscess sac were thoroughly cleansed by irrigations of hot water. The ileum was opened near the point of obstruction and emptied of nearly one gallon of impacted fæces, liquids, etc. A second opening was made at the junction of the jejunum with the ileum to allow the escape of a large quantity of gas in the upper part of the bowel. These openings were closed by Czerny-Lembert sutures. At this point in the operation the patient had seemed to be holding out well; and, to avoid the necessity of resorting to the formation of an artificial anus, he had been requested to do an anastomosis by means of his approximation catgut mats, with the view of establishing the continuity of the intestines. The ileum above the seat of obstruction was brought in communication with the ascending colon below the point of obstruction by making one incision an inch and a half in length in both intestines at a point opposite the mesenteric attachments, and the visceral wounds were carefully united by means of approximation catgut mats. A catgut mat, to which were fastened four braided silk threads, was introduced through each opening into the intestines. The lateral sutures were passed through the margins of the wound to prevent ectropion of the sides of the incisions. After the mats and sutures were in place, the wounds were brought in contact and the four sutures tied, which accurately coaptated the serous surfaces of both bowels over an area corresponding to the size of the mats. This procedure occupied only three minutes. No outside safety sutures were applied, as the approximation was perfect and the coaptation sutures were well protected between the approximated serous surfaces.

A glass drainage-tube was fixed in the lower portion of the wound and the peritonæum closed by a continuous catgut suture. The abdominal wall was closed by interrupted silk sutures and an antiseptic dressing applied. The time occupied in the whole operation was sixty-five minutes. The patient rallied well, was comfortable, and gave favorable signs of recovery for fourteen hours. Three hours after the operation had been completed the patient had a small fæcal operation, when a large quantity of gas had passed *per rectum*.

The temperature, ten hours after the operation, was 100° F., and the pulse 120. Fourteen hours after the operation, while unattended by the nurse, the patient attempted to get up by himself and died suddenly from exhaustion.

Necropsy Two Hours after Death.—Abdominal wound united. Omentum adherent to the wound at the points of operation and incisions. The anastomosis was perfect and the new opening was sufficiently large to nearly equal in size the lumen of the ileum. Adhesions between the two serous surfaces of the bowel were firm, and extended a little beyond the line of approximation, as could be seen from the specimen removed at the autopsy.

While this had been a desperate case for any operative interference, the speaker was sure that the patient's life had been comfortably prolonged ten or twelve hours by the opening, emptying, and washing out the abdominal cavity.

He expressed his regrets that Dr. Drennen had not seen the patient early enough to be able to give him the benefit of the anastomosis at a time more favorable to recovery. Even at the late hour in his illness at which the operation had been performed, he did not think a better, safer, or easier means for restoring the intestinal continuity could have been had. The specimen which the speaker showed clearly illustrated the possibility of the future popularity of intestinal anastomosis.

He was not at all doubtful of the great advantage it possessed, when obstruction existed, over the tedious, difficult, and often fatal operation of circular enterorrhaphy. The mechanical principle was clear, the method was practicable, and the application had been clearly demonstrated. Resections with circular enterorrhaphy, lateral apposition with suturing, and plastic operations, though of little value, had had their day, the objection to them being a dangerous consumption of time, long exposure to infection, frequent leakage, and abscesses. While the application of the principle to man had yet been limited, the method offered advantages many times as great as those of the old operations as to mortality, and could be done in one sixth of the time.

Intestinal anastomosis undoubtedly appealed to the practical surgeon, and would find greater favor every day; and it was no jejune proposition that its appeal to favor rested on the technique of the operative procedure rather than upon the basis of inductive logic that had that mixture of a small amount of truth with a large amount of error which gave so many popular procedures their temporary plausibility and mischievous tendency.

The speaker gave a description of how to make his catgut mats,* and demonstrated on the dog how easily they could be

* "Virginia Medical Monthly," May, 1889, pp. 166 and 167; "Alabama Medical and Surgical Age," May, 1889.

applied. He exhibited a dog weighing twenty-five pounds on which he had done three laparotomies—one for omental grafting and two for anastomosis. He also stated that the catgut mats, if not already on hand, could be made of any desirable size by the most ignorant nurse in an hour.

The CHAIRMAN agreed with the author of the paper that his catgut mats were superior to Senn's decalcified bone plates and Abbe's catgut rings. He thought the experimentations of the author had proved conclusively that the mats possessed all the advantages stated for them. Referring to the case reported, he said that this was the second case in which he had opened the abdomen three days after symptoms of rupture of a perityphlitic abscess with general suppurative peritonitis. While these had been hopeless cases, the operation had given great relief in both instances, and certainly had not shortened the lives of the patients. He had operated in both cases in order to give the patient the benefit of a complete diagnosis, and with the hope that he might find a condition less serious than he had diagnosticated. He said that the lesson taught in the report of these late operations, with fatal results, was the importance of early diagnosis and prompt operative procedure. He thought if the abdomen could be opened within the first twenty-four hours the chances for recovery were favorable. He emphasized the importance of a thorough study of perityphlitis by the general practitioner, that the surgeon might be consulted in time to give the patient the benefit of early operations. He favored opening the abdomen, even after the third day, in cases of suppurative peritonitis, in order to wash out the cavity and to afford the patient relief; and, too, from the fact that a diagnosis could be made, and perhaps a condition found capable of relief, whether the hypodermic needle found pus or not.

Dr. A. L. MONROE, of Louisville, said he thought Dr. Davis's catgut mats the best device he had seen for intestinal anastomosis.

Dr. J. C. ABERNATHY asked Dr. Davis if he used drainage in such cases as he had reported.

Dr. DAVIS said, as to drainage after intestinal anastomosis, that he was guided as in all other abdominal operations. He never put a drainage-tube in when he was able to cleanse the abdominal cavity thoroughly. When conditions existed with the abdominal viscera that rendered drainage necessary, he put in a blind glass drainage-tube, with numerous lateral perforations to allow of the escape of any collected abdominal fluids. Through it the abdominal cavity might be flushed with sterilized water, and the water withdrawn by gravity without danger of getting air into the cavity. In general suppurative peritonitis of three days' duration the serous surfaces of the bowel and peritoneal cavity were largely deprived of the endothelial covering, and the washing out of the abdominal cavity was followed by a copious exudation of plastic lymph, which, like a cement substance, mechanically agglutinated the numerous coaptated folds of the bowel throughout. These multiple adhesions, which bound the bowel in so many flexions, could possibly be prevented by the early administration of cathartics, which tended to relieve the paresis and increase the peristaltic movements. And in cases where he thought it impossible, after operation, to restore the peristaltic movement sufficiently to prevent adhesions, he would not hesitate to operate, that the sufferer might have the benefit of the doubt, and also for the purpose of rendering his dying hours comfortable.

Ligatures.—Dr. A. T. HENLEY presented two double silk ligatures with the following history: Mrs. T. had suffered for two or three years with ovarian disease. Dr. T. Gaillard Thomas had performed a laparotomy on her on October 10, 1888, removing both ovaries and tubes. The recovery had been uneventful, except that two fistulæ had formed in the abdominal wound and had continued to discharge pus of a healthy character. She had returned to Birmingham on December 1st. During the spring months she had suffered considerable pain in both inguinal regions, with very marked tenderness. Probes could not be introduced more than an inch. In May this pain had been very severe. There had been no perceptible swelling.

About the 1st of July a portion of the ligature had made its appearance at the opening of the lower fistula, but it could not be removed without more force than had been thought advisable to use. On the 23d of July both ligatures had been discharged upon the dressing, and the fistulæ both closed in a few days, leaving her without an ache or pain of any kind and apparently in perfect health. One of the ligatures was in perfect condition; the other had been partially absorbed. These ligatures came from the pedicles. In a letter from Dr. Thomas, written in May, he had stated that the pedicle ligatures were causing the trouble, and predicted that they would be discharged.

Dr. J. D. S. DAVIS said that he believed the want of success with abdominal silk ligatures was due to insufficient sterilization; that silk thread contained more or less oil from the hands of the workmen, and must therefore be thoroughly freed from all fatty matter before it was placed in the antiseptic sublimate solution, because watery solutions would not act on the thread if the oil was present. He kept all ligatures in chloroform or ether for twelve hours before using them; then shook them well, and immersed them in ninety-five-per-cent. alcohol, where they were left for twelve hours; and then transferred them, while still moist, to a 1-to-1,000 watery sublimate solution, in which they might be allowed to remain for twenty-four hours. After taking them from the bichloride solution, he allowed them to dry, and then rolled them in sterilized linen compresses and placed them in a suitable glass bottle, or ninety-five-per-cent. alcohol, to keep. He maintained that the main object was to free the silk from all fat and oil before sterilization, and that when ligatures for the abdominal cavity were thus rendered aseptic they were not apt to produce suppuration or secondary abscesses; otherwise, primary abscesses would necessarily be the result.

The CHAIRMAN considered the silk ligatures a frequent cause of pelvic abscess. He reported a case in which he had removed the ovaries and tubes nine months before, and stated that the patient had recently had an abscess due to the ligatures, which had opened into the vagina. He also referred to a case operated on three weeks ago, in which the ligatures had caused an abscess which had opened through the rectum, after which the patient had done well. While he recognized that silk was more liable to be followed by this complication, yet he considered it decidedly the safest ligature to use. He agreed with Dr. Goodell that catgut would soon bring one to grief in the loss of a patient from hæmorrhage.

Reports on the Progress of Medicine.

PHYSIOLOGY.

BY LOUISE G. RABINOVITCH, M. D.

The Quantitative and Qualitative Interchanges of Nitrogen and Phosphorus in the Body, under the Influence of the Mind.—A. E. Stcherbak ("Vratch," No. 4, 1889) has experimented on his own person, and has obtained the following results: Under the influence of active mental work there is a decreased assimilation and increased elimination of nitrogen and phosphorus, the source of elimination being

the same ingredients of the tissues. With regard to the variation of the qualitative changes, the energy of the process of oxidation is below normal; this was learned from the fact of the occurrence of an increased amount of deficiently oxygenated products in the urine. The earthy phosphates in the urine predominate over the alkaline.

From a series of comparative analyses with respect to the amount of phosphorus contained in the diurnal and nocturnal urine, the results were unsatisfactory. The increase of eliminated phosphorus in the diurnal urine is neither much marked nor constant; the difference in the alkaline and earthy phosphates in the urine is more conspicuous; the latter phosphates, as a rule, preponderate in the daytime.

The diverging results of different authors who investigated the variation of the interchanges of phosphorus in the tissues under the influence of mental work is to be ascribed, according to the author, to the fact that the final results of these interchanges, in connection with mental work, must vary with: 1. The relation of the amount of the combinations of phosphorus undergoing decomposition in the brain to that of phosphoric acid sent to the brain. 2. The length of time during which the brain rests and is enabled to regain its loss.

On the Relation of the Spleen to the Hæmoglobin in the Blood.—Schwartz pointed out recently in his thesis the new property of protoplasm and the splenic cells, which consists in first destroying and subsequently regenerating hæmoglobin, regeneration being in proportion greater than the quantity previously destroyed.

This led Professor Ph. Krugner ("Vratch," No. 3, 1889) to study the comparative analysis of arterial blood and that of the splenic vein with respect to the contained hæmoglobin and their solid extracts. The hæmoglobin was determined by Hüfner's spectrophotometer. In four cats the blood from the splenic vein contained on an average 9·52 per cent. of hæmoglobin and 19·01 per cent. of solid extracts, while blood from the carotid artery of the same animals contained hæmoglobin 9·28 per cent., and solid extracts 18·73 per cent.

The higher per cent. of hæmoglobin and solid extracts in the blood of the splenic vein can not depend, according to the author, upon the absorption of liquid from the same by the lymph vessels, since they are scarce in the spleen, and the lymph in the spleen is richer in solid extracts than that from any other region of the body. The inference is that this increase of hæmoglobin and solid extracts in the splenic vein is brought about by their generation in the spleen. According to Koultchitsky, the histological structure of the spleen permits of such supposition.

The Influence of Massage of the Abdomen on Blood-pressure and Respiration.—To decide the question as to the mode of distribution of the blood in the cephalic and podalic extremities of the body under the influence of massage of the abdomen, R. O. Glovetsky ("Vratch," No. 3, 1889) has used the plathysmograph for the purpose, and found the size of the upper and lower extremities to diminish during massage; after suspension of the same the size returns to the normal; the upper extremities, however, frequently exhibit gradual increase in size, that of the lower not uncommonly being decreased at the same time. From experiments on men and animals, the blood-pressure is seen to be increased during and some time after the massage; in animals this is the case even after section of the splanchnic and sympathetic nerves. By means of the manometer the intracranial blood-pressure was shown to be increased too.

The number of cardiac pulsations first increases during the process of massage, but becomes gradually slower, and at the same time fuller toward the end of the process, and especially is that true of the subsequent period. No satisfactory results were obtained as regards the respiration in men; in animals there was a decided increase of the respiratory activity. In cases of asphyxia the use of massage efficaciously influenced the cardiac action.

Researches on the Pathology of Diabetes (Presented by Brown-Séquard).—M. S. Arthaud and M. L. Bettle ("Comp. rend. de l'acad. des sci.," No. 4, 1889) conclude from their recent experiments that:

1. An artificial double and simultaneous neuritis of both vagi is followed by death of the animal within a few days, the symptoms being analogous to those characterizing section of the same nerves. For experimental purposes death can be delayed by gradual interstitial injections into the nerves of inert powder or other irritating substances. Following the first injection there is polyuria with slight albuminuria; after the second, gastric symptoms supervene (vomiting), accompanied by extreme thirst and emaciation, which is explained by the inanition. The amount of urea excreted is diminished, and sugar appears (0·14 grammes of sugar to the animal kilogramme in the twenty-four hours). Death ensues about the second month after the second operation; the anatomical alterations consist especially in congestive and inflammatory lesions of the lungs and the abdominal viscera.

2. One nerve being artificially injured, the degree of resistance to death is greatly in proportion to the intensity of the neuritis. In both the dog and the rabbit emaciation sets in with polyuria and azoturia in the beginning, and an intermittent glycosuria persists during the entire period of experimentation. The post-mortem shows the existence of renal, hepatic, cardiac, and intestinal lesions, the lungs being almost normal, the kidneys are congested, and histologically there is a sclerosis of arterial origin of different degrees. There is hepatic congestion with a granular condition of the hepatic cells; the heart is the seat of interstitial endocarditis; the mucous lining of the alimentary tract is the seat of a peculiar degeneration, resembling that described by Cautain as being found in diabetes.

3. To decide whether these phenomena were brought about by centripetal or centrifugal action of the nerve, the central end of the vagus was irritated after resection; the operation was followed by polyuria and glycosuria, but these symptoms soon disappeared, and within a few weeks the animal recovered perfectly.

4. Peripheral irritation of the vagus was constantly followed by gradual aggravation of symptoms, and death within from four to six months.

5. The inference is that centrifugal irritation of the vagus in animals is apt to induce the different clinical varieties of diabetes as met with in men, according to the individual predisposition.

Analysis permits of the statement that this artificial disease differs in no respect from the varieties of spontaneous diabetes in men, for which the author adopts the neuropathic theory.

The Mechanism of Death in Rabbits subjected to Transfusion of Dog's Blood (Presented by M. Charcot).—Like Héricourt and Richet, G. Hayem ("Comp. rend. de l'acad. des sci.," No. 8, 1889) has observed the fact of the quick succumbance of rabbits when subject to transfusion of dog's blood, whether the entire defibrinated blood or serum is used. The order of toxicity is, beginning with the highest, first defibrinated, then entire blood, and last serum; 5 to 7 c. c. of defibrinated blood to the animal kilogramme suffice to bring about a quick death. In one or two minutes after transfusion, symptoms of asphyxia develop; dyspnœa, followed by cyanosis, and terminal asphyxic convulsions, with dilatation of the pupils, occurring within the following five to fifteen minutes. In case of an insufficient dose, the symptoms are simply those of dyspnœa. After a while some of the animals pass red urine, containing red blood-cells and dissolved hæmoglobin; others are affected by polyuria, the urine containing for one or two days biliary pigments and urobilin, or urobilin alone. Post-mortem immediately after death reveals, in all cases, distension of the right heart cavities with coagulated blood, which extends into the pulmonary arteries and their first large branches. In some cases thrombi are found in the cavæ or portal veins. The lungs, being bloodless, are sometimes the seat of infarctions, and the left heart is empty.

The constancy of these results leads to the conclusion that the death by asphyxia here is due to arrest of the right heart circulation. The animals die as if their pulmonary arteries had been ligated. As observed previously by Landois, the pathology of the process is explained by the solubility of the red cells of the rabbit in the blood or serum of the dog; microscopic examinations prove this to be the fact; the dissolved hæmoglobin is in direct proportion to the amount of transfused blood. Allusion is made to the possibility of the red cells containing impure albuminoids capable of coagulating circulating blood.

Two forms of coagulation might be produced, according to the specimen of blood used; it might be either embolic or thrombotic, the latter causing instantaneous death. Whatever form of coagulation results, it is stated, it is possibly due to the contact of two living organisms closely resembling each other, and this is of interest in the study of the pathology of thrombus and embolism formation.

On the Quantity and the Activity of Reduction of Oxyhæmoglobin in Diabetic Patients.—Dr. A. Henocque ("Arch. de phys. norm. et pathol.," 1, 2, 1889) has kept under observation ten diabetic patients for several years, and made eighty analyses of the urine and seventy-two of the blood. He has found it impossible to establish a line of relation between the amount of oxyhæmoglobin and the degree of glycosuria; the process seemed too complete to rely upon the daily examinations of the amount of sugar and the corresponding activity of hæmoglobin reduction.

After the hourly examinations for three consecutive days of the correlation of these two processes, the conclusion arrived at was that in most of the cases the maximum of sugar production occurred between 10 A. M. and 1 P. M., or else 4, 6, or 8 P. M. The activity of reduction is augmented at the same time. In the evening, and particularly during the night, the glycosuria is diminished, and is accompanied by a corresponding decrease of the activity of oxyhæmoglobin reduction. The author expects to show in future the concomitant relation of the excretion of urea, glucose, and phosphoric acid.

Clinical and Experimental Researches on the Decussation of the Conductors of Voluntary Movements.—The current knowledge of cerebral physiology implies that both physiologists and clinicians accept the view that a transverse section through the entire width of the base of one hemisphere should be followed by paralysis, for the reason of interruption of communication between the muscles and the seat of volition, the arguments for this being: 1. The experiments of Fritsch and Hitzig, Ferrier, and others. 2. The clinical facts of crossed paralyses following unilateral cerebral lesions, or direct paralyses following unilateral spinal lesions. 3. The facts of descending degenerations of the motor tracts commencing at the base of the brain and descending through the cord. Brown-Séquard ("Arch. de phys. norm. et pathol.," Nos. 1–2, 1889) opposes the localization theory on the ground of clinical observation and his personal experiments.

Stimulation of different parts of one half of the cerebral base was followed in most of his cases by movements of the limbs on the corresponding side. He denies decidedly the localization theory and substitutes for it a theory of reflex action.

In opposition to the cases which encourage physicians to favor the localization theory, the author reports cases being in perfect contradiction with those generally known. With reference to secondary degenerations, the author expects to show in future that such lesions may exist without exhibiting any pathological phenomena, and so prove the incorrectness of spinal localization. The cases collected by M. Brown-Séquard support his views decidedly, and enable him, without stating the details here, to formulate in general that these cases prove the possibility of the existence of a lesion, or of destruction of the medulla limited to its motor portion, or of this and its neighboring parts, without a resulting paralysis of the limbs. On the other hand, paralyses were observed to follow lesions of parts that are not considered as motor areas, the motor areas having been unaffected.

Though, it is stated, observations have been made that confirm the current theory of cerebral and spinal localization, and the crossed function of each hemisphere, yet there are evidences that leave no doubt as to the fact that injuries of one side of either the areas considered as motor, or of those that are not recognized as such, might be followed by palsy on the corresponding side of the body. The cases collected are: 1. Dr. A. T. H. Waters, "Trans. of the Medico-chirurg. Soc.," London, vol. xlvi, 1863, p. 115. 2. Dr. Dompeling, "Nederlandsch Arch. voor Genees- en Naturkunde," vol. iv, 1869, pp. 179–190. 3. Dr. S. O. Habershon, "Guy's Hospital Reports," 3d ser., vol. xxiv, 1879, p. 130. 4. M. Pénard, "Bull. de la soc. anat.," 1846, p. 389. 5. M. Hallopeau, "Thèse de concours d'agrégation," Paris, 1875, p. 987. 6. Dr. R. Mayne, "Dublin Hosp. Gaz.," 25 May, 1861. 7. J. P. Gama, "Traité des plaies de tête et de l'encéphalite," Paris, 1830, p. 264. 8. M. Luneau, "Comp. rend. de la soc. de biol.," 1870, p. 133. 9. Jobert, "Études sur le système nerveux," Paris, 1838, p. 446–453. 10. Dr. E. R. Hun, "Transactions of the American Neurol. Assoc.," vol. ii, 1877, p. 206. 11. M. Couty, "Gaz. hebd. de méd.," 1877, p. 110. 12. M. Picot, "Oblitération de l'artère vertébrale dans le crâne," Bordeaux, 1881, pp. 12–19. 13. Reported by Professor Boettcher, "Arch. of Ophthalm. and Otology," by Professors Knapp and Moos, New York, vol. iii, 1873, p. 135. 14. M. J. M. Snook, "Trans. of the State Med. Soc. of Michigan," Lansing, vol. vi, 1874, p. 228. 15. MM. Cossy and Lorreyte, "Bull. de la soc. anat.," 1874, p. 83. 16. Parent-Duchatelet and Martinet, "Recherches sur l'inflammation de l'arach.," Paris, 1821, p. 47. 17. Published by M. Duranti, "Gaz. hebdom. de méd. et de chirurg.," Paris, 1862, p. 39. Other references are alluded to which show that the anterior pyramids corresponding to the palsied side of the body were found injured.

On the grounds mentioned the author concludes that: 1. Parts of the cerebrum which are not supposed to be motor are apt, by being injured, to induce paralysis. 2. Destructive lesions, sometimes very considerable, of the supposed motor areas in the medulla and pons Varolii are not always followed by paralysis of the limbs. 3. Very slight often, but most frequently very pronounced, if not complete, paralysis may follow a lesion on the corresponding side of the medulla, regardless of the seat of the lesion, which may be either in the posterior or lateral parts of the medulla, in the interior of this nervous center, or in the anterior pyramids. 4. It is impossible to admit that those direct paralyses were due essentially to some other lesions than those in the medulla, as reported. It would be wrong to suppose that in the reported cases of direct paralyses there was no decussation of the pyramids.

The author is aware of three instances of direct paralyses where anatomical examinations were made, and the decussation of the anterior pyramids was found perfect. (Dr. E. H. Dickinson, "The Liverpool and Manchester Medical and Surg. Reports," Liverpool, p. 141, 1878; M. Blaise, "Bull. de la soc. anat.," p. 387, 1882; MM. Féré and Arnould, "C. R. de la soc. de biol.," 1887, p. 220.) As far as the author is aware, of the reported cases with bulbar lesions, the number of direct is greater than that of crossed paralyses. This argument, it is stated, is the more valuable in face of the fact that the proportion of direct to crossed paralyses in cases of lesions of the cerebral cortex is one to one thousand, while the proportion of the same in bulbar affections is far greater.

The author intends to show hereafter that bulbar or local lesions of other encephalic parts are not the essential cause of paralysis; that palsy is not dependent upon the loss of function of the injured motor area so called; that it is due to an influence exerted by irritation of the nerve cells and fibers surrounding the palsied parts; and that the irritation is propagated to a distance, and affects, in different parts of nerve distribution, the nerve elements fulfilling the motor function in the organ, this function disappearing by inhibitory act. The article is concluded by the statements that: 1. It is not the case that the fibers of the anterior pyramids decussate at the inferior part of the medulla, and that they are the principal paths for transmission of voluntary movements. 2. It is incorrect to suppose the medulla to be the principal seat of decussation of the conductors of voluntary movements. 3. Decussation of conductors of voluntary as well as of reflex movements of the limbs exist through the entire length of the cerebro-spinal center. 4. Paralyses following unilateral lesions of either the medulla or any other cerebral part, in man and in animals, are not dependent upon destruction of the local centers or of a group of conductors of voluntary movements.

On the Methods of resuscitating Still-born Children.—The first step in Schultze's method is considered of great value for the reason that it commences by an expiratory act, and thus permits foreign matter or bodies to clear the air-passages and escape through the mouth. Schroeder remarks, in his work on obstetrics, that it is doubtful whether it is possible by this method to clear the air-passages from foreign bodies as thoroughly as by means of a catheter. M. D. Nikitin ("Jour. akousherstva e jenskich boleznei," No. 1, 1889) states that the moment the foreign matters reach the posterior nares and mouth they must be removed artificially by the catheter, or the air-passages will become blocked up again at the first inspiratory act obtained by this method. Schultze himself, as stated by Hofmann ("Lehrbuch der ges. Med.," 4te Auflage), announces that his method has no success in prematurely born infants, for the reason of the softness of the chest-walls. And, as reported by different authorities, the main objection to the method is that ten to fifteen swingings of the child's body do not suffice to succeed in resuscitating it; it is necessary to perform thirty to fifty

swingings in order to secure perfect breathing, and this heroic treatment implies great injury to the child. Dr. Winter ("Vierteljahrschritt für d ges. Med.," 1887, Bd. xlvi, H. 1, S. 81) reports three post-mortems after such treatment; in one there was found an extensive extravasation of blood into the abdominal cavity; in the second, rupture of the liver and fracture of three ribs; in the third, rupture of the liver and bone injuries.

Though these cases might be considered as exceptional ones, yet they are easily understood. Dr. Nikitin states, with F. H. Champneys, that traumatism is very apt to occur in the asphyxiated infant, which is perfectly inert, with a weakened condition of the ligamentous apparatus, and especially being deprived of the flexibility proper to the living infant. According to Nikitin, Schultze's method is not to be abandoned entirely; he suggests taking advantage of the first step in this operation, which procures the first expiratory effort and so expels foreign bodies from the air-passages; he then uses the catheter to free the latter radically from the mucus, liquids, etc.; should the introduction of the catheter be attended by difficulties, he advocates repeating the same manœuvre for procuring expiration, and, if not successful, replacing this by Marshall Hall's method for the same purpose, using the catheter again for the removal of mucus, and immediately after this proceeding to insufflation through the catheter, or directly by the mouth of the operator.

The method of insufflation is too much neglected, the author thinks, the objections being, first, that the air fills up the stomach and alimentary tract rather than the lungs; and, secondly, that after forced insufflation the pulmonary alveoli are very apt to rupture. With the assistance of known authorities he experimented on dead subjects, and his opinion is that: 1. The introduction of air is performed with comparative ease. 2. Even with forced insufflation, the air enters more into the lungs than into the stomach, and it never reaches beyond the pylorus. 3. In completely filled lungs not once has artificial emphysema been found to exist.

The precautions that he observes are to avoid occlusion of the larynx by introducing the little finger into the child's mouth and lifting the root of the tongue somewhat forward. The external nares are closed with the fingers of one hand during insufflation, and immediately after this the mouth is occluded by the other hand for several seconds, to prevent the escape of insufflated air. He introduces the tube or catheter to the root of the tongue only; occlusion of the larynx by the tongue is avoided at the same time; the introduction of the catheter into the larynx or trachea he considers as being not only unnecessary for success, but even harmful, for it is under these very conditions that emphysema is induced, and very frequently the visceral pleura is ruptured by the great tension of air. It is advocated to avoid such accidents by insufflation, either directly by the mouth or by means of a catheter, into the mouth of the child. He finds no objections to the filling of the stomach with air by that means, for the air tension in the lungs is counterbalanced by that in the stomach, and artificial emphysema is thus avoided.

Other objections to the insufflation method are that the exhaled air of the operator is too poor in oxygen, and contains an excess of carbon dioxide; that foreign bodies present in the larynx are apt to be driven further into the lungs, which might result in pneumonia. Dr. Nikitin averts the first objection by alluding to Pflüger's statement ("Arch. für Physiologie," 1868, Bd. i, S. 61; also Schwarz, "Die vorzeitigen Athembewegungen," Leipzig, 1858) that the consumption of oxygen in the newly-born is so small that there is hardly any difference noticed between the arterial and venous blood of the umbilical vessels; and, according to Paul Bert ("Leçons sur la physiologie comparée de la respiration," Paris, 1870), the muscular tissues of newly-born animals absorb less oxygen than those of adults in the proportion of 29 to 47; so that there is still a sufficient amount of oxygen in the exhaled air for the newly born.

With regard to the excess of carbon dioxide, which is four per cent. according to P. Bert, respiration is interfered with in animals when the amount of carbon dioxide amounts to twenty-four per cent. under pressure of 760 mm.

Further advance of foreign bodies into the lungs can be avoided, it is stated, by carefully cleansing the child's mouth with the little finger, or by introducing the catheter into the larynx and aspirating. The author speaks highly of the use of insufflation, especially when simple means fail to bring about respiration; should even amniotic liquid blood, and mucus be driven into the lungs, the mucous lining of the respiratory tract might absorb these substances, or they may be thrown off by the first expiratory effort (Schroeder).

The use of ether for inhalations or local applications to the nostrils (Harris Jones, "New York Medical Journal," August 21, 1886) Dr. Nikitin does not consider preferable to that of spirit of ammonia. He thinks that subcutaneous ethereal injections (Grose, of England) must be of value in the enfeebled circulation of the asphyxiated infant, but that experimentally this has not been sufficiently worked out.

Faradization of the phrenic nerve is advocated by Pernice, and is often of good service, but it has the objection of the foreign matter remaining in the respiratory tract, the essential inconvenience, however, being the absence of the battery when needed.

On the Currents of Activity in the Frog's Brain.—B. F. Verigo ("Vratch," No. 2, 1889) makes this communication. Professor J. M. Setchenoff had studied the nerve currents in the medulla of the frog, and noticed that they were periodical, which he ascribed to periodical excitations of the medullary centers.

The reporter has studied the nerve currents in the cerebro-spinal axis, connecting by a galvanometer two points in the spinal cord—one in the thoracic region, the other in the lumbar enlargement. He has obtained a deviation of the galvanometric arrow which, he thinks, indicated the occurrence of a current at each reflected impulse of the limbs; the direction of the current was such as always to present the electro-negative area in the lumbar enlargement.

Since during reflex movements the lumbar region must be in a condition of higher excitation than other parts of the central nervous system, the inference is drawn that the electro-negative tension is connected with areas of most activity. On this basis the galvanometer was proposed by Professor Farchanoff to be used in the study of brain localization. Verigo obtained constant swingings of the galvanometric arrow while experimenting on one hemisphere of a frog; the anterior part of the hemisphere, however, was found decidedly electro-negative to the posterior at each movement of the limb. Professor Farchanoff remarked that this spoke in favor of the anterior cerebral half of the hemisphere performing the function of voluntary movements.

On the Absorption of Necrosed Hepatic Tissue by the Hepatophagues or Giant Cells.—Professor W. W. Podwisotsky ("Vratch," No. 3, 1889) relates the following facts with the view of throwing some light on the pathogenesis of the giant cells: An injection of from 2·5 to 3 c.c. of alcohol, of a 35 to 40 per cent. solution, into one of the branches of the portal vein immediately traversing the hepatic parenchyma is followed by gradual formation of groups of giant cells in the mortified hepatic area supplied by this branch. The giant cells are most abundant at the line of demarkation between the normal and dead hepatic tissue, being in intimate contact with the dead hepatic cells; on the seventh or eighth day the number of giant cells is enormously increased, and they lodge not only in the line of demarkation, but too in the very focus of necrosis, individual areas collecting in groups around the dead hepatic cells. In proportion to the increased amount of giant cells in the peripheral layers of the deadened focus the line of demarkation becomes wider, looks more irritated, and contains less traces of hepatic parenchyma. The size of the giant cells differs, each containing from three to four up to fifty and more nuclei in the enormously increased protoplasm, which may extend over an area of several dozens of hepatic cells.

Even with a low power the giant cells are seen under the microscope to have a more or less regular semilunar shape, in the concavity of which lodge somewhat round or polygonal masses; other cells are simply very large, containing in their interior similar opaque masses, which seem to be surrounded by a limiting zone. Frequently one giant cell holds in its interior several such opaque masses of different sizes, and some of them attain a large size, seeming to be composed of several polygonal masses. On the seventh or eighth day after injection the portal branches of the necrosed areas are bloodless and obliterated by connective tissue.

The relation of the giant cells to the masses they contain and the adjacent necrosed hepatic area is made very clear by using double-staining agents, such as borax-carmine followed by picro-Victoria-blue. The stained specimens thus obtained permit of the inference that the masses inclosed by the giant cells and the necrosed hepatic cells are virtually identical.

Microscopic examinations with a high power confirm the idea that these masses are disintegrated hepatic cells; the degree of disintegration can be studied in the line of demarkation and in the giant cells. With the advance of disintegration and decrease in size of the masses of hepatic cells the giant-cell protoplasm is constantly increasing.

The anatomical changes taking place in the line of demarkation of the normal and pathological hepatic cells are formulated as being: 1. Formation of giant cells around the necrosed hepatic cells. 2. Subsequent disappearance of these pathological cells in the giant cells and under their influence, the giant cells assimilating the organic matter resulting from cell disintegration.

The author thinks this to be the first description of the process of assimilation of the necrosed hepatic cells by the giant cells, generated through the circulatory medium, in the necrosed hepatic parenchyma. He compares the giant cells to I. I. Metchnikoff's phagocytes, and names the former hepatophagues, or absorbers of hepatic tissue. He suggests, too, the term "necrophagues," since it is applicable to cells eating away dead from living tissue, and by doing so, it is supposed, there will be avoided the confusion with the term "phagocytes," which eat away living (bacteria) and dead tissue indifferently; for the cells destroying living tissue the term "biophagues" is suggested.

In accord with Virchow, Ziegler, Wegner, Levschin, and others, the author thinks the giant cells to be derived from connective tissue and endothelial cells; he has not found any facts speaking in favor of their origin being from the leucocytes.

Concluding, the author remarks that the giant-cell genesis seems purposeless in the beginning of the process which is going on under the influence of foreign bodies in living tissue, and that the physical and chemical properties of the foreign bodies play an important rôle in the formation of giant cells; that irritations of a given character and intensity are apt to start this process of atypical protoplasm formation, a type of which are the giant cells.

According to Marchand the contact of iodoform with granulation tissue prevents giant-cell formation. The author has pointed out elsewhere in his work on partial hepatic necrosis influenced by the presence of ammonium and phosphorus in the blood, that no giant cells were to be found around such necrosed areas, and this leads him to believe that irritation caused by alcohol must be different from that stated above; that the same phenomenon is observed in the action of different bacteria, some of them being, and others not, capable of encouraging giant-cell formation.

On the Variation of Glycogen Production in Icterus.—MM. Dastre and Arthur ("Progrès méd.," No. 14, 1889) have studied the subject, and the statements are made that there are difficulties in the way of determining this variation; that in experimenting it is necessary that one of the principal hepatic ducts should be ligated in such a way as not to interfere with the function of the others. Partial icterus is so induced, and it is possible at the same time to compare the pathological and physiological portions of the same liver. In this way it was determined that the amount of glycogen in the icterous portion of the liver diminished invariably, and this was confirmed by the different known reactions. The authors remark that noticeable digestive disturbances must follow in such cases.

On the Alteration of the Red Blood-corpuscles subsequent to Eclamptic Fits.—M. Féré ("Gaz. hebd. de méd. et de chir.," No. 12, 1889) has observed decided alteration of the red cells after epileptic fits; on examining the blood one hour and a half after the fit, the cells are found to be spherical; the next day they assume their normal aspect, their globulin having increased at the same time. This fact is analogous, the authors think, to what occurs after hæmorrhage, menstruation, or any serious disease.

On the Hepatic Lesions in Eclampsia.—M. Pilliet ("Progrès méd.," No. 14, 1889) reports that such lesions are found very frequently on microscopic examinations; they are seated in the portal spaces, and consist in a stagnation of blood with destruction of hepatic tissue. In the varieties of eclampsia that terminate in icterus, which are met with frequently in maternity hospitals, the same lesions are found, being very extensive, and sometimes confluent; in the latter cases the parenchymatous disintegration of the liver resembles that found in fatty icterus.

On the Measurement of the Blood-Cells—a Globulimetric Scale.—M. L. Malassez ("Jour. des soc. sci.," No. 3, 1889) suggests that the easiest method for practical measurements of the blood-cells is: 1. To take an impression of a certain magnitude of a nice preparation of blood by means of the camera lucida. 2. To measure the corresponding designs of the cells, and then calculate the normal diameters. The first part of the process can be performed more or less accurately by taking certain precautions, as was pointed out by the author in June, 1878. The results are more satisfactory when photographs of the blood-cells are used for the purpose. The second has the objection that the blood-cells are not always perfectly circular; this being the case, it is necessary to measure more than one of their diameters to obtain the average; this requires much time and is not exempt from error.

It is four years that the author has been trying to simplify the latter operation, to render it more precise and rapid; he has invented now for the purpose a graduated scale, which he chooses to call a globulimetric scale.

It is a flat, transparent ruler, with finely engraved circles disposed in order of their increasing diameters.

The most convenient arrangement, the author thinks, is to have the diameters of the crossing circles disposed in two lines differing from each other in one fourth of a millimetre, the disposition being as represented:

. . . (6) (6·50) (7) . . .
(6·25) (6·75) (7·25) . . .

The scale is made of glass or any other material. The instrument is used by placing it over the photograph of the blood-cell. The size of the engraved circle on the scale corresponding to the photograph of the blood-cell being known, and also knowing how much the diameter of the photograph is magnified, the natural size of the blood-cell is easily deduced.

He further states that the results obtained are pretty constant, and it is rare that a blood-cell does not correspond to any of the engraved circles of the scale. Should errors still exist, they amount only to half the difference between two successive sizes, or half of one fourth of a millimetre when the photograph is magnified a thousand times. He measures usually a hundred blood-cells and takes the average. Mention is made of the importance of being enabled by this instrument to get, without loss of time, the proportionate differences of the cell diameters.

For demonstrative purposes he suggests the graphic method, which may be expressed either in curves or in columns of different heights and widths, the latter indicating the difference of diameters and the former that of the number. The globulimetric scale can be used, it is suggested, for exact measurements of all microscopic bodies having a circular or spherical shape; satisfactory results are obtained too by measuring different diameters of bodies of more complex forms.

On Pulmonary Ventilation and Thoracic Amplifiation under the Influence of Gaseous Lavation.—M. Brown-Séquard has demonstrated experimentally ("Académie des sci.," Feb. 11, 1889) the existence of a respiratory poison, which is eliminated in healthy persons, and is capable of poisoning rapidly, if injected hypodermically, or even if simply inhaled. For this reason improvement in the pulmonary ventilation is practically beneficial to phthisical patients; it is admitted that the diminution of this poison is in direct ratio to the pulmonary ventilation.

Dr. L. Bergeon ("Lyon méd.," No. 13, 1889) proposes to ventilate the lungs themselves in phthisical patients, instead of ventilating the rooms.

According to Cl. Bernard, Demarquay, and the experiments of Bergeon himself, carbon dioxide introduced into the rectum is rapidly eliminated by the lungs, and the pulmonary ventilation is considerably augmented at the same time. If this gas contains no impurities it is rapidly absorbed by the intestinal venous system, and carried to the lungs, through which it filters, charged with *débris* of organic matter.

The statement is made that it is well to administer this gas in the form of natural mineral waters; that certain patients do not tolerate sulphureted waters. The author has used arsenical waters of complex mineralization. He is convinced that the bacilli of tuberculosis have been observed to grow irregular under such treatment, and to disappear gradually. He ascribes these results not to the direct action of the gaseous lavations, but to the improvement of pulmonary ventilation, which increases the filtration of organic impurities, increases the organic respiratory energy, the vital overactivity, and causes a greater capacity of resistance; all these conditions bring about the pulmonary self disinfection. Allusion is made to the fact that insufficient thoracic dimensions predispose to pulmonary phthisis, and that under the influence of gaseous lavations the thoracic circumference is decidedly increased.

Dr. Bergeon presented a phthisical patient who had been submitted to this method of treatment. In November, 1888, the thoracic circumference was seventy-five centimetres, the intermamillary space eighteen centimetres. After two months' treatment the measurements were found, respectively, seventy-six and nineteen centimetres. In March, 1889, they were seventy-nine centimetres for the thoracic circumference, and twenty-one centimetres for the intermamillary space. The patient was improving considerably during the period of treatment. Other cases are reported with equally successful results.

It is remarked that thoracic amplifiation is not manifested under the treatment in confirmed phthisis, especially at the period of the existence of pulmonary cavities; but the amount of tissue remaining sound improves in nutrition and compresses the walls of the cavities, and the stethoscopic indications of the same disappear. The cavity remains practically as such, but, from close opposition of the limiting walls, air no longer enters it.

Tracings of Excitations obtained by stimulating an Anæsthetic Region in Hysterical Persons.—M. Alfred Binet ("Jour. des soc. sc.," No. 5, 1889) states that faradaic or mechanical excitations applied to anæsthetic regions in hysterical persons diffuse readily all over the body, and that myographic tracings of these excitations can be obtained from any part of the body. Sometimes it is necessary to reapply the stimulus a number of times, but the tracing can finally be got. The length and duration of the contraction are dependent upon the intensity and duration of the excitation. A stimulus of the same intensity applied to a normal and to an anæsthetic area diffuses more markedly in the latter; the results are more conspicuous by using the Du Bois-Reymond apparatus.

The observations, being in accordance with those of Charcot, Richer, Féré, and a number of other physiologists, show that, though the hysterical person is unconscious of the excitation of the anæsthetic region, yet the stimulus is felt all over his organism and acts on all his muscles. With a certain amount of care it can be found that the tracings indicate precise rhythmical reactions, and not an irregular diffusion of the stimulus. This proves that the psycho-motor centers perceive the number and form of the insensible excitations. These motor phenomena seem to the author to have connection with the phenomena of visual perception in hysterical anæsthesia ("C. R. del' acad. des sc.," December, 1888). He has shown that in some hysterical subjects excitation of an anæsthetic region determines definite visual impressions which are in relation with the number and form of excitations, and alleges now that, even in case all precautions are taken to prevent the patients being conscious of the stimulus applied, the same results hold good.

He supposes that the phenomenon of visual perception is a variety of motor reaction provoked by excitation of the insensible region, the only difference being that in one case the excitation is appreciated by the visual and in the other by the psycho-motor centers. The identity of causation of the motor and visual perceptions in such cases M. Binet bases upon the fact that the time of visual impression, as indicated by the subject, coincides with the myographic tracings brought about by the same stimulus.

M. Ch. Féré ("Note sur quelques effets des excitations périphériques chez les hystériques," "Jour. des soc. sc.," No. 5, 1889), while not denying the possibility of visual impressions being induced by cutaneous excitations, accepts the statements with reserve.

On the Influence of Anæsthetics on the Force of the Respiratory Movements (Presented by M. Verneuil).—Hutchinson and Krahmer have shown experimentally that men and animals can not overcome, in either the inspiratory or the expiratory act, the pressure of a column of liquid offering a certain resistance. MM. P. Langlois and Ch. Richet ("Comp. rend. de l'acad. des sc.," No. 13, 1889) have verified the statement, and found that, as a general rule, it is impossible to expire or inspire through a column of mercury of 100 mm.

They made a tracheotomized dog respire through a Müller's plug, modified somewhat by themselves, the branches of the plug containing columns of mercury of different heights. Under such conditions a dog could breathe for a few moments through a column 60 mm. high, but it soon got asphyxiated. To maintain rhythmical respiration and avoid asphyxia, the column must not exceed 25 to 35 mm.; this would allow respiration for several hours; though breathing is laborious, no asphyxia threatens.

Should the animal be anæsthetized by ether, chloroform, or chloral, a feeble pressure suffices to interfere with respiration; a pressure of 10 mm. asphyxiates a dog profoundly anæsthetized, but produces no interference in the normal animal. It is the expiratory effort that is mostly interfered with; under the pressure of a column of mercury of 15, 20, and sometimes 25 mm., inspiration is still performed during anæsthetization, whereas the pressure of a 10-mm. column of mercury actually interferes with the expiratory act, and asphyxia takes place.

The experiments are in accordance with the physiological phenomena of respiration; the inspiratory movements are always active, but the expiratory are purely passive in the normal state, being due to pulmonary elasticity, without the intervention of muscular action; they are active only when they are voluntary or reflex. Both voluntary and reflex actions being abolished by anæsthetization, the active part in expiration is of necessity wanting; the pulmonary elasticity is then not sufficient alone to overcome the pressure of a column of 10 mm. Under the same conditions of anæsthesia the inspiratory act is maintained, for, though being an active phenomenon, it is neither voluntary nor reflex; it is automatic, brought about by bulbar incitations, which, though enfeebled, are not abolished by the anæsthetic.

With regard to the use of anæsthetics in surgery, this shows that it is of great importance to keep the respiratory tract perfectly free from mucus during this process, for an obstacle to respiration imperceptible in a normal animal is very apt to asphyxiate an anæsthetized subject. The author thinks that surgeons pay special attention to the inspiratory act, when it is of most importance to provide for the performance of expiration; the most frequent obstacle is usually the base of the tongue.

Researches showing that the Toxicity of the Expired Air is not Dependent upon the Presence of Carbon Dioxide.—In three communications made previously ("Acad. des sc.," Nov. 28, 1887; Jan. 9 and 16, 1888) the effort was made to show the relation between pulmonary tuberculosis, the expired air of men and domestic mammalia, and the toxic power of one or more substances derived from the lungs. New researches on the subject lead MM. Brown-Séquard and d'Arsonval ("Jour. des soc. sc.," No. 8, 1889) to think that the simple or multiple poison escaping with the expired air, even in small doses, is capable of killing without being injected directly into the blood-vessels. Injected subcutaneously, this poison was seen to kill seventeen out of eighteen animals. In two thirds of these animals death supervened within from twelve to twenty-four hours after the injection. The majority of the animals were injected with less than 32 c. c. of the toxic liquid. The smallest of them weighed 1,750, and the largest 2,350 grammes. The poison is capable of killing even if injected into either the stomach or the rectum, though two only out of seven rabbits died that had received from 24 to 36 c. c. of the liquid by the stomach. Cl. Bernard and P. Bert have shown that large quantities of water can be injected with impunity into the lungs of mammalia. According to Brown-Séquard and d'Arsonval, an injection of even such a small quantity as 8 to 12 c. c. of water obtained from condensed expired vapors brings about death, which is preceded in the majority of cases by inflammatory products in the lungs. Such are the results, the authors think, from the effect of confined air. They do not accept the toxicity of the pulmonary liquid as due to the presence of micro-organisms, since the toxic action remains the same after the

liquid has been brought to a temperature of 100° C., and exposure to the external air avoided. They used for the researches an apparatus that served to determine the vicious effects of the expired air, and convinced themselves that the carbon dioxide of this air did not share in the toxicity.

An incomplete description of the apparatus is given, and it is concluded from the experiments, in which some of the animals were made to breathe the air expired by the others, that death under such conditions takes place in a way similar to that occurring after subcutaneous or intravascular injections of the pulmonary liquid. The respiration is lowered, the action of the heart accelerated; the temperature falls, at first gradually and toward the end suddenly; soon diarrhœa supervenes, and lasts till the close of the animal's life. Death takes place without agony, or at least without convulsions. The cadaveric attitude shows that there has been no struggling before death, the animal reposing on its bent limbs, abdomen, and thorax as if it were asleep. The post-mortem reveals that the animal died of arrest of exchanges between the tissues and blood. The right ventricle contains reddish instead of dark blood. The aorta and vena cava contain more blood than in cases of ordinary death; the color is brighter than that found after death following agony. The bladder and rectum are full; the lungs are of faint red color, scattered with ecchymotic spots and foci of inflammation, as is found in animals killed by an injection of the pulmonary liquid into the bronchi; a similar emphysema is found too. The liver, kidneys, and other abdominal viscera are congested. Frequently intestinal hæmorrhages are found, and sometimes pericardial also.

The authors conclude, on the basis of the analogy of the post-mortem appearances in the cases of death from respiring confined air and those of death caused by injections of the pulmonary liquid, that the cause of death in both cases is identical, though they do not deny the possibility of admixture of some additional poison in the experimental cases of inhalation of vitiated air.

Researches on the Action of the Poison of the Salamandra Maculosa.—M. Abel Dutartre ("Comp. rend. de l'acad. des sci.," No. 13, 1889) communicates the results of his observations on the action of this poison on the different organic functions of the frog.

As has been pointed out by others, the action of the poison on frogs is characterized by a violent convulsive period, with general tetanic attacks, which are followed by a period of paralysis, suspension of respiration, and complete muscular relaxation. According to the amount of poison, the paralytic period may be followed by death with suspension of the heart's action in diastole, or by return to life preceded by a convulsive attack. Thus far the author admits the results, but, in addition, he has found that death finally supervened in frogs that were considered by others as convalescent from the poisonous effects.

At the autopsy, in such cases, all the organs of animal life were found completely anæmic, and often it was impossible to collect a few drops of blood from the heart.

The author thinks M. Calmels is wrong in supposing the action of the poison of the scorpion to be similar to that of the salamander, for, according to M. Joyeux-Laffine, the former poison acts neither on the muscles nor on the blood. According to the author's researches, the action of the poison manifests itself on the nervous centers; convulsions ensue by direct excitation of the bulbar or medullary centers; the brain has no action in this phenomenon; the sensibility, though enfeebled, persists longer than the motor function. The motor nerves are poisoned and the poisonous action on the nerves is complicated by similar action on the muscular fibers themselves. Muscular contractility is abolished very rapidly, even on the occurrence of the first convulsion; the results were confirmed by tracings obtained from the gastrocnemii of the poisoned frogs, as compared with the limbs isolated by a strong ligature excluding the sciatic nerve. No histological changes of the muscular fibers were found. The respiration remains normal for from five to ten minutes after the injection of the poison; then tracings show a deep inspiration followed by from five to six feebler ones in the succeeding few minutes. The respiratory movements soon become more vigorous and numerous, continuing so until the first tetanic attack, when there occurs respiratory suspension with lowering of the buccal floor. Between the convulsive attacks the respiration may be re-established for a few seconds. In the beginning of the paralytic stage there is decided and final arrest of respiration, which lasts during the entire period of immobility. Cardiac tracings show that the number of beats varies little during the period of poisoning, but the different parts of the cardiac curves show progressive enfeeblement with the progress of the paralysis; a period of repose appears between the auricular and the ventricular systole, the reverse of what occurs in normal cold-blooded vertebrates. This poison acts directly upon the blood-corpuscles by dissolving them. Under the microscope segmentation of the blood-cells is observed to occur; when they are treated with a solution of the poison, the degree of their solubility is in proportion to the strength of the poisonous solution. Specimens of blood taken at different periods of poisoning from the beginning show first that, after a few hours' intoxication, the blood-globules are granular and the nucleus soon disappears; that after a more advanced period a larger number of globules are deformed and decomposed. Those remaining intact preserve the property of staining readily with eosine, which indicates the persistence of hæmoglobin, but most of the globules and plasma disappear.

On the Influence of Cortical Lesions on Vision.—M. Lannegrace ("Arch. de méd. expér. et d'anat. pathol.," No. 1, 1889) enumerates the best-known works on the subject, and the diversity of opinions on the same. His own methods of inducing the cerebral lesion and of testing for the lesion and the nature of it are carefully described. From his two years' experiments on dogs and monkeys he arrives at the following conclusions: 1. That visual disturbances can be induced not only by occipital lesions, but also by injuries of the frontal, temporal, and parietal regions. In accord with Goltz, Loeb, Luciani, Tamburini, and Bianchi, he finds that a lesion of the most anterior portion of the frontal lobe, of that in front of the motor zone, fails to induce visual trouble. 2. Not always does visual trouble ensue after injury of the regions named; it is frequently impossible to detect any visual defect, whichever region has suffered injury. The inference is either that there is no specialized area whose existence is necessary for the visual exercise, or that the induced visual imperfection, in some cases, is too feeble to be appreciated by the methods available. 3. The intensity of the visual trouble, induced apparently by identical lesions, varies greatly; the same is true of the degree of the induced sensory and motor disturbances. 4. The intensity of the visual trouble depends upon the seat of injury. All conditions being equal, the most marked disturbances follow occipital lesions. 5. The intensity of the visual disturbance depends upon the extent of the lesion, augmenting considerably on the repetition of the injury. A lesion of one centimetre in diameter is always followed by visual disturbances; and, in case of negative results, a second lesion, either at the place of the preceding one or in its neighborhood, regardless of its diameter, is always followed by visual defect of great intensity. 6. Visual imperfections subsequent to the first lesion are always transitory, lasting from several days to several weeks. The compensation takes place either in the remaining cortical substance of the same hemisphere or in the corresponding portions of the opposite hemisphere. 7. Successive unilateral lesions render the visual trouble not only more intense, but more permanent and persistent. It is permissible to suppose that different cerebral portions compensate in a certain measure for the injured area, when such compensation is needed. 8. After the disappearance of visual disturbances induced by one or more unilateral mutilations, a symmetrical or non-symmetrical lesion on the opposite side not only gives rise to visual disturbances proper to such a lesion, but also makes the previous lesion reappear and renders it more persistent. This leads one to suppose that either one hemisphere compensates for its fellow (and evidently injury to the compensating hemisphere must of necessity result in the conditions stated), or, if gradual recovery after the first lesion is due to the remaining uninjured cortical portion, its function is abolished by inhibition after injury to the opposite hemisphere. The inference is that the function of one cerebral hemisphere depends upon the integrity of the opposite one. 9. Very extensive bilateral lesions have never induced permanent blindness, even when the occipital regions were mutilated; all these lesions involved the surface of the cerebral convexity.

With reference to the nature of visual disturbances the statements are made that: 1. The nature of disturbances following cortical lesions varies; there may be homonymous hemiopia or crossed amblyopia. 2.

There may be pure homonymous hemiopia; crossed amblyopia is almost always associated with some degree of hemiopia, and is very rarely pure amblyopia. 3. The nature of the ensuing blindness is dependent upon the seat of the lesion; homonymous hemiopia follows lesions of any region; anterior lesions only are complicated by crossed amblyopia. It is proper to suppose the cerebral surface to possess a very extensive hemiopic zone, having the main focus in the occipital region, and a limited amblyopic zone anterior to the preceding one. 4. In visual disturbances of cortical origin tolerable perception of impressions seems always to exist in the center of the retina. 5. In accordance with Goltz and Loeb, the author finds that there is no correspondence between given cortical and retinal areas. This he does not state as an absolute rule. With regard to ocular, motor, sensory, and nutritive disturbances induced by cortical lesions, the statement is made that the internal and external muscular mechanism of the eye remains intact, whatever the seat of the lesion is.

Normal and Hypnotic Sleep the Results of Inhibition of Mental Activity.—In previous researches Brown-Séquard ("Arch. de phys. norm. et pathol.," Nos. 1, 2, 1889) has demonstrated that hypnotic sleep was the result of an inhibitory effect, and that, in organic or traumatic lesions of the encephalon, the temporary loss of consciousness is due to the same intellectual inhibition. The following reasoning is given for attributing normal sleep to an inhibitory effect: Durham and Hammond's theory that sleep is dependent upon vascular contraction taking place in the cerebral lobes can not be accepted, since rabbits and guinea-pigs, after section of both great sympathetics of the neck, sleep the same as if they had normal cerebral circulation. The same results are obtained from experiments on cats and dogs, after extirpation of the superior cervical ganglia on one side, and section of the vago-sympathetic on the other. This opposes directly the theory of vaso-contraction during sleep, for, whether there is intense hyperæmia or anæmia, sleep is not interfered with. That the loss of consciousness during sleep, as well as during numerous other accidental or pathological conditions, is due to inhibition of the cerebral faculties is confirmed by the facts that (1) loss of consciousness from puncture of the medulla and similar conditions is decidedly due to an inhibitory act; (2) with regard to what is known of the conditions that precede or accompany sleep, it suffices to conclude that, as in any inhibition, at the onset and during sleep there exist irritations in the organism at a distance from the organ subjected to loss of activity. The following details confirm the existence of irritations: *a*, The so-called need of sleep is characterized by certain sensations, and particularly by a sense of heaviness in the eyes; *b*, persistent constriction of the pupils; *c*, contraction of the orbicularis palpebrarum; *d*, contraction of the rectus internus and superior; *e*, contraction of the blood-vessels of the retina and cerebral lobes. Aside from inhibition of the psychical faculties, there is inhibition of certain muscles, and perhaps some cardiac and respiratory inhibition. These different inhibitory acts during cessation of intellectual activity imply the existence of irritation somewhere or at different points.

The induction of sleep in man by compressing the carotid and cervical vago-sympathetic (Fleming and Augustus Waller) proves that sleep is apt to be induced by peripheral irritation. To this may be added the fact of the somnolent influence of certain gastric irritations. As regards the location of the irritation inducing sleep, it is not correct to suppose its existence in the brain, for pigeons sleep and awake periodically after as well as before ablation of the cerebrum. The reflex contractions and paralytic irritations associated with sleep, if considered as originating from the same point, are to be located in the excitable parts of the cerebral base rather than in the cerebral lobes. (The author has often witnessed the hyperæmic condition of the base of the brain, and especially of the medulla and spinal cord, during sleep.)

As an argument additional to these statements, it is alleged that, in artificial epilepsy of guinea-pigs, it is possible to induce loss of consciousness and cessation of convulsions by peripheral irritation; loss of cerebral activity may take place, too, by inhibition through the influence of irritation, even when very slight, especially if the seat is in Flourens's *nœud vital*.

There can be no doubt after these statements, the author thinks, that there exist irritations at different points present during sleep, and beginning before sleep sets in. He is convinced that the facts are sufficiently conspicuous to lead to the belief that the principal phenomenon of ordinary sleep—*i. e.*, loss of consciousness—is the effect of an inhibitory act.

New Inventions, etc.

AN IMPROVED NASAL SPECULUM.

By Carl E. Black, M. D.,
Jacksonville, Ill.

Recent advances in the diagnosis and treatment of nasal troubles have made it necessary that every practitioner shall be provided with a nasal speculum. Many forms are now in use, yet there is room for improvement, or, perhaps more properly, for simplification. It is desirable to have an instrument that may be adapted to the greatest number of cases in the hands of both the general practitioner and of the specialist. After having used Simrock's speculum for some time with satisfaction, in a limited number of cases, the writer was led to devise the speculum represented in the following cut:



It retains all the advantages of the Simrock and at the same time may be adapted to a much larger range of cases. The blades are short enough not to impinge painfully against the bony parts, and yet are long enough to give a complete dilatation of the nostril. The ends of the blades are of such a shape as to be easily self-retaining when once put into place and the nostril dilated. The handle is put on at such an angle as to lie against the face, and is entirely out of the way of the operator. This handle is also useful in manipulating the speculum so as to bring the various parts of the anterior nasal cavity into view.

The blades are three quarters of an inch long, and when closed are similar in shape to the undilated nostril. The thumb-screw takes the place of the spring which is used in so many specula, and which is too strong for some cases and too weak for others. It is rarely necessary to insert a speculum more than half an inch, and a quarter of an inch is usually far enough, as great dilatation is needless and it is painful to the patient. All parts of the anterior nasal cavity can be brought into view by moving the head of the patient, or by changing the direction of the blades of the speculum.

This instrument was devised while I was at work in the clinic of Professor Schroetter, in Vienna, and was made in that city. It is now made from the same model by Tiemann & Co., of New York. Several instruments of this new pattern are in use at the Massachusetts Eye and Ear Infirmary, and by many private practitioners.

Miscellany.

The Paris Universal Exhibition.—The special correspondent of the "Lancet" thus continues his account of the session of the International Congress of Hygiene: On the 8th inst. the English delegates gathered in Section 5, in the hope that the question of quarantine would be reopened. Dr. Proust, however, was absent, and, as he was the author of the report on the subject, it was thought advisable to await his arrival. The Section therefore proceeded to discuss the subject of vaccination. Dr. Villemin related that in the department of France where he lived

vaccination was performed only once a year, and those who were not present on that occasion could not be vaccinated. A Mexican delegate spoke in favor of compulsory vaccination, and Dr. Treile lamented that, even in an intelligent center like Paris, the population displayed the greatest indifference to the subject. He described how at Fribourg small-pox had reappeared since the abolition of compulsory vaccination in that town. An American delegate said that from time to time he instituted a house-to-house visitation, so as to know if all the inhabitants had been vaccinated. Dr. Arnoult, military inspector, claimed that to the army belonged the honor of having given the example to the French nation of the advantages that accrue from vaccination and revaccination. But their difficulty was to contend against the non-vaccinated civil population. In the Second Army Corps some soldiers under his care contracted small-pox at the Amiens Hospital. To avoid resistance he had sought to popularize vaccination from the calf. Dr. Proust, who by this time had arrived, said that the German army was only really exempt from small-pox when the civil population had been vaccinated and revaccinated. He preferred vaccination from the calf to the use of lymph from even the healthiest-looking children. Dr. Felix said that in Roumania vaccination, but not revaccination, was obligatory. They had not succeeded, even with the aid of the law, in vaccinating everybody till vaccination from the calf was introduced; then the popular resistance ceased. Dr. Janssen said that in Belgium vaccination was not obligatory by law, but was insisted upon in every school, in every public service and institution, and was so admirably organized that there were very few Belgians who were not properly vaccinated. The subject was then allowed to drop.

Mr. Adolphe Smith, on behalf of the English delegates, now rose to inquire whether the Inspector-General of the French Sanitary Services, Dr. Proust, understood that the Section had not adopted the fourth clause of the conclusions of the report on sanitary works in seaport towns. The first three clauses had been carried unanimously, but, as nothing had been said about quarantine, Mr. Smith, in common with several others, imagined that the vote did not apply to the fourth clause. The English delegates, especially at this late hour, were not in the least desirous of opening up the question of quarantine, and if Dr. Proust would concur in the opinion that the fourth clause had not been put to the meeting the subject need not be further discussed.

Dr. Proust, however, did not agree to this. He was under the impression, on the contrary, that the fourth clause had been adopted; but, if there were any objection to this clause, he was quite willing that the matter should be investigated. Dr. V. Vignard, formerly director of the sanitary service of the Lower Danube, rose and fully indorsed what Mr. Adolphe Smith had said. He had also voted for the first three clauses, which alone had been discussed, and not for the fourth, to which he was absolutely opposed. A conversation thereupon arose between Dr. Proust and Dr. Vignard, which continued till they were called to order and each party asked to make a statement. Dr. Vignard consequently delivered an energetic speech. The resolution stated "that it was only when the ports presented a soil unsuitable for the penetration of morbid exotic germs that the last quarantine checks could be abolished"; but what criteria were they to show that the soil could not harbor germs? A port was never quite purified. People talked of the "rendering healthy" (the *assainissement*) of England as if it was something similar to the washing of a plate—an operation which, when once performed, was evident to all eyes. But there were English delegates present who could testify that this was not the case. In spite of the great works accomplished in England, much remained to be done, and even in London there were many plague spots. He complained that he did not know what was going on in the sanitary services of France, and required a large publicity and public control with regard to the quarantine observations imposed by the French port authorities. He had noted with pain and surprise a remark in Dr. Brouardel's opening speech, to the effect that the treason of one guardian of a lazaret had cost Spain in 1884–'85 no less than 200,000 lives. What was this system which by the momentary neglect of one out of many thousand guardians could bring about the loss of 200,000 lives? He agreed with quarantine as defined by Fodéré in 1815. It meant a rope. The difficulty was to prove its utility or its inutility; for if we pointed to failure in one country, others would point to success in other countries. History, however, was against quarantine; for in the fifteenth century it had been properly and rigorously applied. In those days it was said that for a quarantine three things were necessary—money, force, and the hangman. A quarantine enforced, as in the past, by sentences of death was logical; but as we were not prepared, and as it was absolutely unpractical, to return to these barbarous practices, it was illogical, vexatious, and useless to maintain the fiction of quarantine. It was not till the Government of England had officially proclaimed that quarantines were useless that real sanitary improvements were accomplished. The great fear entertained in England of cholera facilitated the execution of sanitary works. What was the use of asking municipalities to vote large sums for sanitary works if they were told at the same time that they would be protected by the imposition of quarantines which would cost them nothing?

Dr. Proust, in reply, protested that he had no desire to revive the old quarantine methods. They were willing to give every facility to companies whose ships were well managed. As for publishing the details of what was done, that would be very uninteresting reading, but whenever anything of interest happened it was at once communicated to the press. The term quarantine was subject to misinterpretation; the abolition of this word had been proposed at the Rome conference. We need only take precautions against the cholera, the plague, and the yellow fever. These diseases came from such a distance that precautions were possible. First, all consuls in the different distant ports could telegraph information; then the journey took from fifteen to twenty days, which was in itself a period of observation; and, finally, the greater part of the ships had to pass through the Suez Canal, where timely information could be obtained and, if necessary, the ships detained before they entered the Mediterranean. This detention was proposed at the Rome conference, and approved by the twenty-two or twenty-three nationalities officially represented. England and India alone voted against the proposal. If a ship had a disinfecting stove on board, a good doctor, and no dangerous case had recently occurred, then they would give free pratique. But if there had been cases of cholera on board two or three days previously, then the ship should be detained. Practically, he had found on inquiry that such detention would have the effect of stopping four or five English ships for four or five days each year. There was a great difference between this and the quarantines described and denounced by Dr. Vignard. Besides, England had herself just sent the ship Neva into quarantine for sixteen days at Southampton. (This assertion greatly surprised the English delegation, who had certainly not heard of the circumstance.) Dr. Proust went on to give further explanation, which tended to reduce the meaning of the word "quarantine" to method of observation and of disinfection, very different from what is generally understood by the term. Dr. Treile approved of quarantines, and maintained that they had saved Algeria from cholera in 1884.

Mr. Adolphe Smith arose to explain that the point at issue was the actual wording of the resolution. Dr. Proust might attenuate the meaning of the word quarantine in a very satisfactory manner, but this would have no effect whatever with the outside public. Hundreds of newspapers would publish the text of the resolution, but would not know, or would not have space to mention, the explanations given in the Section. The point was not what Dr. Proust might mean, but what the resolution meant; and the resolution undoubtedly meant that quarantine might be imposed even in the most salubrious of ports, for there was no port in the world which could be described as absolutely incapable of harboring imported germs of disease. Dr. Proust and several French delegates protested that they did not interpret the resolution in such a literal sense; but Mr. Smith, supported by the English delegates, persisted that this was the view the outside public, unenlightened by the discussions of the Section, would take of the matter, and that therefore he should be obliged to press the question to a division. Dr. Proust now, however, offered to withdraw the word "quarantine," and put "restrictive measures" in its stead. This, when taken in connection with the general tone of the discussion, was considered satisfactory, and it leaves for future congresses to discuss what restrictive measures may be imposed as a substitute for the old-fashioned quarantines. An amicable compromise being thus effected, the Section adjourned without a division. The following is the text of the original resolution and the

amendment proposed, and accepted by Dr Proust and the entire Section, "C'est seulement alors que les ports presentent un terrain réfractaire à la penetration des germs morbides exotiques on pourra supprimer complètement les dernières entraves quarantenaires." Altered to "les dernières mesures restrictives."

On Friday morning the members of the International Congress of Hygiene went to the Exhibition and examined the sanitary apparatus displayed there. In the afternoon, in Section 5, M. Maignen read a lengthy paper on water filtration. He suggested, as a test, that water should be mixed with a known microbe, and a guinea pig or rabbit inoculated with the water. Another rabbit should be inoculated with the same water after filtration. If the former died, and the other did not, this might be taken as a proof that the filter was good. Dr. Macé had made experiments with the germ of anthrax in this manner, and found it did not pass through the "filtre rapide." The filter was equally efficacious in preventing the passage of metallic poisons, copper, lead, etc., in solution. Some little discussion ensued, during which preference for the porcelain filter was expressed by some of the speakers, though it works much more slowly. M. Maignen was thanked for his interesting communication, and the president of the Section concluded by saying that filters were always excellent at first; the difficulty was to discover how long they would last.

Dr. Girard (Rheims) opened a discussion on the supervision of meat, urging that diseased meat should be cremated; that this was the best means of preventing its being surreptitiously sold. He further urged that the rules for supervision should be the same in rural as in town districts. This proposal was adopted by the Section.

After a few words about syrup of glucose, Dr. A. J. Martin's report on river pollution was taken into consideration. There has been a great amount of legislation on this question in France. There were ordinances issued in August, 1669; in February, 1773; in June, 1777; and July, 1782. All these had the force of law, and all declared that refuse, filth, manure, etc., should not be thrown into rivers. These old laws were recently invoked (July 24, 1875) by a ministerial decision. Then there is the law of October 10, 1810, on manufactories, etc. The law of April 15, 1859, inflicts a fine of from 30 francs to 300 francs and imprisonment of from one to three months on those who throw into rivers chemicals that kill the fish. A ministerial circular, dated July 31, 1882, forbids pits or porous wells, by which subsoil waters can be polluted with the residue of factories. Nevertheless, all these enactments require to be codified, and, above all, more strictly applied. Consequently, Dr. Martin concluded that industrial residue of a dangerous nature should not be allowed to flow into a river or an underground watercourse. This can only be allowed when the residue has been so treated as to deprive it of all toxic, putrid, dangerous, or any other sort of matter that can alter the natural quality of the river water. The purification of industrial waters or residue must be rendered compulsory and executed according to approved methods. The purification by irrigation is the most perfect means of treating the waste water from mills, etc., containing organic matter. This must sometimes be preceded by chemical and mechanical processes, to render such waters fit for agricultural purposes. These conclusions were adopted, but a very lengthy discussion ensued as to who should be responsible for the application of such a law. If a manufacturer refused to purify his residue, should the state do the work for him and charge him with the cost? If so, what method would the state apply? Perhaps some antiquated expensive method—in a word, the state might blunder and put the manufacturer to unnecessary expense. As it was, many manufacturers had actually made money in seeking to prevent water pollution, for this had led to the discovery of advantageous methods of utilizing waste. M. L. Faucher, civil engineer, member of the Central Council of Hygiene in the department of the Nord, related that river pollution had produced typhoid epidemics in his district. Each manufacturer, however, denied that the waste was the cause, because they only partially polluted the rivers. It was as if one man had a pistol, another some powder, and a third a bullet, and each declared he could not possibly do any harm. Yet it was only necessary for the three to come together to be able to kill some one. This is exactly what happened in the river with the waste from factories, and now that it had been stopped in his district, typhoid fever had been stamped out. It was ultimately decided that the authorities ought to carry out the necessary works if the manufacturers persistently refused to do so themselves.

In Section 4, on Saturday morning, Madame Tkatcheff read a most interesting and carefully prepared paper on the condition of the working classes in Russia. Irrespective of Siberia and Poland, she said, there were about 932,000 operatives employed in the mills and factories of Russia. The way a considerable proportion of these workers were recruited had a great influence on public health. Many of them were agriculturists who, being unable to earn enough to live, came to the industrial centers and worked in factories from September to February. They had no homes in those industrial centers, but slept very often in the factory itself, in the midst of the machinery, or in a sort of dormitory provided for them just above the works, and separated from the works only by a rude wooden floor, through which all the bad odors passed. Here the workers lay down on wooden shelves. They slept in their clothes, and at best had a little sacking. The shelves were placed one above the other, so that sometimes there was only a hundred cubic feet of space per person. All the inspectors appointed by the Government to inquire into these questions had complained of the dirt, overcrowding, and the promiscuity, for men and women often slept in the same dormitory. The hours of work varied from twelve to fourteen, and the food was altogether insufficient. The clothing was also of the poorest description. It was rare that a man could afford to wear leather boots, but contented himself with wrapping his feet in paper and rags and thrusting them in woolen shoes. Shirts were considered a vain luxury, and but for the sheep's skins, worn with the wool inside, the people would die of cold. This sort of life soon destroyed all sense of self-respect, and fearful immorality was the result. The migrations of villagers into towns for a short time each year had brought back syphilis to the villages, and there were some villages in Russia where every single inhabitant was syphilitic. In some departments ten per cent. of the recruits were syphilitic. There was but one redeeming feature: the Russian, however poor, always insisted on having a bath. He would as soon go without his food as go without his weekly bath. There were no statistics to show what was the mortality of the Russian working-class population, but the general mortality was sufficiently significant; it was 17 per 1,000 in Sweden, 24 per 1,000 in France, and 36·8 per 1,000 in Russia. Out of 1,000 deaths, the proportion of infants under one year was 113 in Norway, 190 in England, 216 in France, and 313 in Russia. The mortality among adults was equally high in Russia, and, taking the deaths occurring at ages varying from thirty to sixty years, the comparison was as the figures 11 for Norway, 13 for France, and 19·4 for Russia. Up to the year 1882 children five years old worked in factories. These children were sometimes syphilitic as well as the victims of alcoholism. There were no regulations to prevent the explosions of boilers, nothing to hinder accidents with machinery. Women had to suckle their babies in the passages of the factories; and as for benefit societies or anything of that description, it would be a mockery to speak of saving to people who are driven by starvation to put up with so fearful an existence. In the match trade 75 per cent. of the workers were children, and they employed white phosphorus. Yet there were men and women in Russia well acquainted with the progress accomplished in Europe, and some attempt had been made to imitate the good example. In 1882 a law was enacted forbidding the employment of children under twelve years of age, and limiting their work up to the age of fifteen to eight hours—that is, four hours, then an interval of three hours' schooling, and then four hours' more work. The law also forbids the employment of children in thirty-six different and dangerous industries, and this is three more than is the rule in most European states. Another law enacted in 1885 forbids night work for women and children, in weaving and spinning mills, but this law is as yet only applied in three centers. There is also organized, under the Ministry of Finance a system of factory inspection. Russia for this purpose is divided into fifty-nine industrial departments; and, as each head inspector receives 5,000 roubles and the sub-inspectors 3,000 roubles, it is anticipated that they will be able to render good service, and that it will not be easy to bribe them to neglect their duties. There is also a law to the effect that where there are more than a hundred persons employed in a factory

medical attendance should be provided; but it is physically impossible to apply this law, for there are only 18,000 doctors in the whole of Russia. Consequently, many factories have no medical attendant, and the lack of proper care in sickness is another cause of the high rate of mortality.

Madame Tkatcheff's paper, of which this is but a brief and incomplete summary, produced a deep effect. After a few questions had been put, Mr. Adolphe Smith rose and urged the Section not to rest satisfied with congratulating Madame Tkatcheff. She had given them a graphic and appalling picture of widespread suffering and human degradation. It was no use holding congresses if they did not exercise their undoubted influence to put an end to such abominations. He would suggest that the Russian delegation might prepare a report on the effect of the recent Russian legislation, and on the actual condition of the working classes in that country. This report could be presented to the London Congress, and followed by a resolution worded in the manner which the Russian delegates might think would have the best effect in Russia. Such a resolution, put to the entire London Congress, and adopted unanimously, as there was every reason to hope it would be, could not but have effect. There was no government so deaf as not to hear the voice of a congress representing the best elements of sanitary progress in modern civilization. In any case, it was impossible to sit still and make no effort to remedy a state of affairs which was a disgrace to our common humanity. The use of international congresses was precisely to bring international pressure to bear where there was a weak point in the armor with which Civilization clothed herself to war against disease and premature death. He therefore moved the following resolution: "That this Section invites the Russian delegates to submit to the International Congress of Hygiene, in London, in 1891, a report on the results of the new laws for the protection of labor, and a resolution for the amelioration of the material condition of the working classes in Russia."

This speech and proposal were warmly cheered, and the resolution was unanimously carried.

Dr. Dargelos read a paper on a method for rendering felt hat manufactories less unwholesome. M. Fisher brought forward some proposals for disinfecting night-soil on its passage to the sewers, and M. Maignen an invention for purifying sewer water and extracting therefrom the solid residue, the ammonia, etc. The Section, on the strength of these two papers, was asked to vote a resolution regretting that the proposed credit of 200,000 francs for experiments in this direction had been struck out of the French budget. Mr. Smith objected on the ground that the French budget did not concern an international congress, but only the principle at stake, and he thought we should all agree that all the governments, and not one single government, should be more liberal in such matters. The utilization of sewage was a problem that might necessitate expensive experiments, and the States of Europe and America should, by small subventions, encourage such experimental research. A resolution in this wider sense was thereupon unanimously adopted, and the Section adjourned.

On Friday afternoon some Sections met at two o'clock, but at four o'clock all the Sections met together in the grand amphitheatre for the final sitting. Dr. Brouardel, as president of the Congress, explained that the Sections had passed a number of resolutions, that the subjects to be discussed in each Section had been fully announced beforehand, and therefore each member of the Congress had enjoyed the opportunity either of supporting or combating any one of the proposals brought forward. Under these circumstances they might conclude that what the Sections had done had been well done, and now he would ask the Congress to approve by vote, and if possible without discussion, the decisions of the Sections. Dr. Martin then commenced to read upward of fifty resolutions. Dr. Brouardel soon discovered that a large number of these resolutions dwelt exclusively with French questions, and therefore did not put them to the Congress, but referred them back to the French committee. Most of the other resolutions of a general character were confirmed by a show of hands, though now and then there were a few opposing votes, and often a great number of abstentions The fact was that many of the subjects were entirely new to a large number of the members, who had not been able to attend more than one Section at a time. Still, it was too late for discussion, and many things were allowed to pass which will require revision. Many of the resolutions thus confirmed have already been given in describing the work of the Sections. To these I might add a resolution, very warmly applauded, demanding that an address be forwarded to M. de Freycinet, Minister of War, congratulating him on his recent measures on sanitation in the army. Other resolutions demanded a permanent inquiry into the cause of excessive infant mortality, a stricter control over midwives, the teaching of hygiene in schools, the publication of methods of water analysis, the creation of bureaus of hygiene and municipal laboratories in all centers of population, new laws enabling municipalities to compel householders to adopt the town water-supply, the abolition of all laws preventing cremation, the encouragement of cremation on battle-fields, the better inspection of pharmacies, etc.

The reading of these resolutions having taken up considerable time, the concluding ceremony had to be proceeded with very promptly, and Dr. Brouardel spoke for only a few moments. He announced that the next Congress would be held in London during the first week of August, 1891. The work of organization had already commenced, and the subjects to be discussed would probably be known in about six months' time. He thanked his colleagues from abroad for the excellent support they had given the Congress, and hoped the harmony which had prevailed during the week among the members of the Congress would continue to reign among the nations represented.

Dr. Roth, on behalf of the foreign delegates, wished to thank the president and the organizing committee for all they had done.

Senator Dr. Pacchiotti, in an enthusiastic speech, reproved the president for qualifying him as a foreigner. "The president," he exclaimed, "salutes the foreigners, but there are none in France. We are all at home in France. Here we meet each other, we live close to each other, we learn to love each other, we talk on the same subjects, we pass the same resolutions; we are not foreigners, we are brothers."

Mr. Shirley Murphy, in the name of the English delegation, rose to thank the French organizers of the Congress for the admirable reception they had prepared. He hoped to demonstrate the gratitude felt by the care they would take in providing hospitable entertainment in London. The cause they had at heart merited the support of all civilized nations. He only regretted that London was not a beautiful city like Paris, and that London did not possess a Brouardel. Nevertheless, he cordially urged all present to accept the invitation and meet again in England, and therefore he did not say *adieu*, but *au revoir*.

Mr. Shirley Murphy was loudly cheered, and the Congress was declared closed, amid cries of "*à Londres!*"

Though the official work of the Congress was thus brought to an end, some two hundred members met again on the following Sunday morning, and, led by M. Bechmann, engineer-in-chief of Paris, visited the palatial sewers that run from the Place de la Madeleine to the Châtelet. In barges and in a sort of tramway they traveled through underground Paris. The sewers were illuminated by many lamps and also by electricity. The barges were supplied with cushioned seats, the ladies came in elegant toilets, and, so that they should not soil their dresses, the steps down into the sewers were carpeted. As an engineering feat these palatial sewers, as they have been so justly described, are certainly most remarkable, and well worth a visit. From the Châtelet the members of the Congress were conveyed in comfortable brakes to the sewage farm of Gennevillier. At Clichy they stopped to see the pumping machines, which lift a third of the sewage and send it over the river in an iron pipe to Gennevillier, where it is used to irrigate 750 hectares of market gardens. The remainder will in couse of time be sent to Archères and to Méry. In the meanwhile, two thirds of the Paris sewage still fall into the Seine at Asnières, and the members of the Congress were able to witness how it fouls the waters of the river. They then went over the sewage farm, admired the vegetables, ate some of the fruit, and drank the beautiful clear water derived from the sewage of Paris. It contained, they were assured, a smaller number of microbes than the best spring water, the Vannes water, supplied to the town of Paris. The Congress now proceeded to enjoy the excellent lunch provided by the town of Paris at a restaurant in the little village of Gennevillier. The toasts were preceded by speeches of a particularly earnest and hearty character. Dr. Martin, as president, proposed that a crown composed of flowers from the sewage farm of Genne-

villiers should be deposited by the Congress on the grave of M. Alfred Durand-Claye, the author of the scheme of which they had admired the result. He recalled that when, in 1878, Durand-Claye had visited Gennevilliers, he had been mobbed by the inhabitants; now he was the hero of the place.

M. Emile Trélat, who could scarce control his emotion, drank to the memory of his old friend. Durand-Claye had been an eminent engineer; he had distinguished himself at college, everywhere; but what made him really great was the whole-hearted manner with which he had given himself up to his work. Around them at Gennevilliers, every hod of earth, every flower, breathed his name. A man with two hearts—a heart in France and a heart in his native Italy—Pacchiotti, had proposed that a monument should be raised in honor of Durand-Claye. As a Frenchman, he could but blush that a Frenchman had not first made the suggestion; but while blushing, he gladly followed the example set by his excellent Italian friend. M. Deligny, Municipal Councilor, who had worked fifteen years with M. Durand-Claye, spoke a few affectionate words in his memory; and then the Mayor of Gennevilliers, in the name of the inhabitants, desired to associate himself with the project, and promised a free grant of land for the monument.

M. Bechmann, M. Durand-Claye's successor, and Dr. Henriot, mayor of Rheims, having spoken, there were loud cries for Dr. Bourneville, who in the National Assembly had carried the bill which legalized these irrigation works, and whose admirable report on "l'Utilisation agricole des eaux d'égout de Paris" should be studied by all who are interested in the subject. Dr. Bourneville, in his speech, paid a handsome tribute to the various international congresses of hygiene. It was their debates, their decisions, which had strengthened his hands and enabled him to obtain the sanction of the French Assembly. M. Durand-Claye had collected a splendid library on sanitary questions, and proposed to leave it to the museum of hygiene which he hoped the municipality of Paris would soon be able to create, and he called upon M. Deligny to press the matter forward.

M. Bonkowsky Bey, chemist to His Majesty the Sultan, in a few well-turned sentences proposed that the name of the ten agriculturists who first consented to utilize the Paris sewage-water at Gennevilliers should have their names engraved on Durand-Claye's monument. Delegates from Mexico, Brazil, and Egypt having also expressed their sympathy, Mr. Adolphe Smith was again selected as spokesman on behalf of England and America. In the name of these nations he desired to participate in the centenary celebrations of 1789, a date to be ever associated with the spread throughout the world of those principles of freedom which were the basis of true scientific research and knowledge. As representing the most liberal nations of the civilized world, he hoped America and England would always remain united with France in their forward march. He claimed for these countries the full right to participate in the honors to be rendered to the memory of Durand-Claye. He challenged the French right to monopolize this memory. Durand-Claye was a glorious example of the international character of sanitary science. He had never paused at a frontier line, but studied hygiene with equal assiduity in England, Holland, Belgium, even in Germany, availing himself of all the good ideas he could find in all countries. That library which he had so generously left to the town would be found to be an international library; and Paris was an international town, and hygienists of all countries meant to avail themselves of Durand-Claye's experience, and while inspiring themselves by his great works, claimed their right to contribute to the homage that would so justly be rendered to his memory. This speech was enthusiastically received. Dr. John H. Rauch, medical officer of health of Chicago, confirmed briefly in English the sentiments expressed, and promised to raise a subscription for the monument in America. Several hundred francs were at once collected among the guests, who, though they had started at nine in the morning, did not get back to Paris till five in the afternoon. Still the Congress was not quite over, for the next evening a hundred members, principally the foreign delegates, were entertained at a brilliant reception given in their honor at the Ministry of the Interior, by the minister, M. Constant.

Thus at last was this most animated and successful Congress terminated. I have given a very imperfect, incomplete account of the proceedings, but perhaps have said enough to show the interest and importance of such congresses. Several subjects, notably the ventilation and heating of houses, so originally and ably treated by M. Emile Trélat and M. Somasco, I must leave for a separate study, and will attempt to describe the theories enunciated when dealing with the exhibits on these questions. But for a full account of the Congress it is best to wait till the official report, which will constitute a large and handsome volume, is published. This will probably be done at an early date, and will be sent gratuitously to all the members of the Congress. Those who were not members will probably be able to obtain the report by applying to the secretary-general of the Société de médecine publique et hygiène professionnelle, 28, rue Serpente, Paris.

ANSWERS TO CORRESPONDENTS.

No. 287.—The meetings are held in Newark. The secretary is Dr. A. Mercer, No. 31 Washington Street, Newark.

No. 288.—Since the year 1876.

No. 289.—We shall soon publish an article on the subject.

No. 290.—The author presented his observations as of physiological interest, and did not advocate their therapeutical application.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

A COMPARISON BETWEEN MERCURIAL AND AVITREOUS THERMOMETERS.*

BY MORITZ IMMISCH,
LONDON, ENGLAND.

MEDICAL thermometry has not received the attention it deserves, and, though no doubt fully understood and appreciated by the few, it is totally neglected as a branch science of the medical profession by the many. Its immense importance in diagnosis and treatment is acknowledged by all, but, in order that the tell-tale thermometer should be a valuable guide to the medical man, it is important that the tale it tells should be rightly interpreted. Unless this is done it were better indeed not to depend upon thermometers at all. A thermometer presumably gives the temperature of the blood, and its readings are often taken as blood heat, whereas in reality it is not, and can not be anything of the kind. It gives simply the temperature of the part it has been applied to when the reading is taken. It depends entirely upon surrounding circumstances and accompanying conditions what relation the observed temperature bears to the actual temperature of the blood, which is really the point in question. The ability to correctly estimate these conditions at their proper value is only acquired by practice; but as a guide to every one who desires to become proficient in the use of thermometers it should always be borne in mind that the part to which the thermometer is applied is a radiating body constantly parting with its own heat to the surrounding atmosphere and other bodies in its vicinity not only by radiation proper but also by convection and evaporation. It is true that the circulating blood rapidly supplies fresh heat, but what is measured by the thermometer is not the blood heat, but the resultant of three things—namely, the real blood heat, the cooling process which is constantly active to lower the temperature, and the rate at which fresh heat is supplied. Anything which favors radiation, convection, or evaporation must necessarily have a marked influence upon that resultant in one direction and the actual blood heat in the other direction. The rate of heat-supply acts in one direction or the other, according to whether it is above or below the normal. As an illustration of the difficulties surrounding this question the following experiment might be tried: Place a dozen correct thermometers in different parts of a furnished room, and in an hour or two you will probably not find two thermometers reading alike. All that is necessary for this experiment to succeed is that the air in the room should be warmer than the inclosing walls. The air of the room may safely be taken to be of the same temperature throughout. In consequence of the very small capacity which air has for heat, the mobility of its particles, the ease with which air of different temperatures intermingles, all justify the assumption that the air surrounding these thermometers is really of the same temperature, and yet we find this difference in their readings, which may amount to two degrees or more. The observed variation is owing to the differing absorptive powers of the substances which happen to be in their proximity. That the observed differences are really owing to this can be easily proved by coating the bulbs of the thermometers with varnish, gum, or lamp-black, by which means the radiation is greatly increased and the difference in the readings becomes more marked.

Now, the human body is another such heat center continually parting with its own heat to the surrounding air and other bodies in its vicinity. The presence of moisture on the surface of the body, a draughty room, a damp bed, a cold wall, whether the surrounding air is cold or warm—all these circumstances have a marked influence on the reading of the thermometer.

Take two equally perfect thermometers both reading alike, one in each hand; leave them there inclosed and stand sideways in proximity to a wall, and in ten minutes you will be able to tell whether the wall is cold or not. Although the blood itself is of the same temperature in both hands, the hand which is toward the wall, if the latter happens to be cold, parts with its heat at a greater rate than its fellow and the thermometer reads lower in consequence. Take a thermometer in your mouth in a cold room and you can not get it up to the normal point, although, doubtless, your blood is 98·4° F. Stand in a draughty place and the difference is greater, because the head itself got chilled by radiation and the breathing of cold air. It even makes a slight difference whether the head is bald or protected by a mass of hair. Each of the influences tending to lower the temperature in itself may not be very important, but when all combine, each adding its own effect, the difference may amount to one degree or more. Without taking these circumstances into consideration and simply going by what the thermometer tells you would be very improper, and in that sense thermometry would be worse than useless.

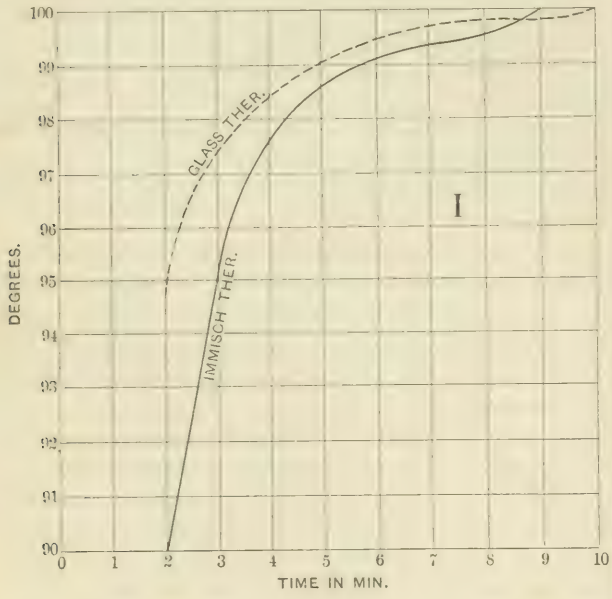
There are certain properties which are common to all thermometers and which must not be lost sight of by any one who wants to use them professionally. Every thoughtful observer will have noticed that the time required for a thermometer to rise from one degree to another is very much shorter when the difference between the temperature which the thermometer may happen to possess and that temperature which it is intended to measure is great. As this difference of temperature lessens, the time required to move one degree becomes greater and greater. Take the temperature to be measured 105°. In that case it takes quite as long for the thermometer to accomplish the last half degree as it required to move from 90° to 104°.

From a great many observations which I have made with different thermometers, all of which observations tally sufficiently close, I have prepared a series of diagrams. One of my objects was to compare thermometers of totally different make, and I used an "Immisch" thermometer alongside an ordinary clinical glass thermometer. The latter was not a self-registering one; both were verified at

* Prepared to be read before the British Medical Association at its annual meeting.

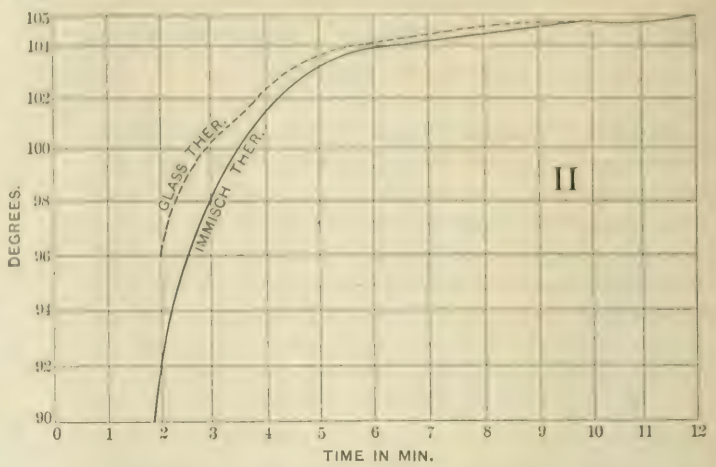
Kew Observatory. Both instruments were inclosed in a metal case filled with water. This metal casing was furnished with a glass cover to admit of the face of the "Immisch" thermometer being seen, and the stem of the glass thermometer projected from the case and was secured in one of the sides of the casing. The joints of the case were water-tight, to prevent any circulation taking place of the water inside the casing and the water-bath into which the casing was plunged. An assistant kept the bath in constant circulation by means of a rotating fan; a "Standard" thermometer and sundry taps were provided to enable him to keep the temperature of the bath absolutely constant for any length of time. Readings were taken every minute, and in some cases, as the diagrams will show, every five seconds. The diagrams thus plotted down clearly show that there is no appreciable difference between the two thermometers in point of time when the final heat was registered. In some instances the "Immisch" arrived there a little sooner, but in most cases the maximum was arrived at at the same time; but in all the observations the glass thermometer was in advance of the "Immisch" at the lower temperatures. We shall see later on that the converse of this feature is of the greatest importance and really constitutes a decided advantage of the "Immisch" over the glass thermometer.

Diagrams I and II represent what most frequently happened. The bath being at 100°, after three minutes the glass thermometer was about two degrees and a half ahead



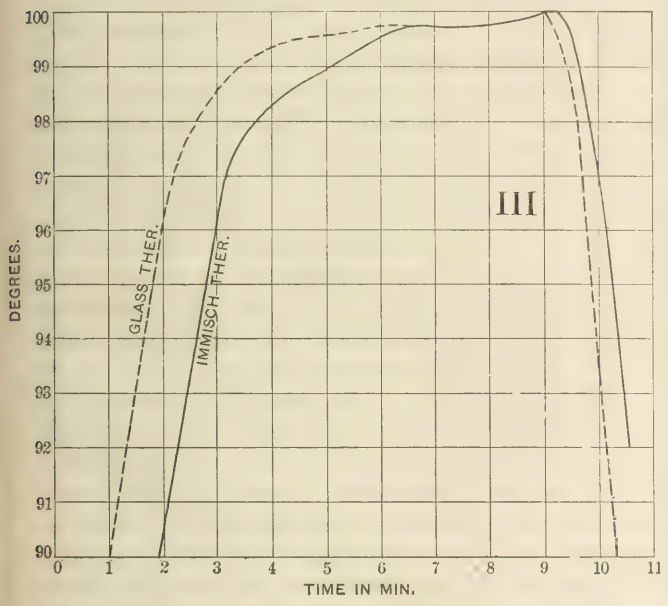
of the "Immisch," the former showing 95° and the latter 97·5°. This difference became less and less; after four minutes the difference was three fourths of a degree, and at six minutes the difference was one fourth of a degree; after eight minutes they stood equal, the whole being completed in between nine and ten minutes, the glass thermometer taking generally about half a minute longer to get to the maximum.

These diagrams clearly show how easily a practitioner may be misled in pronouncing upon the merits of different instruments. If it is only a question of ascertaining what height a thermometer arrives at after three minutes of application, the glass thermometer would have the advantage over the "Immisch"; but, if it is a question of ascertaining the true temperature of the patient, the apparent advantage disappears and even changes from one instrument to the other. The legitimate object of medical thermometry can never be attained by merely ascertaining what any thermometer shows after the lapse of three or four minutes. The instruments themselves vary and behave differently in this respect. Glass thermometers apparently alike show various degrees of sluggishness, owing to the thicknesses of the glass bulbs inclosing the mercury differing among themselves. But far greater errors—and this remark applies to all thermometers—are likely to occur through the cooling influences already named, and the effect which a greater or less circulation of the blood may have in supplying fresh heat at any rate which may be above or below the average. If the importance of these various influences is duly appreciated, it must be clear to every one that any reading taken, say, after three or four minutes is no guide whatever except to those practicing in hospitals, where the condition of the wards is expressly kept uniform, year in and year out, as much as possible. But even then it requires the experience of years to trust to this mode of taking readings. For outdoor practice it is highly improper to resort to it. When the practitioner is called upon to form an opinion of the patient's condition according to whether his thermometer shows one fifth or two fifths of a degree more or less, it is evident that readings taken after a certain fixed lapse of time of three or four minutes are quite useless, seeing that these readings may differ one or more degrees owing to conditions with which the patient has nothing whatever to do. It is, however, satisfactory that, as the diagrams show, there is no appreciable difference in the instruments themselves, of whatever make and construction they may be, in recording the true temperature of the part to which they are applied after a lapse of, say, nine minutes, and in an atmosphere of 65° or 70°. Six minutes may be taken as a safe interval, if a fourth or a half of a degree is added, according to the circumstances which affect the sluggishness of the instrument.

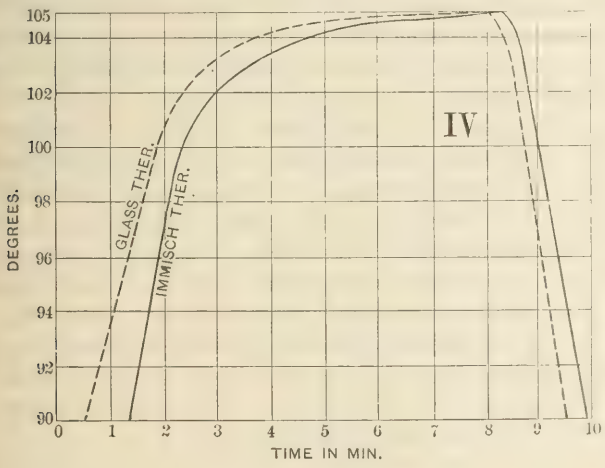


If it is considered that, even after such a reading has been taken, it refers only to the part to which the thermometer has been applied, and that we still have to exercise our judgment to determine what relation this reading bears to the actual blood heat of the patient, it is imperative that such reading itself should be without question. With an atmospheric temperature of 80° and upward, you get nearer the real blood heat in four minutes than in six minutes with a temperature of the room at 65°.

Diagrams III and IV refer to observations made with the heated box containing the two thermometers when at-



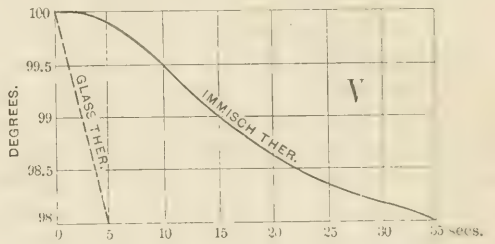
taining a true temperature of the bath. Being suddenly plunged into a bath of the temperature of the room, it is at once apparent that the time required for making these



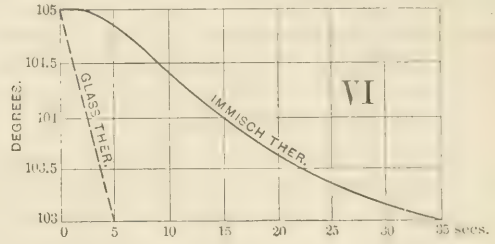
thermometers fall is just as short, or, in other words, they fall just as quickly as they rose when the difference of the temperatures was great. (See Diagrams I and II.)

I must say a few words as to the apparatus chosen for the production of the diagrams. Objections may be raised because water was used for heating the instruments, whereas with a patient no water is present. Water has a great capacity for heat, and requires many more heat-units to raise its temperature a given number of degrees than air, for instance. On the other hand, it is capable much more effectually to impart its heat to the instruments just because of its great capacity. In experiments with a box containing air instead of water, the time required by the instruments to record the temperature of the bath was more than three times as long. I chose, therefore, water as the medium, and of such a volume as closely to resemble the conditions obtaining with patients. In both cases the final temperatures are not attained before the lapse of nine or ten minutes. I therefore conclude that the conditions are conformable. Less water would have caused the maximum to be reached quicker; more water, slower than is the case with medical practice. The volume of water chosen was about one cubic inch and a half. The experiments can be easily repeated by any one who likes to verify the diagrams.

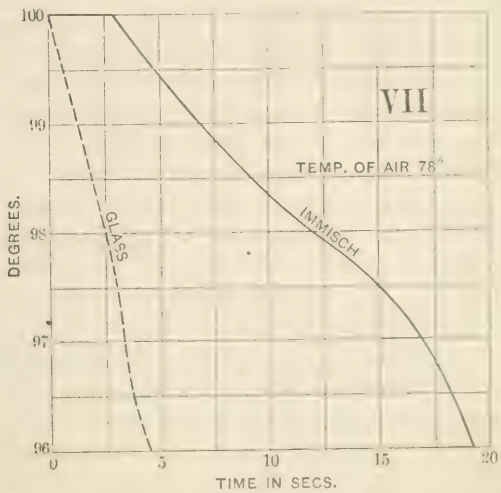
Diagrams V and VI refer to the two thermometers taken out of a warm bath and put immediately into another two



degrees lower; in one case the higher temperature was 100°, and in the other 105°. No water-jacket or box was used

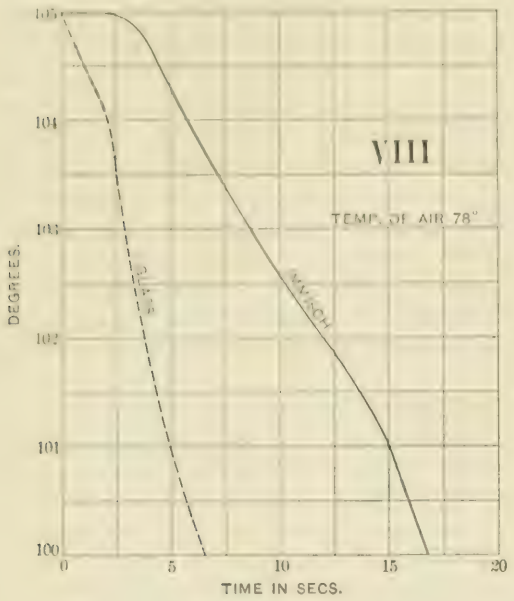


for this purpose, but the baths acted directly on the instrument. This was also done with regard to Diagrams VII



and VIII, which refer to the instruments being taken out of baths of 100° and 105°, respectively, and subjected to

the ordinary temperature of the room. Those last four diagrams were taken to show that an appreciable time elapses before the "Immisch" falls at all. I must remark, however, that in actual practice the stationary interval is longer



than in the diagram. This is owing to the instrument being wet when subjected to the air; and, although the precaution has been taken to dry them on a cloth after removal from the bath, this can not be done so quickly as to prevent a copious evaporation to set in, which we all know has a powerful cooling effect.

The "Immisch" thermometer is actuated by a "Bourdon" tube, which itself is surrounded by air inclosed in the case of the instrument. This air is warmed, and does not permit the colder bath or the colder atmosphere to affect the tube till the air itself is cooled first.

In Diagrams I and II we see that the "Immisch" was behind at the lower temperatures as compared with the glass thermometer; this was owing to the very same cause. The air had first to be warmed before the tube could be affected. The operation of cooling reverses this condition, and it is so far of great importance, as it shows on the one hand that a glass thermometer must be made self-registering in order that any reading can be taken at all; the "Immisch," on the contrary, can be withdrawn, and the pointer fixed after withdrawal. The operation of fixing the pointer takes less time than would elapse before the instrument begins to fall. Herein lies a distinct advantage which the "Immisch" thermometer has over the glass instrument. We can heat it to several degrees above the probable temperature of the patient before application. Two or three minutes would then suffice for the instrument to adapt itself to the real temperature of the part to which it is applied—to the axilla, for instance. The cooling, which takes place on applying the instrument, is counteracted by the instrument being warmer than the axilla, and we may be sure that the instrument has really parted with its excess of heat after two or three minutes. This, in my opinion, is the only legitimate way in which the time of application can be shortened.

The artificial heating is easily done by means of a lighted wax match. Care should be taken to heat both the back and the glass front—in fact, as evenly as possible, as otherwise the cold part would absorb the heat of the warmer portions of the instrument. A little management is, of course, necessary; but this is far easier acquired than is the case with many other instruments which medical men have to handle.

It goes without saying that the same thing can not be done with a glass thermometer; on the one hand we have seen that it must be self-registering in order to be used at all, but if made self-registering we can not overheat it before application, as in that case it would not accommodate itself to any lower temperature.

These diagrams are instructive in another way. They prove that any influence which causes the place to which the thermometer has been applied to cool to the extent of a quarter of a degree temporarily would retard the maximum reading by about two minutes. Not on account of the thermometer at all, because the instrument can not show more heat than is imparted to it, but on account of the axilla, or the mouth, or the hand, or any other part of the patient to which the thermometer has been applied requiring that time to rectify the disturbance.

Whenever the rise of temperature is so gradual as in point of fact it is with an axilla which has been partially cooled at the time of applying the instrument, it does not matter what sort of thermometer is used, as it is sure easily to accommodate itself to the gradual rise. If we had an instrument which instantaneously recorded from second to second the gradual rise of temperature of an axilla which had been temporarily cooled to the extent of half a degree, we should get a curve very much like that shown by our diagrams. But on analyzing these diagrams we find that both these thermometers, although differing so much in construction, are perfectly capable of accommodating themselves to the gradual rise, proving that an instantaneous thermometer, if any such existed, would have absolutely no advantage whatever over either of the two in question.

It is hopeless to get uniform diagrams from actual use with patients, as the conditions are subject to great changes; and I may now refer to a communication by a Dr. Makrocki, of Potsdam, to the "Deutsche Medizinal-Zeitung" of the 26th of March of this year. That gentleman gives, with the view of comparing three different thermometers (viz., Sack's so-called minute thermometer, Immisch's avitreous, and the ordinary glass thermometer), a series of readings—forty-three in all—half of which refer to ten cases with fever, and the other half to ten cases without fever. (See the table on the next page.)

The readings, originally Celsius, have been reduced to Fahrenheit. It is astonishing what a diversity of readings this gentleman gets with the three instruments. If diagrams were taken, some of them would be absolutely bewildering, and there are probably not half a dozen tolerably consistent. In Case 5 he gets, after five minutes' application of the minute thermometer, the same reading as he got after two minutes' application—viz., 97·16—and after ten minutes he gets 98·4; that is higher than he got with the

maximum glass one after ten minutes' application by as much as 0·6°. In the next case (6) the difference is the other way; here the maximum thermometer shows three quarters of a degree higher than the minute thermometer, both after ten minutes' application, making a difference of 1·3° in the two cases.

Cases without Fever.

NO.	SACK'S MIN. THER.				Immisch. 6 min.	Maximal. 10 min.
	1 min.	2 min.	5 min.	10 min.		
1	98·42	99·14	.....	.....	98·78	99·68
2	99·5	100·04	.....	.....	100·04	100·94
3	98·9	99·14	.....	.....	98·4	99·68
4	97·52	98·4	98·78	99·32	98·78	99·32
5	96·8	97·16	97·16	98·4	97·34	97·8
6	95·9	96·98	.....	98·57	97·7	99·32
7	98·6	99·14	.....	99·32	99·14	99·5
8	98·2	98·2	.....	98·6	99·4	99·14
9	97·8	97·8	.....	98·4	97·52	99·14
10	98·4	98·6	.....	98·6	98·4	99·32
Cases with Fever.						
11	103·28	103·64	.....	104·18	103·82	104
12	102·74	103·28	103·46	103·64	102·92	103·46
13	103·1	103·46	.....	104	104	104·36
14	102·02	102·02	.....	102·02	102·92	102·92
15	98·6	100.04	.....	100·04	100·4	101·12
16	99·86	100·58	.....	100·94	100·58	101·3
17	100·22	100·76	.....	101·03	100·76	100·94
18	102·2	102·92	.....	103·64	103·28	103·46
19	103·1	103·82	.....	103·82	104	104·18
20	101·12	101·21	.....	101·66	100·94	102·02

In Case 14 the minute thermometer shows after ten minutes' application nine tenths of a degree less than either the Immisch or the maximum, the Immisch in all cases being applied during six minutes only; and so I might go on through the whole of his work. When it is considered that these enormous discrepancies occur under circumstances presumably alike, one naturally asks himself, What use is thermometry at all? If the article in question and these figures prove anything at all, it is the difficulty of applying thermometers, pointing to the necessity of care and circumspection, which have evidently been wanting in the work of Dr. Makrocki. In no case can it be considered that the question which constitutes the proud title of the article, "What is the best Thermometer for Clinical Use?" has been satisfactorily answered. The gist of his article is that the minute thermometer in no case shows the same temperature after one or two minutes as the maximum after ten minutes. It would, indeed, be strange if it did. He might have gone further and pointed out (Case 14) where the minute thermometer after ten minutes shows 0·9° less than the maximum; neither does the Immisch show after six minutes as high as the glass maximum after ten. Of course not. Nor would the maximum get as high in six minutes as an Immisch after ten.

Comparing thermometers can not be done on the patient, but such comparing must be done by some such apparatus which I have used and which is always uniform and under perfect control. A similar apparatus is used by the Kew authorities to test thermometers for verification. There are great pains taken at that establishment, which has a reputation for accuracy all over the world. Glass thermometers are apt to change; the glass alters its texture with time in the most capricious fashion, and, as the volume of the mercury remains the same, the change in the glass must affect the scale of the instrument. This defect is much more noticeable when the thermometers are new, but, unfortunately, they very seldom last long enough to give them time to settle. Recent improvements in the manufacture of glass for thermometer purposes look promising, but have not cured the evil; the certificate still contains the cautionary advice to have glass thermometers tested from time to time. This advice being omitted on the "Immisch" certificate, it is to be presumed that the authorities have satisfied themselves as to their permanency. The "Bourdon" tube in the "Immisch" does not change. The expanding liquid acting on the tube bends it. The tube is really a spring, which in opening and contracting is always within the limit of perfect elasticity like the balance spring of a chronometer. This does, however, not absolutely prevent the instrument from going wrong when it happens to be badly made. It must not be forgotten that watch-work is required to transmit the motion of the tube to the pointer. This can not be done without some friction, which is only negligible when the workmanship is first-class. It speaks well, however, for the "Immisch" that eighty per cent. on an average receive perfect certificates, whereas the average of perfect certificates is less than twenty per cent. with glass instruments.

It is a fact, which has been recognized by many, that all thermometers act more sluggishly with healthy persons than when applied to a patient suffering from fever, and some practitioners take this feature of greater or less sluggishness as indications of the patient's condition. This is quite independent of the actual temperature of the patient, and has only reference to the rate at which fresh heat is supplied to the system, or, more correctly speaking, to the thermometer itself. The importance of this remark can easily be made manifest. Take a thermometer in your hand, and after ten minutes you will find it registering, say, 96°. Then 96° is the resultant of all the influences which affect the thermometer. Now take a sharp walk (or any other bodily exertion will do as well), apply the thermometer for the same space of time, and you may get 98°, or may even reach normal point; not because the real blood heat has augmented, but the increased circulation has overpowered the cooling influences and the second reading is a faithful record of the resultant under new conditions.

Long Intervals between Births of Twins.—Dr. Engström, of Helsingfors, describes, in the "Finska Läkare sällskapets Handlingar," January, 1889, three cases of twin labors, where the interval between the births of the twins was unusually long. In the first case the second child was not born till thirty hours after the first had been delivered. Uterine contractions had ceased, the membranes were ruptured, and the child, ten pounds in weight, was delivered by turning. In the second case the interval was twenty hours. The waters were fœtid, yet the second child, which weighed nine pounds, was delivered alive, by the aid of forceps. In the third instance the second child, weighing five pounds and a half, was delivered twenty-six hours after the first. In all the above cases both twins were saved. An interval of even twelve hours is not frequent in twin deliveries.—*British Medical Journal.*

THE URETHROGRAPH.

A NEW INSTRUMENT FOR THE EXAMINATION OF THE URETHRA.

By R. W. STEWART, M. D., M. R. C. S.,
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In the treatment of urethral diseases the importance of being able to obtain reliable information regarding the caliber of the urethra, the presence or absence of strictures, their caliber, extent, and location, if present, as well as the location of painful spots, is self-evident. To obtain this information various instruments have been devised, but they are open to the objection that the results obtained by them are dependent so much on the skill of the operator that two persons examining the same urethra with the same instruments may arrive at different conclusions as to the condition of the urethra under examination.

What is wanted for the examination of the urethra is an instrument which will do for the urethra what the indicator has done for the steam-engine or what the sphygmograph has done for the pulse—an instrument which will make a record of the urethra at all parts, which shall be accurate and yet independent of the skill of the operator; a record which shall be the same whether the instrument is handled by the expert or by the novice.

Without entering into a discussion of the merits and demerits of the various instruments used in the examination of the urethra, I will describe an instrument which I have devised and called a urethrograph, which meets the requirements indicated above.

A brief report of this instrument has already appeared in an article on "The Diagnosis of Urethral Stricture of Large Caliber," published in the July number of the "Pittsburgh Medical Review." The instrument has since then been so materially modified that it merits a separate description.

It resembles closely a catheter inserted into a handle. Its anterior extremity, which is curved to permit of its introduction into the bladder, terminates in two jointed arms on either side, which present a smooth convex surface to the urethra. By means of a spring within the handle these arms are expanded until arrested by pressing against the urethra; the pressure exerted by these arms is uniform in all positions, and may be readily increased or diminished to any desired extent by means of a screw at the handle.

Beneath the handle there is a marking arm so connected with the jointed arms already mentioned that, as the latter expand or contract in following the irregularities of the urethra, the marking arm draws a line on a strip of cardboard which is a reproduction of the contour of the urethra except that the irregularities of the urethra are magnified twice on the card-board. The card-board strips are marked longitudinally into millimetres and transversely into inches, so that at a glance the size and position of any portion of the urethra may be ascertained.

On the upper surface of the instrument there is an index which indicates in millimetres the circumference of the urethra at the point where the jointed arms are in contact.

To use this instrument, it is inserted, with the jointed arms closed, into the bladder or, if the neck of the bladder is tender, as far as the prostatic urethra. Having the urethrograph introduced as far as desired, a strip of card-board is inserted into a slot beneath the handle. The diagram of the urethra is then taken by touching with the index finger of the right hand a movable pin which liberates the spring contained within the handle, expanding the movable arms at the extremity of the instrument until their expansion is arrested by the resistance of the urethra. The urethrograph is now withdrawn after the manner of withdrawing a sound, while the card-board upon which the diagram is taken is held stationary with the left hand. If desired, the card-board may be dispensed with and the condition of the urethra ascertained by simply observing the index on the handle of the instrument as it is withdrawn; but this method is open to the objection that one of the chief advantages of the urethrograph is dispensed with—that of furnishing a diagram of the urethra which may be examined at any time and kept for future reference or comparison with subsequent diagrams.



Fig. 1.

It may be mentioned here that on the back of these card-board strips a place is arranged for the name of the patient, the date, and any remarks the physician may desire to record.

Figs. 2, 3, and 4, for which I am indebted to Dr. Carrington, United States Marine Surgeon to the Port of Pittsburgh, who had in charge the patient from whom the diagrams were taken, represent the condition of the urethra of a patient before and during treatment for stricture, as indicated by the urethrograph. Fig. 2 represents the urethra previous to any instrumental interference whatever. It will be noticed that the prostatic urethra, which is represented

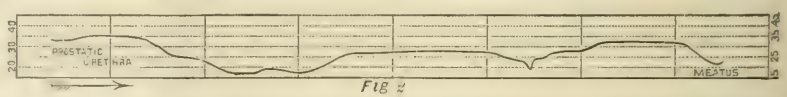


Fig 2

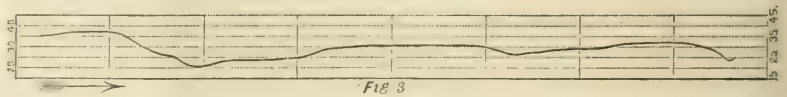


Fig 3

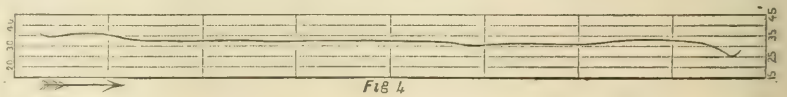


Fig 4

to the left, is the widest portion of the canal, being a little over thirty-five millimetres in circumference. Anterior to the prostatic urethra there is a stricture about two inches in length, and situated at the bulbo-membranous portion of the urethra; this stricture at its narrowest part is about seventeen millimetres in circumference. From the situation of this stricture, occupying the curved portion of the urethra, it would have been inaccessible to the urethrometer, which is only used in the straight portion of the urethral canal. About two inches from the meatus there is another stricture, more distinctly defined but less in extent than the previous one. Anterior to this stricture the urethra becomes dilated, but not so much as at the prostatic portion. At the meatus a third stricture is found, having a circumference of twenty-one millimetres.

The caliber of the urethra having been ascertained, Holt's divulsor was introduced and the strictures were stretched to the full extent of the divulsor; immediately afterward the urethrograph was introduced and Fig. 3 taken. Comparing this diagram with the previous one, it will be noticed that the stricture at the meatus has only yielded two millimetres, while the stricture at the middle of the pendulous urethra has yielded about six millimetres. The stricture at the bulbo-membranous junction has yielded less than the one anterior to it, but this may be accounted for by its depth in the urethra, placing it beyond the point of maximum distension of the divulsor. It will be observed in this diagram that at no point has the divulsor dilated the strictures up to the same width as the adjacent unstrictured urethra, so that we may readily draw the inference from this that Holt's divulsor, while materially aiding the dilatation of strictures, is insufficient of itself to obliterate them.

Fig. 4 was taken from the same urethra that the two previous diagrams were taken from, but not until a period of two weeks had elapsed, during which time the urethra was subjected to the introduction of sounds up to a size which was considered the full capacity of the urethra. It will be observed by this diagram that the urethra bears somewhat the appearance of a straight canal, that the stricture at the bulbo-membranous portion has disappeared, and the one in the pendulous portion almost so, while, in spite of all the stretching it has undergone, the meatus has only dilated four millimetres; surely this points emphatically to the fallacy of attempting to dilate strictures of the meatus. It will be noticed that under the use of the sounds even that portion of the urethra which was not considered as strictured has undergone some dilatation; to this the prostatic urethra is an exception, though it is still the widest part of the canal.

In considering this diagram the query arises, How near does the urethra, after instrumental treatment for stricture, resemble the normal urethra which has never been strictured? Is the prostatic urethra spindle-shaped, and the widest portion of the canal, as is shown here and generally taught? has the remaining portion of the urethral canal an almost uniform caliber? and is the meatus normally the narrowest part? These are vexed questions. The normal urethra is still debatable territory, but I venture to predict that the urethrograph, by presenting something tangible to gaze upon and to form comparisons with, will yet shed light upon these disputed points.

In conclusion, I may add that the urethrograph, while designed for the examination of the urethral canal, is capable of modification so as to serve the same purpose in the examination of the other canals of the body that it does in the urethra.

HÆMORRHAGE FROM THE LARYNX.*

By WILLIAM PORTER, M. D.,
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Many objections have been urged against the use of the term laryngitis hæmorrhagica, and it is probably well to begin with a few definite statements which I believe are supported by facts.

Hæmorrhage from the larynx is seldom if ever unaccompanied by other symptoms or evidence of laryngeal disease, though sometimes these may have been previously unnoticed. It is rare, yet frequent enough to have been accurately observed and described. In most cases it is slight and, unless as a symptom of serious disease, is unimportant, yet in a few instances it has been profuse and alarming. Granting its frequency and the fact that it is generally in itself of little importance, it is still an interesting study, as an indication of pathological conditions and also because it is often erroneously credited to pulmonary lesions.

In examining the recent literature upon this subject, I can not but feel that careful observation will give it a more important place in the catalogue of symptoms of laryngeal disease. That it is not so is doubtless due to the fact that it has generally been found to be, when severe, but a symptom of some grave and definite morbid process, as of malignant, tubercular, or syphilitic character, and, when slight, to be of little importance.

Reasoning in the abstract, we might probably conclude that the larynx would be a favorite site for such local lesions as would result in hæmorrhage. The parts have free vascular supply, as has the pharynx or naso-pharynx, where hæmorrhages are not infrequent. The functions of the larynx require almost constant movement, and this is favorable to rupture of blood-vessels already weakened by disease. Such would be a reasonable hypothesis aside from recorded facts.

Against this supposition is the almost unanimous verdict of the members of the Section in Laryngology and Rhinology of the British Medical Association of last year. The president, in summing up the discussion, pointed out that there was an evident opinion among those present that hæmorrhages from the previously healthy larynx and pharynx were extremely rare—far rarer than was supposed by the profession at large—and that in any case of hæmorrhage into the upper air-passages of obscure origin it was probable that the hæmorrhage was due to pulmonary tuberculosis, even in the absence of physical signs of that condition.

I would not thoughtlessly dispute the conclusions of

* Read before the American Laryngological Association at its eleventh annual congress.

such high authority, and yet I must confess a doubt as to its entire accuracy. There might of course be on the part of some a disposition to hide behind technicalities. For instance, no one would oppose the statement: hæmorrhages from a previously healthy larynx are infrequent, for without previous lesion, small though it be, there could not well be hæmorrhage, which is a symptom of lesion. The thought intended to be conveyed, however, is plain enough, and while I grant that well-marked laryngeal hæmorrhage is rare, yet, as I have already intimated, I believe enough cases have been observed to make it worthy of study.

It seems to have been the experience of many observers that most of the cases of so-called laryngeal hæmorrhage are of pulmonary origin, or that pulmonary disease becomes evident sooner or later. It is generally true that bleeding through the mouth denotes pulmonary disease and is suggestive of grave conditions, but it is in some cases of this kind that the laryngologist is able to say that the hæmorrhage is not from the lungs, that it is purely local, and does not indicate a progressive course and fatal termination.

In twenty-two cases reported by six observers, most of whom are members of this association, phthisis followed in but three. The general tenor of replies to Gleitsmann's circular letter of interrogation upon this subject was "that hæmorrhage from the larynx can be regarded as a precursor of phthisis in exceptional cases only. The data furnished further tend to sustain the assertion made in this paper that many, if not the majority, of cases are not published, and that they are by no means so rare an occurrence as generally supposed." Regarding the first statement, I can say that three of the four cases of which I have notes have given no evidence of pulmonary disease, and am not sure but that in the fourth (No. 3 in the series) the pulmonary involvement has been the result of the hæmorrhage, as will be mentioned hereafter.

In this paper I will not attempt to present a full bibliography upon the subject, as this has been given by Dr. Gleitsmann in the "American Journal of the Medical Sciences" for April, 1885, with an additional series of cases compiled by the same author in the "Medical Record" for October 29, 1887.

Permit me, however, before mentioning several cases in my own practice, to recall a few well-marked ones which have been recorded by others.

Ten years ago Dr. J. H. Hartman, at the first annual meeting of this association, reported a case of laryngeal hæmorrhage from the rupture of a large capillary vessel upon the surface and about the middle of the left ventricular band. The patient had been singing, the hæmorrhage came on suddenly, several ounces of blood were expectorated, the next morning a recurrence, and two or three ounces of blood were again lost. The application of a strong solution of ferric alum was sufficient to stop the bleeding.

An interesting case was reported by Fraenkel in 1874 in which the patient, a woman in the fourth month of pregnancy, had repeated and severe hæmorrhage continuing at intervals for four weeks. As soon as the blood crusts which had formed on the laryngeal mucous membrane were removed, parenchymatous bleeding from the cords and posterior wall could be distinctly seen.

During the past ten years a score of writers have contributed the history of cases to the literature on this subject, and of these I will mention but one which seems to me to be in every way typical. In the Section in Laryngology of the Ninth International Congress, Dr. Stockton, of Chicago, presented the history of a young lady, an opera singer, who suddenly lost her voice while practicing, and in a few minutes coughed up some bright frothy blood. The larynx was found coated with blood, and when it was removed, a small pulsating vessel was seen, and from it came the hæmorrhage, which was controlled by the galvano-cautery.

In my own experience I have records of but four cases of hæmorrhage from the larynx, not associated at the beginning with serious local disease or pulmonary tuberculosis. Elsewhere I have reported cases of pharyngeal hæmorrhage which were ascribed to pulmonary sources; but of necessity these are excluded here, though of the same general class as those under consideration and giving rise oftentimes to the same errors in diagnosis.

Case I.—Miss K., aged eighteen, with good family history, had repeated hæmorrhages with some hoarseness, and at times soreness in the glottic region. After failing the first time to find any chest complication and nothing to indicate laryngeal bleeding except a chronic laryngitis, I saw her a second time while she was expectorating blood. The site of the hæmorrhage was seen to be a small perforating ulcer of the right ventricular band. The bleeding was, after several recurrences, finally controlled, and the laryngitis has under treatment been relieved. It is two years since I first saw Miss K., and there has been no return of the bleeding and no evidence of pulmonary disease. This case is also reported in the proceedings of the last Medical Congress, vol. iv, p. 45.

Case II.—In January of the present year I saw Mr. G., a Government inspector, whose duties frequently required him to be in the holds of boats which are often damp and foul. He was forty-two years old, robust, and with a good family record. He said that for a year he had had recurrent hæmorrhages which he feared were from the lungs. He was slightly hoarse and was expectorating blood when I saw him. I found nothing to indicate lung disease, but in the larynx discovered the bleeding to come from the posterior part of the right vocal cord, which was red and swollen. I believe that all the hæmorrhage came from this part of the larynx, because it was entirely controlled by the direct application of iron, and the local inflammation has improved under the usual treatment.

Case III.—Miss L., a pale, delicate-looking little lady of about thirty-five years of age, consulted me three months ago on account of almost constant cough and repeated though slight hæmorrhages existing for six weeks. There was no expectoration other than the blood and a little mucus, half a degree of fever, pulse slightly quickened, but no loss of flesh, and fair appetite. The family history was free from any trace of so-called hereditary disease. A careful examination of the chest gave negative results. The larynx was red and the mucous membrane over the left arytenoid cartilage, and indeed the whole left side of the larynx, including to some extent the vocal cord, appeared swollen. There was at this time some hoarseness, but no bleeding. Although the circumstantial evidence was in favor of laryngeal hæmorrhage, it was not until her third visit that I could affirm it. While waiting in my office the

bleeding returned. At once making an examination, I found that the hæmorrhage came from the suspected region of the larynx, especially from near the posterior attachment of the left cord. After this the bleeding returned a number of times, but has not appeared during the last two months.

A fortnight since, or nearly four months from the first hæmorrhage, I found evidence of pulmonary consumption, not at the apex, where phthisis as a rule begins, but in the right lung at the third intercostal space anteriorly. There was and is now slight dullness, diminished vesicular murmur, and prolonged expiration.

It has been shown by Dr. Alexander Hodgkinson ("British Medical Journal," September 15, 1888) that blood may pass from the pharynx into the larynx and down the trachea with the utmost facility. After an operation upon the pharynx he found the blood trickling over the interarytenoid fold, and apparently giving rise to no laryngeal irritation.

In discussing this subject before the Section in Laryngology and Rhinology of the British Medical Association, 1888, Dr. David Newman, of Glasgow, raised the interesting question as to whether or not hæmorrhages from the upper air-passages might act as a predisposing cause to tubercular disease. He reported a case which is so suggestive, taken in connection with Miss L.'s history, that I quote it. There was a "papilloma attached to the posterior pharyngeal wall from which repeated and sometimes copious hæmorrhage took place. The blood escaped by the nose and mouth, but on several occasions it flowed into the trachea and was subsequently coughed up. For six months these hæmorrhages were observed to occur at irregular intervals, and no symptoms developed nor could physical signs be discovered to support a suspicion of pulmonary disease, the patient being in perfect health with the exception of the growth in the pharynx. At the beginning of last year, however, the condition of the upper lobe became suspicious, and within three months marked signs of consolidation developed."

In the case of Miss L., it is true that the general condition pointed to something more than a recurrent hæmorrhage that was never very severe, but, sustained by Dr. Newman's experience, I can not but believe that this is one of those instances of "phthisis ab hæmoptoe," for it is a pathological fact that tubercular disease may follow a pulmonary hæmorrhage. "The inhaled blood is simply dead organic matter, offering no resistance to the action of specific micro-organisms, and, when it becomes infected, induces changes in the surrounding tissues which result in consolidation and terminate in tubercular phthisis." It may be that in this case the laryngeal hæmorrhage was but one of several factors in the development of the pulmonary condition, yet the bleeding was distinctly laryngeal and the pulmonary symptoms were not evident until some months after the hæmorrhage began.

Case IV.—Mrs. R. was brought to me by her husband, himself a physician, on account of two slight hæmorrhages ten days apart. She was expectorating blood in small quantities when I saw her. Here there could be no doubt as to the nature or location of the lesions for the veins at the base of the tongue were distinctly varicose and one, and perhaps more, ruptured.

This case can scarcely be cited as one of laryngeal hæmorrhage, but I mention it for the sake of completeness. Mr. Lennox Browne believes these conditions to be associated with varix in other parts of the body, and often manifested to such an extent as to constitute a "truly hæmorrhoidal state of affairs." In confirmation I can add that there is a varicose condition of the veins of the left lower extremity in the case just reported.

Fortunately, I have not seen a case of marked submucous infiltration of blood in the larynx as described by Ingals, Schnitzler, Lewin, and others.

The subject is so interesting that any attempt at completeness or to include the study of laryngeal hæmorrhage from well-defined general disease, or those of traumatic origin, would extend this paper far beyond its limit.

I beg to offer the following conclusions:

1. Laryngeal hæmorrhage may occur from simple local conditions.

2. Unless associated with other and more positive symptoms, it is not indicative of pulmonary lesion.

3. It is possible, through the passing of blood from the larynx into the lungs, that pulmonary disease may be incited.

4. Care should be taken to distinguish between pulmonary and laryngeal hæmorrhages, not only for the sake of more exact treatment, but especially because of the more favorable prognosis that may be given in many cases of the latter condition.

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WARTY GROWTHS IN THE NARIS.*

By E. FLETCHER INGALS, M. D.,
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A peculiar case of this rare affection has for some time been under my treatment, which I believe will be of interest to this association.

Mr. X., a gentleman forty-six years of age, came under my care three years ago, complaining of hawking and spitting, and hoarseness upon using his voice for a short time. These symptoms were found due to a recurrent pharyngo-laryngitis induced by thickening and deflection of the septum narium and swelling of the inferior turbinated bodies. He objected to operative procedures; therefore the treatment was limited to means for reducing the swollen condition of the turbinated bodies and relieving the congestion of the larynx. In a short time these measures were so far successful that he was relieved and had no more trouble for several months, but the following spring the difficulty returned, and was associated with a subacute tracheitis. I saw him occasionally for a few weeks, and subsequently he remained well, until he finally returned in March, 1888, complaining of similar trouble. At this time, in addition to the appearances formerly noted, I found a small, grayish, sessile, warty excrescence on the mucous membrane of the left naris, about a centimetre and a half within the nostril. To this I applied chromic acid, which completely removed it, and there had been no return at the end of five weeks, when he started for New Mexico. Upon his return, about three weeks later, I found the left nostril about one half occluded by

* Read before the American Laryngological Association at its eleventh annual congress.

a soft papillary growth, which sprang from the mucous membrane of the septum within about a centimetre and a half of the nostril. This was about seven millimetres in diameter by seventeen millimetres in length, and had a base fully as large as the diameter of the growth. I removed this with a snare and cauterized the base with chromic acid. A week later two or three small growths, grayish in color and hard to the touch (indeed, in all respects, excepting color, exactly resembling warts on the skin) were found—one on the floor of the naris, just within the line of union of skin and mucous membrane, and others on the anterior end of the inferior turbinated body. These were cauterized thoroughly with nitric acid. A month later two more warts were destroyed in the same way, and three weeks later two others had appeared on the septum, about fifteen millimetres from the nostril. These were also touched with nitric acid. A week later, finding that the warts on the septum and turbinated body continued to grow, I thoroughly cauterized them with the galvano-cautery. A month later other small warts had appeared in the same locality. These were cauterized with nitric acid, and when they reappeared were touched with a ninety-five-per-cent. solution of carbolic acid. Afterward, from time to time, chromic acid and nitric acid or acid nitrate of mercury were used to destroy the warts. Some were eradicated, others grew again, and still others were developed from the surrounding mucous membrane. In December, 1888, and the early part of January, 1889, I curetted out all of the warts to a depth of about three millimetres below the surface of the membrane with the galvano-cautery, but by the 19th of January another small wart had developed near by, and similar growths have continued to spring up at intervals ever since, so that altogether I must have destroyed twenty-five or thirty. Some places where the warts have been removed now appear perfectly healthy, and others show healthy cicatrices. I have not used the galvano-cautery often latterly because I did not wish to destroy so much tissue; besides, the results from it were not much better than from other caustics.

On the 20th of April the patient returned after an absence of two weeks, and I found, besides two or three minute warts on the septum and one of considerable size at the lower part of the nostril, a comparatively large mass of warty tissue at the anterior extremity of the inferior turbinated body which grew from a broad base about eight by sixteen millimetres in size, and was about six millimetres in thickness at its largest part. This was of a pink color, had a slightly raspberry-like surface, and the little nodules, which were somewhat lighter in color than the tissue between them, presented a few small red spots similar to those seen on ordinary warts. The smaller warts were touched with acid nitrate of mercury; the large mass I removed with the galvano-cautery, scooping out the soft tissue nearly down to the bone.

Professor Walter S. Haines has examined this and reports as follows: "The small tumor which you recently sent me has been carefully examined under the microscope conjointly by Dr. A. J. Ochsner and me, and we find it to be a papilloma similar in structure to a common wart. It consists of a central portion of connective tissue, sending off numerous delicate branches or papillæ, which are covered with a somewhat prolific layer of epithelium. The latter, however, although abundant, is entirely superficial, not extending down into the connective tissue itself. We find no nests of cells, nor any other important histological elements excepting those mentioned above."

For several months preceding the middle of April, 1889, the warts have developed less rapidly and have had almost exactly the density and appearance of cutaneous warts, excepting that they were somewhat lighter in color on account of the moisture of the parts. The patient has never had pain in the growths, has no cachexia, is apparently in perfect health, and wounds of the parts heal kindly; therefore I do not think these growths of a malignant or lupoid character. He has several healthy children, is a gentleman with a clean history, and has no sign or scar indicative of specific disease; indeed, there seems every reason for believing that there is no such taint. At only one time have the growths resembled condylomata, but for a period of about fifteen months they have sprouted up and grown rapidly to a moderate size like cutaneous warts which they so closely resemble; therefore I believe them essentially the same as the verrucæ so frequently seen upon the hands of children.

I have never observed this affection in other patients, and, though authors speak of papillary growths and condylomata in the naris, I have been unable to find a description of any case closely resembling this. I have had the library of the Surgeon-General's office carefully searched and can find records of only two cases at all similar to it, but in each of them there was only one growth which upon removal did not recur. The cases referred to are as follows:

First, "Condylomatous Polyps of Nasal Fossa," etc., by Dr. A. Testelin, "Jour. de méd., chir. et pharm.," Bruxelles, 1859, xxviii, p. 147. The growth was described as tongue-shaped, slightly thickened at its edges, like a cock's comb, about six centimetres in length and about six millimetres in thickness; soft to the touch; nowhere vesicular in appearance, and with no evidence of serous infiltration. Its color grayish-yellow, dotted with minute red spots. It was apparently attached, by a portion about twelve millimetres in length, to the border of one of the turbinated bodies. This growth seems to have been very similar to the largest growth, which was removed in the early part of the treatment, in my case.

Case second, "Papilloma of Septum," by H. T. Butlin, "St. Barth. Hosp. Rep.," 1885, xxi, p. 150. The author found a "warty growth" depending from the upper part of the front of the naris, nearly blocking the passage. He removed it with the galvano-cautery and it did not return. He says: "So far as the diagnosis is concerned it is easy, for the warty character of the tumor is distinctly visible as it lies in the interior of the nostril. It may, of course, be mistaken for a warty epithelioma, a disease even more rare."

I saw a warty growth similar to these in the person of an elderly lady about three years ago. It was about a centimetre in diameter, grew by a comparatively small pedicle from the mucous membrane of the anterior portion of the septum, and had the same general characteristics as that described by Testelin. I removed it with a steel-wire snare, and there has been no recurrence.

These cases seem to be of the nature of the large single warts or moles not infrequently met with on the back and sides. In the case of Mr. X. the growth resembled as closely as possible the apparently contagious ordinary wart known as verruca vulgaris. There were two or three very small warts when the condition was first noticed, but others have grown near these and upon the opposite surface, apparently

spreading from the original warts. Many times the growths have seemed to be eradicated, but the warts have appeared again in the same or other places until altogether there must have been twenty-five or thirty, varying in size from three to eight millimetres in diameter.

If any of the members of this association have seen similar cases, I shall feel under great obligations if they will tell me how to cure this so that the growths will not return. It now appears that my present line of treatment may succeed with the efficient aid of time, but I should like to escape obligations to this ancient remedy.

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LOCAL TREATMENT OF DIPHTHERIA.*

By J. C. MULHALL, M. D.,
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There is hardly a familiar disease concerning which the evidence of witnesses is more conflicting than in diphtheria, no matter from what standpoint it may be viewed.

Statistics based on mistakes in diagnosis, on the varying nature of epidemics, on faulty reports as to anatomical regions invaded, and on our general ignorance as to its method of diffusion, its ætiology and pathology, no doubt account for this confusion.

A vast number of agents have been employed in the local treatment of the disease with the usual conflicting testimony as to value.

It is, however, chiefly concerning the method used in their application that I desire to draw attention to a plan which for four years has yielded me gratifying results. When I originated this plan I took for granted several propositions commonly accepted by observers:

First, that the disease is a germ disease.

Second, that in the vast majority of cases the specific microbe selected the tonsils as their initial culture soil.

Third, that, unless checked by germicides, their colonization usually resulted in local putrefactive changes with general secondary septicæmia.

Fourth, that implication of the laryngeal or nasal chambers largely increased the mortality.

Fifth, that the disease is acutely adynamic.

It occurred to me, therefore, that, as was already largely practiced, the local treatment should be chiefly antiseptic, and that, as the disease spread rapidly and the salutary effect of antiseptic solutions in the upper air-passages, from anatomical reasons, could be of but short duration, this antisepsis should be, if possible, continuous. It will be readily admitted that it is of the utmost importance to maintain the patient's strength, and that, therefore, an element in ideal local treatment is, other things being equal, the employment of agent and method which least harass the child and which permit the recumbent attitude throughout. It suggested itself that a method which washed out from the throat the perverted secretions was preferable to that which invited a subject too young to expectorate to swallow them, and which permitted the larynx to be bathed in them, as must occur in the use of a spray. The instrument with which these requirements can best be met is one which is found in nearly every domicile—namely, the common household syringe. It is a fact not generally known that if the end of such an instrument is introduced into the pharynx or into the back part of the mouth of a young child, the throat can be boldly flushed out without causing gagging, vomiting, coughing, or strangulation. Reflexly, the tongue immediately retracts and pushes the epiglottis down, making a water-tight glottis, and the child involuntarily ceases to breathe while the pharyngeal irrigation goes on. The first treatment, like any other first local treatment, in a young child is met with repulses, but even very young children soon learn to appreciate the agreeable effect of clearing the throat of foul and adhesive secretions, and soon quietly submit. With badly trained children, some of whom even repulse the nurse when she smears the nostrils and lips with a soothing ointment, I commonly use the rectal tip, or, better, a pewter tip which can be curved so as to be insinuated behind the last molars; but ordinarily I use no tip, simply the rubber hose, which is soft and has the further advantage of providing a larger stream. The physician himself carries out the first treatment as a demonstration to the nurse.

The child lies in a crib, one side of which is open; a rubber cloth conducts fluids into a vessel. The child's head is brought to the edge, the face turned toward the vessel, and the flushing is rapidly accomplished. The exertion, even of sitting up, is usually avoided. I direct the washing to be done every hour in the waking state, and to never permit the child to sleep three hours without it. I have used various antiseptics. I prefer a mixture of carbolic acid and compound solution of iodine properly diluted with warm water, which frequently, in addition, is saturated with boric acid. An ordinary water tumbler of fluid is consumed at each irrigation.

This plan is so far imperfect, since it does not provide for disinfection of the post-nasal region, and there are few cases of diphtheria which do not more or less implicate this region, rich in lymphatics and probably, next to the tonsils, most frequently the line of poison march to the system at large.

I have been amazed in consulting practice to observe the frequency with which the nose had been neglected until serious nasal signs—such as hæmorrhage, fœtor, or total obstruction—had compelled some kind of attention, very often too late, for this triad of symptoms is most commonly the harbinger of death.

If we consider that the general practitioner is usually unacquainted with rhinoscopy, that even the expert has often failed in illuminating and seeing the nasal cavities of a young child, that the nose which the evening before seemed uninvaded is found in the morning to be seriously affected, it can hardly be gainsaid that prophylactic treatment of the nasal cavities in pharyngeal diphtheria is a wise therapeutic measure. Antisepsis of the nasal cavities can do no harm, while it may prevent or render mild invasion from the throat. Moreover, since for many reasons we can not in

* Read before the American Laryngological Association at its eleventh annual congress.

these cases treat the pharyngeal vault from the mouth, the anterior nasal cavities form ready avenues of approach for the disinfection of this region, and this is an integral part of my plan of continuous antisepsis. Let me repeat that, apart from this being a channel for the antiseptic treatment of the throat, I desire to strongly recommend to the profession that in every case of diphtheria, whether the nose be affected or not, the nasal cavities be kept sterile from the first. The method of accomplishing this varies. When it is clear that neither the post-nasal nor nasal chambers are attacked, the frequent insufflation of a non-irritating antiseptic powder may be sufficient. When uncertainty exists, or it is apparent that invasion has taken place, the nurse is instructed to wash out the nasal cavities with the same antiseptic solution as that employed in the throat, except that it should be far weaker, so as to irritate the nose as little as possible, and should seldom exceed in amount more than two teaspoonfuls for each nostril. The child, if possible, clears the nose and the antiseptic powder is at once forcibly insufflated. This, as the child lies on its back, gradually trickles into the pharynx and assists in the plan of continuous antisepsis. I commonly use finely powdered sulphur, or iodoform, or salicylic acid highly diluted with a trifle of cocaine, to prevent irritation.

This cleansing of the nose should not be done with the household syringe, for it throws a stream too small in diameter, and one far too forcible in careless or unskillful hands; nor does it permit of the regulation of the amount of fluid to be injected. The point of the ordinary glass syringe introduced into the nostrils of an impatient child is apt to produce an undesirable wound of the septum. Moreover, the caliber of the nozzle is far too small, permitting a slender, swift, painful, and inefficient stream.

The syringe which I show you is made for me by Mr. J. M. Good, a druggist of St. Louis, and fulfills, I believe, the ideal requirements of a syringe for anterior nasal medication in young children. Its capacity is about two drachms. It terminates in a bulbous enlargement which prevents a forcible stream, forms a shoulder to rest against the margins of the nostrils, and, since it terminates abruptly in the nozzle, can not enter the nose and abrade the mucous membrane. The diameter of the outlet is one fourth of an inch, thus permitting a large yet gentle stream. Before I invented this syringe I was in the habit of filing through a small glass syringe at its neck, where the diameter was large, thus avoiding the objections of the tip. The nozzle thus altered should be held in an alcohol flame to smooth away irregularities. The frequency with which the nasal cavities should be irrigated is a matter of individual judgment. Gently and quickly done with agents that are not painful, children readily submit to it—an important matter, for, whatever the plan of local treatment be on the adynamic diseases of childhood, that plan is best which, other things being equal, meets with least resistance. The rapid dissolution of the membrane is undoubtedly an element of successful local treatment, and I frequently make use of solvent remedies immediately succeeding the cleansing of the diseased surface. I have best succeeded with papoid.

There is but one method of local medicinal treatment which can be efficiently pursued in the laryngeal diphtheria of children—that by vapors. At appropriate stages, the inhalation of the fumes of slaking lime deserves always to be remembered.

I beg leave to call your attention to a modification of the plan of Delthil, which I have hitherto employed in seven cases, with a final result of four recoveries and three deaths.

A small apartment in the house is selected, the carpet and other belongings removed; the room is thoroughly fumigated with sulphur, and a sheet saturated with a disinfectant spread across the doorway.

A gas-stove is introduced which will support two vessels. Into each is poured a half-gallon of water. Into each of these a half-pint of pine tar is stirred, and a tablespoonful of oil of turpentine. As steam is generated, water is occasionally added, so that the half-gallon mark is maintained. The amount of tar will be sufficient for the entire treatment, but to each vessel there is added every hour a tablespoonful of the oil of turpentine. I have not as yet observed strangury or the characteristic odor of the drug in the urine.

The air from outside should be admitted several times daily. The heat from the gas precludes this method in warm weather.

In three of my cases, with one death and two recoveries, I have been able to demonstrate membrane with the laryngoscope. The four children safely passed the laryngeal crisis with but little cough and no glottic spasm. In a boy aged four, seen with Dr. Holland and Dr. Frazer, of St. Louis, who died on the seventeenth day from exhaustion, but not the slightest dyspnœa was at any time observable, though total aphonia existed, and I was able to demonstrate to these gentlemen the presence of membrane in the larynx. The steam is generated day and night, and in one of my cases was continually done for six days.

In diseases in other parts of the body whose natural termination is in putrescence the surgeon, in anticipation of this event or on its actual arrival, thinks first of antiseptic measures. It is therefore probable that analogous measures are the best that can be employed in diphtheria. I have endeavored to describe a reasonable method of their execution.

The Functions of the Cerebellum.—"Is the cerebellum an organ for the storage of cerebral events which have become automatic? Do we first of all receive with the cerebral cortex and then practice with the same brain-bark, and afterward relegate to the cerebellum, as to a limbo, those things of which we are so tired of being conscious? Are all performances of the cerebral cortex conscious acts, and those of the cortex of the cerebellum unconscious? And so might questions, more or less unanswerable, be postulated without end. The functions of the little brain are scarcely known at all; even the dependence of the equilibrium on its existence may be called in question on the data supplied by pathology. It is perfectly certain that no obvious signs of nervous disease need exist when the lateral lobes are the seat of even extensive mischief. Some regard the cerebellum as the terminal organ of all visceral sensation, and on this assumption it has been thought that the curious perturbations in visceral epilepsy are to be ascribed to perversions of the vitality of the gray matter of the little brain. Anything is possible for the cerebellum. The most gifted imagination might guess strange things, yet pathology could perhaps find exact counterparts."—*Lancet.*

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THE PASSAGE OF THE VIRUS OF RABIES THROUGH THE PLACENTA AND VARIOUS GLANDS.

ONE of the most brilliant professors of the school of medicine of Paris opened his course of lectures last year with a remark which has been widely repeated and which expresses the feeling of earnest men who are engaged in advancing the science of medicine to-day. Although some of the force of his words is necessarily lost by translation, yet, as nearly as we can recall them, they were as follows: "I think, considering the triumphs of science in this last quarter of the century, that it is good to live in these times, to those who interest themselves in the affairs of medicine." By these words he referred to the modern discovery of the presence of micro-organisms almost everywhere; to the knowledge acquired of the pathogenic influence of many of them; to the usefulness of many to the human race, which without them would not be able to subsist long upon the earth; to the recent knowledge of other pathological processes in the body more chemical or physiochemical in their nature than dependent upon the growth of microscopical parasites; and to the newly found methods of protection against morbific germs and the modern means, both surgical and medical, of removing from the human economy the effects of their injurious presence there. He showed a record of progress in the recent past which promised great results in the near future. One of the broad channels in which this progress is being continually made is the science of biology, which in a wide sense includes the relations of microscopical to human and other of the higher organisms, and of animal poisons to a healthy economy. This brings us to the subject of our article.

The fact that morbific germs of many varieties can live in human tissues and circulate in the blood is now beyond discussion, but the fact that they can also pass through the unbroken epithelial and membranous structure of certain glands and parenchymata, and be secreted with the normal products of such glands and parenchymata, has not until quite recently been proved. Not only has the virus of rabies been found to be secreted by the mammary glands in animals having that disease, but it has also undeniably passed through the tissues of the placenta of the rabbit and of the guinea-pig from the maternal blood to the fœtal, and caused the death of the offspring *in utero*. Roux, who is so well known in bacteriological circles through his connection with the Pasteur laboratory, has endeavored to obtain this result, but without demonstrative success. Perroncito and Carita, however, have been more fortunate, and their experiments are recorded in the "Recueil de médecine vétérinaire" for 1887, No. 13. The latter practiced intracranial inoculation of rabietic virus upon a pregnant rabbit shortly before the end of her period of gestation. Five days later the animal was delivered of a litter, of which four were dead and one was living, and the last also soon died. Four days after this the mother died of the paralytic form of rabies. Now comes the practical demonstration. With the brains of two of the still-born young two healthy guinea pigs were inoculated, of which one died of ordinary raging hydrophobia. Another pregnant guinea-pig was inoculated in the same manner as the first one, brought forth two living young two days later, and died nine days after the inoculation. Soon afterward the young both died, without very pronounced rabietic symptoms, however, but the brain of each was used as material for the inoculation of a rabbit and a guinea-pig. The former succumbed in eleven days, the latter in fifteen days, to clearly pronounced rabies, thus showing plainly that the mother of the two young guinea-pigs had transmitted the disease to her offspring yet unborn, and that they in turn had infected the rabbit and another guinea-pig with the original disease.

Some time ago Pasteur stated that the salivary glands were not the only ones whose secretions contained the rabietic virus, and that the lacrymal glands and also the pancreas secreted products containing the virus. Recently this list has been increased, and the mammary glands are now known to secrete the virus, to furnish poison with the food. Nocard, who reports his experiments in the same journal, tried four times to impart rabies to healthy animals by using the milk of rabid animals, and succeeded once. He took a few drops of milk from a nursing bitch that died of rabies, mixed it with two or three drops of water, and injected it into the anterior chamber of the eye of a rabbit, and the rabbit died of rabies about six days afterward. Roux also had one successful experiment among many. He inoculated a rabbit by trephining with a fragment of a lacteal gland of a suckling rabbit that died of rabies, the fragment being triturated in some of the milk of the dead female. After twenty-eight days the inoculated rabbit sickened and in two days more was dead of rabies. A still more important observation of this transmission was made with human milk by Bardach at the bacteriological institute in Odessa. A woman who had been nursing a child for six months was bitten by a mad wolf, and at the time of her admission into the hospital was suffering with hydrophobia. Four rabbits were inoculated with her milk by trephining. One died of rabies after eleven days. With its brain two other rabbits were inoculated, which died of typical rabies twenty days later. The three other rabbits of the first series all died of indubitable rabies in fifteen or sixteen days after the inoculation. To make assurance doubly sure, the experimenter inoculated a dog with the brain of one of the three rabbits, and with the brain of the rabid dog infected a rabbit again, thus establishing the genuineness of the disease of which the infecting agent was primarily contained in the woman's milk. An interesting fact remains to be chronicled. The nursing child of the woman who died with hydrophobia was still healthy four months and a half later.

In all these experiments and observations the morbid germ had penetrated and traversed organic tissues of a certain degree of compactness and density, in which there exist no apertures or natural orifices suitable to the passage of those germs. It must be admitted, therefore, that they forced a way for themselves through tissue everywhere continuous—the placenta in some instances, the mammary gland in others. It can not be urged from this fact, however, that the virus of rabies is amorphous, chemical, and soluble, instead of being of definite form and insoluble—in other words, consisting chiefly of microbes; for other well-defined structures, such as leucocytes and red blood-corpuscles, have been seen to force a passage through continuous tissue. Although the micro-organism of rabies has not yet been isolated, there are weighty reasons for believing that it exists—reasons as good as those that made Leverrier believe that the planet Neptune existed before Galle turned his telescope upon it to discover it. This is not the occasion to enumerate those reasons, but it may be said that most pathologists admit the probability of the early discovery of the micro-organism. No doubt exists, however, about the passage of another micro-organism through the mammary glands. The *Bacillus tuberculosis* is eliminated with the milk of tuberculous animals, and multiplies in the organism of the child that consumes it. Here is one of the recent discoveries included among those to which Professor Bouchard's remark, quoted in the opening paragraph of this article, is applicable. From a biological point of view, it is interesting to note how this micro-organism acts in order to preserve itself and to multiply in the organism of the animal; from a hygienic and pathological point of view, it is necessary to know this fact in order to guard against the encroachments of this same morbid germ. In rabies, as in tuberculosis, there is a certain danger in using the milk from the infected animal, although the danger seems at present more remote in the former than in the latter.

From the foregoing we conclude that the virus of rabies (almost certainly a micro-organism) is eliminated in the milk as well as in the saliva, the tears, and the pancreatic juice of rabid animals; that the presence of this virus in milk is comparable to a certain extent with that of the *Bacillus tuberculosis* in the milk of cows and of women; that the presence of these germs in milk constitutes a fact of the highest biological, hygienic, and therapeutical importance; and that, if the child mentioned in the account of the nursing woman bitten by a mad wolf did not die of rabies, it was because the virus did not find in the gastro-intestinal tract of the child an environment suitable to its development, as it might have found had it been injected directly into the tissues. But we have as yet only entered upon our knowledge of microbiology, and no doubt there is many a surprise reserved for us in the near future.

WAKEFULNESS IN NEURASTHENIA.

A wide range of opinion on the management of this condition found expression at a recent meeting of the Epidemiological Association. The use of drugs, with the exception of sulphonal, perhaps, did not find much favor with the members. Some of them had found that their patients of this class slept when they were at the seaside, while others recommended the Colorado atmosphere. Some patients had been found to be able to sleep at sea, but not on land. The weight of evidence seemed to favor the resort to mountain air for patients who were anæmic, with a presumption in favor of sea air for those who were plethoric. Dr. Solly, of Colorado Springs, has found that a large proportion of anæmic neurasthenics find sleep on the mountain heights, but this can not be said of the entire class. It is not improbable that other conditions besides those of climate enter into the account where the patient travels from our Eastern cities to the Rocky Mountains in pursuit of sleep. The jaded matron leaves the worries of the household, and the business man, broken down by the rush of daily cares, finds many things changed besides the atmosphere among the far Western altitudes. Still, as a rule, the climate gets all the praise when an improvement takes place. Business men from the East report a larger percentage of recoveries than the matrons, however, probably because fewer of their anxieties can follow them. Improvement in the assimilation of food, it should not be forgotten, goes a great way toward sleep-production in those who are affected with derangement of the nervous system; and this is one of the frequent accompaniments of any change of scene and environment. Not that there is always any marked increase of appetite or in the amount of food taken, but there is an appropriation of the food by the nervous centers, to their consequent strengthening. It is often a prominent feature in neurasthenia that the food may be taken in and digested fairly well, but stops short somewhere in its distribution to the tissues and is largely wasted. Ordinarily, when this waste ceases there is a corresponding abatement of wakefulness and other neurotic symptoms.

MINOR PARAGRAPHS.

PESSIMISM AS A NEUROSIS.

In a recent lecture delivered by Dr. A. Deschamps, of Paris, to the faculty of Clermont Ferrand, he successively reviewed all the neuroses—stopping at hypnotism—and showed that the neurasthenic was a social invalid who appeared at the commencement of the nineteenth century; scientific discoveries, the revolution that electricity and steam have made in industry and commerce, the equality of individuals before the law, and the power of money, had progressively developed the ambition and desires. The derangement of the sensibility and weakening of the will were the two principal causes of the general disease that had produced the abuse of science, the loss of the ideal, the crisis that traverses religions, and the influence on literature and art inspired by Schopenhauer, Tolstoï, Darwin, Herbert Spencer, and Stuart Mill. The physical causes were located in hereditary or acquired faults, such as alcoholism, hysteria, epilepsy, and morphinomania. There were, then, two kinds of pessimists—those by temperament and those by taste. The neurasthenic existed in letters, not in science. He asked if the century did not lean to fatality. Was not pessimism the crisis? The pessimist, convinced of the inutility of effort, preached general renunciation; consequently the exercise of the will mastered him. The question was solely, to conquer that patho-

logical state of the senses, that the will should triumph. He would not modify actual, social, and physiological conditions from top to bottom, but he would transform them by education and hygiene; the muscles should be toughened and the mind strengthened. To children he would give an education of the mind and body, physical exercises holding a very large place. Such exercises would fortify the entire economy and permit our sons and daughters to resist the crisis we were traversing, and definitely triumph over it. These suggestions of Dr. Deschamps's are not without value; and probably many, without having made any particular analysis of the question, have considered pessimism as, if not a mental alienation, a neurosis. Why Darwin and Herbert Spencer are in this company is not clear; and, while Germany, Russia, and England are represented, what modesty has prompted the omission of the country of Descartes, Bayle, Gassendi, Voltaire, Diderot, Baudelaire, Coppée, and Leconte de Lisle? Another question arises, that of whether firm muscles and a well-regulated digestive system would have made these hierarchs of pessimism optimists.

AN ASSOCIATION OF FRENCH MEDICAL JOURNALS.

A SYNDICATE has recently been formed in France by the editors of many of the medical journals. Desirous of knowing somewhat more of the limitations of this syndicate than we could gather from the printed reports, we addressed ourselves directly to Dr. Auvard, editor of the "Archives de tocologie," and one of the syndicate's founders. From his courteous reply we gather that, although the society has been formed for the protection of the common and individual rights of its members, the powers conferred upon them by the French law have not yet been, and probably will not be, examined until such a time as one of their members is attacked. Neither has it been decided in what manner an unworthy member shall be eliminated, although a vote of the majority will probably decide the matter. "There are therefore in this society, as in all others newly formed, many *lacunæ*, but the ultimate good obtained more than counterbalances the *desiderata*," says Dr. Auvard. At present the society has no other force than that formed from the aggregate power of its members. The laws of the society are twelve in number, bearing upon the conditions of government and membership. Founders and titular members enjoy the same rights and privileges. In order to become a member it is necessary to be a physician; to be an owner, director, or editor of a medical journal, or delegated by the latter as a representative; to be presented by two members of the association; and to be elected in assembly by a majority of the members after hearing the deductions of a report drawn up by a member other than either of the two who proposed the candidate.

Absent members can vote by correspondence or by proxy. The association is governed and represented by three syndics eligible to re-election at the expiration of their annual terms of office. The present syndics are Dr. Cézilly, Dr. Cornil, and Dr. De Rause. Meetings are held three times a year.

THE BRITISH DEGREE IN STATE MEDICINE.

ACCORDING to the educational number of the "British Medical Journal," nearly all the examining bodies of Great Britain and Ireland grant special degrees in public health or state medicine. The Royal College of Physicians and the Royal College of Surgeons hold examinations, consisting of two parts, in July and December. Candidates must be at least twenty-three years of age before admission to part first, and at least twenty-four years of age before admission to part second, of the examination; and they must be registered as qualified practitioners. Both examinations may be taken in the same month. Part I consists of: 1. Physics in its application to health, with reference to (*a*) warming and ventilation; (*b*) water-supply, sewerage, and drainage; (*c*) sanitary construction. 2. Meteorology in relation to health. 3. Chemistry in relation to the examination of air and water. 4. Microscopical examinations as applied to air, food, and water. 5. Geology in relation to drainage and water-supply. 6. Statistics in relation to health. Part II: 1. The origin, growth, and prevention of disease: (*a*) the special pathology of endemic and epidemic diseases; (*b*) the influence of climate, season, and soil; (*c*) the effects of unwholesome air, water, and diet; (*d*) diseases of animals in relation to the health of man; (*e*) the influence of occupation and lodging; (*f*) isolation, quarantine, disinfection, and vaccination. 2. Sanitary work and administration: (*a*) the health requirements of houses, villages, and towns; (*b*) the sanitary regulations of households, establishments, and occupations; (*c*) the prevention and control of epidemic and endemic diseases. 3. Statutes and by-laws relating to public health. 4. The duties of sanitary authorities.

THE KÜSTER-DOLBEAU OPERATION.

DR. E. LAPLACE writes in the "New Orleans Medical and Surgical Journal," for June, favoring the employment of Küster's modification of Dolbeau's operation for vesical calculus and for the removal of foreign bodies from the urinary bladder. This procedure consists in a paraprostatic section of the urethra with subsequent dilatation of the incised urethra and neck of the bladder. The perineal incision is dilated to the size of a No. 8 Simon's dilator, which is sufficient to admit of the introduction of two fingers for exploratory and cleansing purposes. A certain proportion of the foreign contents of the bladder can be extracted by the fingers; what is too large to be brought out in this way can be readily managed with the ordinary surgical forceps. Dr. Laplace reports his experience in one case, in which the perineal wound permitted of the passage of urine until the tenth day, when it closed; on the twenty-sixth day the wound was fully healed. Although the operation is but little known, it has been performed often enough to demonstrate the dilatability of the prostatic urethra with ease and impunity. Dr. Laplace thinks that this operation will be found to be safe and easy where foreign bodies in the deep urethra and bladder require surgical interference.

THE JOHNS HOPKINS UNIVERSITY.

PRESIDENT GILMAN has authorized the announcement that this university will be opened on October 1st, and that there is no foundation for the rumor of its financial difficulties. The salaries of the president and professors have not been cut, and several new appointments have been made. While it is true that the income from the Baltimore and Ohio Railroad bonds has been cut off, yet there is an accumulated income from former years, the receipts from tuition average $40,000, and $108,000 is available as an emergency fund during the coming three years. Within six months the university has received $300,000, and other gifts are expected. The hospital funds are distinct from those of the university, and are so invested that the income is an assured one.

PROLONGED GESTATION.

WILL widowhood prolong the period of gestation? A discussion before the German Obstetrical Society has elicited views, on the part of some of its members, giving an affirmative response to that inquiry. A commission has been appointed to

collect the evidence, said to exist, that pregnancy may last for 320 days, or ten months, especially in the case of widows. Dr. Olshausen declares his opinion that 160 days should stand as the minimum limit of pregnancy, and that the maximum should be raised to 320 days. The Imperial Civil Code gives 300 days as the maximum figure.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending September 17, 1889:

DISEASES.	Week ending Sept. 10.		Week ending Sept. 17.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	53	7	55	14
Scarlet fever	24	3	22	2
Cerebro-spinal meningitis	0	0	1	0
Measles	7	1	11	0
Diphtheria	62	12	61	16

The Continental Anglo-American Medical Society will hold its first general meeting at the Grand Hotel, Paris, on Monday evening, the 30th inst. The honorary presidents, one of whom is expected to take the chair, are Sir Spencer Wells, Sir Joseph Lister, Dr. Richard Quain, Dr. Benjamin Ball, Dr. C. E. Brown-Séquard, Dr. P. Ricord, Dr. J. S. Billings, Dr. Fordyce Barker, and Dr. S. Weir Mitchell. The meeting will be followed by a dinner.

The Medico-chirurgical College of Philadelphia.—Dr. Ernest Laplace, of New Orleans, has been appointed professor of pathology. Dr. Samuel Wolfe, of Skippack, Pa., will fill the chair of physiology for the coming year.

The American Academy of Medicine.—The next annual meeting will be held in Chicago, on the 13th and 14th of November.

Change of Address.—Dr. Valentine Mott, to No. 62 Madison Avenue.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from September 1 to September 14, 1889:*

By direction of the Secretary of War, a board of medical officers—to consist of Vollum, Edward P., Colonel and Surgeon; McElderry, Henry, Major and Surgeon; Matthews, Washington, Major and Surgeon; and Merrill, James C., Captain and Assistant Surgeon—is constituted to meet in New York city on the 1st day of October, 1889, or as soon thereafter as practicable, for the examination of assistant surgeons for promotion, and of candidates for admission into the medical corps of the army. The board will be governed in its proceedings by such instructions as it may receive from the Surgeon-General. Par. 1, S. O. 203, A. G. O., September 2, 1889.

Janeway, John H., Major and Surgeon. With the approval of the Secretary of War, the leave of absence granted in S. O. 52, July 29, 1889, Division of the Pacific, is extended two months. Par. 1, S. O. 206, A. G. O., September 5, 1889.

Cleary, P. J. A., Major and Surgeon, is hereby granted leave of absence for two months on surgeon's certificate of disability. S. O. 59, Headquarters Division of the Pacific, San Francisco, Cal., August 27, 1889.

Ewing, Charles B., Captain and Assistant Surgeon, is granted leave of absence for twenty-one days, to commence on or about September 21, 1889, provided that at that time the post surgeon now on leave has returned to duty. Par. 5, S. O. 201, Headquarters Division of the Atlantic, Governor's Island, New York, September 4, 1889.

Banister, W. B., First Lieutenant and Assistant Surgeon, is granted leave of absence for fifteen days. Par. 2, S. O. 82, Headquarters Department of Arizona, Los Angeles, Cal., August 23, 1889.

By G. O. 69, A. G. O., August 31, 1889, the garrisons of Fort Laramie, Wyoming, Fort Hays, Kansas, and Fort Lyon, Colorado, will be withdrawn, and the posts named will be abandoned as soon as it can be done with due regard to economy.

Walker, Freeman W., First Lieutenant and Assistant Surgeon. By direction of the Acting Secretary of War, the leave of absence on surgeon's certificate of disability, granted in S. O. 92, April 20, 1889, from this office, is extended one month on surgeon's certificate of disability. S. O. 211, A. G. O., September 11, 1889.

Walker, Freeman W., First Lieutenant and Assistant Surgeon, by direction of the Acting Secretary of War, is relieved from duty in the Department of Texas, and will, upon the expiration of his present leave of absence, report in person to the commanding officer, Jackson Barracks, Louisiana, for duty at that station, and by letter to the commanding general, Division of the Atlantic. Par. 2, S. O. 212, A. G. O., September 12, 1889.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending September 7, 1889:*

Nash, F. S., Passed Assistant Surgeon. Detached from the Dale and ordered to duty in the Bureau of Medicine and Surgery.

Russell, A. C. H., Passed Assistant Surgeon. Ordered to the Naval Hospital, Yokohama, per steamer of September 28th.

Hall, C. H. H., Passed Assistant Surgeon. Detached from the Naval Hospital, Yokohama, on reporting of relief, and to return home.

White, S. S., Assistant Surgeon. Detached from the Naval Hospital, New York, and ordered to the Minnesota.

Stone, E. P., Assistant Surgeon. Detached from the Minnesota and to wait orders.

Bryant, P. H., Assistant Surgeon. Detached from the Ajax and ordered to the Naval Hospital, Norfolk, Va.

Wentworth, A. R., Assistant Surgeon. Detached from the Naval Hospital, Norfolk, Va., and to wait orders.

Society Meetings for the Coming Week:

Monday, *September 23d:* Medical Society of the County of New York; Boston Society for Medical Improvement; Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement; Baltimore Medical Association.

Tuesday, *September 24th:* New York Dermatological Society (private); Buffalo Obstetrical Society (private); Medical Society of the County of Lewis (quarterly), N. Y.

Wednesday, *September 25th:* New York State Medical Association (New York—first day); New York Pathological Society; American Microscopical Society of the City of New York; Auburn, N. Y., City Medical Association; Medical Society of the County of Albany; Philadelphia County Medical Society; Berkshire, Mass., District Medical Society (Pittsfield).

Thursday, *September 26th:* New York State Medical Association (second day); New York Orthopædic Society; Brooklyn Pathological Society; Roxbury, Mass., Society for Medical Improvement (private); Cumberland, Me., County Medical Society (Portland); New London, Conn., County Medical

Society (extra—New London); Pathological Society of Philadelphia.

FRIDAY, *September 27th:* New York State Medical Association (third day); Yorkville Medical Association (private); New York Society of German Physicians; New York Clinical Society (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

Proceedings of Societies.

MEDICAL SOCIETY OF VIRGINIA.

Twentieth Annual Meeting, held in Roanoke, on Tuesday, Wednesday, and Thursday, September 3, 4, and 5, 1889.

The President, Dr. E. W. ROW, of Orange, in the Chair.

Man and his Development was the subject of the annual address, by Dr. THOMAS J. MOORE, of Richmond.

The Status of Cocaine in Surgery was the title of a paper by Dr. JOHN A. WYETH, of New York (present by invitation). After a note or two on the history of cocaine as a surgical anæsthetic, in which he accorded to Dr. Karl Koller, now of New York, but formerly of Vienna, the credit for its introduction into ophthalmic surgery, and to Dr. J. Leonard Corning, of New York, the credit of its practical application to other branches of surgery, he remarked first upon its dangers, due to idiosyncrasy, etc. Its dosage was uncertain, differing widely, not only in different individuals, but in the same individual at different times. He spoke from personal experience and observation. The general rule should be to begin with the minimum dose, gradually increasing it, always watching the pulse, face, respiration, and pupil. In small doses it increased the number of respirations, and was a cardiac stimulant; in large doses it arrested the heart in diastole and the action of the respiratory muscles. Cocaine was never applicable to children under ten or twelve years of age. In his several hundred applications in adults, in all parts of the body, he had several times observed pallor of the face and fainting, but they had been due most probably to the patient's being overcome by the sight of blood, etc. In some, however, they had been due to absorption of the drug. Exhilaration was not an uncommon symptom, and in rare cases it increased to boisterousness. In one instance convulsive movements had occurred, opisthotonos being rather well marked. In another case a convulsion occurred fourteen hours after a gradual injection of thirty minims of a four-per-cent. solution of cocaine (one grain and a half). In many cases, when it was not applied about the eye, dilatation of the pupil occurred, indicating absorption by the blood. For hypodermic purposes he used twenty grains of cocaine and three grains of boric acid dissolved in an ounce of distilled water—approximately, a four-per-cent. solution. A more decidedly aseptic solution was one in equal parts of distilled water and saturated solution of salicylic acid. Cocaine should always be dissolved in water free from lime. In operations upon the extremities, the circulation might be temporarily arrested. In amputation of the last phalanx of the finger, one might first immerse the hand for half an hour in a 1-to-2,000 solution of corrosive sublimate. It was best not to apply Esmarch's bandage to the finger, but to constrict it with a piece of rubber tubing. Direct injections (in the line of incision) retarded union to a slight degree. Hence the indirect method (by injections about the nerves at the base of the finger) should be employed when possible, although this method required a little longer time and a little more of the cocaine solution. Just before applying the rubber, the smallest-sized hypodermic needle should be inserted through the skin on the lateral aspect of the dorsum of the digit, about an inch from and on the distal side of the ligature. About two minims should be injected, and the needle pushed a quarter of an inch farther, and two minims more injected, and so on until the needle-point rested just beneath the skin on the plantar aspect of the finger, when the same quantity was to be injected. Thus one half of the finger was injected, and the operation was immediately repeated on the other half—the entire procedure occupying not more than thirty seconds. A smarting, burning pain was felt as the fluid entered. The tourniquet should be tightened at once, thus holding the solution in place for absorption, which might be hastened by massage over the injected area. Insensibility supervened in about two minutes. Usually about fifteen minims were sufficient, but thirty minims might be thus used safely. The operation being finished, the band should be loosened for only a minute, which restored the circulation, and (under sublimate solution) the wound would bleed freely, thus giving escape to whatever of the solution the arterioles might have absorbed; but, of course, a certain amount was carried into the general circulation. The rubber should be tightened again for two or three minutes, the sutures inserted, and the dressing applied. Gradually the general circulation should be accustomed to the cocaine by alternately loosening and tightening the tourniquet. The heart and nerve centers might be overwhelmed if the entire excess was suddenly let loose into the general circulation.

The advantages of the direct method were rapidity of anæsthesia, the small quantity of cocaine used, and escape of much of the solution through the wound of incision. This method was preferable for incising felons and removing diseased nails, foreign bodies, etc. Indeed, any procedure where the necessary anæsthesia could be obtained by not more than a drachm of a four-per-cent. solution might be safely done with this agent by the direct method. In operations upon the trunk, the immediate absorption of the solution rendered greater precaution necessary. For instance, if a fatty tumor was to be removed, the needle should be inserted into the deeper layers of the skin (not the subcutaneous fat) along the line of proposed incision, and half a minim or a minim injected: the needle should be advanced a quarter of an inch, and the injection repeated, and so on, as far as the needle would reach from the original puncture. The injections should be repeated, if necessary, for a length of three inches until anæsthesia was established. The anæsthesia was evident by the pallor of the overlying cuticle. The skin should be divided through the middle of the anæsthetized line, and the dissection continued laterally until pain was experienced. Insensibility often spread an inch or more on either side of this line. Half a minim or more should be injected at all sensitive points in the line of incision. Since scars were to be avoided, cocaine was not so free from objections on the face and neck as elsewhere. In eye surgery the uses of this agent were too well known to require remark. In the buccal cavity it had a wide range of application. Tumors from half an inch to not more than an inch in diameter could be excised painlessly. Small epitheliomata or suspicious ulcers were painlessly removed from the tongue when five to twenty minims of a four-per-cent. solution were injected beneath and around their bases. He had twice dissected out ranulæ successfully. Complete cleft of the soft palate in the adult could be closed painlessly by applying the solution to the mucous surface with a brush. Cocaine was in every-day use for the larynx, nose, and naso-pharynx. For internal urethrotomy, regardless of location, he rarely employed general anæsthesia now. The urethra having been disinfected with boric-acid solution (gr. x

to ℥ ij, be injected ℥ j ij of a four-per-cent. solution of cocaine with the ordinary syringe. At the end of a minute or so all of the cocaine solution was allowed to run out of the urethra that would run out. If the operation was to be in the membranous portion, Otis's long curved tube was passed into the part, and from twenty to thirty minims were injected. For the introduction of the sound on the third day after urethrotomy, one should be careful not to over-distend the canal with the preliminary cocaine solution; about a drachm of the solution was then as much as should be used. For bladder examinations cocaine was very useful. Circumcision in adults no longer required general narcosis. The penis having been constricted near the pubes, the prepuce should be pulled forward and the hypodermic needle inserted at the free border in the middle line on top, between the mucous and cutaneous layers. Then the point should be carried back as far as the proposed line of section, and one minim of the four-per-cent. solution forced out. The needle should then be withdrawn half way and carried forward again to the right and left, and a minim forced out for every quarter of an inch of the line of section. On account of the sensitiveness about the frænum, it was best to inject two or three minims here. In Levis's operation for hydrocele, the point where the trocar was to enter should be cocainized. If the hydrocele was small, Volkmann's operation might be done with cocaine anæsthesia. In the open operation for varicocele, cocaine was not sufficient; nor was it sufficient for external urethrotomy, cystotomy, hernia, etc.; but small hæmorrhoids might be injected or cut away after cocaine injections. Cocaine was sufficient also for fissures and ulcers of the anus and rectum, and for single and superficial anal and rectal fistulæ.

Dr. Hunter McGuire, of Richmond, did not think that Dr. Wyeth had dwelt sufficiently on the dangers of cocaine. The speaker had used this remarkable agent almost every day for the past five years; but he had come very near killing one or two patients with it, so uncertain was its paralyzing effect in some cases, which cases could not be distinguished until the danger was recognized to be at hand. In one of the journals he had read that Dr. Sims had injected a few minims of a twenty-per-cent. solution of cocaine hydrochloride into the male urethra, and in twenty minutes his patient was dead. The speaker had cocainized a great many children without observing the very serious effects referred to by Dr. Wyeth; in fact, they seemed to stand cocaine as they did chloroform anæsthesia —very well. But there were objections to cocaine. Undoubtedly it interfered with the repair of wounds by the first intention. During the session of the society two years ago, in Richmond, he had heard a distinguished authority in such matters—then a resident of New York—affirm that a cocaine habit, in the sense in which the term habit was applied to the whisky habit, the morphine habit, etc., could not be established. But he was certain he had seen a case or two of the cocaine habit in patients who had come under his care.

Dr. Wyeth indorsed everything that Dr. McGuire had said. In fact, the dangers of the indiscriminate use of cocaine were very considerable. He had not meant to imply in his paper that the danger of cocaine, when used with children, was in the drug itself, but in the imperfect manner in which it was generally administered to them, because of their struggling to resist its administration, and the peculiar feeling of loss of sensation in the part, which frightened them.

Medical Reforms, with Special Reference to the Profession of Virginia, was the subject of the President's address. He advocated the establishment of a general hospital, to be sustained by the State, like the asylums. But he thought that matters of professional interest connected with the management of such an institution should be placed under the control or direction of the Medical Society of Virginia. In other words, he thought that the medical affairs of the State should be directed by the medical men of the Commonwealth, just as its legal affairs were by the legal men, etc. The medical profession had shown its ability to manage such matters as belonged to it, as evidenced by the excellent work done by the Medical Examining Board of Virginia—the creature of this society. The insane hospitals and like institutions should be more directly under the supervision of this society, so far as the medical affairs connected with them were concerned. It was a duty of the society to set to work to secure for the State Board of Health an annual appropriation from the State sufficient to pay all its necessary expenses, for it appeared that the law establishing the board, some seventeen years ago, very foolishly concluded with some such proviso as: "Provided the said board of health shall not be an expense upon the State."

Croupous Pneumonia.—An appointed discussion on this subject was opened by Dr. B. L. Winston, of Hanover Court-House, who would confine his remarks to uncomplicated cases. The diagnosis was not difficult, although sometimes the disease escaped detection unless resort was had to the physical signs. Pain was probably never present unless more or less pleurisy complicated the pneumonia. Rusty-colored sputa, though pathognomonic when seen, did not by any means occur in the majority of cases, according to his experience; and on this point he thought the text-books should be corrected. The causes might be classed as specific, exciting, and predisposing. The view that pneumonia was due to a specific organism did not meet with common approval. He thought that pneumonia was not simply a local inflammation of the lung, but an expression of a general disease; and pneumonia deserved no higher classification than the intestinal ulcers of typhoid fever. Croupous pneumonia was not produced by extension of inflammation, but, in such cases, lobular pneumonia was the result. It was not produced by inhaling irritating gases, nor by traumatism, nor by "cold," as other inflammations of the air-passages were. It was a self-limited disease, and frequently occurred as an epidemic. The common asthmatic tendency could not be due to the height of the fever, nor to cardiac weakness, nor to the amount of lung consolidated (for the amount invaded was often very small). It was at least certain that the cardiac failure in no way corresponded with the severity of the other symptoms. It seemed to the speaker that the tendency to heart failure, which was the most alarming symptom in uncomplicated cases, was due to a morbific agent acting on the nerve centers. But the exact cause of croupous pneumonia was a subject for further investigation. The germ theory might or might not be true. The predisposing causes were age (under sixty years), the male sex, the negro race, certain diseases, such as typhoid fever, winter and spring seasons, etc. The exciting causes were, in general, such things as tended to lower the vital powers—such as exposure to inclement weather, insufficient clothing, neglecting the wearing of flannel in winter and spring, etc. It was more common South than North, pneumonia being almost unknown in the frigid zone. During the winter and spring almost every article of food had the stamp of age upon it; and it seemed more probable that the character of food then taken, when the vital powers were at their lowest, contributed most largely to the development of the disease. As to treatment, almost every drug had been tried; yet the mortality among adults was second only to that from consumption. A certain author abstracted from five to ten ounces of blood on the fourth or fifth day, when the heart was on the eve of being overpowered by the pneumonic toxic matter, but the speaker thought stronger evidence needed to justify resort to bleeding on such occasions, although there might be times when venesection was

useful. He also thought large blisters of doubtful propriety, although he had seen blisters relieve pain. Calomel had no place in the treatment of croupous pneumonia. Aconite in the beginning, and quinine, given early, as an abortive, might be useful. But he had got the best results when he had given the least medicine. Hot poultices, opium to relieve pain, stimulants when needed, food, hygienic measures, and, above all, skillful nursing, would be all that could be of use in uncomplicated cases.

Dr. H. C. Beckett, of Scottsburg, thought that the specific cause of croupous pneumonia was undetermined. No age had a notable proclivity to the disease, and no age was exempt. It rarely occurred in children under five years of age. It was perhaps most frequent between the ages of twenty and forty and after sixty. In adult life it occurred in males three times as often as in females. In females it occurred most frequently at the catamenial periods. Outdoor laborers were more liable to it than indoor workers. Habitual alcoholic drinkers, malarial subjects, convalescents from severe acute diseases, etc., were most liable to it. Erysipelas, measles, diphtheria, small-pox, etc., were predisposing causes. Traumatism, especially in the aged, and a previous attack of pneumonia, were also predisposing causes. It occurred more frequently in the Middle and Southern States than in the Northern. It often prevailed as an epidemic in the mountainous regions of the South. The first five months of the year were its season. Thus it was seen that all things predisposed to pneumonia that depressed vital action. Dr. Shaw, of St. Louis, believed that perturbations of the vasomotor center in the medulla caused pneumonia by impressions conveyed through nerves connecting this center with the stomach. As to treatment, stimulants or depressants should be used as required. If both lungs were involved, so as to leave little breathing surface, it was proper to bleed. In such cases venesection afforded immediate and remarkable relief. Large hot poultices over the lungs reduced blood-pressure, while the heat stimulated the heart. Aconite was preferable to veratrum as a cardiac sedative, but he preferred acetanilide as the antipyretic, to be followed by quinine, which latter he considered the sheet anchor in pneumonia. He usually prescribed five grains every four hours until the fever broke. In the second and third stages he generally used ammonium carbonate, and digitalis also. The early administration of a large dose of calomel was useful. Opium was useful to allay pain and restlessness. Expectorants had no place in the treatment of pneumonia. Blisters at the beginning of the third stage hastened resolution. Alcohol was essential as a food and to sustain the heart. Many believed that the disease was contagious, and that four days was the period of incubation.

Dr. Lewis G. Pedigo, of Roanoke, spoke of *Sedative Doses of Calomel in Acute Croupous Pneumonia*, referring to doses of thirty grains and upward. He gave a history of the use of this treatment in various acute diseases by a few members of the profession for years past, and then explained the method of administering the drug. He reviewed the condition of the secretions and the various indications of treatment in pneumonia, gave a systematic and detailed account of the numerous and apparently diverse effects of the large doses of calomel, classified these effects, and showed how they were all dependent on two general principles—namely, stimulation of the secretions and a sedative influence on the nerves. He argued the adaptability of these effects to the chief indications in pneumonia. His entire remarks were based on clinical experiences, and one case was briefly reported to illustrate the treatment advocated. The important effects alleged were the promotion of the salivary, gastric, hepatic, and intestinal secretions, unloading of the portal circulation (followed by improved digestion and assimilation), increased and improved action of the kidneys and skin, loosening of the bronchial and pulmonary secretions, relief of cough, lowering of temperature, and promotion of sleep.

Dr. Bedford Brown, of Alexandria, gave a *Résumé of his Personal Experience of Forty-one Years in the Treatment of Croupous Pneumonia.* During this period he had seen four or five different methods of treatment adopted and practiced, and finally discarded. The depletory plan had at first been used in every case, then in only certain cases, and finally it had been entirely discarded. Then came the mercurial plan, in which calomel in small doses, with Dover's powder and with mercurial inunction, was used until ptyalism occurred. The great majority of patients recovered under this treatment. Then followed the sedative treatment, consisting of the use of veratrum viride, aconite, and ultimately digitalis. The sedative treatment of Norwood had given birth to all our subsequent ideas of sedation. This was an advance on the pure depletory treatment, and had resulted in real good. Then came the stimulant treatment. This was a still further advance, and had brought more and better fruits than any other single treatment. This also might be modified and combined with elements of other methods with advantage. The speaker had not seen benefit from the pure antipyretic treatment. He had in former years seen much of the epidemic forms of typhoid pneumonia, with a tendency to collapse, which was constant and great. In this form he had used large quantities of whisky—a quart per diem—carbonate of ammonium, tincture of nux vomica, and chloroform internally. In this form he had also used, in connection with stimulants, solution of acetate of ammonium, tincture of nux vomica, and tincture of chloride of iron, with benefit. He did not think, from this long experience, that adherence to any one single routine treatment exclusively would give as good results as the plan of combining the good features of all; but the value of stimulants and nourishment should never be forgotten. He had seen cases of pneumonia, with slight fever, slow pulse, moderately excited respiration, etc., end in recovery without medication.

Dr. J. H. Neff, of Harrisonburg, believed that acute croupous or lobar pneumonia was a general disease, due to a specific poison. This theory had been ably presented for some years, and much could be said for and against it. But each year's experience had strengthened his opinion in its favor. The future organic chemists and bacteriologists must prove whether the contagium was a chemical poison or an organized germ. Believing that pneumonia was a general disease, due to a specific cause, for which there was no specific medicine capable of aborting its course, he thought the treatment must be determined by the nature of the attack in each individual constitution. He had never bled nor given a dose of aconite or veratrum viride, nor used mercury except to give occasionally an ordinary dose of calomel in the beginning. Many patients would recover without medicine, if properly nursed; this had been observed and recorded more than twenty-five years ago. He had seen cases of double pneumonia with scarcely a bad symptom. The area of lung involved did not always determine the gravity of the disease. He gave opium or morphine to allay pain, lessen shock, produce sleep, etc. He regarded quinine as the safest antipyretic; besides, it had special virtues in lessening the gravity of all local inflammations. He had never seen it produce collapse, and hence preferred it to other arterial sedatives. If not needed as an antipyretic, it might be of benefit in small tonic doses. He gave antipyrine to children; and, if he had any routine treatment, it was to envelop their chests with an oil-silk jacket lined with soft, fine flannel. Digitalis, alcohol, ammonia, and chloral had all, in their places, been of much service.

Dr. J. G. Wurstner, of Baltimore (present as a delegate), said that, studying the subject of croupous pneumonia after Lepine, Sevestre, Charcot, and others, one must accept the theory that it had its origin in a specific pathogenetic germ; yet it could not be denied that there were certain meteorological conditions that stood in a strong causative relation to its production. We were constantly exposed to the invasion of the pneumococci; but, for the want of the necessary conditions to render the mucous membrane of the lung a suitable soil for their culture and growth, it was able to resist them for a time, only to yield when such exciting causes as cold and traumatism supplemented the specific influence of the germs. Apropos of the theory that the pneumocci had other habitats than the lungs, he called attention to the study of Sevestre of an epidemic of broncho-pneumonia, complicating cholera infantum and other enteric troubles, in which he had found the microbes of pneumonia in the intestinal tract, whence they were carried to the lung by the lymph channels. The treatment of croupous pneumonia called for heart sedatives, heat, and moisture in the form of hot cloths. These, if used in the first stage, might abort the disease; should it, however, pass into the stage of red hepatization, a supporting and stimulating plan should take the place of the sedative one. The temperature and heart should be watched as closely as the powers of the patient. Alcohol was important in the second and third stages. Quinine and antipyrine, when used together, were the best antipyretics. They not only reduced the temperature, but preserved the power of the heart. Carbonate of ammonium did the twofold work of aiding in liquefying and facilitating the expectoration of the fibrinous deposit and of keeping the heart's force up.

Dr. Heny M. Paterson, of Staunton, said that, if this was a specific disease, the treatment given had certainly been at variance with such an idea. He did not believe that it was a simple hyperæmia of the lungs. The gravity of the attack depended on the amount of exudation. How to remove the engorgement was the question. This was the time to abort the disease, if such a thing was ever possible. His present success with the lancet was as great as it had been when he began practice, in 1851, and compared most favorably with the results of other plans of practice to-day. As a food and stimulant, he gave alcohol during the second stage in almost every case. He had also had some remarkably satisfactory experience with ergot.

Officers for the Ensuing Year were elected as follows: Dr. Oscar Wiley, of Salem, president; Dr. J. M. Estill, of Tazewell Court-House, Dr. Alfred C. Palmer, of Norfolk, and Dr. Casper C. Henckel, of New Market, vice-presidents; Dr. Landon B. Edwards, of Richmond, recording secretary; Dr. J. F. Winn, of Richmond, corresponding secretary; and Dr. Richard T. Styll, of Hollins, treasurer. Dr. John S. Apperson, of Glade Spring, was chosen to deliver the address to the public and profession during the session of 1890. Dr. C. T. Lewis, of Clifton Forge, was selected as the leader of the discussion of the selected subject for 1890—"The Treatment of the Summer Diarrhœa of Children." Dr. R. F. Young, of Love's Mill, and Dr. P. B. Green, of Wytheville, were nominated for commission as members of the Medical Examining Board of Virginia, to fill vacancies occasioned by two resignations. Rockbridge Alum Springs was selected as the place for the annual session of 1890, some time between the 25th of August and the 5th of September, as the Executive Committee might hereafter determine.

The Report of the Section in Anatomy and Physiology, in the form of a paper entitled "Mental Action—Material Action," was read by Dr. E. T. Brady, of the Southwestern Lunatic Asylum at Marion.

The Report of the Section in Materia Medica and Therapeutics was presented by Dr. William B. Cooper, of Woodville.

The Report of the Section in Obstetrics and Diseases of Women and Children was presented by Dr. R. S. Martin, of Stuart, in the form of a paper entitled "Advances in Diseases of Women."

The Report on Advances in Obstetrics was read by Dr. Charles W. Pritchett, of Keeling.

The Report on Advances in Diseases of Children was read by Dr. A. S. Priddy, of Keysville.

A Further Contribution to the Study of the Ætiology and Prophylaxis of Puerperal Septic Infection was the title of a paper read by Dr. George T. Harrison, of New York, an honorary fellow. The doctrine of self-infection, he said, which had recently been brought into prominence, and the industrious researches of the bacteriologist, with the practical deductions from them, had divided obstetricians into two parties diametrically opposed to each other. The one side attached all importance to the disinfection of the obstetrician ("subjective disinfection"). The other regarded it as a matter of necessity to subject the parturient woman, in a greater or less degree, to antiseptic measures ("objective antisepsis"). The writer had taken the ground of those who advocated the paramount importance of subjective antisepsis in a paper read before the society in 1885, and had not had reason to change his ground. Of course, this position did not exclude the thorough cleansing and disinfection of the external genitals. The views of Kaltenbach were quoted, who insisted upon it that an obstetrician, even with clean hands, might induce infectious forms of disease. He believed that, as the surgeon disinfected his field of operation, so must the obstetrician disinfect the parturient canal as well as the vicinity. Winter, as the result of bacterial investigations, had drawn the inference that it was necessary to disinfect the cervix and vagina to avoid self-infection. Steffeck and Dolderlein had arrived at the same conclusion. The writer believed that, if the demands made by the bacteriologists were generally acceded to, and it became a universally accepted rule of practice that the cervix and vagina of every parturient woman should be subjected to thorough and energetic disinfection, an immense amount of injury would be inflicted. These disinfective procedures deprived the vagina of its physiological mucus, and rendered it more vulnerable. It became more liable to the attack of infective germs. Moreover, labor was mechanically retarded when the vagina lacked its normal mucus, and it must not be forgotten that disinfection of the vagina and cervix was a painful manipulation. Probably the most serious objection that could be urged against the self-infection doctrine was that it diminished the personal responsibility of the obstetrician, and that that wholesome dread of infection disappeared which every one should have who examined a parturient woman. The distinction was made between septic infection and putrid intoxication. Cases of so-called self-infection were really cases of ptomaine intoxication. The microorganisms of septic infection were streptococci. According to Bumm, the streptococci of erysipelas and those of phlegmonous inflammations were identical. Bumm's careful and exact bacteriological studies lent no countenance to the doctrine of self-infection. Leopold's clinical experience had been very striking. Of five hundred and ten women treated without vaginal douches, only nine had slight febrile phenomena. When the cervix and vagina were disinfected there was a marked rise of morbidity. The doctrine of self-infection was a retrograde movement, and tended to imperil our present attainments in the prophylaxis of septic infection.

Some Gynæcological Work of the Past Year was the title of a paper by Dr. J. S. Stone, of Lincoln. The author stated that his cases had been treated in his private sanatorium, where the patients could have good surroundings, nursing, etc. Four

cases of abdominal section for cystic tumor of the peritonæum with cancer of the transverse colon, salpingitis, chronic peritonitis following salpingitis, and one Battey's operation, were reported. The specimens shown (three in number) were characteristic of the disease in question. Other cases of lacerated cervix and perinæum were alluded to briefly. The author still advocated Emmet's operation for lacerated cervix, but did not now perform it so frequently as formerly. One case of modified hysterorrhaphy was mentioned in which Alexander's operation was done on the left side and a partial hysterorrhaphy on the other. It was maintained that many minor disorders not surgical were to be successfully treated with massage, electricity, and over-feeding by the Weir Mitchell method. The author had had several years' experience in treating these cases, and affirmed that a very large percentage of cases came under this heading. Electricity was not spoken of at length, but enough was said to show some skepticism in regard to its value in all cases save those of nervous complications.

A Report on the Practice of Medicine was read by Dr. JOHN W. SCOTT, of Gordonsville.

Enteralgia and Chronic Peritonitis.—Dr. A. JACOBI, of New York, contributed a paper on this subject, in which he said that enteralgia was always an irritation of a branch or of branches of the sympathetic nerve. Its cause lay in the nerve, or the intestinal tissue, or its contents. Hysteria, hypochondria, malaria, gout, poisons, etc., might start the disease; or the pain might be reflected from spinal, hepatic, genito-urinary, or cutaneous disease, sudden chilling of the skin being a frequent cause. The pathological changes were congestion or inflammation, with their results. Acid foods, certain drastics, scybala, fermenting foods, etc., were the common causes of enteralgia. The attacks were indefinite in length and suddenness. The temperature was rarely raised; the pulse was irregular; the skin became cold and clammy; sometimes dysuria, nausea, vomiting, constipation, or diarrhœa occurred. The tumidity of the abdomen changed its place under palpation, etc. Priapism and seminal discharges might occur with spastic retraction of the testicles. A common cause of enteralgia, often overlooked, was chronic peritonitis of a secondary nature. New abdominal formations, peritoneal adhesions, swollen pelvic glands, etc., pointed to previous peritonitis. A floating kidney might give rise to peritonitis, and thus become fixed in its abnormal position. Vertebral disease, psoas and iliac abscesses, hip-joint abscess, etc., might cause chronic peritonitis, often not recognized except post mortem. Catarrhal diseases of the female genitals were frequent causes, as were also violent cohabitation, the puerperal state, etc. Biliary calculi, perinephritis, splenic and pancreatic diseases, infantile intussusception, a preceding attack of peritonitis, etc., were also causes. Simple intestinal catarrh might speedily grow into enteritis. Inflammation was likewise communicated to the muscular and mucous tissues from the peritonæum, and thus gave rise to œdematous infiltration, paralysis, and consequent constipation. Thus, also, diarrhœa, intestinal ulceration, without perforation, etc., might cause local peritonitis. The diagnosis of chronic peritonitis was not always easy. The respiration need not be accelerated in pelvic peritonitis. Vomiting was sometimes wanting; diarrhœa was not infrequent, but constipation was the rule; the abdomen might be tumid; and the horizontal posture was often uncomfortable. The seat of inflammation or adhesion might sometimes be told by placing the patient on his back, extending and then flexing the extremities, and then using pressure, soft or hard, sudden or gradual. Often, however, it was best to make deep pressure; if there was no pain, the pressure should be relapsed suddenly, when localized pain might be felt. Change of position of the bowels might arouse pain; sharp pain after a full meal might point to adhesions of the stomach; if pain occurred three or four hours after eating, chronic colitis should be looked for; if it occurred after quickened inspiration, then perihepatitis, etc. The variability of the pain depended on the degree of irritation or congestion. Extensive pelvic peritonitis might not give rise to pain except on defecation, cohabitation, micturition, etc. In pericystitis, when the urine was about half voided and the bladder began to contract more efficiently, a localized pain above the pubes, increased by pressure, developed, much resembling the spasmodic pain of vesical catarrh. Flatulence, etc., developed enteralgia in chronic peritonitis. Stenosis of the bowel, twisting, adhesions, etc., resulted, thus interfering with the intestinal functions. In short, the sequelæ of chronic peritonitis were very various. The indications of the treatment of enteralgia from chronic peritonitis were determined by its results and symptoms, such as intestinal sluggishness, adhesions, etc. Subacute and acute peritonitis required absolute rest, support for the knees, ice or hot applications according to circumstances, opiates, etc. Some were now recommending large doses of magnesium sulphate and turpentine enemata; but a treatment under which an occasional patient might escape death must not supersede one that had proved successful in most cases and beneficial in all. Localized attacks, mainly in the right hypochondrium, demanded local applications; a few leeches occasionally and morphine subcutaneously might be required. Old adhesions, etc., were not amenable to medicines. Great physical exertion, pressure on the abdomen, etc., must be avoided. The bowels should be kept regular. A snug bandage should be worn over the whole abdomen for years after the last complaint of pain. Generally this bandage, held down by a perineal band, gave immediate relief. Without the immobility given by it to the sore intestine, he did not expect a case of chronic peritonitis to do well.

(To be concluded.)

NEW YORK ACADEMY OF MEDICINE.

SECTION IN LARYNGOLOGY AND RHINOLOGY.

Meeting of May 28, 1889.

Dr. CLARENCE C. RICE in the Chair.

Rhinoplasty.—Dr. R. T. HOWE gave a description and demonstration of an operation of this sort done by the late Dr. T. T. Sabine, the details of which had not all been published up to that time. The patient, a man of thirty years, had had perfect features when born. At the age of twelve he had received a blow on the nose, with fracture of the bones and a wound which had never fully healed. At length erysipelas had appeared in the wound and destroyed much of the surrounding tissues, leaving a very unsightly cicatricial formation. It was to remedy this condition that the little finger had been ingrafted to take the place of the destroyed feature.

Dr. J. H. GIRDNER, who had watched the operation and the subsequent history of the case, recalled some points of interest. Great difficulty had been met with in destroying the matrix of the finger nail. The finger had been frozen and the nail removed; then the stump had been cauterized with fuming nitric acid. Nevertheless, after the finger was implanted, the nail had repeatedly grown out again. At the time of operation no tracheotomy-tube had been provided among the instruments in the operating-room, since no one had expected that need for one would arise. No bleeding had occurred until the finger was being stitched into place just over the mouth, when suddenly the man's breathing had stopped, and his face had become intensely cyanotic. With perfect coolness and marvelous rapidity Dr. Sabine had made an opening into the trachea, held the sides

of the wound apart with his fingers, at the same time preventing hæmorrhage into the trachea by pressing on the tracheal rings, and so had kept the patient breathing easily until a tube could be brought from a distance. A third point of interest in the history was that the patient had suffered from prolapse of the rectum a few days after the operation, although never before or since that time.

From time to time, after the finger had grown to the face and traction on the hand had shown that the skin was perfectly adherent, efforts had been made in the way of preparing for the final step of severing the finger from the hand. Pressure on the digital arteries had continued to produce pallor in the tissue which it supplied, and doubt had arisen whether the implanted finger could ever be nourished when its own blood-supply was cut off. However, the two digitals had been tied, one at a time, and, although the finger had continued to be bloodless for a considerable time, a collateral circulation had at last become established. The artificial nose finally obtained had been considerably shorter than the operation had at first promised to give, owing to necrosis of the end of the bone and retraction of the skin of the first phalanx of the finger.

Amygdalotomy.—Dr. C. H. Knight presented a patient from whom he had removed a very much enlarged tonsil by the use of the galvano-cautery loup, and called attention to some advantages connected with this mode of operation as compared with the use of the steel amygdalotome.

New Instruments for Operations on the Nasal Septum.—Dr. J. M. W. Kitchen presented a set of instruments designed to facilitate the dissecting up of flaps of mucous membrane from the septum. It consisted of two knives and two spuds, all having flexible shanks four inches long, so that any part of the nasal cavity could be reached. The blades of the knives were round in form and about an eighth of an inch in diameter. The blade for making antero-posterior cuts had its cutting edge parallel with the shank of the knife, while the knife for making vertical cuts had its blade set at right angles to the shank. The spud, intended for lifting the mucous membrane, was ovoid in shape, and about a third of an inch long and a fourth of an inch wide. At best, these operations were difficult. Where the mucous membrane was thick and vascular, the speaker thought it best to attempt no operative treatment of this sort.

A New Tube for Intubation adapted to the Movements of Deglutition.—Dr. J. M. Bleyer presented a new intubation-tube of which the most important feature was its automatic closing whenever the patient swallowed, so that neither fluids nor solids in the diet could enter the trachea through the tube. Its light weight and cheapness constituted additional advantages. This tube was made partly of hard and partly of soft rubber, the three sections being melted together by a process invented by Tiemann & Co. Its head was composed of wire and hard rubber, the latter being vulcanized over the wire; this gave it great firmness, and precluded the possibility of its breaking during extraction. The neck was of soft flexible rubber, and the tracheal portion of the tube of hard rubber. During deglutition the adduction of the vocal cords and the action of their accessory muscles closed this soft portion of the tube completely. Afterward it reopened by its own elasticity.

The idea had been first suggested to the speaker by direct observations made in a case of syphilitic ulceration of the epiglottis in which this organ had been completely destroyed by the disease. Finding that, simultaneously with the act of swallowing, a very marked adduction of the cords took place, he had introduced into the larynx a piece of soft-rubber tubing, and had found that the closure occurred with force sufficient to compress the tubing and effectually preclude the entrance of food.

He had also experimented on a dog, laying open the thyreoid cartilage, introducing his finger into the larynx, and at the same time bringing about acts of deglutition. His finger had been squeezed between the cords with considerable force at these times.

Electricity for Medical Purposes as supplied by the Edison Dynamo.—Dr. O. B. Douglas read a paper on this subject, showing the many advantages of such an arrangement as compared with the difficulties incident to obtaining a supply from galvanic cells. The doubts raised as to the therapeutical value of electricity at a recent meeting of the Academy he could not share. He believed good results depended, more than was usually recognized, upon an exact adjustment of the length of a sitting to the nervous condition of each patient.

Now that he got all of his electricity from the wires of the Edison company, paying for what he took only, and being always certain of having whatever amount of current he desired, he was more than ever satisfied with its practical value and its great convenience in the physician's repertory of resources. The speaker then described the method (an adaptation of Parsell's) by which he regulated the strength of the current. He expected to have the total yearly cost of his electricity come within one hundred dollars, and this provision included the supply in his office of a smooth, soft electric light during the hours from darkness to midnight. He had provided himself with six storage cells, but used only three of them, and found two sufficient for supplying a galvano-cautery.

Dr. W. B. Vanderpoel compared the results obtained by Dr. Douglas with those secured from an apparatus in which galvanic cells were used to charge a storage battery, and concluded that, no matter at what expense the supply of galvanic electricity was arranged for, the method which Dr. Douglas had just described was the best which had as yet been suggested, especially as regarded its reliability and its not requiring an expert to keep the plant in order.

Dr. Girdner concurred in this opinion, but thought a thoroughly constructed apparatus consisting of gravity cells and a storage battery must remain the best device for supplying those who did not happen to have a wire of the Edison system passing through their neighborhood. Such a battery, moreover, could be constructed and maintained with but little trouble, and at a cost still much below that of electricity from the Edison system, and would furnish every form or strength of current used in medicine.

Mr. Medicroft, an electrical engineer, present by invitation, stated that a connection with the wires of the Edison system involved no risk of accident in case the wires were handled. He thought Dr. Girdner had had better results from a galvanic storage battery than were usually met with. In most instances a sufficient outlay was not made at the outstart, so as to get good connections. A storage battery and gravity cells would give much better satisfaction if the wires connecting the latter to the former were not carried through the flooring and out of reach. The speaker then stated that the Edison current could be supplied in New York anywhere between Fourteenth and Fifty-ninth Streets and Sixth and Madison Avenues. The first cost of its introduction, including connections, was $125. It was always better to be liberal in the first cost of electrical apparatus. This outlay would furnish a light of from sixteen to twenty-four candle power. Once connected, the current never stopped. A light of sixteen candle power cost one cent and a fifth an hour, or at the rate of two dollars a thousand feet of gas. A motor could be supplied at the cost of the amount of current it consumed only.

The Diagnosis and Treatment of Certain Forms of Rhinitis.—Dr. C. H. Knight read a paper with this title. (See p.

32.) The general conclusions reached were strongly indorsed by Dr. M. J. Asch, Dr. Douglas, and Dr. Beverley Robinson, especially as regarded the essentially constitutional nature of catarrhal affections of the nose, and the primary importance of constitutional treatment for their relief. Dr. Robinson believed douches and sprays to be, therefore, essentially irrational; most people found themselves "stopped up" in cold, moist weather, and why should we hope that the direct application of a cooling spray should relieve this condition? On the other hand, we often found patients doing better in high, dry, and equable pine-tree regions, or around mineral springs. Following this suggestion, he had of late adopted the use of volatile agents, and with good results. The chief drawback was that we had no means of using them that did not involve too much time and trouble. If we directed our attention to the general constitutional state, we must be prepared to do so in a very intelligent manner. He had little belief in our ever getting lasting relief in asthma by nasal operations. In a record recently kept of thirty-one cases, in five of which a notable stenosis of the nasal passages had existed, an operation had been done in all of the latter; but with no effect whatever (on the asthma) in one of the five patients and only a temporary alleviation in the other four. Asthma was, in his opinion, a disease connected with a deranged condition of the stomach and heart closely allied to gout. It was folly to suppose any one local trouble, such as nasal stenosis, could occasionally and entirely of itself cause an affection which had really so complex an ætiology as asthma. Till we were able to abandon the almost axiomatic truths which the wisdom of the ages had brought us, we ought to be very careful in our active interference with an organ like the nose, the functions of which were not fully understood—else we were likely to accomplish more harm than good.

The Chairman, while he appreciated the necessity of constitutional treatment, believed the time was now come when rhinologists could study, and, in certain cases, treat locally, the various obstructions of the nose to some purpose. He spoke particularly of his success in the use of cocaine and chromic acid in hyperplasia of the nasal mucous membrane, and also in chronic hyperæmia. In operating for obstruction we should aim to restore the nasal function (to the extent of restoring a circulation of air through the nares) without destroying too much of the tissues in which other functions were seated.

Book Notices.

Lectures on Nervous Diseases, from the Standpoint of Cerebral and Spinal Localization, and the Later Methods employed in the Diagnosis and Treatment of these Affections. By Ambrose L. Ranney, A. M., M. D., Professor of the Anatomy and Physiology of the Nervous System in the New York Post-graduate Medical School and Hospital, etc. Profusely illustrated with Original Diagrams and Sketches in Color by the Author, carefully selected Woodcuts, and reproduced Photographs of Typical Cases. Philadelphia: F. A. Davis, 1888. Pp. xiv–778. [Price, $5.50.]

Dr. Ranney's book is in some respects a unique contribution to neurological literature. It is largely a compend of previous papers and publications by himself; and yet so deftly is the old material which is thus utilized woven in with the new matter that the combination forms a congruous whole, and no one not conversant with the author's previous works would recognize that the present work was thus pieced together or would be able to indicate the lines of junction of its component fragments. This appearance of symmetry and completeness in a book so constituted is largely due to the logical and orderly arrangement of the separate parts—an arrangement which insures the presentation of the different subjects according to a natural and easy order of development. In other words, the author builds his work from the ground up—stating first the anatomical, physiological, and pathological facts upon which the science of neurology is based; then giving in full detail the means of recognizing the pathological conditions which may exist, and thus showing how the knowledge of these basal facts of the science can be utilized for the investigation of nervous diseases; and finally taking up in order the individual diseases themselves, enumerating first the structural affections of the brain and spinal cord; secondly, the functional nervous affections; and, thirdly, those diseases which do not seem to fall certainly under either of the former heads, or which are of toxic origin. A section on electro-therapeutics, which is mainly a re-edition of the author's "Electricity in Medicine" and of his brochure on "Static Electricity," completes the book.

While each one of these subdivisions of the work is satisfactory in point of both style and matter, being readable, apparently well brought down to date, and containing much useful new material, the section which will especially engage the attention both of the specialist and of the general practitioner is that upon functional nervous diseases. It might be thought that but little or nothing that was new or interesting could be advanced in regard to such well-worn themes as epilepsy, chorea, and neuralgia; but the author's recognition of the reflex element which undoubtedly plays such a large part in the causation of these affections, and his own most interesting experience in regard to the relief of them by the "Stevens" method when, as is often the case, they are due to derangement of the ocular muscles, should demand careful study and appreciation. To those who, without examination of its merits, have hitherto ridiculed this method in its application to nervous disease, we cordially commend a perusal of Dr. Ranney's book.

An excellent feature of the work is found in the numerous colored diagrams, many of them either original with the author or modified by him from the designs of others. Such diagrams elucidate more clearly than any mere pictorial illustration, or than any amount of descriptive text, some of the most difficult points in cerebro-spinal anatomy and physiology.

The book is written in a clear, unpretentious style, equally free from involved discussions and from dogmatism of statement; and, in the controversial portions, the reviewer notices with pleasure a marked absence of personality or of anything approaching abuse or unfair treatment of an adversary.

The mechanical execution is excellent, the type, paper, and in general the illustrations also, leaving little to be desired.

BOOKS AND PAMPHLETS RECEIVED.

Annual of the Universal Medical Sciences. A Yearly Report of the Progress of the General Sanitary Sciences throughout the World. Edited by Charles E. Sajous, M. D., Lecturer on Laryngology and Rhinology in Jefferson Medical College, Philadelphia, etc., and Seventy Associate Editors, assisted by over Two Hundred Corresponding Editors, Collaborators, and Correspondents. Illustrated with Chromo-lithographs, Engravings, and Maps. Vols. I, II, III, IV, and V. Philadelphia and London: F. A. Davis, 1889.

A Text-book of Human Physiology, including Histology and Microscopical Anatomy; with Special Reference to the Requirements of Practical Medicine. By Dr. L. Landois, Professor of Physiology and Director of the Physiological Institute, University of Greifswald. Third American, translated from the Sixth German Edition. With Additions by William Stirling, M. D., Sc. D., etc. With Six Hundred

and Ninety two Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1889. Pp. xxxi–53 to 974. [Price, $6.50.]

A Text-book of General Therapeutics. By W. Hale White, M. D., F. R. C. P., Senior Assistant Physician to and Lecturer on Materia Medica and Therapeutics at Guy's Hospital. With Illustrations. London and New York: Macmillan and Co., 1889. Pp. xi–371. [Price, $2.50.]

A Manual of Chemistry for the Use of Medical Students. By Brandreth Symonds, A. M., M. D., Assistant Physician to Roosevelt Hospital, Out-patient Department, etc. Philadelphia: P. Blakiston, Son, & Co., 1889. Pp. 154. [Price, $2.]

Lectures on Obstetric Nursing. Delivered at the Training School for Nurses of the Philadelphia Hospital. By Theophilus Parvin, M. D., Professor of Obstetrics and Diseases of Women and Children at Jefferson Medical College, etc. Philadelphia: P. Blakiston, Son, & Co., 1889. Pp. viii–9 to 104. [Price, 75 cents.]

Essentials of Pathology and Morbid Anatomy. By C. E. Armand Semple, B. A., M. B. Cantab., L. S. A., M. R. C. P. Lond., etc. With Forty-six Illustrations. Philadelphia: W. B. Saunders, 1889. Pp. xvi–160.

Inebriety: Its Ætiology, Pathology, Treatment, and Jurisprudence. By Norman Kerr, M. D., F. L. S., Fellow of the Medical Society of London, etc. Second Edition. London: H. K. Lewis, 1889. Pp. xxxii–471.

Index-catalogue of the Library of the Surgeon-General's Office, United States Army. Authors and Subjects. Vol. X. O to Pfutsch. Washington: Government Printing Office, 1889.

Transactions of the Gynæcological Society of Boston. New Series. Vol. I. Boston: Published by Cupples & Hurd, 1889.

Transactions of the American Surgical Association. Volume the Seventh. Edited by J. Ewing Mears, M. D., Recorder of the Association. Philadelphia: P. Blakiston, Son, & Co., 1889.

Transactions of the Thirty-ninth Annual Meeting of the Illinois State Medical Society, held in Jacksonville, May 21, 22, and 23, 1889.

On Disordered Digestion and Dyspepsia. By Frank Woodbury, A. M., M. D., Fellow of the College of Physicians of Philadelphia, etc. Detroit: George S. Davis, 1889. [The "Physicians' Leisure Library."]

Prolapse of the Womb, with Especial Reference to the (so-called) Hypertrophic Elongation of the Supra-vaginal Portion of the Cervix, with Report of a Case. By Lewis H. Adler, Jr., M. D. [Reprinted from the "Medical News."]

Spinal Caries: Operative Treatment, Laminectomy, or so-called Trephining of Spine. By De Forest Willard, M. D., Ph. D., etc. [Reprinted from the "Transactions of the College of Physicians of Philadelphia."]

Nephrectomies for Gunshot Wound and for Tuberculous Kidney. By De Forest Willard, M. D., etc. [Reprinted from the "Transactions of the American Surgical Association."]

Reports on the Progress of Medicine.

HYGIENE AND PUBLIC HEALTH.

By S. T. ARMSTRONG, M. D.,
U. S. MARINE-HOSPITAL SERVICE.

The Sale of Tuberculous Flesh and Milk in Scotland.—At a recent meeting of the Scottish Veterinary Association ("Glasgow Med. Jour.," July, 1889) the Government was petitioned to stop the sale of milk from animals suspected of being infected with tuberculosis, and to suppress the consumption of the meat of such animals, owners being recompensed for the value of the latter. This petition seems to be the outcome of a recent trial in Glasgow relative to the question of the condemnation of a whole carcass if tuberculosis was present in a limited portion, in which two carcasses were adjudged unfit for food. The grounds of the judgment were that tuberculosis in the lower animals was the same disease as tuberculosis in man; that it was transmissible by ingestion of flesh or milk; and that though the disease might seem limited to the viscera, the flesh appearing healthy, yet the tubercle bacillus might be there. It was ruled that, "except on the footing that the meat was the medium of transmission of the disease, it would be unnecessary and wasteful to exclude from the food-supply the carcasses of animals which had suffered from tuberculosis, however generalized and extensive." The interest of the public health, however, was paramount to the question of a small loss to the food-supply.

The Distribution of Disease in Southern India.—In a paper on this subject by Surgeon-General George Bidie ("Brit. Med. Jour.," July 20, 1889), the results of a long residence in the Madras presidency are given. The territory has an area of about 149,000 square miles, with a population varying from 91 persons in Kurnool to 583 in Tanjore to the square mile. During the past five years the mean annual death-rate in towns was 24·9 in a 1,000, in the rural districts 19·9 in a 1,000. The cold season is most fatal to natives, the hot months being healthiest. The moisture in the air, the daily range of temperature, and the character of the soil are determining causes of disease. The cold, damp, clay soils cause pulmonary diseases, the alluvial soils cholera and bowel complaints, while the sandy and gravelly soils are generally wholesome. During twenty years the mortality from cholera was at the mean rate of 44·02 to 1,000 inhabitants; the disease occurred in the water-logged alluvial land, the villages and towns being very dirty, and the drinking water being taken from filthy irrigation ditches and shallow wells. Malarial fevers are generally prevalent in the low-lying districts, shunning the coast as a rule, and are rather rare in the rice districts; the death-rate is greater in the country (8·6) than in towns (6 in 1,000). Fogs seem to increase the prevalence of fever, the moisture containing the malarial germs that are introduced through the lungs. Small-pox is quite prevalent—endemic, the author says. There is popular opposition to vaccination, and not more than 16 to 17 per cent. of children are protected by vaccination; the mean annual death-rate is from 1 to 4 to 1,000 of the population. Phthisis and syphilis are common, and the author considers that the latter predisposes to the development of the former. Beri-beri is endemic in various places, sometimes epidemic in the wet season, the germs being bred in the soil and carried in the air. Madura foot is due to a fungus, usually introduced by traumatism. Elephantiasis is endemic also; it is supposably due to a *Filaria*. Leprosy, 4·4 to 10,000, is held in check by the high mortality and low fecundity of those affected. Segregation is not practiced.

The Pasteur Institute, Paris.—According to the recently published proceedings of the Academy of Sciences, Paris (*ibid.*), 1,673 persons had been treated in the institute. It was certified that all had been bitten by rabid dogs; and that the animals were rabid was often demonstrated by inoculation. There were thirteen deaths, six occurring during treatment that was probably begun too late, four taking place soon after treatment, and three seeming to show complete failures of inoculation protection. It would have enhanced the value of the statistics if the number of dogs proved to be rabid by inoculation experiments was given.

The Health of Children in Fourteen London Schools.—A committee to investigate the physical condition of the pupils in London schools was appointed by the psychological section of the British Medical Association ("Brit. Med. Jour.," July 27, 1889), and, on account of the refusal of the London School Board to allow the investigation to be made in their schools, the observations had to be confined to fourteen elementary schools. The results of the examination are given, without comment, in a series of lengthy tables. There were 1,944 boys and 1,987 girls examined; among these there were signs of nerve weakness—nervous hand, weak hand, lordosis, toneless orbicular muscles of the eyelids, and finger twitches—in 207 boys (10·6 per cent.) and 144 girls (7·2 per cent.); with defective nutrition, there were 100 boys (5·1 per cent.) and 84 girls (4·2 per cent.); with mental dullness, there were 153 boys (7·8 per cent.) and 78 girls (3·9 per cent.); with cranial abnormities—rickets, large head, small head, dolichocephalus, narrow forehead, etc.—there were 166 boys (8·5 per cent.) and 65 girls (3·2 per cent.); with diseases or defects of the eyes—squint, hypermetropia, myopia, disease of the cornea, disease of the lids, cataract, nystagmus, loss of the eye—there were 74 boys (3·8 per cent.) and 75 girls (3·7 per cent.). One or more of the conditions were found in the same child

occasionally. Only in defective nutrition and ocular defects were the sexes equal; strange to note, nerve-weakness was greater in the boys than in the girls, and the other defects were almost twice as common in boys as in girls.

The Training of Local Health Officers.—The chairman of the Section in Public Medicine of the British Medical Association (Dr. E. Ballard) has presented the results of his extensive experience with local health officers in a consideration of their necessary qualifications ("Brit. Med. Jour.," August 31, 1889). He considers that such an official should have a wider range of information than is requisite for the general practitioner, adding to the knowledge required by the latter an acquaintance with meteorology, geology, sewer and water engineering, the construction and ventilation of houses, bacteriology, and the laws governing epidemic contagia, and even the pathology of animals. His scientific education should be supplemented by a course of training under a health official; and he must never forget that he is not an autocrat, but always display tact in dealing with his constituency. In the discussion on the paper it was agreed that the local health officer should be appointed by the state, to hold office during life and good behavior, and that the salary should be sufficient to permit general practice to be prohibited, no one being appointed to such a position unless holding the special qualifications in hygiene above noted, and, in addition to his general duties, to have charge of vital statistics, medical registration, and public vaccination.

The Incubation Period in Infectious Diseases.—Dr. James Finlayson ("Glasgow Med. Jour.," May, 1889), in preparing a code for the regulation of the school attendance of children exposed to or affected by infectious diseases, found that there was a decided diversity of opinion among authorities as to duration of the incubation period and as to the time of quarantine for children that had been exposed. The incubation period in scarlet fever is given as low as 1 day and as high as 14 days, with an average duration of quarantine from 10 to 14 days; measles, from 3 to 17 days—quarantine 16 days; rötheln, from 4 to 21 days—quarantine from 16 to 21 days; mumps, from 4 to 24 days—quarantine from 21 to 24 days; whooping-cough, from 4 to 14 days—quarantine from 16 to 21 days; chicken-pox, from 2 to 18 days—quarantine from 18 to 21 days; small-pox, 5 to 19 days—quarantine 16 to 18 days; diphtheria, 1 to 14 days—quarantine 10 to 12 days; enteric fever, 1 to 30 days—quarantine 28 days; typhus fever, 1 to 21 days—quarantine 21 to 28 days; erysipelas, 1 to 13 days—quarantine 10 days. As in the United States local ordinances involving this question require the physician to furnish a certificate to the child, the periods of quarantine above given may serve as precedents.

The Influence of the Closure of Schools on an Epidemic of Measles.—The health officer of Cardiff, Dr. Edward Wolford, reports ("Sanitary Record," May, 1889) that in the autumn of 1888 an epidemic of measles occurred among the children attending school, and, notwithstanding every effort to stamp out the outbreak by careful inspection, enforcing and advising ordinary precautionary measures, and distributing printed circulars of information, the disease became so prevalent that by the end of November almost one third of the pupils were ill or confined at home. The schools were closed for four weeks, and the number of cases at once decreased; only four cases appeared among twenty thousand scholars after the schools were reopened. The author considers that the material was not exhausted, but that the comparative isolation of the children stopped the epidemic. This opinion is supported by the fact that in a previous epidemic, when the schools were not closed, the mortality was double that in the present instance.

Child Mortality in Dublin.—Dr. T. W. Grimshaw ("Dublin Jour. of Med. Sci.," July, 1889) calls attention to the fact that, while the annual death-rate to 1,000 in children under twelve months (115·5) and five years (36·6) is less in Ireland than in England or Scotland, yet in Dublin the rate in the first-mentioned class increases to 210·1 to 1,000, and is higher than that of any other city in the United Kingdom. He considers that it is caused by: 1. The large proportion of poor in Dublin, statistics proving that the infant mortality in the working class is six times as great as in the professional class. 2. The inferior house accommodations of the artisan and laboring classes, the larger tenement houses accommodating 7·5, the smaller 4·8 families. 3. The intemperate habits of the laboring classes, statistical tables showing that a high death-rate is coincident with a high drink-rate, and that Dublin leads the United Kingdom in the latter feature. 4. Carelessness regarding the care of young, and especially sick children, this being demonstrated by the large number of uncertified deaths.

Disinfection by Steam at High Pressure.—Dr. A. D. Lübimoff ("St. Petersburg Inaug. Dissert.," 1889, p. 54) has experimented with the steam disinfection apparatus of Geneste and Herscher and with a disinfection chamber in the St. Petersburg Clinical Military Hospital. The steam current had a pressure of six atmospheres. Strips of Swedish filter paper saturated with various microbes were put into test-tubes; these were placed in pillows, mattresses, and bundles of clothing, and kept in the disinfecting chamber from half an hour to three hours. The inoculated paper was then introduced into agar-agar or broth cultivation media. The experiments demonstrated that sporeless bacteria were killed in half an hour, while pathogenic microbes were entirely destroyed after an exposure to steam at 113° or 114° C. The disinfecting chamber must be able to maintain this temperature for an hour and distribute the steam uniformly to all parts of the apparatus. Articles to be disinfected must be dry, because if damp they interfere with the height of the temperature; and they should be distributed singly in the chamber, or be done up in small parcels. The management of such chambers should invariably be in the hands of medical men, and each municipality should have a public disinfecting chamber, as in Berlin. [The disinfecting apparatus of Geneste and Herscher is a metallic cylinder 1·3 metres (4¼ feet) in diameter and from 2 to 4 metres (6½ to 13 feet) long. The cylinder is closed and made air-tight by means of two doors, supported on wheels, one at each end; the doors are made steam-tight by clamp-screws. In the interior of the cylinder there is a car running on an iron track, on which the soiled articles are placed. Steam, generated by a neighboring boiler, enters the chamber by two sets of tubes—one to raise the temperature to 130° C., the other, pierced with holes 40 millimetres in diameter, to allow steam to enter the chamber when it is desired. The necessary pressure-gauges, thermometers, etc., are placed on the exterior of the cylinder.]

Disinfection and Isolation in Reference to the Control of Epidemics.—In opening a discussion ("Brit. Med. Jour.," Aug. 31, 1889) on this subject, Dr. H. Franklin Parsons, after referring to the epidemic diseases, mentioned the experiments of Koch in destroying the spore-bearing and non-spore-bearing micro-organisms, in which that observer had proved that carbolic acid had an inhibitory effect on their growth, spore-bearing forms requiring immersion for one or two days in a five-per-cent. solution, whereas a two-per-cent. solution only killed them in a week. Sulphurous-acid gas, in a six-per-cent. mixture, failed to kill spore-bearing organisms after four days' exposure. Dry heat (284° F.) would destroy spores in three hours; but this temperature would injure all textile materials. Steam at 212° F. would destroy spore-bearing forms in five minutes; and articles to be disinfected were easily penetrated by it. A watery solution of iodine or corrosive sublimate (one per cent.), or chlorine or bromine (two per cent.), would destroy spore-bearing organisms after one day's immersion. The carriers of infection were the body of the patient, the excreta and the skin, the air tainted by exhalations from the sick, clothes, bedding, etc., articles of food, walls and floors of dwellings, collections of filth, dust on walls or in cracks, and sewage. The body may be disinfected by suitable washes, and, after death, buried in lime or charcoal. The air may be extracted from the sick-chamber and burned in a furnace or in a ventilator containing burning gas-jets. Discharges from the nose and throat may be received on rags and burned; those from the bowel and kidneys should be received in vessels containing a five-per-cent. corrosive-sublimate solution. Clothing, bedding, etc., should be exposed to steam, or, where that is impracticable, boiled after having been immersed for some hours in a bichloride-of-mercury solution. Books and letters should be exposed to dry heat for some hours. Thorough boiling of water or milk, or cooking of food, will disinfect food stuffs. For house disinfection, sulphurous acid or chlorine is recommended, followed by scrubbing of the walls, removal of paper, and whitewashing where practicable.

In the discussion that followed, Dr. P. C. Smith, of Glasgow, considered that there were two divisions of the subject: disinfection and isolation; first, in hospitals; second, at home. Cities should have pavil-

ions for the different zymotic diseases; towns, a cottage hospital, with a tent for portable house) for small pox; they should have steam disinfecting chambers, and the clothing of typhus and small pox patients should be burned. At home the room occupied should be in the top story, divested of carpet and furniture, save a bed and chair for the nurse. There should be no communication between the nurse and the occupants of the house; food, etc., being placed on a table at the door. Disinfection of discharges, clothing, the room, etc., should be done as mentioned by the first speaker.

Dr. W. Squire, of London, considered the public establishment of good wards, good nursing, and care to attract the attention of those in need, as the first essential. If the hospitals could not care for patients until convalescence was completed, there should be convalescent homes. In the scarlet-fever hospitals in London, in 1887, 3,000 patients had been treated, with a mortality of 267; in 1888, 4,408 patients; in 1889, 5,900 patients. These figures showed the increasing usefulness of those hospitals, and showed that the mortality from the disease had decreased.

Dr. Hope, of Liverpool, considered "domestic isolation" a fallacy, and instanced eighty cases of typhus fever so treated, in which the disease had spread to 386 individuals of the families, with 62 deaths. Contrasted with this were eighty cases in which the patient was at once removed to the hospital and the house disinfected and cleansed, and no extension of the disease took place.

Dr. C. H. Allfrey spoke of the isolation of persons with infectious diseases in hotels, citing a case where great care had failed to secure rigorous quarantine. He advocated an association of hotel-keepers that would insist upon the removal of all members of an infected family as soon as possible, the declaration of all visitors that they were free from and had not been exposed to infection, and the establishment of a register of sanitarily certified hotels. [The British Medical Association adopted a resolution to this effect.]

Dr. Littlejohn stated that in Edinburgh the removal of patients with infectious disease was compulsory.

The Contamination of Drinking-water with Lead.—Dr. Sinclair White (*ibid.*), as the result of extensive experiments, concludes that acid water invariably acts on lead, the intensity of action varying with the acidity; new lead pipe being acted on more than old, the amount of lead dissolved increasing for the first twenty-four hours, and materially decreasing at the end of six days. Other things being equal, the greater the pressure of the water the greater the amount of lead taken up, and the greater the temperature the greater the solvency. A small amount of lime or soda diminishes the solvent power of the water, and filtration through limestone, charcoal, or spongy iron causes the water to become inert; filtration of water containing lead through the two latter substances will remove the lead. Where lead-dissolving water exists, wrought-iron, tin, or glass-lined iron pipes and tanks should be employed, or the water should, before distribution, be filtered through beds of fine sand and broken limestone.

Dr. Fairclough believed that much of the anæmia of town people was due to drinking water containing small quantities of lead. He referred to the fact that some waters formed an insoluble crust on the interior of new lead pipes in two or three weeks, thus forming a permanent protection.

Dr. Whitelegge recommended that water pipes be made of Borff iron, as it had the property of withstanding rust.

The Physiological Value of Meat Foods for Invalids.—Surgeon-General C. M. Jessop (*ibid.*) believes that there is considerable waste in the preparation of beef teas, because nurses and cooks try to make a "clear" solution. Referring to the physiological metamorphosis of nitrogenous substances, he concludes that at least 138 grains of nitrogen, or six ounces of meat, is the smallest daily amount necessary for the bare maintenance of life. Yet the extractum carnis made by slowly heating, until it boils, a pound of finely chopped beef in an equal quantity of water, is nothing but a solution of excrementitious substances and blood salts. Baron Liebig says: "By the addition of meat extract to our food, we neither economize carbon for the maintenance of the temperature nor nitrogen for the sustenance of the organs of the body, and therefore it can not be called food in the ordinary sense. Dogs fed exclusively on extractum carnis die sooner than those not fed at all, which seems to be due to the deleterious influence of the potash salts contained in the extract." In prolonged illnesses the potash salts may impede nutrition by diminishing the absorption of oxygen by the blood globules, and, increasing the salts in the serum, interfere with the exhalation of carbonic acid. In an emergency one or two drachms of beef may be chopped to a pulp, placed in a cup with two tablespoonfuls of water, a pinch of salt being added, and the mixture heated for ten minutes and given at once. In making fluid meat-food there should be no remainder. Mince one pound of good beef, place it in a double boiler with two quarts of water, and boil for three hours, stirring it frequently with a wooden masher; pass it through a colander to remove the fiber, and season with salt if necessary. The mixture is wholesome and may be administered in necessary quantities every three or four hours.

Cholera in Malta during 1887.—In an interesting review on the Seventeenth Annual Report of the Local Government Board (for 1888), Lieutenant-Governor Hutchinson's "Note on the Present Prevalence and Extent of Cholera in Malta," and Dr. S. L. Pisani's report as chief government medical officer for that colony, the "Practitioner" for May, 1889, concludes that an analysis of these reports demonstrates that, in the interests of public health and of the commercial interests of the world, "the antiquated and ever-failing quarantine restrictions should be done away with, and an efficient sanitary administration substituted for them." Cholera first prevailed in Malta from June 9 to October 11, 1837—4,462 cases occurring in towns, 3,105 in villages; 2,207 deaths took place in the former, 1,585 in the latter. The second epidemic, imported from Barbary, lasted from June 9 to October 13, 1850; there were 4,029 cases, with 1,736 deaths. The third epidemic lasted from June 9 to November 11, 1865; there were 2,362 cases and 1,479 deaths. In the fourth epidemic, from July 5 to November 25, 1867, there were 403 cases and 259 deaths. From August 3 to November 11, 1887, there were in the towns, with a population of 60,629, 155 cases with 110 deaths; in the villages, with an aggregate population of 76,161, there were 471 cases with 352 deaths. In the villages the houses were often overcrowded, the ventilation was poor, there was no sewerage, and there was often no good potable water—the supplies being liable to pollution. In the towns the houses are drained, there are sewers, and there is a plentiful supply of good water. Consequently the epidemics have decreased in severity in the towns and increased in the villages. During the last four epidemics quarantine has been practiced; nevertheless, means have been found to evade the restrictive law. Dr. Pisani concludes that, if the villages were drained and supplied with water, the houses of the poor inspected and improved, and all blind alleys opened, the island would become "an unfertile soil for the cholera germ." The "Practitioner" believes that a recognition of these facts—supported by the statistics of the towns of the island—and a disbelief in any efficiency in quarantine will enable Malta (as well as other localities) to avoid future epidemics.

Leprosy in the British Possessions.—In 1884 the medical profession of the Cape of Good Hope, says the "Practitioner," became convinced that leprosy was increasing, and an act was passed reciting this fact and providing that if a person was certified to be suffering from leprosy, he or she should be removed to a leper hospital, to be there detained. The disease is chiefly confined to the blacks and half-castes, though Europeans are affected. In Jamaica, where there are seven or eight hundred lepers, there is a difference of opinion as to its increase. In Trinidad the number of patients in the hospital has increased, and it is maintained that this is out of proportion to the increase in the population. In British Guiana, where one in five hundred of the population is leprous, the disease is believed to be increasing, not only among the coolies but among creoles as well. In Barbadoes the population has increased six per cent., leprosy twenty-five per cent. In New Brunswick leprosy has decreased, but it has appeared among the Chinese in British Columbia. In India the census of 1881 gave 131,168 lepers; there is no evidence as to its increase or diminution. In the Mauritius leprosy is at a standstill. In Australasia it has appeared among the Chinese, Malays, Arabs, and Hindus. [There is certainly some leprosy in the Bahamas, for cases have appeared at Key West from there.]

The Heredity of Leprosy.—Dr. G. A. Hansen, the discoverer of the *Bacillus leprœ*, has made an investigation of the present condition of

160 Norwegian immigrants that had settled in Wisconsin, Minnesota, and Dakota ("Arch. f. path. Anat. u. Physiol. u. f. klin. Med.," cxiv). He has been able to find only thirteen of the original immigrants; a few more may be living, but nearly 147 are dead. Of all their descendants, so far as great-grandchildren, not one has become a leper. There are many Norwegians in those States descended from or related to lepers, yet the disease does not increase nor has it proved hereditary.

The Royal College of Physicians on Quarantine.—The arrival of the steamship Neva at Southampton, in June last, with one case of yellow fever on board, caused the Privy Council Office to order her into quarantine for seven days. The "Practitioner" thought the Privy Council was to be congratulated that the occurrence took place at the only spot on the British coast that maintained a quarantine station (two hulks, at the entrance of the harbor). The Secretary of State for the Colonies submitted to the Royal College of Physicians the question of the proper periods of detention for purposes of quarantine in yellow fever, cholera, and small-pox. The college reported that the incubation period of yellow fever and cholera was uncertain, and that the committee was of the opinion that it was unwise to impose quarantine restrictions in the case of these diseases. The committee was further strongly opposed to such restrictions generally, which it considered harmful and vexatious. In the case of small-pox the committee was of the opinion that the incubation period did not usually exceed a fortnight, and that suitable precautions based on this knowledge were desirable. The "Practitioner" does not consider the last paragraph of the report very helpful, especially as vaccination is the obvious means of preventing small-pox.

Miscellany.

The New York State Medical Association will hold its sixth annual meeting at the Hotel Brunswick, Fifth Avenue and Twenty-seventh Street, New York, on Wednesday, Thursday, and Friday, the 25th, 26th, and 27th inst., under the presidency of Dr. William T. Lusk. The programme includes the following titles: An address by the president, on "Tubal Pregnancy"; "Inversion of the Uterus; Novel Treatment," and "The Latero-dorsal Position in Gynæcic Irrigation," by Dr. George E. Fell, of Erie County; "The Treatment of Uterine Fibroids by Electricity," by Dr. Henry D. Ingraham, of Erie County; "Pelvic Cellulitis in Women," by Dr. W. H. Robb, of Montgomery County; "Report of a Case of Laparotomy for Ruptured Pyosalpinx; Error in Diagnosis; Recovery," by Dr. C. S. Wood, of New York County; "The Use and Abuse of the Forceps in Obstetrics," by Dr. J. P. Garrish, of New York County; a discussion on "Tubal Pregnancy," by Dr. William T. Lusk, of New York County, Dr. William Goodell, of Pennsylvania, Dr. George T. Harrison, of New York County, Dr. Howard Kelly, of Pennsylvania, Dr. Theophilus Parvin, of Pennsylvania, Dr. Isaac E. Taylor, of New York County, Dr. T. Gaillard Thomas, of New York County, Dr. Ely Van de Warker, of Onondaga County, Dr. W. H. Parrish, of Pennsylvania, and Dr. W. H. Wathen, of Kentucky; "Prognosis in Pulmonary Phthisis; How much has it been Improved and by what Means?" by Dr. Avery Segur, of Kings County; "Affections of the Eye Symptomatic of Disease of the Central Nervous System," by Dr. Alvin A. Hubbell, of Erie County; "A New Portable Accumulator," by Dr. Robert Newman, of New York County; "The Warming and Ventilation of Public School Buildings," by Dr. Ira B. Read, of New York County; "A Word in Favor of Free Dispensary and Free Hospital Work," by Dr. E. J. C. Minard, of Kings County; "The Microscope in Diagnosis; Personal Observations," and "Forced Respirations; Additional Observations," by Dr. George E. Fell, of Erie County; an address in surgery, by Dr. Francis Bacon, of Connecticut; "Alcoholic Paralysis," by Dr. T. D. Crothers, of Connecticut; "A Few Fads," by Dr. H. D. Didama, of Onondaga County; "Some of the Uses of the Transfixion Ligature," by Dr. T. H. Manley, of New York County; a discussion on "The Treatment of Hernia," by Dr. Joseph D. Bryant, of New York County, Dr. William T. Bull, of New York County, Dr. Charles W. Brown, of Chemung County, Dr. T. H. Squire, of Chemung County, Dr. Charles L. Squire, of Chemung County, Dr. W. S. Tremaine, of Erie County, Dr. Roswell Park, of Erie County, Dr. Charles McBurney, of New York County, Dr. John A. Wyeth, of New York County, Dr. D. M. Totman, of Onondaga County, Dr. Leroy J. Brooks, of Chenango County, and Dr. Frederic S. Dennis, of New York County; "Lantern Views of Bacteria," by Dr. Edward K. Dunham, of New York County; an address in medicine, "On the Bacteriological Test of Drinking Water," by Dr. Edward K. Dunham, of New York County; "The Cure of Hæmorrhoids by Excision and Closure with the Buried Animal Suture," by Dr. Henry O. Marcy, of Massachusetts; "Report of a Case of Ataxic Paraplegia," by Dr. Darwin Colvin, of Wayne County; "Observations on Dislocations of the Hip," by Dr. U. C. Lynde, of Erie County; a discussion on "The New Hypnotics: Sulphonal, Amyl Hydrate, Hydrobromate of Hyoscine, Hypnone, Paraldehyde, Urethrane—their Therapeutic Applications, Contra-indications, Toxicology, and Methods of Administration," by Dr. William H. Flint, of New York County, Dr. Austin Flint, of New York County, Dr. E. G. Janeway, of New York County, Dr. Charles Rice, of New York County Dr. Charles G. Stockton, of Erie County, and Dr. John G. Truax, of, New York County; "Extraction of Cataract without Iridectomy," by Dr. Charles Stedman Bull, of New York County; and "Two Cases of Angular Deformity of the Knee Joint," by Dr. Lewis Hall Sayre, of New York County.

A Foreign Body in the Urethra.—Dr. Albert Krog writes to us as follows:

"A mother called upon me with her little boy, of about five years of age. Upon examination of the boy, I found an extremely tender penis. The glans was very much swollen and inflamed, and from the opening of the urethra a very thick, greenish-yellow pus made its appearance. The little fellow seemed to suffer much pain. Micturition was hardly possible. The mother then informed me that her little boy had already been under the treatment of an old physician for the preceding four or five days, who, under the impression of a gonorrhœa purulenta, had well dosed him with cubebs and copaiba. Nevertheless, his condition had grown worse and more alarming. A more minute examination seemed to reveal to me a specially tender spot along the urethral canal, and, on introducing a slender forceps, I extracted a small piece of wood, which had been the cause of all the trouble. Cold applications allayed all the concomitant symptoms."

The Southern Surgical and Gynæcological Association will hold a meeting in Nashville, Tenn., on the 12th, 13th, and 14th of November, under the presidency of Dr. Hunter McGuire, of Richmond. The preliminary programme includes the president's annual address and the following titles of papers: "Report of Gynæcological Work, with especial Reference to Methods," by Dr. R. B. Maury, of Memphis; "Direct Kelotomy, with Cases," by Dr. W. O. Roberts, of Louisville; "Open Abdominal Treatment," by Dr. B. E. Hadra, of Galveston; "The Abortive Treatment of Acute Pelvic Inflammation," by Dr. Virgil O. Hardon, of Atlanta; "The Importance of Early Treatment of Inflammatory Affections of the Uterus," by Dr. William C. Dabney, of University of Virginia; "The Relation of the Nerve System to Reparative Surgery," by Dr. Thomas O. Summers, of Jacksonville; "Concerning the Causes of Frequent Failure of Relief of Reflex Symptoms after Trachelorrhaphy," by Dr. W. F. Hyer, of Meridian, Miss.; "Cranial Surgery," by Dr. De Saussure Ford, of Augusta, Ga.; "The Treatment of Ectopic Pregnancy," by Dr. W. H. Wathen, of Louisville; "Laparotomy in Extra-uterine Pregnancy," by Dr. Waldo Briggs, of St. Louis; "Epithelioma of the Penis, with the Report of a Case," by Dr. D. W. Yandell, of Louisville; "Laparotomy in Intestinal Obstruction," by Dr. C. Kollock, of Cheraw, S. C.; "An Experimental Study of Intestinal Anastomosis," by Dr. John D. S. Davis, of Birmingham, Ala.; "Operative Interference in Ascites," by Dr. Hugh M. Taylor, of Richmond; "Observations pertaining to Pregnancy and Parturition," by Dr. W. Duncan, of Savannah; "Puerperal Convulsions," by Dr. J. Herbert Claiborne, of Petersburg, Va.; "Some Remarks upon Aneurysms, relating more especially to their Surgical Treatment," by Dr. F. T. Meriwether, of Asheville, N. C.; "Coccygodynia and its Treatment," by Dr. Hunter P. Cooper, of Atlanta; "The Improved Cæsarean Section *versus* Crani-

otomy," by Dr. W. D. Haggard, of Nashville; "Conservative Surgery in Injuries of the Foot," by Dr. J. T. Wilson, of Sherman, Texas; "Gunshot Fractures of the Femur," by Dr. John Brownrigg, of Columbus, Miss.; "Trophoneuroses as a Factor in the Phenomena of Syphilis," by Dr. G. Frank Lydston, of Chicago; "Trophic Changes following Nerve Injury in Fractures, with a Report of Two Cases," by Dr. W. Perrin Nicholson, of Atlanta; "The Treatment of Malignant Diseases of the Rectum," by Dr. W. T. Briggs, of Nashville; "The Achievements of Modern Surgery," by Dr. J. Ewing Mears, of Philadelphia; and "The Treatment of the Pedicle in Suprapubic Hysterectomy," by Dr. William M. Polk, of New York. In addition, papers on subjects not yet determined on are announced to be read by Dr. W. L. Robinson, of Danville, Va.; Dr. W. B. Rogers, of Memphis; Dr. L. S. McMurtry, of Danville, Ky.; Dr. E. J. Beal, of Fort Worth, Texas; Dr. E. Burke Haywood, of Raleigh; Dr. Paul B. Barringer, of University of Virginia; Dr. J. F. Y. Paine, of Galveston; and Dr. Joseph Price, of Philadelphia.

Mortality in Cities in the United States.—The following table represents the mortality in the cities named, as reported to Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, and published in the abstract of sanitary reports received by him during the week ending September 13th:

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—										
				Cholera.	Yellow fever.	Small-pox.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y.	Sept. 7.	1,530,281	709	..	..	..	..	..	15	3	16	2	15
Chicago, Ill.	Aug. 31.	1,100,000	389	..	..	..	..	..	16	3	21	1	3
Philadelphia, Pa.	Aug. 31.	1,040,245	410	..	..	..	..	..	21	3	6	..	5
Philadelphia, Pa.	Sept. 7.	1,040,245	343	..	..	..	..	..	16	6	5	..	1
Brooklyn, N. Y.	Sept. 7.	834,607	335	..	..	..	..	..	9	5	16	1	3
Baltimore, Md.	Sept. 7.	500,343	157	..	..	..	..	..	7	1	..	..	..
St. Louis, Mo.	Aug. 31.	450,000	162	..	..	..	..	..	4	1	3	..	2
St. Louis, Mo.	Sept. 7.	450,000	138	..	..	..	..	..	4	..	4	..	1
San Francisco, Cal.	Aug. 30.	325,000	..	..	..	..	..	..	3	..	1	..	1
Cincinnati, Ohio.	Sept. 7.	325,000	108	..	..	..	..	..	5	2	..	1	..
New Orleans, La.	Aug. 31.	254,000	104	..	..	..	..	..	..	..	2	..	..
Pittsburgh, Pa.	Sept. 7.	230,000	101	..	..	..	..	..	9	1	5	2	..
Minneapolis, Minn.	Sept. 7.	200,000	37	..	..	..	..	..	2	1	..	..	..
Kansas City, Mo.	Aug. 31.	180,000	51	..	..	..	..	..	6	1	..	..	1
Rochester, N. Y.	Aug. 31.	130,000	57	..	..	..	..	..	2	..	..	..	..
Rochester, N. Y.	Sept. 7.	130,000	51	..	..	..	..	..	1	..	2	..	..
Providence, R. I.	Sept. 7.	127,000	54	..	..	..	..	..	2	..	2	..	1
Indianapolis, Ind.	Sept. 7.	124,450	..	..	..	..	..	..	4	..	..	..	..
Richmond, Va.	Aug. 31.	100,000	39	..	..	..	..	..	..	..	1	..	..
Denver, Col.	Aug. 30.	100,000	37	..	..	..	..	..	7	..	..	..	..
Denver, Col.	Sept. 6.	100,000	40	..	..	..	..	..	2	..	2	..	1
Toledo, Ohio	Sept. 6.	80,000	21	..	..	..	..	..	..	1	..	..	..
Fall River, Mass.	Sept. 7.	69,000	41	..	..	..	..	..	1	..	..	..	..
Nashville, Tenn.	Sept. 7.	65,153	36	..	..	..	..	..	2	..	..	..	..
Charleston, S. C.	Sept. 7.	60,145	34	..	..	..	..	..	1	..	..	..	..
Lynn, Mass.	Sept. 7.	50,000	14	..	..	..	..	..	..	..	1	..	..
Manchester, N. H.	Aug. 31.	42,000	14	..	..	..	..	..	2	..	..	..	..
Portland, Me.	Sept. 7.	42,000	20	..	..	..	..	..	1	..	..	..	..
Galveston, Texas.	Aug. 30.	40,000	8	..	..	..	..	..	..	..	..	..	..
Council Bluffs, Iowa.	Aug. 19.	35,000	3	..	..	..	..	..	..	..	..	..	..
Council Bluffs, Iowa.	Aug. 26.	35,000	5	..	..	..	..	..	..	..	..	..	..
Council Bluffs, Iowa.	Sept. 2.	35,000	2	..	..	..	..	..	..	..	..	..	..
Council Bluffs, Iowa.	Sept. 7.	35,000	5	..	..	..	..	..	..	..	1	..	..
San Diego, Cal.	Sept. 4.	32,000	2	..	..	..	..	..	..	..	..	..	..
Binghamton, N. Y.	Sept. 7.	30,000	6	..	..	..	..	..	8	..	..	..	..
Auburn, N. Y.	Sept. 7.	26,000	9	..	..	..	..	..	..	..	..	..	..
Haverhill, Mass.	Aug. 31.	25,000	14	..	..	..	..	..	1	..	..	..	..
Haverhill, Mass.	Sept. 7.	25,000	9	..	..	..	..	..	..	..	..	..	..
Rock Island, Ill.	Sept. 1.	16,000	2	..	..	..	..	..	..	..	..	..	..
Rock Island, Ill.	Sept. 8.	16,000	..	..	..	..	..	..	..	..	1	..	..
Keokuk, Iowa.	Aug. 31.	16,600	2	..	..	..	..	..	..	..	..	..	..
Keokuk, Iowa.	Sept. 7.	16,000	1	..	..	..	..	..	..	..	..	..	..
Pensacola, Fla.	Aug. 31.	15,000	1	..	..	..	..	..	..	..	..	..	..

The Rarity of Christian Charity.—In the Journal of the 10th ult. we referred to the refusal of the Mayor of New York to furnish dogs from the pound to some gentlemen engaged in making certain surgical and bacteriological experiments. The request of one of the experimenters was given considerable newspaper notoriety, and he was recently the astonished recipient of the following letters, written from widely separated localities. We print these anonymous communications *verbatim et literatim*, leaving all comment to our readers:

"You vile merciless rascally *friend*. I judge from your name you are a nasty Frenchman with no heart, and without a God. If you think you will be permitted to set up a place of Torture in this country for poor animals you are vastly mistaken. You will have to betake yourself to the vile and *Godless* country from which you came or to the Hell to which you are destined, and if you wish to indulge in such fiendish performances when you reach the latter place—which I hope you will soon—unless you *repent* you will have an opportunity with kindred *friends* of torturing yourselves through the endless ages of eternity. I am a woman who despises brutes and all brutal actions."

"When *pain* the most awful sensation of the human frame *exists*—let its alleviation or study prove the sole lawful guide to future cases.

"Only the most *damnable* fiend cloaked in human form ever lifted the knife in *vivisection*. May the *curse* of an all merciful God rest upon you. Laugh, sneer, such as you do. But may every agony your hellish minds and hand inflicts be trebled upon yourself in this world and the one to come—and upon all like you. May your death bed be such a scene of horror that all will forsake you. May God's curse be upon you."

Possibly some may recall that once Professor Brown-Séquard, while demonstrating to his class certain physiological experiments on a dog, was assailed by a woman armed with a parasol; and we have been informed that Paul Bert once had a similar experience. So our experimenter, who, by the way, is not a Frenchman, may congratulate himself on having had only a verbal castigation.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

A HITHERTO UNDESCRIBED DISEASE OF THE OVARY;

ENDOTHELIOMA CHANGING TO ANGEIOMA AND HÆMATOMA.

BY MARY A. DIXON JONES, M. D.,
BROOKLYN.

So far as I know, this peculiar formation, or degenerative disease, of the ovary has not been described. The name kirsoma has been proposed on account of the peculiar convolutions that are manifested. The first one or two microscopical specimens showing this change I considered as curiosities, or as the initial stage of a growth which would possibly, upon further development, be alveolar sarcoma.

I have studied the subject, first by carefully considering the individual characteristics of each case, the symptoms, etc., and afterward the pathological condition of the specimen. Probably now it will be best to present the subject in that order: 1. Individual cases. 2. The microscopical appearances of the disease.

The patient in whom I first recognized this formation was operated on in my private hospital on May 25, 1885. She was thirty-five years of age, single. Her trouble commenced with a severe aching pain in the left side of the pelvis, which gradually increased year by year, extending to the other side of the pelvis, and frequently the pain was so sharp and lancinating that she screamed with agony. She consulted many physicians. Fly-blisters were repeatedly applied to the lower part of the abdomen. For nine months she was treated for "inflammation and misplacement of the uterus"; pessaries were used and only made her worse. Subsequently she was treated for "ulceration and uterine congestions," with no better results.

When I first saw the patient she was pale, emaciated, anæmic, and had very much the appearance of one who has phthisis. Examination showed the uterus to be acutely anteflexed; ovaries tender and intensely sensitive. The patient was nervous, hysterical, and her mental conditions were much disturbed. Her friends said she was "not exactly right in her mind." I was fully convinced that the ovaries were in some way exceedingly diseased, and that all her abnormal nerve symptoms were due to reflex irritation from these diseased organs. I so informed the patient, and told her that an operation for their removal might be necessary. Still, I commenced with a course of treatment, hoping, if possible, to save her from the necessity of an operation; but she showed no improvement, and I became convinced I was only wasting time. So, on the 25th of May, I performed the operation. She made an excellent recovery, and since, her health has been good and she has been able to work. It would have been better if the diseased structures had been removed ten years before; every day they remained they were doing injury to the general system and interfering with her general health. A few months after the operation she took entire charge of her paralyzed mother through a long sickness. She stood it well, and ever since has been able to attend to her usual duties. I saw the patient on June 28, 1889. She seemed to be in good health and strength, and was doing the work for an ordinary-sized family.

This case was one of a series reported in the "Medical Record," August, 1886. A microscopical examination was there given, and a drawing of the formation. I studied the subject in Dr. C. Heitzman's laboratory, and he said: "This tumor we shall have to term either an endothelioma or an alveolar sarcoma."

The next person in whom I found this growth or degeneration was a patient in the Woman's Hospital of Brooklyn. She first came with her mother to see me, March 30, 1887, a pale, emaciated, cadaverous-looking woman, apparently with tubercular consumption. She had been married some years, and had never had any children. She suffered with constant pain on both sides of the pelvis, increased by walking, and at times the pains were especially sharp and severe. The patient said she had had for years tenderness and soreness in the lower part of the abdomen; did not menstruate till she was sixteen, and then it was accompanied with great suffering. Examination showed that the ovaries were prolapsed, enlarged, and so sensitive that the patient shrunk from the slightest touch, and it was evident they were the seat of some form of disease which was in some way seriously deranging her general health. She had been treated by many excellent physicians, both locally and constitutionally, and they had done everything possible for her; still, I commenced a course of constitutional and local treatment, but with no better results, and finally decided there was but one way to relieve or cure the patient, and that was by removing the hopelessly diseased organs. This operation I performed in the Woman's Hospital of Brooklyn on May 10, 1887; it was completed in about fifteen minutes, and the patient recovered without a bad symptom.

Sections of the ovary showed this growth in great perfection and in a very advanced stage of development (Fig. 1). It seemed to occupy the whole ovary, extending quite

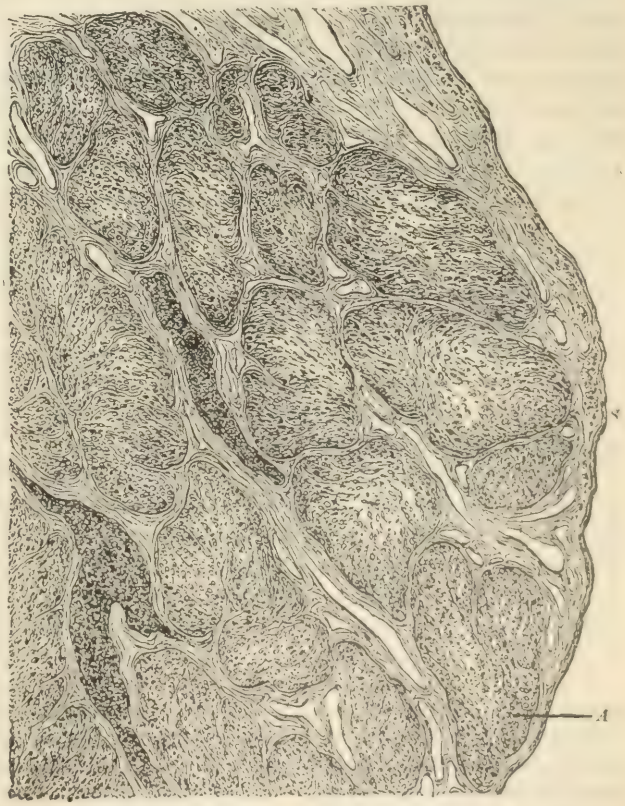


FIG. 1.—Endothelioma of the left ovary, extending to the periphery. × 25. *S*, surface of the ovary; *A*, alveoli filled with endothelia.

to the periphery, and replacing all the special ovarian tissue. In one ovary there were some cysts the walls of which were formed by stratified layers of inflammatory tissue,* and this growth seemed to be extending or infiltrating itself into the already diseased tissue. In other instances the cyst wall is composed entirely of this growth, which seems so curiously to destroy all healthy or diseased tissue of the ovary, gradually occupying the whole structure.

Another remarkable feature of this case, and one which I have since recognized in many others—indeed in every instance of this disease—was an abnormal condition of the ova. There was not a normal ovum to be found. Many of them were broken up into inflammatory corpuscles. No epithelia, no maculæ, no yolk; in some the wall was changed into fibrous connective tissue; in some the follicles were enormously swollen and contained a hydropic yolk; others contained granular matter and hæmatoblasts, while in other places there was a complete atrophy of the ova, thus exhibiting a destruction of the most vital part of the ovary.

This fact opened a most interesting field for investigation, and presented a new cause for sterility. The patient had come to me not only to be relieved of her suffering, but, with a sorrowful heart, she wanted to know why she did not have children. Her cry was that of Hannah's: she had that deep-seated longing which is in every true woman's heart, which we all so fervently respect and admire, and which, if not gratified, makes life a disappointment. But the condition of this patient showed, as I have seen in many cases, that *the disease which had caused the suffering had also produced a confirmed sterility.*

This patient had long complained of tenderness and soreness in the pelvis, and that the marital relations were not only painful but repulsive and unendurable. After the operation her emphatic statement to me, as well as similar statements of many other patients, disprove the assertion that the removal of the ovaries destroys sexual desires. So far from it, this patient assured me to the contrary, and similar statements have been made to me by other patients.

In May, 1887, I presented to the New York Pathological Society a microscopical section of this growth. At my request Professor Prudden took a small section of the ovary of this patient, and had it prepared and mounted in his laboratory. He wrote me it was carcinoma, also sending one of the sections so labeled. I sent a microscopical section of the ovary of the same patient to Waldeyer, of Berlin; he replied, October 18, 1887, that it was *carcinoma.*

But, from studies and drawings I had made during the summer, I could clearly see that the protoplasmic bodies seemed to round themselves, the coarse granules wonderfully shaping themselves into blood-corpuscles. In some places the elongated protoplasmic bodies seemed to fuse together, forming canals in which were the shadows of blood-corpuscles, and then would appear the completely formed blood-vessel, and near by many cross-sections of blood-vessels completely filled with blood-corpuscles. These changes I traced over and over again, and saw them in other specimens; so it was clearly proved to my mind that *this growth was a new formation of blood-vessels and blood-corpuscles.* This statement was presented to the New York Pathological Society, December 12, 1888.

From further study I thought the growth essentially started from some mysterious change in the menstrual follicle, as represented in Fig. 2; the living matter shoots up



Fig. 2.—Myxomatous tissue of a menstrual follicle. × 500. *F*, fibrous portion of the follicle; *M*, myxomatous portion filling the follicle. The protoplasmic bodies filled with hæmatoblasts.

like the lines of light of an aurora borealis; soon are found the granules and hæmatoblasts, and then commences the rapid growth, spreading and increasing. Other figures show a more advanced stage; the myxomatous portion is composed of nucleated tracts of protoplasm. But why this growth should have the power of destroying every structure of the ovary, even firm secondary fibrous connective tissue, or why an ovary should so degenerate, or what is its pathological significance, are still questions for consideration. Certain it is that this formation is as surely accompanied with manifestations of ill-health as is the breaking down of lung tissue, and the symptoms of both diseases are in many respects similar. It destroys normal structure as effectually as does tubercle. When we look at this rapidly growing formation and the great masses of granules, the impression forces itself upon us that it *may* be malignant. Future investigation may prove it so. The cancer epithelia do not multiply more rapidly, or destroy the tissues more surely, or seem more threatening or monstrous in their appearance and growth.

If it were so that we could watch and study this growth from day to day, see its progressive changes and its general effects upon the system, we might tell the final result. Who knows how disastrous it is, or how fatal, or how many deaths it may have caused? Certainly it destroys the health, comfort, and usefulness of the individual, and as surely its removal has restored health, comfort, and happiness, as well as ability to work. If it were as possible to remove tuberculous lungs as this growth, or as we would a gangrenous

* In the microscopical study of the ovaries I have frequently found these small cysts, and never have seen one but it was surrounded by newly formed layers of inflammatory tissue, showing long-existing disease; frequently layers of secondary fibrous connective tissue, the results of the inflammation, again in a state of acute inflammation. These small cysts have a history of suffering; they are either the outcome of inflammation or have produced the inflammation.

toe, or as successfully as we do diseased ovaries, how many could thereby be given relief and years of restored health!

Though this growth is apparently so fearful in its appearance, so destructive to healthy structures, yet from it develops only an army of little blood-corpuscles and forming blood-vessels. But may not this, apparently so innocent a formation, have a serious pathological significance? Why should these autochthonous collections of blood be here, while there is pallor on the face, a tallowy hue to the skin, and an emaciation of the whole body?

This disease seems in some way to destroy such important formations as the ova. Yet in the early stages, before the disease has so much extended, in some instances women with this growth have borne children. A healthy ovum even in the midst of a sea of disease may develop and fulfill its final destination.

The clinical features in this disease are so marked that in many instances I have diagnosticated it on the first examination, and this diagnosis was subsequently verified by microscopical examination of the diseased structure. All the patients complain of a special and characteristic pain in the region of the ovaries, at times severe, sharp, and lancinating; there is a peculiar pale or cachectic look, or the cadaveric pallor of the consumptive; they all have a marked emaciation. Some, who are naturally strong with a tendency to *embonpoint*, from the time of the development of the disease begin to emaciate; in some instances lose twenty, thirty, or forty pounds. The further advanced the disease, the more emaciated and the more extreme the pallor. The more the ovary is occupied or filled with this growth, the more serious the manifestations in the system. So pronounced are these symptoms, and especially in connection with the characteristic manifestations that usually accompany diseased ovaries, that a diagnosis can usually and with confidence be made. I have so verified it in many instances. Not long since I had two patients. Both had all the symptoms mentioned—pain, pallor, some loss of flesh, etc.; in both I diagnosticated this disease, and subsequent history of the cases proved it to be correct. A young woman came to me last spring. She had always been in good health. No suffering in any way till the previous five or six years, when, as she remarked, she had at times such pain and distress that she rolled on the floor in agony, and was so faint and weak that she could keep up only two or three days successively. She had been under the care of good physicians, and had been in two hospitals. In one an operation was proposed; in the other she was pronounced incurable. I felt confident she had endothelioma of the ovary, and an operation would relieve her sufferings. She was anxious for the operation, and, as it was evident her condition was growing worse, it was right that she should be relieved. The operation was performed in the Woman's Hospital of Brooklyn. She made an excellent recovery. Fig. 3 is a representation of the ovary. The same form of degeneration spreads elsewhere in both ovaries. The patient had chronic oophoritis, and much of the normal structure of the ovaries was changed in consequence; the arteries were seriously affected with endarteritis obliterans, and some were waxy. The ova were diseased. In the tubes many of the epithelia were destroyed or changed to muco-pus, and there was an inflammatory infiltration of the mucosa.



FIG. 3.—Left ovary with an endothelioma loosely imbedded in the cortex. The ovary is halved; so is the nodule on the right upper periphery. On the lower half is seen the cavity previously occupied by the nodule. × 2.

A few weeks ago a patient came to my office who had been married fifteen years and had no children. At the age of sixteen she was well and rugged; when twenty years of age she began to have pain in the pelvis, to lose flesh, and looked as if she were going into decline; now, at the age of thirty-five, she is worn out with suffering, and I feel confident she has endothelioma of the ovary which is surely and prematurely destroying her life. On August 9th a lady called to see me complaining of similar pains in the pelvis; had the same pallor, not so much emaciation, though she says she has lost thirty pounds in flesh; has been married ten years, and had no children. Without doubt she has the same trouble of the ovary, which has produced the pain and destroyed the ova. By carefully considering all the symptoms the disease can be diagnosticated in every instance.

The third patient in whom I found this peculiar growth was a Mrs. B., thirty years of age; came to me in March, 1887; the same story of suffering, distress, cramps, and extreme pain; not able to be around. Examination showed both ovaries enlarged, prolapsed, and extremely sensitive. Every motion of her body gave her distress, and she was entirely unable to attend to her household duties. Operation May 20th of the same year, in the Woman's Hospital of Brooklyn. Right ovary very much enlarged, pear-shaped, one end measuring two inches in diameter; the left ovary was less enlarged. The patient made an excellent recovery, and has now the physical vigor to carry on a large business, besides attending to her household duties.

Microscopical examination showed that both ovaries were entirely filled with this growth in an advanced stage of formation. The growth also formed the walls of some large cysts, and the ova, as far as examined, were diseased.

The fourth case of this form of degeneration was Miss C., single, twenty-eight years old, sent to me by Dr. B., of Bridgeport, Conn. The patient had been sick for more than a dozen years; had much suffering at her menstrual periods; had so broken down in constitution, and her general health was so enfeebled, that she was no longer able to attend to her ordinary

duties. Dr. B. writes "that everything possible had been done, and now evidently an operation was demanded." The patient was pale and emaciated. Her friends supposed she had consumption and that she was going into a decline. Examination showed that her lungs were sound and as strong as any part of her body, but that the ovaries were enlarged, dislocated, and exceedingly painful to the touch. She was admitted into the Woman's Hospital of Brooklyn. Further treatment gave her no relief, so an operation was deemed advisable, and, after consultation, was performed. The patient made an excellent recovery, and has since gained in health, strength, and flesh. She was able soon to resume her ordinary avocations, and she wrote me some months after: "It seems so strange to be free from pain"; said she "could not thank me sufficiently for all that was done; that before the operation she was the most miserable creature in the world; since, she was the happiest." She wrote June 14, 1889: "I am now in perfect health after fifteen years of suffering."

In this case also the entire ovary was filled with this remarkable and peculiar growth, except some little patches on the border, which were in a state of intense inflammation. No ova could be found. Near the periphery were some cysts, the walls of which were formed of this growth. This growth could be seen gradually invading and replacing every tissue. Some fields under the microscope looked like a sea of blood; near by were large blood-vessels clearly defined, with a well-marked endothelial lining and filled with blood-corpuscles.

Case V.—Mrs. A., twenty-eight years old, married some years, no children, has pain in the pelvis all the time; ovaries and tubes extremely sensitive; marital relations so painful she can not endure them. She has suffered so much that she was anxious to have the operation. The ovaries were small, cirrhosed, not much larger than a bean, and covered with fine adhesions. All the ovarian structure was completely destroyed by the growth. The tubes were larger than the ovaries, and in a state of interstitial salpingitis. The patient seemed to do well.

Case VI.—Mrs. H., forty-three years old. For some years her sufferings had been unusually severe, low down in the pelvis on both sides. At times the pain was agonizing; said she had not been able to perform any kind of labor. On September 9, 1887, I removed the diseased uterine appendages; they were in a mass of adhesions. The left tube was the size of a lemon; it, with the ovary, was firmly bound to the posterior part of the uterus. On the right the appendages were wedged down deep into the pelvic cavity. The ovary proved to have been transformed into a dermoid cyst. The tube was enlarged, firmly adherent, closed at the outer extremity, and all traces of the fimbriæ gone. The patient made an excellent recovery, and while there were serious complications in this case, probably this growth in the ovaries caused most of the patient's suffering.

Case VII was also complicated by a diseased condition of the Falloppian tubes. The patient was twenty years old, had suffered for some time with diseased ovaries, married three years and a half, two children; last parturition followed by some septic troubles. She came to me suffering with severe pain in the pelvis, unable to walk or to attend to her household duties. Examination showed deep transverse laceration of the cervix; perinæum gone; also there was serious disease of the uterine appendages; but, as she had so lately borne children, I decided to do nothing more than repair the cervix and the perinæum. She was admitted into the Woman's Hospital of Brooklyn, treated for some six weeks, injuries repaired successfully, and the patient sent home. After her return home she still complained of such constant distress and so much suffering that she begged to re-enter the hospital, and was admitted. The uterine appendages were in such an extremely diseased condition that there was no relief for her except by their removal, which I did in August, 1887. On both sides the appendages were buried in a mass of adhesions. Each of the ovaries formed part of the wall of an abscess cavity; each tube was completely closed at the fimbriated extremity, and in a state of intense interstitial salpingitis. There were numerous miliary abscesses in the walls of each of the tubes.

The patient made an excellent recovery, and is now in the enjoyment of perfect health. Microscopical examination of the ovaries showed that almost the entire structure was replaced by this growth. The ova were ruined. Her irreparable sterility had already been produced by the condition of the tubes.

Case VIII.—Mrs. G., thirty-five years old, feeble and emaciated, complaining of constant pain in the pelvis. Her pulse and temperature varied little from 100. Her friends thought she was going into consumption. Examination showed the uterus retroflexed at the internal os, ovaries enlarged, tender, and low down in Douglas's *cul-de-sac*. All efforts were made by constitutional and local treatment to improve her general health and strength and relieve her suffering, but the distress in the pelvis continued, and an operation seemed to be her only hope. She was not only anxious for the operation, but disappointed at any delay. I performed laparotomy on May 2, 1887. The whole broad ligament was like wet paper; it melted under the ligature, bled profusely, tore off even to the corner of the uterus, but all was properly secured, and the patient did well. She has since been a woman of remarkable strength and vigor, without indications of decline or consumption, has done the work for a family of eight persons, and looks remarkably well.

All the normal structure of the ovary was destroyed by this growth. The ova were in a retrograde condition, many of them filled with granular matter, the nuclei breaking up into medullary corpuscles.

Case IX.—Mrs. R., a pale, feeble, emaciated woman of twenty-three years, married five years, two children, youngest three years of age, has constant pain in the lower part of the pelvis, especially severe during the menstrual period and five days before; evacuation of the bowels produces great pain; coition also extremely painful; uterus retroverted and retroflexed; ovaries prolapsed; pessaries had been used without any good results, only increasing her distress. She entered the Woman's Hospital of Brooklyn, and I performed laparotomy on October 24, 1887. The growth in the ovaries is represented by Fig. 4. In one ovary two large cysts were found, surrounded by layers of inflammatory tissue. The ova were diseased.

Case X.—Mrs. M., also a delicate, emaciated woman, with apparent consumptive tendencies and such constant distress in the pelvis that life was a burden. She was not able to care for her family, neither could she submit to the marital relations. I performed laparotomy for her in April, 1887. She made a good reovery. Both ovaries were small and in a state of cirrhosis, and occupied by this growth; tubes in a state of slight interstitial salpingitis.

Case XI.—Miss W., thirty-nine years of age, single, pale, feeble, and emaciated. She commenced to be sick when she was twenty-five years of age, and has continued to grow in worse conditions, the pain increasing in severity. Much of her time not able to be out of bed. She was for a while in the Massachusetts General Hospital, also under an eminent specialist of Boston. He informed her that her ovaries were diseased, but that an operation would be exceedingly dangerous on account of her debilitated condition. She was in the Woman's Hospital of Brooklyn during the summer of 1888, returned in the fall, and in November of that year I removed the diseased tubes and ovaries. She made an excellent recovery, and has told me since "she was so much better, and so glad that she had had the

operation." She spoke of once being "rosy and fleshy," and how her sickness had made her "thin and pale," but that "since the operation she was regaining her flesh and rosy complexion."

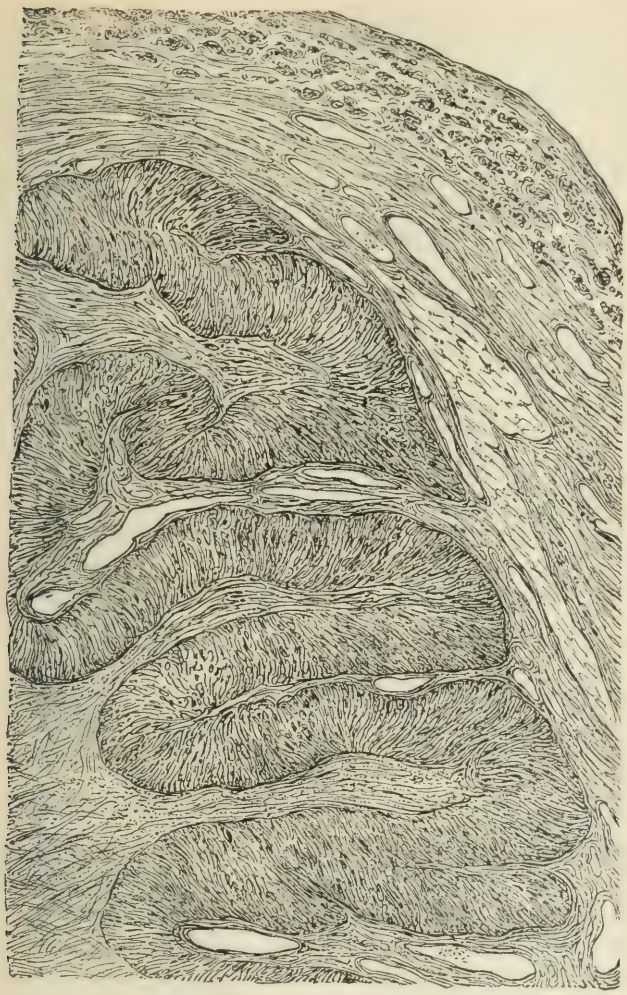


FIG. 4.—An endothelioma of the ovary approaching the surface. × 250.

She also said that "before she went into the Woman's Hospital she had suffered so much she did not expect to live, but that now she was gaining health and strength."

The ovaries of this patient showed a most remarkable and well-advanced condition of this growth. The whole ovarian structure seemed to be replaced by it.

CASE XII.—Mrs. T., forty years of age, consulted me in August, 1888; was in feeble health, pale, and emaciated; suffered constant distress in the pelvis; ovaries extremely sensitive; uterus pulled to the right by shortening of the right broad ligament. Nine years previously she had consulted an eminent specialist of Philadelphia, who told her she had inflammation of the ovaries. Since then her sufferings had continued to increase and her condition to grow worse till her nervous system was broken down and in an extremely irritable condition. So cachectic was she in appearance that some imagined she had malignant disease. She informed me that she wanted to be relieved, even if it were necessary to perform an operation. She asked me that the ovaries might be removed. This operation I performed in October, 1888, and immediately she began to gain in health and strength, and in a few weeks showed very much improved conditions.

The right ovary was somewhat enlarged, and most of it occupied by a fibroid growth. Microscopical examination showed a number of nodular fibromata, also enlarged blood-vessels, many of them in a state of endarteritis obliterans.

The left ovary was cirrhosed, changed to cicatricial tissue, the outcome of chronic oophoritis. In some portions of the same ovary I discovered globular deposit of lime salts, and within them angular protoplasmic bodies, like bone corpuscles—osteoid tissue. The Falloppian tubes showed chronic inflammation and were atrophied. But the most remarkable feature was this growth, invading and taking possession of both ovaries. The ova were diseased.*

Microscopical Representations of the Growth.—Fig. 4 represents the general appearance of the ovary in an advanced stage of development. Right ovary, × 25. P, peritoneal layer. C, cortical layer, with numerous bundles of smooth muscles. V, fibrous connective tissue, in which the ovary has been transformed, freely supplied with capillary and venous blood-vessels. E, endothelioma of a markedly convoluted form, the depressions between which are filled outwardly with freely vascularized connective tissue, and inwardly by non-vascularized. F, coagulated fibrin. S, dense fibrous connective tissue, likewise exhibiting faint convolutions, and holding protoplasm in a reticular arrangement with pigment granules.

Here we see a narrow zone of the cortical substance of the ovary left, not exceeding in diameter one to two millimetres. The greater portion of the cortex is replaced by a convoluted tissue visible to the naked eye, being characterized by the presence of coarsely granular corpuscles arranged in a radiating direction and interrupted in many places by light gaps, which, on close examination, prove to be forming blood-vessels. A peculiarity of this formation is that it is bordered by a fibrous connective tissue on all sides. The difference, however, is that the connective tissue entering the depressions between the convolutions toward the surface of the ovary is richly supplied with blood-vessels, mostly capillary and venous in nature, while the connective tissue in the depressions looking toward the hilus lacks blood-vessels either entirely, or shows only a limited number, not exceeding the amount usually found in the cortical substance of the ovary. In many instances the spaces between the convolutions looking toward the hilus are filled with coagulated fibrin, and frequently coagulated fibrin fills all the space left between the convolutions and the hilus.

In another case, perhaps still more advanced, there is but little ovarian tissue left at the cortex, and the rest of the ovary is taken by a partly convoluted and partly irregular tissue, holding in its central portion numerous and large cavities, apparently filled with blood and fibrin. The growth seems to replace by degrees all the original structures of the ovary, transforming them into its own, and yet, in many instances, apparently not increasing the size of the ovary. In the most advanced stage of the disease, or in the highest degree of change, there may be no visible aug-

* Microscopical specimens from these ovaries were presented to the New York Pathological Society, December 12, 1888.

mentation of the volume of the diseased ovary. Sometimes it is really diminished in size.

Toward the outer periphery of the convoluted tissue we not infrequently meet with patches of an extremely dense fibrous connective tissue, the bundles of which are separated by branching protoplasmic masses, often supplied with dark-brown pigment granules.

Solid masses of either hyaline or slightly fibrous structure are often met with in ovaries, and are usually considered as the remnants of menstrual follicles. Hyaline masses especially are considered to be remnants of the structureless or basement membrane of a bursted follicle, and are probably the product of a plastic or formative inflammation ensuing after the rupture of a menstrual follicle. Not infrequently such a dense convoluted wall surrounds a markedly myxomatous structure, as is represented in Fig. 5, a menstrual follicle at the boundary between cortex and medulla of an ovary affected with endothelioma in a high degree, × 100. A, fibrous connective tissue, such as we see in the medulla of the ovary, with numerous convoluted arteries of varying



Fig. 5.—A myxomatous menstrual body. × 100.

sizes. V, vein. C, convoluted wall of a probable menstrual follicle surrounding a myxomatous structure. N, transition between a dense fibrous and a less dense myxomatous tissue.

Low powers of the microscope suffice to show that the convoluted wall of such a follicle is not uniformly dense throughout, but often exhibits transitional features from a dense fibrous to a less dense myxomatous tissue. The wall under these circumstances still shows an irregular protoplasmic reticulum, when the meshes are filled with fibrous basis substance. This tissue blends with ordinary myxomatous tissue in which the meshes are filled with a hyaline or slightly granular basis substance. These features are more clearly represented by high powers of the microscope, as in Fig. 6, a menstrual follicle at the boundary between cortex and medulla, × 600. F, dense fibrous connective



Fig. 6.—A myxomatous menstrual body. × 600.

tissue composed of coarse bundles between which are few nuclei left. B, transitional tissue between fibrous and myxomatous, made up of protoplasmic tracts with nuclei at the points of intersection, and holding in the meshes a less dense basis substance. M, myxomatous portion composed of nucleated tracts of protoplasm, the meshes being filled with a mucoid basis substance, in which delicate offshoots of the protoplasmic tracts produce a delicate reticulum. The center of the mesh usually holds a nucleus-like body, apparently suspended in the mucoid basis substance.

Here we observe changes in the morphology of the basis substance from a purely fibrous to a purely myxomatous tissue. As an additional feature in the myxomatous portion we often observe light- or dark-brown pigment granules imbedded in the protoplasmic tracts, which is another proof of these bodies being remnants of menstrual follicles.

I have described these formations because some of my specimens tend to prove that the follicular wall is the tissue in which occur the morbid changes under consideration. I have seen the transitional portion between fibrous and myxomatous basis substance becoming transformed into polyhedral medullary corpuscles, known by the term endothelia. By this term histologists designate corpuscles of the connective-tissue series, meaning a growth of the medullary corpuscles to such an extent that they flatten one another, and thus assume similarity with epithelia. In developing bone such bodies have long since been known by the term osteoblasts—that is, bodies ready to be trans-

formed into basis substance. Whenever bone tissue becomes inflamed, the reappearance of the osteoblasts is one of the first symptoms of osteitis. Judging from analogy, the tissue of the follicular wall may likewise return into its medullary or embryonal condition, and cause the reappearance of medullary corpuscles in the shape of endothelia. The convoluted figure of the follicular wall may explain the convolutions of endothelioma.

There may be another source, however, of the convoluted dense formations in the ovary, more especially at the boundary zone between the cortex and medulla, or in the medulla itself. This process is endarteritis obliterans. I simply allude to this by no means rare occurrence, which I propose to study up at some future time. We find convoluted masses of considerable length, and can trace their origin from previous arteries, which, as is well known, have a markedly tortuous course in the medulla of the ovary. See Fig. 7, a solid convoluted mass of fibrous tissue—the early stage of endothelioma.

In specimens of endothelioma I have often seen obliterated arteries, especially at the boundary zone between cortex and medulla, and in the medulla. The final result is not only a transformation of a pervious artery into a solid tract, apparently structureless, or made up of dense fibrous connective tissue, but sometimes broad convolutions arise from hyperplasia of the adventitial coat leading to the new formation of convoluted granular masses, in the centers of which remnants of the arteries are recognizable by a few muscular fibers left unchanged. No trace of caliber is rec-



Fig. 7.—Convoluted fibrous tissue, the result of endarteritis obliterans. × 100. *A*, a transverse section of a permeable, unchanged artery.

ognizable in such a remnant of an artery. This process may be another source of endothelioma, although I have not yet seen positive proof of a transition of such remnants into endothelial formations. On the other hand, endothelioma is often traversed by arteries exhibiting a marked condition of endarteritis.

The next question to be considered is, What are these coarsely granular corpuscles building up the formation under consideration? The nature of these bodies can best be seen in places where they are yet scanty and scattered in the fibrous connective tissue, as we often find in the vicinity of well-developed endothelioma. Here we observe bodies of varying sizes between the bundles of fibrous connective tissue, distinctly flattening one another, whether they are present in groups or rows. See Fig. 8, hæmatoblasts changing to capillary blood-vessels, from a specimen of endothelioma



Fig. 8.—Hæmatoblasts changing to capillary blood-vessels. × 600.

in the initial stage of formation. F, dense fibrous connective tissue, with a reticulum of protoplasm between the bundles, the bundles themselves partly transformed to lymph corpuscles. E, isolated and grouped endothelia. E¹, a bundle of fibrous connective tissue transformed into coarsely granular masses. C, capillary blood-vessels springing or developing from a row of coarsely granular bodies.

Bodies of this description are known since 1839, when Theodore Schwann described them as blood cells and, in his wonderfully acute power of observation, claimed that from them arose both the blood-corpuscles and the walls of the blood-vessels. Whenever an active new formation of blood and blood-vessels is going on, we invariably meet with such bodies. This is the case, for instance, whenever one tissue changes into another, when cartilage breaks up into medullary tissue preceding the formation of bone tissue, also at the border of the external epithelium of the enamel organ of the developing tooth, together with the active proliferation of the external epithelium thereof, and its transformation into medullary tissue. In 1872, pp. 100 and 341 of his "Microscopical Morphology," C. Heitzman described the same corpuscles as hæmatoblasts, claiming that every granule may eventually become a red blood-corpuscle, while the peripheral portions of the corpuscles, by fusion of hæmatoblastic substance, produce the walls of the blood-vessels. Since 1867 we have known, through the

studies of S. Stricker, that the capillaries originally are solid cords, which by vacuolation become hollowed out. Hayem (1877) discovered corpuscles in the blood smaller than red blood-corpuscles, and likewise termed them hæmatoblasts. Still later Ehrlich described coarsely granular bodies which were termed by him "Mastzellen," which means well-fed cells, which also proved to be either fat- or blood-forming elements.

In studying the coarsely granular corpuscles under consideration, we find a large number of homogeneous glistening granules and lumps within them, or scattered without being in the interior of sharply defined corpuscles, of a bright-yellow color, not taking up the stain of ammoniacal carmine. The close study of these granules shows their gradual change into red blood-corpuscles—a change easily traceable in almost any part of the specimen. There is no doubt we have before us hæmatoblasts in large numbers, either arranged in sharply circumscribed bodies or scattered in the fibrous connective tissue, from which in time red blood-corpuscles do originate. At the same time the peripheral portions of such coarsely granular bodies serve for the building up of the walls of blood-vessels, first of all of capillaries. Such newly formed capillaries have peculiarly fluted contours, reminding one of their origin from previous rows of coarsely granular bodies, and invariably contain a certain amount of red blood-corpuscles, or so called ghosts, apparently even before entering any communication with the vascular system. Not infrequently we see sprouts arising from the walls of such capillaries, either solid or filled with hæmatoblasts, or hollowed out, and being in connection with the main vessels by means of a comparatively narrow neck.

That the bodies filled with hæmatoblasts mainly serve for the new formation of blood-corpuscles and blood-vessels is easily demonstrated on any marked formation of endothelioma with high powers of the microscope. See Fig. 9, Ridger.



Fig. 9.—An endothelioma in full development, showing the change of endothelia into capillary blood-vessels. × 600.

F, fibrous connective tissue at the border, showing the initial stage of formation of hæmatoblasts. E, endothelia more or less filled with hæmatoblasts. V, blood-vessels traversing the growth mainly in a radiating direction.

We observe radiating rows of polyhedral bodies which either contain a well-marked central nucleus, or, instead of this, one or several glistening lumps of a high refractive power. Between the bodies we can trace light narrow rims, usually traversed by delicate offshots, obviously serving for an interconnection of the polyhedral bodies.



Fig. 10.—Endothelioma with a marked new formation of blood vessels. ×300.

Ever since Bizzozero, of Turin, Italy, drew attention to the occurrence of endothelial growths strictly of a connective-tissue nature, the attention of the pathologist was drawn to tumors, holding a varying amount of such bodies, for which the name of endothelioma has been suggested. Further research has, however, revealed the fact that a tumor deserving the name of endothelioma does not exist. Endothelia, if grouped together in large masses, are either a prestage for the formation of a lipoma or an angeioma.

In some instances I have been able to trace a large number of newly formed arteries at the periphery of an endothelioma, near the surface, where arteries, especially large arteries, do not occur in a normal ovary. The formation of arteries is represented in Fig. 10, an endothelioma with new formation of arteries, veins, and capillaries.

E, endothelia of comparatively small size filled with hæmatoblasts. L, lymph corpuscles in clusters. A, artery in transverse section. A^1, artery in longitudinal section. V, sinuous veins holding hæmatoblasts and red blood-corpuscles.

The development of veins goes on the same plan as that of capillaries, the only difference being the large caliber and sinuous or bay-like cavities along their course. The wall of such veins is made up of endothelia seen in edge view, or the wall appears to be continuous or homogeneous.

The arteries develop on the same plan with the addition of smooth muscle fibers around the wall. Whenever arteries are newly formed, we invariably find in their neighborhood clusters of lymph-corpuscles — viz.: medullary corpuscles more or less homogeneous, lacking nuclei, and not transformed into medullary corpuscles filled with hæmatoblasts. So far as I could trace the formation of arteries, I am convinced that the muscle fibers arise from the previous lymph-corpuscles in a manner described by Dr. Jeanette B. Green in her studies on the decidua.

Hæmatoma of the ovary is considered usually as an extravasation of blood into an ovarian cyst, in many instances giving very little disturbance to the system.

Endothelioma, on the contrary, leads to and terminates in a collection of blood by a change of tissue or a new formation, and seems to be of profound pathological importance, as it not only destroys the anatomical structure of the organ and consequently its physiological functions, but disturbs seriously, and in some instances destroys the health and comfort of the individual.

TWO CASES OF LARYNGEAL PARALYSIS,

WITH A CONSIDERATION OF THE POINTS INVOLVED.

By JONATHAN WRIGHT, M. D.,
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The peruser of recent medical literature, especially in the domain of laryngology, must often be struck with the divergence of views and the discrepancies of statement in works on laryngeal paralysis. There is an undoubted tendency toward bewilderment of mind the more one reads and studies the various experiments to settle the nerve supply and the *modus operandi* of the dilators and closers of the glottis with the complicated interrelation of the various contributory muscles. The laryngologist himself, if his experience is large, must from time to time see certain laryngeal paralyses whose ætiology, after the most exhaustive local and general examination, is a mystery. All other muscular groups are normal, and the patient may otherwise be in good health. Ascribing them to some pre-existing laryngitis or to rheumatism or gout is far from satisfactory without an explanation of how these very common affections, in particular cases, can bring about such results. It has been the lot of the writer to see several such cases when the most careful local inspection and the most painstaking physical examination of the chest failed to disclose the cause. In most of these cases (all, I think) the immobile vocal cord was in the median line. The chagrin which they have caused has led me to study the two cases presented in this paper with more interest than they would have otherwise excited. They, of course, do not belong to the group of puzzling cases just mentioned:

Case I. *Left Lingual and Laryngeal Paralysis; Atrophy of the Left Side of the Tongue.*—G. K., aged twenty-nine, a German shoemaker, came to the throat department of the Roosevelt Hospital on July 20, 1887. His family history is good. He had typhoid fever when twelve years old; otherwise he has never been sick, though always delicate as a child. He is a moderate drinker of malt liquors. Nine years ago the patient had gonorrhœa and a chancre. He took medicine only four weeks, and had no secondary symptoms nor any trouble attributable to syphilis until four years ago. At that time he began to feel quite weak, but could go on with his work. He states that at that time he was treated for syphilis, but since then has never felt entirely well.

The weak feelings continue and he suffers often from pain in the back of the head and neck, which occasionally extends to the vertex. Last January (1887) he began feeling very much weaker, and noticed that he reeled to the left side when walking in the dark, and felt dizzy. He says his arms and legs felt as though asleep. These symptoms have grown gradually worse. Five weeks ago he suddenly noticed an impediment in his speech. He also began to swallow with difficulty, though he seems undecided as to the time at which this began. He says that when he drinks, the fluids come out of his nose. The patient has a cachectic appearance. His voice is nasal in tone, and he articulates indistinctly. His mental faculties seem normal. There is a slight paresis of the left side of the face, noticeable both in quiescence and when attempting to smile. He can, however, whistle fairly well. His general muscular power seems to be much less than one would expect from his appearance. When he closes his eyes and attempts to walk he falls to the left. On protruding the tongue it is seen to deviate markedly to the left side. There is considerable atrophy of the left side of it, apparent to the eye and appreciated by the finger.* No loss of taste or of tactile sense can be made out. There is no sensory paralysis anywhere. The left palatine arch is completely paralyzed. On laryngoscopic examination, the left vocal cord is seen immovably fixed in the median line. It seems loose and the edge rises slightly with expiration. The right vocal cord overrides it somewhat on phonation.† The cords are both congested. There is abundant muco-purulent secretion on the left side of the naso-pharynx and in the left nostril. There is no sterno-mastoid or trapezius paralysis.

Dr. T. T. Janeway, of this city, kindly made an examination of the patient's vision and of his hearing with the following results:

R. V., $\frac{20}{100}$; with $\frac{1}{36} = \frac{20}{200}$. L. V., $\frac{20}{200}$; with $\frac{1}{36} = \frac{20}{30}$. Ophthalm.: R. $\frac{1}{30}$, L. $\frac{1}{30}$.

H. D. R. W. = 18″. H. D. L. W. = 1″. After inflation, H. D. R. W. = 18″. H. D. L. W. = C.

Aerial sound conduction better in both ears than bone.

Aerial and bone conduction both more reduced in left than in right ear. Tuning-fork in median line heard better in the right ear.

T. F. R., aerial, 19″; bone, 8″. L., aerial, 4″; bone, 3″. After inflation no improvement.

Urinary Examination.—Negative. No sugar. There is no appreciable lung lesion.

Treatment.—The patient was put on large doses of the iodide of potassium. The limit of tolerance seemed to be about half an ounce daily. During intermissions and along with it were given from time to time arsenic and the syrup of the iodide of iron.

The patient was under observation for about a year. Shortly after his first presentation he had three attacks of inspiratory dyspnœa, probably each time from food or drink dropping into the larynx. He also had a quite severe attack from an application of the solution of the chloride of iron to the congested

* The appearance was similar to the case represented in the "Berl. klin. Woch.," No. 29, 1887, reported by Pel.

† I give here the usual appearance. At times I was in doubt as to these minor appearances which are nevertheless so important.

vocal cords with a brush. At the end of a year, when he passed out of observation, there was the following change in his condition:

The dizziness and reeling to the left ceased soon after the commencement of the iodide treatment. The difficulty in swallowing was also soon overcome entirely. His articulation became distinct, though his voice was husky at times. The slight facial paresis disappeared. There was partial though not complete relief from the palate paralysis. His general muscular weakness was relieved so that he could resume work. There was no improvement in the lingual atrophy and paralysis, and no change in the laryngeal condition.

A second examination was made by Dr. Janeway four months after the first, with these results:

Eyes: R. V., $\frac{20}{100}$; with $\frac{1}{36} = \frac{20}{20}$. L. V., $\frac{20}{100}$; with $\frac{1}{36} = \frac{20}{20}$.
Ears: H. D. R. W. 12″. H. D. L. W. 4″.

Aerial conduction better in both than bone.

Bone conduction better in the right than the left.

Tuning-fork gave increase in duration both of bone and aerial conduction, the record being R., aerial, 25″; bone, 10″. L., aerial, 17″: bone, 9″. No improvement after inflation.

Case II. *Left Laryngeal and Sterno-mastoid and Trapezius Paralysis.*—M. M., aged twenty-seven, a married woman and a native of Ireland, came to the Dennet Dispensary April 17, 1888. Her mother died of bronchitis(?); one sister died of consumption.

The patient is an exceedingly nervous and excitable person of limited intelligence. When a child she had lumps in her neck which disappeared later. Four years ago the patient "got a wetting." Since then she has not been unwell and has had "the whites." Alcoholic and specific histories are denied. Two years ago her voice began to be husky at times and she had occasional "choking fits." There was no cough at that time. Six weeks ago the patient began to cough and raise a little blood. She had pain in her back and her leucorrhœa increased. She became short of breath and began to have night-sweats with chilly feelings, followed in the afternoon by fever. Her appetite is poor. She has lost flesh and strength.

Examination.—Her general appearance is fairly good. The circulation in her extremities is poor. Her voice is exceedingly husky. At the apex of the left lung in front there is dullness on percussion, crepitant and subcrepitant râles, increased vocal fremitus, and roughened breathing. There is great tenderness to pressure and percussion over this area, which extends downward to the upper border of the third rib. Posteriorly the signs are not so marked. There is no other pulmonary change. There are no cardiac or aneurysmal indications.

Her voice is unsteady, at times clear, but usually somewhat husky.

The laryngoscope shows the left vocal cord and arytenoid cartilage immovable in the median line. The cord itself is congested and lax, and there is general laryngeal congestion, but no swelling or infiltration. The right cord moves spasmodically. There is no palate or facial paralysis. There is decided paresis of the upper portions of the left trapezius muscle and almost total paralysis of the left sterno-cleido-mastoid, but no restriction of the movements of the head.

It will be noticed in this history that the symptoms referable to the laryngeal paralysis antedated those assignable to the lung lesion about two years. The case when last seen was running the ordinary course of phthisis in the first stages, with no change in the laryngeal symptoms.

Now, in these two cases we have several points of great interest because of the doubts in which they are involved:

1. The peripheral manifestations of a central or nerve lesion.

a. The median position of the affected vocal cords.

b. The concomitant lingual paralysis and atrophy in one case and the paresis of the sterno-mastoid and trapezius muscles in the other, with other symptoms.

2. The character and situation of the lesions, whether in the cerebral cortex, the medulla oblongata, or at some point of the nerve trunks supplying the various muscles.

In order to make the conclusions arrived at clearer, it will be well to review, as briefly as possible, the literature of the subject bearing upon the salient points, and in the order named. Of course, it must be understood that nothing like completeness is intended or aimed at; that would be tiresome and useless.

We need not go back to Galen or even to Albers in prelaryngoscopic days, but all the information of use is to be found in literature since 1860.

It will be noted that the term laryngeal paralysis is applied to these cases. This is for convenience rather than for exactitude of nomenclature. Until recently median position of the vocal cords was generally supposed to be due to paralysis of the crico-arytænoidæi-postici muscles.

As late as 1880 such an authority as Störk (1) said that paralysis of the postici was one of the rarest of laryngeal neuroses. A year later Semon (2) showed conclusively that it was by far the most frequent of all partial laryngeal paralyses. Almost simultaneously with the introduction of the laryngoscope into medicine we find an account of a case of median paralysis of one vocal cord. Lewin (3) gave, in 1860, a wonderfully good description of "paresis of the muscle of the right arytenoid cartilage which narrows the glottis and does not produce hoarseness," in a patient suffering from constitutional syphilis. In the same year Türck (4) described a case of right hemiplegia with immobility of the left vocal cord, which was displaced to the right of the median line. Three years later Gerhardt (5), who is usually credited with reporting the first cases, published his classical work on "Laryngeal Paralysis," with what appears to be the first account of the laryngoscopic appearances of a case of *double* "posticus paralysis." He reported eighteen cases of laryngeal paralysis in all, and in regard to a cerebral laryngeal center contents himself with saying: "Physiological data do not go far here. The superior roots of the accessorius, like the neighboring vagus, can be traced to the gray mass on the floor of the fourth ventricle." Many cases were afterward reported, and many theories advanced to account for them.

Bäumler (6) and Johnson (7), in 1872 and 1873, and later McCall Anderson (8) and Whipham (9), reported cases of bilateral paralysis of the vocal cords, some of them in the median position, which were due to pressure on one vagus nerve alone. Johnson (10), in another and a very able paper, explained this phenomenon on the strength of the researches of Rosenthal and Waller and Prevost, which were repeated by Professor Rutherford at Johnson's instance. Pressure on the trunk of the vagus may cause bilateral spasm or bilateral palsy, or spasm of one and palsy of the other side of the larynx, by reflex action due to the

decussation of the nerve fibers in the medulla, since the vagus is made up of both afferent and efferent nerve fibers, while pressure on the recurrent alone can only cause paralysis of the affected side. This he believed to be the cause of many cases of sudden dyspnœa in thoracic aneurysm. Finally he says: "It is probable that the long-continued irritation of the trunk of the vagus may gradually, as in the cases of traumatic tetanus, induce such demonstrable structural changes in the nerve center as will explain the bilateral palsy, which appears to be one of the results of this chronic nerve irritation." We see here a foreshadowing of part of what Krause years later announced as the results of his investigations. Indeed this article, as pointed out by Semon, has not received the attention and consideration it deserves in the history of laryngeal neurosis. Cohen's (11) recent remarkable clinical observation of the stimulation of the peripheral sensitive distribution of the pneumogastric in the larynx, causing temporary relief to a flagging respiration, is in line with this early work of Johnson.

Rosenbach (12), in 1880, called attention to the greater frequency of abductor paralysis, and Semon still further emphasized the point, showing that adductor paralysis from a central or nerve lesion was almost unknown.* Since then their respective claims to priority on this point have been urged with a persistence and an industry worthy of a better cause and of a more important subject. Various explanations of this preponderance have been advanced. Rosenbach said that "in the inspiratory closing of the glottis following a paralysis of the dilators there is not primarily a spasm of their antagonists, but a rhythmical perverse innervation in one direction only—namely, toward the adductors." This sentence has been widely quoted, probably on account of the obscurity of its meaning. It is needless to say that it has no experimental proof to stand on, and, if I understand it rightly, can necessarily have none, but must always remain a theory. Semon supposed the adductor and abductor filaments existed separately in the recurrent nerve, and advanced three hypotheses to account for the median position of the cords.

1. The abductor nerve fibers may be peripheral, and hence more exposed to external injury.

2. There may be a specific vulnerability of the abductor filaments, or when adductor fibers are partially disabled the other adductor fibers are able to carry all the adductor stimulus.

3. Possibly the nerve fibers receive an increment of nerve force from the superior laryngeal.

McKenzie (13) and Riegel (14) were inclined to accept the first supposition, the former suggesting that the nerve fibers were peripheral, the latter that they were together at one side. Semon himself leaned to the probability of the second hypothesis. It certainly seems to me that claiming a "specific vulnerability" is begging the question and is as unintelligible as Rosenbach's "perverse innervation." It leaves the problem, Why are the abductor filaments singled out for injury? unanswered.

* It should be remembered that in *complete* one-sided paralysis of the larynx the vocal cord is in the cadaveric position of Ziemssen, or half way between adduction and abduction.

The third hypothesis has received some support from the investigations of Mandelstamm (15) and Exner (16), and in Lennox Browne (17) it has a prominent though not an unreserved supporter. Many years ago Weir Mitchell, as quoted by Johnson, showed that the movements of the glottis in the turtle are due to two sets of muscles, the openers and the closers. The superior laryngeal nerve supplies both, while the inferior supplies only the openers. The superior laryngeal nerves were found to decussate at the base of the brain like the optic chiasm. The superior and inferior laryngeal nerves were separate throughout their course. If all nerves were cut but one superior laryngeal, the larynx movements would still obtain. Schech (18) and Schmidt (19) separately, in 1873, did much to formulate the arrangement of laryngeal innervation and muscular movement given by the text-books and accepted up to a recent date. According to the investigations of Exner and Mandelstamm, the thyreo-arytenoid muscle in its internal division receives its innervation almost exclusively from the superior laryngeal through a branch from its pharyngeal division, which they call the middle laryngeal. This muscle is a straightener and tensor of the vocal cord, and is supplied by both nerves on each side equally. The crico-thyreoid muscle is also supplied by the superior laryngeal nerve of both sides equally, while the recurrent probably furnishes some fibers also.*

"The interarytenoid muscle apparently is supplied equally on the two sides by both the inferior and superior laryngeal nerves. It is probable that the other muscles, including the posticus, receive their principal nerve supply from the inferior laryngeal, though some of it from the superior laryngeal. Often the fibers of the superior laryngeal reach over to the other side posteriorly." Some arrangement of this kind was suspected twenty years ago by Türck (*loc. cit.*, p. 440). It has been urged that this arrangement does not in itself explain those cases where there is a bilateral median position with a central lesion, or a lesion in the vagus above the superior laryngeal. Neither does it explain the cases of Baümler and Johnson, nor why section of the recurrent causes total paralysis.

This brings us to a consideration of the theory of a spasmodic action of all the laryngeal muscles, or at least the principal ones.

Although Jeleneffy states (*loc. cit.*) that he announced in 1872 that the condition was due to spasm from irritation and not to paralysis, and although the same was hinted at by Johnson, as we have seen, the credit of demonstrating and emphasizing the fact by experiments on animals belongs to Krause (21). The conclusion he arrived at as a result of his very careful experiments was, in a few words, as follows: The irritation of pressure or disease, either along the nerve trunks or in the nerve centers themselves, causes a spasm of all the laryngeal muscles, and the adductor

* I have now a case under observation in which there was apparently a paralysis of the thyreo-arytenoid muscles with a paresis of the crico-thyreoid and interarytenoid muscles on both sides. Besides the elliptical opening in the glottis on adduction, the cords had the peculiar rounded outline described by Störk. This latter soon disappeared, but the laxness of the cords still obtains. This condition supervened on the pharyngeal inflammation caused by swallowing carbolic acid. The patient is gradually recovering her voice.

muscles—resembling the flexor muscles of the extremities, to which they have been repeatedly compared—having the greater power, cause the vocal cord of the affected side to assume the median or adducted position. This position may be permanent or it may continue a shorter or longer time, and then, from the progress of the disease and a destruction of the nervous elements, change to one of complete paralysis, when the cords assume the cadaveric position. Of course this is a very crude statement of Krause's very elaborate article, to which reference must be made for the full force of the argument. It may be said here that complete adductor paralysis from a nerve or central lesion is almost or quite unknown, though some good observers have confessed their inability to invariably distinguish between the cadaveric position and complete abduction. Adductor paralysis, usually bilateral, is the rule in the hysterical form, which is never permanent.*

That Krause's conclusions have been subjected to many and very weighty criticisms can not be denied. His opponents, until lately, if not still, are in the majority, but Jeleneffy's work, unless refuted by future investigations, must eventually establish the reality of Krause's conclusions, at least in the main. The former states—and his demonstrations are singularly convincing, at least to the writer—that not only is the crico-arytenoideus posticus an antagonist to the lateralis in its adducting power, but beyond a certain point is in some of its fibers a synergist. It also tends to fix the arytenoid cartilage on the cricoid, and prevents the vocal process from being depressed by the contraction of the lower fibers of the lateralis. By its counteraction it helps the thyreo-arytenoid and the crico-thyreoid muscles to stretch and straighten the vocal bands. It assists the inter-arytenoideus also to approximate the arytenoid cartilages. The original article† must be consulted for an explanation of this somewhat complicated and yet, according to Jeleneffy's demonstration, very obvious function of the posticus. Krause does not deny the possibility of the occurrence of posticus paralysis, but a little reflection will convince those who have seen many cases of the permanent median position of the cords that it must be a rare one if the above view of the action of the posticus is a correct one. Dr. Solis-Cohen (*loc. cit.*) seems to have adopted Krause's views at least as explaining the cases where there is lesion of the recurrents.

In 1885 Hooper (22) noticed in the dog that there was forcible abduction of the vocal cord from galvanic stimulation of the corresponding recurrent nerve when the animal was very profoundly anæsthetized, and adduction at other times. Krause noticed something of the same phenomenon. The former, therefore, said that the abductors belong to organic life, and denied their proclivity to paralysis. Donaldson (23) in the following year said it was only on weak stimulation that the cords were abducted, and that the abduction was not due to the etherization; but he also denied the greater proclivity of the abductors to paralysis. Semon and Horsley (24), while denying strenuously the validity of Krause's views, confirmed the statements of Hooper in regard to deep etherization, as well as those of Donaldson in regard to weak stimulation of the recurrents, but showed that, in repeating Hooper's experiments, Donaldson did not carry the narcosis far enough.

These authors also stated that in excision of the larynx in the living animal the postici muscles lose their contractibility before the other muscles, but Jeleneffy (*loc. cit.*) has shown that this is due to their smaller size and their more exposed condition. While the writer is inclined to accept Krause's views in the main, there are some points which are not explained and some which seem to controvert them. When Remak (25) reported his case of lingual and sternomastoid paralysis with immobility of the right vocal cord, from injury to the nerves at the base of the skull, Fraenkel (26) seemed to think that this settled the question, reasoning that because there was paralysis of other muscles, there could not be spasm of the laryngeal group, but the posticus must be paralyzed. Without at all detracting from the force of this objection, which is open to much more serious criticism, it might be said that the history of laryngeal paralyses abounds in such examples, and the case of Remak is not unique. Case II, recorded here, is such an example. Fraenkel (27) himself has elsewhere advanced an objection that appeared much more vital to the spasm theory. It can not be denied that even in the cases where the lesion is central, and hence including the bulbar origin of the superior laryngeal nerve fibers, the vocal cord, although in the median position, is often, if not usually, lax during respiration, and occasionally is made tense only during phonation. It was difficult to see how this could occur during spasm of all the laryngeal muscles.

Jeleneffy's article explains how it is that after atrophy due to the continued spasm we obtain a condition which is practically a paralysis of the posticus and thus allows a laxness of the cord to occur from the non-fixation of the arytenoid cartilage and the lack of counteraction to the crico-thyreoideus and thyreo-arytænoideus internus muscles.

Nevertheless, the objections to the spasm theory are less numerous and weighty than those of paralysis of the posticus alone, since it is supplied by the same nerve as most of the other muscles. This supposition is unsupported by experimental proof, and many well-established facts seem utterly irreconcilable with it. But argument is of little use. Clinical observation can only serve to keep alive the interest in the subject. Physiological experiment and anatomical research, repeated and varied, are the only methods by which the problem will be solved.

The concomitant lingual paralysis and atrophy in Case I is of only contributory interest to us. Although Fairlie Clarke (28), in reporting a case in 1871, declared that he was unable to find any case of lingual atrophy reported in literature, there is at least one by Dupuytren as long ago as 1832

* I have seen one case in which what was without doubt hysterical closure of the glottis was so persistent and caused such extreme inspiratory dyspnœa that tracheotomy with artificial respiration for half an hour were necessary to save the patient's life. Lately, after the lapse of six years, I have seen the patient, who wore the tube for many months. She still has occasional attacks of typical hysterical aphonia with an increase in other hysterical manifestations, but she has had no return of the nearly fatal dyspnœa.

† See for *résumé* "N. Y. Med. Journal," Aug. 31, 1889.

referred to by Leudet (29), while Lande (30) in 1870 reported five cases. Since then, and indeed before, many cases have been reported by the French writers.

The other symptoms need only be referred to in speaking of the location of the lesions. In Case II the shoulder paralysis would indicate, as in Remak's case, that we have to do with a lesion of the vagus and accessory immediately after their exit from the skull. This is still further suggested by the history of glandular enlargement in the neck and by the fact that the phthisis of the left pulmonary apex began two years after the laryngeal affection. Moreover, the "choking fits" or "laryngeal crises" to which the patient had been subject, and the spasmodic action of the right vocal cord, point to an irritation of the vagus, as in the cases of Bäumler and others mentioned. It is reasonable to suppose that there was pressure exerted by some enlarged cervical gland, although none could be distinguished upon examination.

In Case I, the lesion being evidently an intracranial one, we have two possible locations—a cortical and a bulbar.

The question of a cortical laryngeal center has been the subject of some interesting pathological and physiological investigations. Lewin (31), in 1874, examined a case with left hemiplegia and made out immobility of the left vocal cord in the middle line. There was no autopsy. So scanty are the data upon which to base a reliable localization of a laryngeal center in the cerebral cortex from pathological evidence, that the laryngoscopic appearance of every case of hemiplegia should be recorded for future reference on autopsy. Seguin's (32) cases which were reported in 1877 tended to show that the lower part of the third frontal convolution of the left side, especially in right-handed people, was the seat not only of speech, but of laryngeal movements. This, however, was far from conclusive, as no laryngoscopic examination was made. Indeed, until very recently, either the laryngoscopic or the post-mortem appearance of these supposed cortical lesions has been lacking in each case. Indeed, the case of Garel (33), so far as I know, is the only one in which, with a cortical lesion found at autopsy, there had been in life a laryngeal neurosis noted. There was in his case right hemiplegia with aphasia, and the left vocal cord was paralyzed, thus resembling the case reported by Türck many years ago and referred to above. Here, however, an autopsy was subsequently obtained, and, besides the ordinary hæmorrhagic lesion on the left side of the brain, there was a localized area of softening in the inferior part of the third frontal convolution on the right side. The report is meager in details and no account is given of the microscopic condition of the medulla. Dr. Delavan (34), in a recent paper published in this Journal, sums up the general testimony on this point in cerebral localization:

"1. Unilateral irritation of a given cortical center excites the corresponding bulbar center and causes bilateral movement.

"2. Unilateral destruction of a given cortical center gives no result, as the influence of the opposite cortical center is sufficient to excite the corresponding bulbar center, and thus to cause bilateral movement.

"3. Bilateral destruction of a given cortical center causes paralysis."

Now, from this standpoint we must conclude that there was a corresponding lesion of the same spot on the opposite side. If so, why was there not bilateral paralysis? A lesion on the left side of the medulla, which, without a microscopic examination, might have been overlooked, would be what we should expect. Garel, however, had a physiological basis on which to stand, and this possibly may have caused him to be a little hasty in his conclusions. Krause (35), in 1884, announced his experiments on the brains of dogs. He demonstrated that in these animals there was a center for the laryngeal adductors in the gyrus præfrontalis, the third frontal or Broca's convolution, near its anterior and descending end. In the neighborhood were also areas for the muscles of deglutition and of the neck. The channel of communication from this region to the medulla is probably through the corpus mamillare. These statements have been confirmed by Semon and Horsley (quoted by Delavan, *loc. cit.*). The electrical stimulation of this cortical area causes different laryngeal muscular actions in different animals—adduction in the monkey and dog, abduction in the cat. Dr. Delavan in the same year (1884) read a paper (36) before the International Congress, at Copenhagen, on a cortical localization of a laryngeal center, based on a case very much resembling Case I of this paper. This case on autopsy, however, showed the causative lesion to be in the medulla. Gottstein, in the last edition of his work on the throat (p. 302), in referring to the case, pointed out what afterward proved to be the correct situation of the lesion.

There are a sufficient number of carefully reported cases, as well as physiological data, on which to base a diagnosis of and locate a lesion in the medulla oblongata. Hughlings Jackson (37), in reporting some such cases in 1864, which were also seen by Mackenzie (*loc. cit.*), asks the question which now confronts us, "Where is the disease which suddenly produces together paralysis of the tongue, palate, and vocal cord, all on one side?"

His answer was more unsatisfactory than ours should be to-day, for since then a great deal has been done to supplement the work of Claude Bernard, Lockhart Clarke, and others.

Beginning at the widest part of the floor of the fourth ventricle, where the posterior border of the pons Varolii crosses it, we find an irregular mass of gray matter extending backward and downward to the posterior end of this lozenge-shaped space, where it becomes continuous with the gray matter of the spinal cord. Here, from before backward, the root fibers of the facial, acusticus, glosso-pharyngeal, pneumogastric, and the upper roots of the spinal accessory have their origin. This is not only a motor, but a sensitive tract. The latter, known as the sensitive or ventral nucleus of the vagus, is deeper and a little higher than the dorsal or motor nucleus, though they are continuous with one another. The nucleus of the hypoglossus nerve is nearer the median furrow and parallel with the tract of the other. A careful comparison of Case I, with the symptoms noted and the lesions found in the cases of Senator (38) and Eisenlohr (39)

and Delavan (*loc. cit.*), as well as with others, helps us to a diagnosis and location by pathological evidence. It is probable that the lesion was most extended toward the lower and in the superficial parts of the mass on the floor of the fourth ventricle, where it would involve the nucleus of the hypoglossus and the motor nucleus of the vagus, leaving the sensitive tract uninvaded, since there was no sensory paralysis of any kind noted. It must have extended upward along the median furrow on the left side, involving the nucleus of the acusticus and slightly the facial to account for the facial paresis, the marked diminution of hearing on the left side, and the palate paralysis. The deafness, the difficulty of swallowing, and the tendency to fall to the left we saw improve under treatment. The lingual and laryngeal paralysis remained unchanged, as it usually does. To account for the giddiness, we have either to imagine that it was due to the involvement of the acusticus or to some interference with the blood-supply of the cerebellum. When we come to consider the cause and the nature of the lesion, it is probable, in view of the specific history and the result of treatment, that the patient had areas of softening and congestion due to disease of the coats of the left vertebral artery or its branches, the posterior spinal and the inferior cerebellar. The iodide of potassium relieved the areas where actual tissue necrosis had not taken place, and produced some amelioration of the symptoms, while further improvement could not be expected. It is a singular fact, noticed by Elsberg (40), that, although other muscular groups may recover with varying rapidity and completeness from paralysis, the power of the laryngeal muscles rarely returns. This may be due to the rapidity with which they atrophy on account of their small size.

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THE USE OF ALCOHOL IN MEDICINE.*

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The subject of this paper is probably the oldest and most conspicuous article that has a place in the history of medicine. We read of it early both in sacred and secular history, not so much as a remedy in the treatment of disease, but as a beverage that, from those early periods of the world's history down all along these ages to the present time, has had more influence in the events chronicled by historians than have any or possibly all other causes combined. Noah planted a vineyard, and got drunk from his home-made wine and notoriously disgraced himself. Alexander the Great, the most illustrious general the world ever saw, died a delirious sot at the age of thirty-three. The wine indulged in by kings, statesmen, and generals has been productive of many wars that have cost millions of lives and the destruction of untold treasures, and have changed the boundaries of many of the nations of our world. In the domain of private and social life its power has been no less marked. The effects of alcohol upon the physical, mental, and moral powers of man are beyond estimation or computation. The flood-tide of evils that flow from its use has long been recognized and acknowledged by every unprejudiced observer. In fact, alcohol is to-day the greatest power known to the world that is constantly operating to dethrone reason, shatter the physical system, and bring on moral and financial ruin. The amount of alcohol consumed by the civilized nations of the world is almost beyond computation, and the avarice of man is introducing it into heathen and barbarous regions as rapidly as commerce and the work

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of explorers will permit. It has grown to be such an important article of commerce that its manufacturers and dealers are now an important factor in the political and law-making power of not only our commonwealth, but of every nation under the sun. The liquor oligarchy are dictators in many matters of political policy.

Thus much as a brief introduction to the power and influence of the subject of this essay. As conservators of the lives of our fellow-men, it behooves us to most seriously consider an agent capable of producing such devastating results before we "unchain the tiger," who, when once upon his victim, may never relinquish his grasp until all that is pure and noble, all that is wise and good, all that is lovely and desirable, has been drained from our brother-man, leaving only a bloated carcass and a curse, whose friends painfully endure until death comes to rid them of the living shame, when his poor, debased body has been buried from their sight, and their hearts are torn by the solemn thought that "no drunkard can inherit the kingdom of heaven."

Before beginning this paper I most carefully read the views of those authors who furnish the text-books on materia medica and therapeutics for the medical students of to-day, and then I did not wonder why it was that alcohol still held such a sway in our profession and among the laity, who naturally look to us as authority in this matter of the value of alcohol. For one, who has witnessed the action of this agent on the human system for thirty-two years in the practice of medicine, I earnestly protest against the teachings of most of our recognized authorities on this subject; to me their language and inferences are more befitting circulars issued by liquor dealers and manufacturers to advertise and recommend the great value of their products to enfeebled and diseased humanity. I quote first from Bartholow: "Alcohol is a useful food in the small quantity which increases but does not impair digestion, which quickens the circulation and gland secretion, but does not overstimulate, and which is within the limit of the power of the organism to dispose of by the oxidation processes." Oh, how habitual and so-called "moderate drinkers" will applaud this language, and how grateful perhaps we ought to be that there is one so wise as to state just how much and how often we should use this valuable and health-giving medicine! Hear our author still further: "This amount has been pretty accurately shown," says Bartholow, "to be one ounce to one ounce and a half of absolute alcohol for a healthy adult in twenty-four hours. All excess is injurious. . . . It is equally true that alcohol is, within certain limits, a food, and that the organism may subsist for a variable period on it exclusively." I take exceptions to all of these statements by this eminent author, and I can sustain my position by Dr. Benjamin W. Richardson, the eminent physician and author of London, who has been a close and able observer and scientific investigator of the influence and effects of alcohol. The results of the scrutinizing investigations of this distinguished physiologist and physician (though in some quarters disputed and their resultant teachings disregarded) have shown that the allegation that "alcohol is food" is not a fact, that it contains no element to nourish or repair the physical organism, and that the impression that formerly existed—that it was of value to burn in the body and increase the temperature of the body when below par—is likewise a great delusion, for it has been proved again and again that the body will withstand cold and exposure far better without the alcohol than with it. We know that the first effect of alcohol is to increase the action of the heart and elevate the temperature, but that subsequently the temperature of the body falls lower than it was at first, and that the ultimate result is to lower the temperature—a reaction from the perturbing action produced by the stimulant—and that is why a drunken man freezes quickly when falling by the wayside undiscovered until too late to save him. We now turn to Bartholow again; we quote as follows: "Alcohol in small doses is a useful *stomachic tonic.* It is best taken for this purpose after or with meals. It is especially serviceable in the feeble digestion of old people, the atonic dyspepsia of the sedentary, and in the slow and inefficient digestion of convalescence from acute disease." Against all this, with due respect for our truly illustrious author, I take positive and decided issue. They are, in my humble judgment, utter fallacies. Alcohol gives no power; it only stimulates the natural processes, which need rest and carefully selected nutrients, and not the lash of alcoholic stimulants to goad them on to do a work they are unfitted to perform, and thus ultimately do harm instead of good. I quote again: "As alcohol stops waste, promotes constructive metamorphosis by increasing the appetite and the digestive power, and favors the deposition of fat, it is directly indicated in chronic wasting diseases, especially in phthisis. Clinical experience is in accord with physiological data; alcohol is an important remedy in the various forms of pulmonary phthisis." Again I say that Bartholow is in error. Clinical experience has failed to establish the value of alcohol in cases of phthisis for the reasons heretofore given. It retards the normal processes of waste and thereby induces a pathological fatty condition that life-insurance companies have learned to steer clear of. I am here reminded of an old epitaph that I have seen quoted, said to have been upon a tombstone in an old English burying-ground. The man was a tallow chandler by profession, but became so obese, probably from drinking ale, that he died, and this was the inscription on his head-stone:

"Here lies poor Marks, an honest fellow,
Who died by fat but lived by tallow."

To give you a variety, I will now quote from another eminent author, Ringer, on "Therapeutics." After commending the use of alcohol to restore "appetite and digestion," he says: "Strength, no doubt, is best supported by food"—to which I say Amen!—"yet," he continues, "the weakened stomach can digest but sparingly, but at the critical juncture alcohol spurs the flagging digestion and enables the patient to take and assimilate more food." I think it fitting to introduce a comparison here which, though it may appear crude, will illustrate my views upon the paragraph quoted. A teamster has a horse that by hard work and a long and continuous draught has become exhausted and unable to pull his load. The driver, whose name is Ringer, would rise upon his feet and, with ejaculations more forcible than rev-

erent, would, with threatening shouts and a vigorous application of the whip, so excite the nervous power of the poor animal that he would pull the load through though he might fall exhausted or dead when the struggle was over. That is the effect of alcohol; it lashes the nervous system and makes a show of strength, but it is only a *show*, that is followed *always* by a corresponding depression. How would driver Richardson manage that beast had he been in charge? Like a man of sagacity, he would spare the horse, if not from humane impulses; he would have a better way. The horse would be unhitched from the load, his harness removed, his limbs bathed, his whole system refreshed by a period of rest and a bountiful supply of nutritious food and water. Then, after a brief period, he would resume his load and take it easily to the desired point and be ready for further duties as usual the next day. . Man is an animal that requires rest, pure water, and good food in health, and the conditions do not change when he is sick; and he who in his wisdom believes that he can improve upon the elements needed for man's sustenance in his extremity by substituting alcohol for water or milk and drugs for food is wise only in his own conceit, and has yet to learn the alphabet of physiological science.

But Ringer says some things that I heartily indorse, for example: "After a variable time the prolonged indulgence in alcoholic drinks seriously damages the stomach by producing chronic catarrh." While advocating its use in many conditions of the system and as a cardiac tonic, he is willing to state that "great as are the beneficial effects of alcohol in disease, yet it may do harm as well as good; . . . that, while alcohol may benefit *one* part of the system, it may injure *another*, doing good in one respect, yet on the whole inflicting more harm." Again he says: "In my judgment, there can be no doubt that alcohol is not required in all febrile diseases; on the contrary, many cases are best treated without it; and in no instance should it be given unless special indications arise." That certainly is very conservative advice. Again he writes: "A large dose at one time largely stimulates the heart; then, as the alcohol is decomposed or eliminated, the heart is left unsustained, when great weakness may set in; whereas, the frequent administration of small quantities keeps the heart more uniformly supported." I would ask, Is not the same kind of result produced no matter what the size of the dose? The heart is left weaker in consequence of its unnatural and stimulated activity. To *me* this appears good logic. I am sorry that Ringer was led to write what I am now about to quote; how old topers must relish such a declaration! "The good old-fashioned remedy —rum or brandy and milk taken before breakfast—is useful in phthisis and exhausting diseases. A little rum and milk an hour before rising is a good prop to town-living women, to whom dressing is a great fatigue, who, without appetite for breakfast, suffer from morning languor and exhaustion, often lasting till midday; and to convalescents from acute diseases." These same persons the good doctor, to be consistent, would have take a little before dinner and tea to help the digestion, and again more at bed-time as a "night-cap" to induce sleep, and, if his practice was extensive, he would furnish business for a wholesale liquor-store by his generous prescriptions for the various kinds of spirituous and malt liquors.

We now turn to Bidwell's "Materia Medica." He says, in brief and concise language, that "alcohol in the form of vinous and spirituous liquors *is employed*" (the Italics are mine; you will notice that he fails to commend, but simply states the facts, which we can not complain of or criticise) "to rouse and support the system in debility, asphyxia, syncope, the latter stages of acute attacks, typhoid and typhus fever, asthenic and malignant diseases, exhausting hæmorrhages and suppuration, gangrene, to counteract the effects of bites of venomous reptiles, in *mania a potu*, and in poisoning from digitalis, tobacco, and other narcotics; also as a stomachic in colic, flatulence, indigestion, nausea, etc." Had Bidwell stopped here we would have had no controversy with him, but, alas! he closes by this wholesale commendation, as follows: "The early administration of the preparations containing alcohol furnishes our best means of counteracting the depressing action of disease in general."

I pass to our next author, only remarking that the preceding is a statement entirely unsustained by experience. In the "Annual of the Universal Medical Sciences" for 1888 I find this sentence: "As to the employment of alcohol at all even in disease, the majority of writers seem to believe that it may be a most useful agent." I commend the compilers for their candor in making such a statement, though they rank themselves with the majority, for it reveals the fact (nevertheless, well known for several years) that there is a minority, respectable in numbers and character, that are steadily and conscientiously and scientifically at work to undermine the position that alcohol still holds in the list of remedies for the treatment of disease. I contend that its use as medicine in disease generally is as unwise and delusive as its use as a beverage in health. I am encouraged in this work to know that, from being the universal and infallible remedy it was once assumed to be, and fitted to meet all of the ills to which our poor humanity is heir, it has fallen into disrepute, and there are many sound practitioners of medicine who rarely or never use it.

I now turn to the "National Dispensatory." Hear what that announces: "The use of alcohol in every age and by every nation in the world demonstrates that it satisfies a natural instinct, that it literally refreshes the system exhausted by physical or mental labor, and that it not only quickens the appetite for food and aids in its digestion, but that it spares the digestive organs by limiting the amount of solid food which would otherwise be required. But in accomplishing this salutary end it does not act as a mere condiment. It is also food—in this sense at least, that it offers itself in the blood as a substitute for the tissues which would otherwise be destroyed." The writer quotes from Moleschott, who says: "Alcohol is the savings-bank of the tissues. He who eats little and drinks alcohol in moderation retains as much in his blood and tissues as he who eats more and drinks no alcohol." I wonder he don't go further and state that he might also save expenditure for clothing and coal, for he could fire up with alcohol and keep himself

warm and save his coal-dealer's and tailor's bills. I remember hearing when I was a boy that "rum was a drunkard's lodging, meat, and drink"; it filled all the requirements of his system; but I was not prepared to read in this day and age from a book that is published and received as authority that man had a *natural* instinct for whisky, and that it was "the savings-bank of his tissues." I know a barrel of alcohol will keep a dead man if he is plunged into it and the barrel sealed up, but a *live* man could not long be preserved in it, even if he took to it as naturally as a duck does to water; and if alcohol is his savings-bank, I doubt if he ever has any deposits in any other bank. But I must not descend to the humorous. I had made copious selections from this "Dispensatory," but will forbear to add more save this: "In the form of wine or distilled spirits, alcohol is the universal and familiar remedy for debility of every kind."

I now turn from this undue laudation of alcohol to the more conservative "United States Dispensatory": "Alcohol is a very powerful diffusible stimulant. . . . In a dilute state it excites the system, renders the pulse full, and gives additional energy to the muscles and temporary exaltation to the mental faculties. It is found to lessen the amount of the excretions, from which fact some physiologists have inferred that it diminishes the disintegration of the tissues. . . . In some cases of acute disease, characterized by excessive debility, alcohol is a valuable remedy. In chronic diseases physicians should be cautious in prescribing liquids containing it for fear of begetting intemperate habits. . . . As an article of daily use, alcoholic liquors produce the most deplorable consequences. Besides the moral degradation, their habitual use gives rise to dyspepsia, hypochondriasis, visceral obstructions, dropsy, paralysis, and not infrequently mania."

These conclude my quotations from our standard textbooks in medicine. I now desire to quote from the eminent Dr. Richardson, who, in an address delivered to physicians perhaps fifteen years ago, used these words:

"We offer no reflection on the past, for we admit that in the past there was a common error pervading medicine in relation to the physiological action of alcohol, a common blindness as to the pathological evils springing from it, and a common misunderstanding or ignorance as to the extent of the evils. We remember how, in our pathological studies, our masters indifferently noticed the lesions admittedly produced by alcohol as they were observed in the dead, while they devoted their energies to define with the utmost nicety the lesions which immediately caused death. I recall one of those devoted teachers, whose memory I shall ever cherish, who, at nearly every research in the dead-house, would end the most careful description of the conditions that were the actual cause of the fatal disease with, 'Gentlemen, there are the usually known other lesions with which I need not trouble you, because they come under one head—whisky.' We admit all these past mistakes; we know how blind, not we alone, but all the world has been, and we come at present purely to review the past with the intention of improving the future."

The words of Dr. Richardson express my sentiments, and have ever since they were uttered by him or before I had the privilege of reading them. I feel, as I stated at our last meeting, that the time has arrived when we should carefully review our practice in the use of alcohol. When I began the practice of medicine, thirty-two years ago, I used whisky by the gallon in my treatment of typhoid fever and other exhausting diseases, because I was taught thus to do, not only by our authors, but by the medical teachers of those times. But I was too much of a Yankee to blindly follow ever in a beaten path, and, using my own eyes of observation, I gradually arrived at positive convictions that the value ascribed to alcohol in the treatment of such cases was a delusion, and cautiously I gradually withdrew the use of stimulants, until at last I found myself successfully managing typhoid cases without the use of a drop of stimulants, and my patients recovered more promptly, I believe, as the result of dispensing with alcohol.

Dr. Richardson goes on to say as follows: "Fifteen or, at the most, twenty years ago (that would be thirty or thirty-five years from this time) the true physiological action of alcohol was a speculative discussion unsupported by any reliable experiment, and therefore of the most contradictory character. Now there is so much evidence of its mode of action that dispute gives way to accepted facts. That the ultimate action of alcohol in the animal temperature is to reduce the temperature; that alcohol relaxes organic muscular fiber; that alcohol produces four destructive physiological states of the body; that alcohol reduces oxidation; that alcohol interferes with natural dialysis; that alcohol induces, even in small quantities, a series of morbid changes and diseases which were not formerly attributed to it; that alcohol prepares the body for destruction by external shocks and depressions which are thus made more fatal; that alcohol belongs to the same class of chemical substances as chloroform, ether, and the anæsthetic family—all this is now on the accepted record, with the final admission, when we are speaking and thinking seriously, that man, like his lower earth-mates and like his own children, can in health live and work and play as well—not to put a fine point on it—without a trace of alcohol as he can with it."

I am confident that were Dr. Richardson speaking today upon this topic he would put a finer point upon it; for the steady nerve of the unerring marksman, Dr. Carver, has no trace of alcohol to influence it, and no one can live or work or play with the full fruition of life's possibilities if alcohol has a place in his system, for it is a perturbing agent that disturbs the equilibrium of the vital forces and deranges the normal action of man's elaborate mechanism.

Dr. N. S. Davis, of Chicago, has said: "Step by step the progress of science has nullified every theory on which the physician administers alcohol. Every position taken has been disproved until it is narrowed down to this: acute diseases where it is supposed there is danger from extreme weakness." After a further discussion of the subject Dr. Davis adds: "Hence I assume that alcohol neither strengthens nor nourishes nor sustains the heart's action, but diminishes it."

The limits within which I desire to confine my paper will not allow of more extensive quotations, and I will only add a few brief ones from other medical gentlemen whose views accord with my own observation and experience. Dr. R.

Green stated several years ago before the Medical Society of Boston: "Alcohol is neither food nor medicine. It can not add one molecule to the plasm out of which our bodies are daily built up. On the contrary, it exerts upon the whole animal economy a most deleterious influence. It does not supply but diminishes vital force. It weakens the nerves, deadens the sensibilities, lessens the power of the system to resist disease or to recover from its effects. Alcohol can not sustain vital force. It weakens the power of digestion and assimilation and can not be long continued without disastrous effects. There can be no excess in the animal economy without a corresponding loss. The momentary exaltation of the functions of either body or mind produced by alcoholic stimulants is always followed by an increased degree of depression. Alcohol may spur a weary brain or nerve a feeble arm to undue exertion for a time, but its work is *de*structive, not *con*structive; such stimulation means destruction, not added force. It is not stimulus but rest that is required for exhaustion from excessive mental labor. It is a whip, a cruel spur, quickening speed and consuming vitality." "As a result," he adds, "of thirty years of professional experience and practical observation, I feel assured that alcoholic stimulants are not required as medicines, and I believe that many if not a majority of physicians to-day of education and experience are satisfied that alcoholic stimulants as medicines are worse than useless, and physicians generally have only to overcome the prevailing fashion of to-day to find a more excellent way, when they will look back with wonder and surprise that they as individuals, and as members of any honored profession, should have been so far compromised." Dr. Bernard O'Conner testified before the British Medical Association: "During fourteen years of practice I never used alcohol for any patient, and my experience at the Consumption Hospital, to which I have been attached for some years, has been that consumptive patients progress very much more favorably with the absence of any alcoholic liquid than they do when alcohol is administered." I make my last quotation from Dr. N. S. Davis: "I speak the more positively because for thirty years I have faithfully tested the correctness of the sentiments given in relation to the therapeutic effects of alcohol in an ample clinical experience both in hospital and private practice. I have found no case of disease—no emergency arising from accident—that I could not treat more successfully without any form of fermented or distilled liquors. The preparations of ammonia and camphor are far more speedy and efficient remedies for immediately arousing the sensibility, while in caffeine, digitaline, convallaria, etc., I have found the proper cardiac tonics for restoring permanent steadiness and force to the circulation."

Gentlemen, I know and am proud of the fact that our noble profession is a conservative one. We are slow to abandon old remedies and theories for new ones, yet our Creator has endowed us with intelligences to guide us through the great responsibilities that we have to bear; and is it not true wisdom for us to follow the teachings of that great apostle, Paul, who said, "Prove all things; hold fast that which is good," by which he implies that we are to cast overboard those agents that are found wanting? The wisest man of ancient times said: "Wine is a mocker, strong drink is raging, and whosoever is deceived thereby is not wise." It has deluded the world from the time of Noah until now. Let us, my professional brethren, cast off this great delusion and relegate alcohol to the family of anæsthetics, of which it is the least worthy member, and then we shall rarely or never prescribe or make use of it. The limits of this paper have not allowed an elaborate discussion of the subject, but I trust that I have presented sufficient to answer the requirements of your complimentary resolution and to arouse my professional brethren to renewed investigation on this line, that each of us may be prepared to give a reason for the faith we profess and the practice we follow.

A CASE OF NUTMEG POISONING.

By AMOS SAWYER, M. D.,
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On August 14, 1889, I was called to see a boy aged three. I found my little patient with a normal temperature and respiration; pulse regular, but just a little slow; all the muscles completely relaxed. An attempt to arouse him failed, his head falling in whichever way the body inclined. An examination of the pupils revealed complete dilatation. I felt certain that this condition was the effect of something the child had eaten, and, upon inquiry, was informed that he had, unknown to his mother, appropriated from her spice-box five large nutmegs, which he informed his little sister was his tobacco, and which by noon he had managed to consume, presumably spitting out the bulk of the spice. About 2 P. M. he complained of feeling dizzy and soon fell asleep, and they had been unable to arouse him. He had had one movement from the bowels, and had urinated twice while in this condition. There had been no delirium. He recovered consciousness as if awakening from a natural slumber, but with the greatest dislike for nutmegs, after having slept thirty consecutive hours.

Query, Why would this not be a valuable remedy, where a relaxed sleep was indicated, as an antispasmodic narcotic?

Treatment of Pneumonia by Application of Ice.—"Dr. Fieandt, writing in 'Duodecim,' a Finnish medical journal, states that he has now treated no less than 106 cases of pneumonia with ice, and with the best results. Though ten of the cases were of double pneumonia, only three out of the whole number succumbed, notwithstanding that the epidemic was by no means a slight one. The method adopted was to apply over the affected lung an India-rubber bag containing ice continuously for from twelve to twenty-four hours after the crisis. In addition to the local treatment the patients were given such medicines as are usually employed—that is to say, opium, ipecacuanha, digitalis, brandy, etc. The method has, we may remark, received of late some attention in this country."—*Lancet.*

Pathology of Extensive Burns.—"Oscar Silbermann, of Breslau, finds that in extensive burns the red corpuscles alter their form, and are able to exert less than their normal resistance to heat, drying, compression, and staining. In consequence of these changes, thrombosis and stasis in different organs are very frequent, especially in the lungs, kidneys, stomach, bowels, spleen, liver, skin, and brain, and most of all in the smaller branches of the pulmonary artery. The stasis in the lungs produces a very considerable impediment to the emptying of the right ventricle, with enormous venous congestion and dangerous arterial anæmia. This again leads to apoplexies and parenchymatous alterations in the above-mentioned organs, also to dyspnœa, cyanosis, coma, a small pulse, angina pectoris, eclampsia, anuria, and to a diminution of the surface temperature."—*Lancet.*

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GLANDULAR FEVER.

UNDER this title, in a recent number of the "Centralblatt für klinische Medicin," Dr. E. Pfeiffer describes an acute febrile condition mainly characterized by a swollen state of the lymphatic glands—an affection of frequent occurrence. According to his observations, the temperature rises to about 103° F., the tongue is slightly coated, the tonsils are a little reddened, and there is chilliness with fever, pain in the limbs, great uneasiness, loss of appetite, and vomiting. All the internal organs appear normal, but the lymphatic glands of the sterno-cleido-mastoid and occipital regions are swollen and painful. In moderate cases the fever ceases on the second day, and the glandular swelling subsides gradually. The affection may, however, be prolonged by recrudescences, the implication of the sterno-cleido-mastoid glands passing from one side of the neck to the other, and the lymphatic glands of the whole body may become involved. In such cases the throat symptoms are more pronounced, with slight cough, dysphagia, and hepatic and splenic pain on pressure on the third or fourth day. Another form of glandular fever is that which accompanies swelling of the intestinal glands; the liver and spleen are both tender, and there is diarrhœa with moderate fever, loss of flesh, slight albuminuria, and ascites.

Pfeiffer thinks that the course of the disease and its occurrence in localized epidemics, confined to a house or a family, show it to be infectious. O. Heubner is represented as having made similar observations, except that he has not noticed the implication of the liver and spleen or the occurrence of the disease in the epidemic form. Pfeiffer asks whether the affection is idiopathic, symptomatic, or a mere aggregation of symptoms of various morbid processes. Heubner has always taken the glandular condition as proceeding from infection of a neighboring mucous membrane, and this view is more in harmony than Pfeiffer's with what has previously been held, although the tendency to make glandular swelling an idiopathic disease has been so marked that in the first half of the century Velpeau, among others, protested against it. "Swollen and inflamed," said Velpeau, "the glands may remain for a long time the only sign of disease after the part originally diseased has returned to its normal condition; if there have been no appreciable changes, no signs of lymphangeitis, in the course of the intermediate vessels, the patients and even their doctors readily overlook the cause of the adenitis and content themselves with studying the effect."

Sometimes the effect is disproportionately severe, often probably on account of the patient's reduced powers of resistance. Such was the case in a family to which the present writer was once called. Two of the children were affected in a manner absolutely the same as that described by Pfeiffer. The swelling of the sterno-cleido-mastoid glands was very great, especially on the right side. The tonsils were so slightly reddened that attention was at once called to the disproportion between cause and effect. On inquiry, it was found that the mother, owing to dread of overfeeding her children, had so systematically underfed them that it required but a slight cold to make them very sick. Cod-liver oil and iodide of iron gradually got the upper hand of what might naturally be considered a cultivated weakness—a weakness common enough in poorly nourished children, whether from inherited tendencies or from improper feeding.

In his cases of the second class of glandular fever—those in which the intestinal glands were involved—Pfeiffer used calomel, cold compresses, a strengthening diet, quinine, wine, and iron, and it took at least three months for the patients to be completely restored to health.

AN UNJUST DISCRIMINATION.

MANY of our readers may not be aware that the law forbids the appointment of a physician to the presidency of the City Health Board. The fact has been severely commented upon by the profession, not with the prospect of the candidacy of any individual, but on account of the implied insult flung upon the profession at large. It seems to us preposterous that a board which should be composed of those versed in sanitary matters should be crippled with the condition that its head must not be a physician. The text of the law, however, makes it a mandatory proviso, even to the verge of ostracism. Can it be possible, we ask, that the pains taken to acquire the essential requisites of such an office should be a disqualification? If, indeed, the prospective incumbent were a recluse without the ordinary intelligence of the ordinary business man, unaccustomed to responsibilities, devoid of principle, or lacking in executive ability, there might be some reason in such special legislative discrimination. But, in the majority of instances, the physician has figured very largely and very acceptably in public affairs, even out of his ordinary sphere. Under the Dutch rule and during the colonial period he was a valuable counselor, and helped in no mean degree to shape the destinies of the metropolis. Toner, of Washington, in his "Medical Men of the Revolution," has also offered a tribute in favor of his patriotism, loyalty, self-sacrifice, and integrity. And yet the State of New York, carelessly we hope, has entered upon its statute-book this slur against an honorable profession, which in Europe claims the respect of potentates of almost every degree, particularly in affairs that concern the physical welfare of the people. Surely with a counsel of its own, or a corporation counsel, whose duty it is to advise regarding the limits of power, and with the distribution of funds checked by ample safeguards, there can be no danger in allowing the meager privilege of electing a physician to the presidency of the Health Board if he is qualified. The doctrine of this republic is supposed to be the largest liberty, and yet the member of our guild must necessarily forswear

his allegiance, forget his knowledge, and go into an all-around training, if his ambition happens to be in the direction of the only office in the State placed beyond his reach by self-seeking politicians. We have no candidate for the position, or, if we had, we should not depart from our policy of urging no one's advancement in political matters; we merely wish to rebuke what can be construed into nothing else but an insult or want of confidence. Let the office go, but remove the disqualification.

MINOR PARAGRAPHS.

THE STATE EXAMINATION OF MEDICAL STUDENTS.

The law, passed last winter, requiring students having no baccalaureate degree to be examined before entering upon medical study, is being put in train for enforcement by the Regents of the University. A circular, dated August 20th, has been sent to the colleges and to individuals giving information respecting the methods of these examinations. The secretary, Professor Melvil Dewey, may be addressed at Albany for copies of the circular. Students who had entered upon a three-years' course prior to June 13, 1889, are not affected by the new law. The earliest date for which an examination has been set down is September 30th, at Buffalo. Hence, we judge, a certain proportion of this year's entries at the colleges will be in the plight of a legal oversight, unless there happens to be some provision that is not explicitly stated in the circular of the Regents. However, as it is not the object of the act to lay a hardship upon the students of the current term, there will probably be no difficulty in obtaining an amendment from the next Legislature by which their cases may be passed upon equitably. It is not generally known that the Regents' certificate is required to be filed with the dean or secretary of the medical school "prior to entering upon the prescribed three-years' course of study of medicine," and without this preliminary filing it is forbidden to the schools to grant the degree of doctor of medicine. The act does not apply to persons who "have already entered upon" the said course of study. The word "already" must be construed to refer to the date of the approval of the act by the Governor, on June 13, 1889.

THE AMERICAN PUBLIC HEALTH ASSOCIATION.

Elsewhere in this issue we publish the substance of certain announcements indicating that the forthcoming meeting, to be held in Brooklyn, promises to be altogether the most profitable one that the association has ever held. Far too seldom is the Brooklyn profession given an opportunity to show what it can do in connection with the meetings of medical and quasi-medical bodies of more than a local character. The pains that have been taken by the local committee in this instance ought not only to insure the success of the meeting, but also to dispel the illusion that Brooklyn has no title to as much individuality in such matters as is freely accorded to cities of a far smaller population.

THE CARBOLIC-ACID TREATMENT OF HÆMORRHOIDS.

Dr. Andrews, of Chicago, was one of the first to study the subject of the carbolic-acid treatment of hæmorrhoids, and he has been reverting to it from time to time during the past ten years. According to the "Indianapolis Medical Journal," he states that there have been thirteen deaths following the operation of injecting the acid into piles, out of three thousand cases. This is a mortality far greater than that attendant upon the use of chloroform as an anæsthetic. The estimated mortality, in the late civil war, following chloroform anæsthesia was about one in three thousand administrations, often undertaken under circumstances of embarrassment and risk. But the chloroform was of the purest that could be found and was scrutinized with care before being accepted in the medical supplies. On the other hand, in regard to the purity of the carbolic acid used by the operators on hæmorrhoids, little if any attention is given to it, it is alleged; generally the first that is offered is accepted without question.

THE CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

Dr. C. H. Mastin, of Mobile, who may be said to be the father of this organization, set a wholesome example in the ground he took, at a recent meeting of the Executive Committee, for declining the nomination to the presidency. He is reported as having said that no member of the Executive Committee ought ever to be elected to the presidency. Thereupon Dr. S. Weir Mitchell, of Philadelphia, was chosen president, and Dr. William H. Carmalt, of New Haven, secretary. The next meeting is to be held in Washington, in September, 1891.

THE ACADEMY OF MEDICINE'S NEW BUILDING.

It is announced that the corner-stone of the new building, in West Forty-third Street, will be laid by the president on Wednesday, October 2d. The exercises, which are to begin at 4 o'clock in the afternoon, will include an invocation by the Right Rev. Bishop Potter, an address by Dr. A. Jacobi, and remarks by the Hon. Grover Cleveland. We trust that there will be a full attendance of fellows of the Academy, as well as of members of the profession at large, to add dignity to the occasion and to promote general interest in the Academy's efforts to raise the sum still wanted to complete the amount of money required for the new building.

THE OBSTETRIC USES OF CREOLIN.

The "Medical Press" for September 4th refers to creolin as about the best disinfectant in midwifery. It is not an irritant to the vaginal mucous membrane, like carbolic-acid and sublimate solutions. It does not irritate wounds or abrasions, and will not retard healing. Under the use of creolin mucous membranes become softer and smoother than before its use. Its odor is not disagreeable, especially when brought into comparison with carbolic acid or iodoform. If by accident it is taken internally it is said to be bland and harmless. It does not corrode instruments, but, mixed with water, it forms a non-translucent emulsion, so that instruments may be lost sight of, if not sought for with care. The cost of creolin is not high, being less than that of carbolic acid. The writer recommends Pearson's creolin as being less variable than some others. The uncertainty of its composition has been the chief objectionable feature of creolin.

ITEMS, ETC.

The Shelby County (Indiana) Medical Society will hold its next monthly meeting in Shelbyville, on Monday, October 14th. The programme includes the following titles: "The Management of Normal Labor, with Particular Reference to the Employment of Antiseptics in Midwifery Practice," by Dr. J. W. Green, of Shelbyville; "The Use of Ergot in Labor," by Dr. S. L. Strickler, of Boggstown; "Practical Obstetrics," by

Dr. John Moffett, of Rushville; "Delivery of the Placenta, with Report of Cases of Adherent Placentæ," by Dr. M. R. Gilmore, of Boggstown; "The Management of Shoulder Presentations," by Dr. Edward F. Wells, of Shelbyville; "Post partum Hæmorrhage, with Report of Cases," by Dr. J. W. Bowlby, of Marion; "Puerperal Eclampsia, with Report of Cases," by Dr. T. R. Rubush, of London; "Management of the Perinæum, with Report of a Case of Rupture," by Dr. I. W. Trees, of Smithland.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending September 24, 1889:

DISEASES.	Week ending Sept. 17.		Week ending Sept. 24.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	55	14	63	16
Scarlet fever	22	2	24	4
Cerebro-spinal meningitis	1	0	0	0
Measles	11	0	9	0
Diphtheria	61	16	55	15

The Military Service Institution.—The announcement of the meeting for Friday, the 27th inst., at Governor's Island, New York Harbor, gave the title "Personal Identity as a Means of Recognizing Deserters" as that of a paper to be read by Surgeon Charles R. Greenleaf, of the army.

The City Health Department.—Dr. F. Irving Disbrow has resigned his position under the Department, on account of failing health, and resumed private practice.

Change of Address.—Dr. George P. Thomas, formerly of Staten Island and late superintendent of the Alameda County Hospital, California, to lock box No. 253, San Leandro, Cal.

The late Dr. Addinell Hewson, of Philadelphia, who died on the 11th inst., aged sixty-five years, was of the fourth generation, in direct line, in medicine. He received his preliminary education in the University of Pennsylvania, and was graduated in medicine at the Jefferson Medical College in 1850. He held several hospital appointments in Philadelphia, and was a meritorious writer on surgical subjects.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from September 15 to September 21, 1889:*

SMITH, ANDREW K., Colonel and Surgeon. By direction of the Acting Secretary of War, leave of absence for fourteen days is granted on surgeon's certificate of disability. Par. 1, S. O. 214, A. G. O., September 14, 1889.

STERNBERG, GEORGE M., Major and Surgeon, having completed the duties assigned him in War Department order dated February 4, S. O. 30, February 5, A. G. O., is, by direction of the Acting Secretary of War, reassigned to duty as attending surgeon and examiner of recruits at Baltimore, Md. Par. 12, S. O. 218, A. G. O., September 19, 1889.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending September 21, 1889:*

BEARDSLEY, G. S., Medical Inspector. Granted six months' leave, with permission to go abroad.

RUTH, M. L., Surgeon. Order granting furlough revoked, and placed on waiting orders.

HUDSON, ADRIAN, Medical Director, WOODS, G. W., Medical Inspector, and DICKINSON, DWIGHT, Surgeon, will continue as president and members of an Examining Board for examination of applicants for the position of assistant surgeon in the navy at San Francisco, Cal., until June 30, 1890.

Society Meetings for the Coming Week:

TUESDAY, *October 1st:* New York Obstetrical Society (private); New York Neurological Society; Elmira Academy of Medicine; Buffalo Medical and Surgical Association; Ogdensburgh Medical Association; Medical Societies of the Counties of Broome (annual), Columbia (annual—Hudson), Orange (semi-annual—Goshen), and Schoharie (semi-annual), N. Y.; Medical Association of Northern New York (annual—Malone); Hudson (Jersey City) and Union, N. J. (quarterly), County Medical Societies; Chittenden, Vt., County Medical Society; Androscoggin, Me., County Medical Association (Lewiston); Baltimore Academy of Medicine.

WEDNESDAY, *October 2d:* Society of the Alumni of Bellevue Hospital; Harlem Medical Association of the City of New York; Medical Microscopical Society of Brooklyn; Medical Society of the County of Richmond (Stapleton), N. Y.; Penobscot, Me., County Medical Society (Bangor); Philadelphia County Medical Society; Bridgeport, Conn., Medical Association.

THURSDAY, *October 3d:* New York Academy of Medicine; Society of Physicians of the Village of Canandaigua; Washington, Vt., County Medical Society; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington).

FRIDAY, *October 4th:* Practitioners' Society of New York (private); Baltimore Clinical Society.

SATURDAY, *October 5th:* Clinical Society of the New York Post graduate Medical School and Hospital; Manhattan Medical and Surgical Society (private); Miller's River, Mass., Medical Society.

Proceedings of Societies.

AMERICAN GYNÆCOLOGICAL SOCIETY.

Fourteenth Annual Meeting, held in Boston, September 17, 18, and 19, 1889.

The President, Dr. H. P. C. WILSON, of Baltimore, in the Chair.

AN address of welcome was given by Dr. J. P. REYNOLDS, of Boston.

The Use and Abuse of Antiseptic Injections in Obstetrical Practice was the title of a paper by Dr. H. J. GARRIGUES, of New York. If, he said, one was satisfied that puerperal fever in any given case was the result of infection, the use of antiseptic injections was indicated. Like all other useful measures, this had sometimes been carried to extremes. The other extreme was reached by those who discarded injections after labor altogether. Much mischief was undoubtedly done by injections when they were not needed—as, for example, when they were used too frequently, of too great strength, etc. At the Maternity Hospital, at Blackwell's Island, from 1874 to 1885, the mortality had been 4·17 per cent. During the period from 1884 to 1888, in which the author's method of treatment had been followed at the same institution, there had been but two fatal cases, or a mortality of a fraction of one per cent. The morbidity also had been small. Vaginal injections before delivery were believed by the author to be useful, though they were objected to by many writers on the ground that they were

dangerous, that the lubricating mucus of the vagina was removed, etc. In answer to the objections that the bacteria on the surface of the vaginal mucous membrane were harmless, it must be remembered that they would not be harmless if they penetrated the subjacent tissues. They would also constitute an element of danger when carried from the vagina into the womb. If vaginal injections were used prior to labor, the vagina would be dilated and the micro-organisms removed or destroyed. It must not be forgotten, too, that during labor a new supply of mucus was secreted to replace that which might have been washed away. In cases in which, for any cause, frequent examinations were required during labor, vaginal injections should be repeated as often as every three hours, and, if instruments were required or the hand was introduced into the uterus, both uterine and vaginal injections would be required. Such injections were better than intra-uterine applications of antiseptic material with a swab, which was recommended by some. Infection would not occur if the labor had been antiseptic. Subsequent to labor, if the lochial discharge became fœtid, another indication for intra-uterine irrigation would exist, likewise if *débris* were left in the uterus, if there had been sloughing as the result of prolonged labor, if the fœtus had been macerated, etc. Puerperal peritonitis should be treated with such injections as soon as it was recognized, and such treatment might also be required after abortion. As to the proper material for injections, solutions of bichloride of mercury might be used, but they should be used with great caution. Since 1884 reports of twenty-two fatal cases from the use of such injections had been reported, though it must be admitted that four of this number should not be considered, and in others the solution had been too strong, or had been too frequently used, or had been improper in some other way. The strength of the mercurial solution should not exceed 1 to 5,000, and its use should immediately be withheld if toxic symptoms were apparent. Some of the contra-indications to its use were anæmia, kidney disease, and diarrhœa. Other solutions had also been extensively used for this purpose, especially that of carbolic acid. The objection to this was that its odor was offensive to many, it benumbed the hands, and might produce severe results to the patient's entire nervous system. Thymol, salicylic acid, chloride of zinc, hydronaphthol, and various other substances had advocates. The author had made extensive trial of creolin, and had been well pleased with the results. In two-per-cent. solutions it was perhaps as useful and as unobjectionable as anything that had been tried. Objections to its use were that its agreeable odor might mask offensive odors which would lead to the discovery of important conditions; also that, as it formed an opaque emulsion and not a transparent fluid, it might conceal particles the presence of which it would be desirable to ascertain. It had also valuable lubricating and hæmostatic properties. If vaginal douches alone were to be given, the author preferred to use a glass vaginal tube six inches long. If the solution was to be carried into the uterus, a single tube was preferable to a double one, and it should be carefully guided into the uterus with the fingers, great pains being necessary to avoid forcing any fluid or uterine *débris* into the Falloppian tubes. The patient, while receiving the injection, should be on the back, on a bed-pan or a rubber cloth so folded that it would catch and carry away all fluid as it returned from the vagina. The tube must not be forced into the uterus, but must be withdrawn and re-introduced if obstruction was encountered. Failure to observe this precaution had resulted in perforation of the uterus and injection of the bichloride solution into the abdominal cavity. The temperature of the uterine douche should not exceed 110° to 115° F., and the quantity should not be greater than two or three pints. For vaginal douches there would be no objection to using from two to three quarts. The return fluid should be carefully examined for septic matter, the uterus should be compressed after the irrigation was completed, and no fluid should be allowed to remain in the vagina.

Dr. W. T. Lusk, of New York, agreed entirely to the fundamental principle of the paper, which he understood to mean the advocacy of prophylactic vaginal injections. He also believed that all cases of septic puerperal fever which called for irrigation were the result of insufficient precautions on the part of the attending accoucheur. Of course this did not apply to diseases in which the virus was not introduced through the vagina. The best results from uterine injections were obtainable in cases in which there was infection from putrid matter, decayed blood-clot, etc. In septicæmia, in which round bacteria constituted the infecting agent, injections did no good, and probably did harm if used after the microbes had passed into the lymphatic circulation. In general, he believed that one thorough uterine irrigation, followed by the use of an intra-uterine iodoform pencil, was all that would be serviceable. Injections repeated as often as once in three hours were improper and likely to be injurious. He did not believe that one could depend upon the odor from offensive discharges as a guide for the administration of uterine injections, as had been frequently asserted. In fact, the most offensive discharges might proceed from simple puerperal catarrhal endometritis. In New York practice, he believed, many cases of supposed puerperal fever were in reality cases of typhoid fever proceeding from defective sanitation. Especially was this true in tenement-house practice. The method of treating puerperal fever which was practiced by Doléris and his followers, which consisted in curetting the uterine mucous membrane and then irrigating, was to be recommended in some cases.

Dr. H. C. Coe, of New York, had followed the method prescribed by the reader of the paper with satisfactory results. He found it very difficult, however, to distinguish those cases which were suitable for irrigation from those in which it was contra-indicated, in view of the fact already referred to by Dr. Lusk that the infectious elements might have passed beyond the reach of the injection. He had obtained good results from the use of creolin, but had also observed that it sometimes masked the odor of the discharges. He believed that prophylaxis was all-important in the treatment of puerperal cases.

Dr. W. M. Polk, of New York, indorsed the principle advocated by the author, but, as to the details, his custom was somewhat different. He first washed the genitals externally and internally with potash soap and hot water, and then used an injection of bichloride of mercury, 1 to 5,000, or creolin. He had not yet decided which of the two solutions was preferable. He believed it a fact that suppuration in the uterine cavity should be treated in the same manner as suppuration in any other cavity. His habit was to place the patient on the left side, carefully swab out the vagina and uterus with cotton, give the injection, and then introduce iodoform gauze for drainage. There was usually no necessity of repeating the irrigation—certainly not within a day or two.

Dr. P. F. Mundé, of New York, thought it had not been stated that a prime condition was to find the absolute cause of sepsis. This implied a careful examination of the uterus with the finger after the chill or high temperature had appeared and before irrigation had been practiced. If septic matter was discovered it should always be removed with the curette, this being followed by irrigation. Subsequently ergot might be administered, the ice-bag or cold-water coil applied, and an antiseptic pad placed at the vulva. He agreed to the statement that one should not depend upon the odor of discharges as a guide to irrigation, and even the finger could not

be relied upon in all cases—notably in those cases in which the infecting bacteria had passed into the circulation. A chill might follow irrigation, the temperature reaching from 104° to 105° F. This need not cause alarm. Intra-uterine injections after normal labor were entirely uncalled for. He agreed to the statement that the fault was that of the attending accoucheur if a puerperal woman became septic.

Dr. H. J. Boldt, of New York, showed an intra-uterine catheter which was a modification of the Bozeman-Fritsch instrument. He admitted the difficulty of cleansing it, and stated that it should always be boiled immediately before being used.

Dr. A. P. Dudley, of New York, believed that there were cases of puerperal fever which were due to infection from pyosalpinx of one side, infection of the uterus not occurring until labor had been concluded.

Dr. Howard Kelly, of Philadelphia, believed that the vagina should always be washed out in cases in which there was any suspicion of infection. In tenement-house practice, in which the surroundings were very unhygienic, he had derived great benefit from the use of a device of his own by which means injections could be given and the fluid be carried off without wetting the clothes of the patient or the bedding.

Dr. E. C. Gehrung, of St. Louis, thought that septicæmia might be produced by the use of uterine injections, *débris* being propelled by the current farther into the uterus. Suction or aspiration was more successful in the treatment of puerperal cases than propulsion.

Dr. W. G. Wylie, of New York, believed that in many cases of puerperal fever the source of the trouble was not in the uterus, but in the broad ligaments or other pelvic tissues. He had long since advocated intra-uterine irrigation if the disease was in the uterus, and believed that, if used at all, injections should be used frequently—as often as once an hour. If the disease was in the broad ligament, his plan was to make an opening in the vagina, remove the septic matter, and drain. In many cases general peritonitis would result, but even this might be cured by timely laparotomy.

Dr. Garrigues warned against depending solely upon temperature as an indication for uterine irrigation. The uterus should be carefully examined for septic matter; if any was found, it should be removed with the curette, and irrigation practiced. If these conditions did not exist, irrigation was not called for. He approved of the preliminary use of soap and water recommended by Dr. Polk, but saw no necessity for gauze or other means of drainage in the uterus, the natural conditions of the organ favoring drainage. A chill after irrigation was not usual, but, should it occur, the irrigation should not be repeated. Laparotomy would seldom be appropriate; indeed, the patients or their friends would seldom allow it. Frequent irrigations might not be harmful if properly given, but he thought that equally good results could be obtained by using powerful vaginal suppositories.

A Digest of Twenty Years' Experience in the Treatment of Cancer of the Uterus by the Galvano-cautery.—A paper with this title was read by Dr. John Byrne, of Brooklyn.

One reason, the author said, why a knowledge of the value of the galvano-cautery was diffused to so small a degree among gynæcologists consisted in the great popularity of the thermo-cautery, which, however, could not occupy the same field with the former. His first series of cases of cancer of the uterus treated with the galvano-cautery had been published in 1872. He had tried to demonstrate at that early day that this means of treatment was less dangerous than any other, and that it was the most useful for the treatment of uterine cancer. Even at that time he had stated that it was necessary in all cases to remove tissue quite beyond the apparent seat of the disease, if one would obtain permanent results. Prior to 1872 there had been few who had made use of the galvano-cautery, one great obstacle being the difficulty of obtaining a battery of the requisite power. He had finally succeeded in overcoming this difficulty, and the battery which he had devised had been in constant use in all his work during the past fifteen years. The Paquelin thermo-cautery was much inferior to the galvano-cautery in the treatment of uterine cancer, because of its great radiation of heat, and he believed that its value was greatly overestimated. Whatever instrument was used, it was essential that all the diseased tissues should be thoroughly burned. Chloride of zinc had been used for many years, and was an inferior substitute for the cautery when the latter was not attainable.

The author's patients numbered 367. Of these, 121 had been lost sight of within a year after the operation; his statistics were, therefore, necessarily incomplete. Of those cases which he had been able to follow up, in 59 the disease had been limited to the portio vaginalis, in 81 to the entire cervix, and in 8 to the corpus; in 219 the entire organ had been involved. In the first class, 36 had exemption from recurrence for from one to fifteen years, the average period being eight years and a half. In the second class, there were 35 in which the average period of exemption was five years and a half. In the third class, 4 had an average period of relief for two years. In the fourth class, 78 were exempt for nearly three years. Though the relief in many cases was only temporary, all palliative means in so terrible a disease should be considered useful. In using the cautery the greatest care and thoroughness were necessary, and the current should not be passed until the wire had been secured upon the tissues which were to be burned. Care must also be taken to avoid burning the healthy vaginal tissue at a distance from the disease.

Dr. A. Reeves Jackson, of Chicago, eulogized the painstaking and laborious efforts of the reader of the paper, and considered its statements as forming a striking contrast to most of the recent contributions to the treatment of cancer, in which serious cutting operations upon the uterus or its adjacent organs were advocated. Such contributions showed results which were far inferior to those which had been published by Pawlik and the reader, by both of whom the galvano-cautery had been used. Those who performed hysterectomy admitted that the death-rate from that operation was high, but as an offset they maintained that those who recovered from the operation were likely to be free from recurrence of the disease. Reference to recent German statistics showed that such a statement was fallacious.

Dr. T. A. Reamy, of Cincinnati, thought the author of the paper too sanguine in regard to the possible results to be obtained by the use of the cautery. In his own series of fifty-seven cases of operations for cancer of the cervix, in which twenty-two patients had apparently recovered, he doubted whether the results would have been much better if the cautery had been used, as the reader of the paper had seemed to imply. The result in all cases must depend upon the stage of invasion of the cancer at the time of the operation, rather than upon the method or form of the operation. He believed that hysterectomy had a field, though it might be a narrow one, and did not agree with the two previous speakers that such operations should never be performed.

Dr. Byrne thought it impossible to define the limits of cancer in any given case, and believed that after all tissue that could be reached by the knife or scissors had been removed the cautery would reach diseased cells which were otherwise inaccessible. He had avoided the use of the word *cure* in the relation of his cases, preferring to use the word *relief* as more

appropriate, for no one could say that an absolute cure was obtained in any case. Even in those cases in which relief had continued the longest the disease might reappear in the ovaries or elsewhere. With reference to hysterectomy, he was totally opposed to it, and was certain that the statistics were even much worse than had been reported.

Dr. H. C. Coe, of New York, read a memorial of the late Dr. James B. Hunter.

The Nature and Limitation of Treatment for Uterine Fibroids was the title of a paper read by Dr. P. F. Mundé, of New York. There were many cases of uterine tumor in which no treatment was required. Referring to the usual classification of uterine tumors, it was noticeable that those of the subperitoneal variety were seldom accompanied by hæmorrhage; those of the submucous and interstitial varieties frequently were. The treatment for the subperitoneal variety, in cases in which treatment of a surgical character was required, would consist in removal of the uterus with the tumor, or in removal of the ovaries alone. In the interstitial variety the tumor could often be removed without removing the uterus; in the submucous variety the tumor alone would require removal. If the tumor was not removed, ergot or electricity might be substituted, the object being to force the tumor as far as possible into the pelvis. The greatest difficulty was to be expected in attempting to remove sessile fibroids seated near the fundus through the undilated utero-vaginal canal. The German method, of performing laparotomy and removing the tumor through the opened uterus, was perhaps preferable in such cases. Hæmorrhage accompanying uterine tumors might be treated with the curette or by electro-puncture through the vagina. It was maintained for the latter, which was Apostoli's method, that it would cause the tumors to cease growing, but this cessation was not permanent. In the three cases in which the author had performed oophorectomy for the relief of uterine tumors the results had been satisfactory. In six cases in which subperitoneal tumors had been removed through the abdomen recovery had taken place in four; in all cases the pedicle had been treated by the extra-peritoneal method. Tumors which were seated near the os internum tended to dilate the os, and in many cases no treatment would be required. In some cases in which operation was indicated they could be enucleated and drawn out after the capsule had been split. Laparotomy should not be performed if a tumor was causing no serious trouble, and no operation was indicated in most cases in which the menopause was imminent.

The Nature and Treatment of Fibroid Tumors.—Dr. W. G. Wylie, of New York, in a paper on this subject, said that he had observed that in tumors which were slow in growth uterine symptoms were equally absent, and that, if pain and general discomfort were present, the endometrium or the tubes and ovaries were usually involved. In women forty years of age and upward small tumors of the uterus were not usually significant, though they might delay the menopause. If there were pain and failing health about the time of the menopause, it was usually an indication that degeneration was taking place, and hysterectomy would probably be indicated. Fibroid tumors were like all organic matter, and had their periods of growth and decay. He could not speak with accuracy, but believed that the life of a tumor would usually be from two to eight years. Should it cease growing, and after a time begin again, its removal might be required. A tumor might be quite large and give rise to no symptoms; the patient might even be unconscious of its existence. Should complications occur, such as cystic degeneration or suppuration, an indication for removal would then be furnished. If only the lining membrane of the uterus was diseased, curetting might control hæmorrhage for a year or more, but in case it did not, the tubes and ovaries should be removed. If this was done thoroughly, all bleeding would probably cease. He believed that it was possible to do hysterectomy with comparative safety. His own death-rate was now but ten per cent., and he thought it could be lowered. He had experimented with Apostoli's method of treating fibroids for two years, and believed that its value had been overestimated. If it did no harm, it would at least cause delay, and thus might remove a patient's only chance for relief by operation. With women of the child-bearing period strong currents of electricity were inadvisable. Electricity would doubtless stop bleeding from fungous growths of the uterus, but it might also cause damage, and was no safer than the curette. In fact, the use of the latter had been absolutely safe in his experience. His opinion as to the value of electricity was admitted to be provisional, as he considered his experience still insufficient.

Dr. Reamy approved of the conservative tone of both the papers which had been read, especially in view of certain radical views that had recently been enunciated in certain parts of our country. Cases were innumerable in which autopsies revealed the presence of uterine tumors the existence of which had never been suspected during life. Such a fact was fundamental in the consideration of any method of treatment. Martin had recently stated that in 205 cases in which uterine myomata had been removed by him, fatty and other degenerative changes were found in 70; hence spontaneous cure might occur. It was even possible in cases in which changes of an inflammatory character had taken place, as he had twice witnessed. The low vascularity of most of these growths also taught us that severe measures were not always necessary. Many might be cured by ergot without the aid of knife or electricity. The speaker was of the opinion that Apostoli had not been fairly dealt with in this discussion. He knew from personal experience that tumors were curable by Apostoli's method. Curetting had not been absolutely safe in his hands, and if, as was asserted, electricity caused stenosis of the uterine canal, it could not destroy the possibility of pregnancy more effectually than removal of the tubes and ovaries, which had been so freely advocated. In his experience oophorectomy would not always stop the hæmorrhage caused by uterine tumors. For the severest cases he conceded the propriety of hysterectomy.

Dr. G. J. Engelmann, of St. Louis, admitted that his results in the treatment of uterine fibroids by electricity had not come up to his expectations. The results were excellent in cases in which the uterus was surrounded by hard masses of exudate. The same was true in the treatment of both profuse and scanty menstruation. In most cases in which electricity had been used by him the patients had become more comfortable, and with poor working women that was of great consequence. No single method of treatment was applicable to all cases of uterine tumor. There was a field for ergot, for the knife, and for electricity.

Dr. J. R. Chadwick, of Boston, was entirely opposed to Apostoli's method. He had followed Apostoli's directions carefully in twenty-four cases, and had seen improvement in but one. In that case the hæmorrhage was checked for three years. In none of them had the tumors been reduced in size. In two cases death had resulted, and two others had been nearly fatal. Apostoli alleged much for his method; he was therefore a fair object for the most searching criticism.

Dr. Ely Van de Warker, of Syracuse, N. Y., believed that Apostoli's method had produced positive scientific results, and objected to such sweeping denunciation of it. Electricity might result in cystic degeneration in tumors or intensify such a condition if already existing. It might also be followed by high temperature, and these results might be caused by the intra-uterine use of electricity as well as by galvano-puncture. But

such results were exceptional. On the other hand, it would cause tumors to become movable and smaller, and would stop hæmorrhage.

Dr. M. D. Mann, of Buffalo, N. Y., had used electricity with success in all cases in which tumors had been treated, but this statement did not apply to galvano-puncture.

Dr. Mundé stated that he had seen three tumors disappear after galvano-puncture, but still believed that Apostoli's statements were extravagant.

Dr. Wylie reiterated his opinions concerning the value of the curette and the extravagance of Apostoli's assertions.

(*To be concluded.*)

MEDICAL SOCIETY OF VIRGINIA.

Twentieth Annual Meeting, held in Roanoke, on Tuesday, Wednesday, and Thursday, September 3, 4, and 5, 1889.

The President, Dr. E. W. Row, of Orange, in the Chair.

(*Concluded from page 329.*)

Some Practical Points in the Treatment of Hip Disease with Special Reference to the Use of Thomas's Splint.—In a paper with this title, by Dr. John Ridlon, of New York (present by invitation), the management of hip disease in a mechanical way was considered from the standpoint of the general practitioner. The difficulties in the way of the use of the various forms of traction splints were considered. The use of plaster of Paris was dwelt upon, and its advantages and disadvantages were pointed out. Traction in bed, after the manner of Howard Marsh, was described and commended for those cases where traction was indicated, and where there was no contra-indication to prolonged rest in bed. To one, however, who was satisfied to treat tubercular joint disease in any part of its course without traction, or who was so circumstanced, as the general practitioner was, that he must treat all walking patients without traction, and to one who believed that immobilization, and not traction, was chiefly indicated in the management of these cases, Thomas's splint would prove of great service, as it could be made by a blacksmith and a harness-maker at a cost of not more than $2.50. Splints were exhibited, their construction was described, and their application was shown according to Mr. Thomas's latest methods. It was urged that the splint should not be considered as essentially a walking-splint, but that it should be applied to the patient while he was still in bed, and that he should be kept in the horizontal posture, though not necessarily in bed, till all involuntary muscular spasm subsided. Then he should be allowed to go about on crutches and a patten (on the sound limb). When it appeared that he was cured, the crutches and patten should be dispensed with and the splint shortened so as to reach only to the knee, and so continue for several months. The importance of not once removing the splint, to test the joint motion, was insisted upon as likely to prolong the disease and lead to ankylosis.

A Report on Advances in Ophthalmology, Otology, and Laryngology was read by Dr. Joseph A. White, of Richmond.

Primary Iritis, its Diagnosis and Treatment, was the title of a paper by Dr. J. Herbert Claiborne, Jr., of New York (present by invitation). After an anatomical description of the iris and contiguous parts, he remarked that it was important to remember that, in a condition of health, the edge of the pupil rested on the anterior surface of the lens in moderate dilatation. The diagnosis was to be made by the signs rather than the symptoms of the disease. The chief signs were circumcorneal redness, steamy cornea, clouded aqueous, discolored iris, small pupil, irregular and puckered edges of the pupil, etc. Tenderness on pressure in the ciliary region was the symptom indicating a high stage of ciliary congestion, but not necessarily of cyclitis. Treatment was comprised under the great "therapeutic trilogy"—local depletion, dilatation of the pupil, and systemic treatment. Local depletion was best obtained by that leech that took deepest hold, sucked the longest, and drew the most blood. Bleeding should be encouraged by hot applications to the bites. The position for the leeches was in the temporal fossa, in a horizontal line with the outer canthus of the eye, to drain the temporo-malar branches of the lacrymal arteries. He preferred to combine cocaine with mydriatics, on account of the greater mydriatic power of such a combination, and the analgesic effect of cocaine. He preferred duboisine combined with cocaine. With regard to systemic medication, he used blue ointment, salicylate of sodium, iodide of potassium, the iodide combined with bichloride or biniodide of mercury, antipyrine, Russian or Turkish baths, and quinine for its general tonic effect. He laid much stress on the value of salicylate of sodium, especially in rheumatic iritis. It was also of great value in the specific forms of the disease, as assisting the action of the other agents. There was no need of opium or morphine in iritis. If the pupil could be dilated, pain would cease; if it could not, antipyrine was a good substitute for morphine. Too much stress could not be laid on the importance of the early treatment of iritis with regard to preserving the sight. The responsibility of treatment rested on him who saw the case first.

Neurectomy for Facial Neuralgia.—Dr. E. M. Magruder, of Charlottesville, read a paper reporting two cases. The first was that of a gentleman, aged seventy-one, who had had persistent neuralgia for fourteen years that no medicine cured, although he had consulted eminent specialists. Seven drops of fluid extract of gelsemium, every three hours, gave greater relief than any other medicine except morphine. But, all medicines failing, the patient was chloroformed, and, with strict antisepsis, an incision was begun just below the lower orbital margin, over the infra-orbital foramen, and carried straight downward, parallel with the nose, toward the lip, ending on a level with the lower border of the ala nasi—about an inch long. The fascia and fibers of the levator labii superioris were torn through with the handle of the scalpel, and the nerve was exposed at its exit where it divided into its branches. Each branch—the palpebral, the nasal, and the labial—spreading into a fan-shape as it neared its destination, was dissected out as far as it could be followed without mutilating the face too much. The main trunk was then seized with a forceps at the foramen, drawn out as far as possible without breaking it, and cut off close to the bone, after which the various branches were divided at their farthest point of dissection. The wound was closed with fine silk sutures. There was at first considerable paralysis of the side of the face, with loss of sensation, but these had now disappeared except from the right half of the upper lip, which was still without motion or sensation. There had been no recurrence of the neuralgia. The patient felt like a new man.

The second patient was a lady, aged fifty-eight, who had had facial neuralgia for ten years. At first it was confined to the left lower jaw, never passing the middle line of the chin, but afterward extended to the left external ear, the temple and the side of the head above and behind the ear, the left side of the tongue, and then the left side of the floor of the mouth. The diagnosis was that of neuralgia of the inferior dental nerve, with reflex and sympathetic phenomena exhibited by the auriculo-temporal, gustatory, an dmylo-hyoid nerves. As to treatment, teeth had been extracted, analgesics had been used, etc., and finally total neurectomy of the inferior dental nerve—including its branches—was done. In the operation, to avoid injury to the facial artery and Stenson's duct, the scalpel was inserted just in front of the posterior border of the ramus and

just below the parotid duct and lobe of the ear, and a curvilinear incision was made downward, half an inch in front of the inferior maxillary angle, then carried forward a little above the lower border of the ramus, and upward just behind and avoiding the facial artery, stopping short of the line of Stenson's duct above. The flap thus shaped was raised by shaving the masseter muscle from its attachment to the outer surface of the ramus, and the bone laid bare. With a half-inch trephine he cut out a button of bone from the center of the outer plate of the ramus, exposing the nerve in its bony canal. Seizing the proximal end of the nerve with a forceps, he made strong traction away from its origin; it was then cut off with scissors close to the bone as it entered the circular cavity made by the trephine. Then, the wound being stuffed with moist antiseptic cotton and the hæmorrhage stopped with pressure, a second incision was made, an inch long, horizontal in direction, over the mental foramen (below the root of the second bicuspid tooth), beneath the depressor anguli oris, disclosing the mental nerve and its branches beneath the last-named muscle. The nerve was grasped with a forceps and pulled upon, but broke off at its point of exit. The branches were then dissected out and cut off as far as possible from the foramen. Then, returning to the first wound over the ramus, and chiseling away the wall of the dental canal for an eighth of an inch from the circular cavity in the ramus, so as to expose this end of the nerve, which had been divided by the distal side of the trephine, he drew it out of the dental canal with the forceps, in its entire length from the ramus to the mental foramen. In all, three inches and three eighths of nerve structure were removed. The wounds were closed, the patient was perfectly relieved, and there had been no return of neuralgia since. The paralysis of the left side of the face disappeared in about two weeks.

The lesson to be learned was that in all operations for facial neuralgia, as much of the troublesome nerve and its branches as the anatomical formation of the parts would allow of, without rendering the procedure too grave, was to be removed.

A Report on Advances in Neurology and Psychology was read by Dr. Lewis G. Pedigo, of Roanoke.

A paper on "Railroad Injuries" was read by Dr. C. R. Cullen, of Waldo, Florida (present by invitation).

A paper on "Diagnosis by Means of Urinary Analysis" was read by Mr. Hugh Blair, of Richmond, a delegate from the Virginia Pharmaceutical Association.

Dr. A. F. Kerr, of Williamsville, reported a case of external glanders in man.

Dr. W. W. Parker, of Richmond, read a paper entitled "A Few Original Observations on Blood Gravitation in Health and Disease."

Outline Tests for Muscular Insufficiencies of the Eye.—Dr. A. C. Palmer, of Norfolk, read a paper on this subject. Leaving out of consideration cases of strabismus, etc., he confined his attention to the more minute forms of insufficiency known by the term heterophoria. In strabismus one eye soon accustomed itself to see the object looked at while the other was idle. In heterophoria there was acute normal vision, in which every detail of an object was seen; but the external rectus of one or both eyes was too weak to prevent the internal rectus muscle from turning the ball in just past the normal axis. Eyes such as these had to swing a very little way to make the image seen with one eye a little to one side of that seen with the other; and the confusion resulting was all the worse from the very fact that each eye saw so clearly that neither image could be ignored. The patient had before him two similar images, which were continually receding from and blending with one another. But he would involuntarily overcome this blurring of outlines if he could possibly spur up the externus muscle to pull the eye out to its proper place. Just these insufficiencies or strains produced more mischief than true strabismus. Prisms deflected an image toward their apices or their edges. The relative strength of each of the four recti muscles in their normal conditions was presumed to be first ascertained. Thus the externi should diverge the eyes sufficiently to make the image single when prisms of 8° were placed before them with their bases in. The interni, after a little trying, should converge sufficiently to produce single images when prisms of 50° were placed before them bases out. If a patient with neurasthenia presented himself he should stand erect and direct his vision on a lighted candle twenty feet off. Then each eye should be covered alternately, and notice taken as to whether the light seemed to move up or down or to the right or left. This parallax test, introduced by Dr. Alexander Duane, of New York, often established at once the form of insufficiency. But, should it not do so, then the prism test should be used, which the author described in detail. He then explained the application of glasses to overcome each of the insufficiencies.

Therapeutic Position in Sexual Congress was the title of a paper by Dr. Henry V. Gray, of Roanoke, who recommended that, in cases of pelvic inflammatory troubles that were aggravated by coitus in the ordinary fashion, the woman should assume Sims's posture, and the man approach her from behind. He referred to several cases in which this device had relieved the pain of intercourse.

A paper on "The Use and Abuse of the Obstetric Forceps" was read by Dr. D. Mayer, of Charleston, W. Va., a delegate from the Medical Society of West Virginia.

Dr. L. B. Anderson, of Norfolk, presented a Report on Hygiene and Public Health.

Dr. J. G. Wiltshire, of Baltimore (present by invitation), read a paper on "Anæsthetics."

Book Notices.

College Botany, including Organography, Vegetable Histology, Vegetable Physiology, and Vegetable Taxonomy, with a Brief Account of the Succession of Plants in Geological Time, and a Glossary of Botanical Terms; being a Revised and Enlarged Edition of the "Elements of Botany." With nearly Six Hundred Illustrations, largely from Drawings by the Author. By Edson S. Bastin, A. M., F. R. M. S., Professor of Botany, Materia Medica, and Microscopy in the Chicago College of Pharmacy. Chicago: G. P. Englehard & Co., 1889. Pp. 15–451. [Price, $3.]

This work, compiled, as the author states, chiefly as an introductory text-book for use in our higher academies and colleges, we take pleasure in recommending, after a somewhat careful examination, as one of the best aids to the study of the interesting topic of which it treats that have appeared. The author has succeeded, by the logical arrangement of his subject, the lucid, simple, non-technical language of the text, and the copious, well-executed illustrations, in bringing our knowledge of the life-history of plants within the comprehension of any student of average intelligence, and the plan he has adopted of giving practical exercises at the close of each chapter, directing the student how to verify the previous lesson by his own experiments, adds great value to the work, and tends to make the study a pleasant recreation instead of a dry task. The execution of the wood-cuts is very creditable to the engraver, and the printing is all we could desire.

BOOKS AND PAMPHLETS RECEIVED.

Die allgemeine Pathologie, oder die Lehre von den Ursachen und dem Wesen der Krankheitsprocesse. Von Dr. Edwin Klebs, O. Ö. Professor der allgemeinen Pathologie und der path. Anatomie an der Universität Zürich. Zweiter Theil. Störungen des Baues und der Zusammensetzung. (Allgemeine path. Morphologie.) Mit 79 farbigen Abbildungen in Text und 47 Farbentafeln. Jena: Gustav Fischer, 1889. Pp. xviii–836. [Price, 30 Marks.]

The Diseases of Children, Medical and Surgical. By Henry Ashby, M. D. Lond., M. R. C. P., Physician to the General Hospital for Sick Children, Manchester, etc., and G. A. Wright, B. A., M. B. Oxon., F. R. C. S. Eng., Assistant Surgeon to the Manchester Royal Infirmary, etc. London and New York: Longmans, Green, & Co, 1889. Pp. xix–681. [Price, $6.]

Mother, Nurse, and Infant: a Manual especially adapted for the Guidance of Mothers and Monthly Nurses, comprising Full Instruction in regard to Pregnancy, Preparation for Childbirth, and the Care of Mother and Child, and designed to impart so much Knowledge of Anatomy, Physiology, Midwifery, and the Proper Use of Medicines as will serve intelligently to direct the Wife, Mother, and Nurse in all Emergencies. By S. P. Sackett, M. D. New York: H. Campbell & Co., 1889. Pp. viii–13 to 387.

Syphilis of the Nervous System. By H. C. Wood, M. D., LL. D. Detroit: George S. Davis, 1889. [The Physicians' Leisure Library.]

Fourth Annual Report of the State Board of Health of the State of Maine. For the Fiscal Year ending December 31, 1888.

Seventh Annual Report of the Provincial Board of Health of Ontario, being for the Year 1888.

An Experimental Study of Intestinal Anastomosis, with some Practical Suggestions as to a Modified Technique. By A. V. L. Brokaw, M. D., St. Louis, Mo. [Reprinted from the "Weekly Medical Review."]

Styrone: A Consideration of its Value as an Antiseptic. Copaiba in Surgery. By H. H. A. Beach, M. D., Visiting Surgeon to the Massachusetts General Hospital. [Reprinted from the "Boston Medical and Surgical Journal."]

Dress Reform and its Relation to Medicine. By S. Knopf, M. D., Los Angeles, Cal. [Reprinted from the "Southern California Practitioner."]

Light Gymnastics for Schools. By F. N. Whittier A. M., M. D., Director of Sargent Gymnasium, Bowdoin College, Brunswick, Me. [Reprinted from the "Fourth Annual Report of the State Board of Health of Maine."]

The Hydro-therapeutic Treatment of Typhoid Fever. By G. C. Smythe, A. M., M. D., Greencastle, Ind. [Reprinted from the "Transactions of the Indiana State Medical Society."]

Notes on the Electro-Magnet in Ophthalmology, with a Report of Nine Cases. By William Ellery Briggs, M. D., Sacramento, Cal. [Reprinted from the "Occidental Medical Times."]

A Few Observations on the Ætiology, Prognosis, and Cure of Incipient Cataract without Operative Interference. By A. R. Baker, M. D., Cleveland, O. [Reprinted from the "Transactions of the Ohio State Medical Society."]

The Treatment of Typhoid Fever. By William G. Daggett, A. B., M. D., New Haven, Conn. [Reprinted from the "Proceedings of the Connecticut Medical Society."]

The Treatment of Fractures of the Neck of the Femur by Immediate Reduction and Permanent Fixation. By N. Senn, M. D., Ph. D., of Milwaukee, Wis. [Reprinted from the "Journal of the American Medical Association."]

Du traitement des fibromes utérins, par la méthode d'Apostoli (l'électrolyse utérine), avec une lettre-préface du Dr. Apostoli. Par le Dr. Delétang (des Nantes), charge du service d'électrothérapie des hôpitaux de Nantes. Paris: O. Doin, 1889.

The Nervo-vascular System. [Three charts.] Arranged by W. Henry Price and S. Potts Eagleton. Philadelphia: F. A. Davis. [Price, 50 cents.]

Fibromes utérins, leur traitement par l'électrolyse (méthode Apostoli) et leur élimination fréquente sous-muqueuse par l'action de l'électricité. Par le Docteur La Torre (de Rome), etc. [Extrait, revu et augmenté des "Archives de tocologie."] Paris: O. Doin, 1889.

Some Uterine Displacements not Curable. What shall we do with them? By W. F. Rochelle, M. D., Jackson. (Read before the Tennessee State Medical Society at its Fifty-sixth Annual Meeting.)

Miscellany.

The American Public Health Association.—The seventeenth annual meeting will be held in the hall of the Brooklyn Institute, Washington and Concord Streets, Brooklyn, on October 22d, 23d, 24th, and 25th. Addresses of welcome will be delivered by the Hon. Alfred C. Chapin, Mayor, on behalf of the city, and by Dr. Alexander Hutchins, on behalf of the medical profession. The following topics have been selected for consideration at the meeting: "The Causes and Prevention of Infant Mortality"; "Railway Sanitation" (heating and ventilation of railway passenger coaches; water-supply, water-closets, etc.; carrying passengers infected with communicable diseases); "Steamship Sanitation"; "Methods of Scientific Cooking"; "Yellow Fever" (the unprotected avenues through which yellow fever is liable to be brought into the United States; the sanitary requirements necessary to render a town or city proof against an epidemic of yellow fever; the course to be taken by local health authorities upon the outbreak of yellow fever); "The Prevention and Restriction of Tuberculosis in Man"; "Methods of Prevention of Diphtheria, with Results of such Methods"; "How far should Health Authorities be permitted to apply known Preventive Measures for the Control of Diphtheria?" "Compulsory Vaccination"; "Sanitation of Asylums, Prisons, Jails, and other Eleemosynary Institutions."

It is the purpose of the association to provide an exhibition of everything available adapted to the promotion of health. The exhibits will be classified as follows: I.—*The Dwelling:* 1. Dwellings; models and designs for sanitary dwellings. 2. Treatment of the site; foundations, drainage, drainage-tiles, etc. 3. Materials for construction; bricks, tiles, floors, cements, etc. 4. Heating; devices and appliances for furnaces, stoves, and water and steam heating apparatus. 5. Ventilation. 6. Lighting. 7. Domestic water supply, purification, filters, water fittings, etc. 8. Plumbing; traps, sinks, water-closets, baths, etc. 9. Disposal of waste; domestic garbage destructors, garbage receptacles, etc. 10. Sanitary furniture, refrigerators, wall-paper (non-arsenical), floor-coverings, etc. II.—*Schools and Education:* 11. Plans and models for improved school buildings. 12. Heating, ventilation, lighting. 13. Furniture and fittings. 14. Improved books, printing, etc. 15. Gymnastic apparatus. 16. Works on sanitary topics. III.—*Factories and Workshops:* 17. Designs and models for improvements in factories and workshops. 18. Life- and health-saving devices. 19. Special devices for removing dust and effluvia and preventing injuries from the same. IV.—*Clothing and Dress:* 20. Improved materials and garments, etc. V.—*Food:* 21. Selected displays of unprepared animal and vegetable substances used as food or in the preparation of food. 22. Prepared vegetable substances used as food, including canned and prepared and preserved fruits and vegetables; prepared cereals, meals, flour, biscuits, bread, etc.; syrups, sugars, etc. 23. Prepared animal substances used as food; canned, smoked, salted, preserved, and prepared animal foods, including honey. 24. Products of the dairy. 25. Beverages of all kinds; alcoholic, non-alcoholic, tea, coffee, cocoa, chocolate, etc. 26. New varieties of food; food for infants and invalids. 27. Articles and devices used in the preparation of food; cooking stoves, ranges, etc.; vessels for preserving food, etc. 28. Adulterants and adulteration. VI.—*Sanitary Engineering:* 29. Plans for sewerage and sewage disposal. 30. Plans for drainage. 31. Plans for water-supply, including purification, filtration, etc. VII.—*Public Health Administration in Cities and Towns:* 32. Treatment of contagious diseases, including plans for hospitals for the same. 33. Vital statistics, blanks, etc. 34. Disposal of waste, garbage destructors, odorless apparatus. 35. Anti-

septics, disinfectants, and disinfection. 36. Reports of local and State boards of health. VIII.—*The Laboratory:* 37. Instruments of precision in meteorology, thermometers, barometers, hygrometers, etc. 38. General chemical apparatus for a health laboratory. 39. Microscopes, etc. 40. Biological apparatus, cultivations, etc. IX.—*Red Cross Section.* The exhibition will be held in the hall at the northwest corner of Fulton and Pineapple Streets, one block from the Brooklyn Institute, where the sessions of the association will be held, and but three blocks from the bridge. It will be opened to the public on October 22d, at 1 P. M., and will continue open until December 1st. Admission free. Applications for space may be made to any member of the Committee on Exhibits, accompanied with details as to name and character of articles proposed, space required, and the name and address of the applicant. To cover the necessary expenses of the exhibition, each exhibitor will be charged ten dollars, allowing him twenty square feet of floor space, and thirty cents a square foot for additional space, to be paid on the second day of the exhibition. All proposals for exhibition and applications for space are subject to the approval of the Committee on Exhibits, and should, therefore, be made as promptly as practicable. At the close of the exhibition the association will award diplomas to exhibitors of specially meritorious articles, based upon the judgment of experts.

The chairman of the Committee on Exhibits is Dr. A. N. Bell, No. 113*a* Second Place, Brooklyn; its secretary is Dr. E. H. Bartley, 21 Lafayette Avenue, Brooklyn.

The Health of Connecticut.—According to the State Board of Health's "Monthly Bulletin," the total number of deaths reported from 167 towns during the month of August was 1,190, including 5 from scarlet fever, 15 from cerebro-spinal meningitis, 46 from diphtheria and croup, 15 from whooping-cough, 3 from erysipelas, 45 from typhoid fever, 9 from malarial fever, and 12 from typho-malarial fever. There were also 120 deaths from consumption, 25 from pneumonia, and 13 from bronchitis.

Mortality in Cities in the United States.—The following table represents the mortality in the cities named, as reported to Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, and published in the abstract of sanitary reports received by him during the week ending September 20th:

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—										
				Cholera.	Yellow fever.	Small-pox.	Varioloid.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y.	Sept. 14.	1,581,179	624	..	..	..	..	..	..	15	2	19	1	8
Chicago, Ill.	Sept. 14.	1,100,000	360	..	..	..	..	..	..	9	2	17	..	4
Philadelphia, Pa.	Sept. 14.	1,040,245	352	..	..	..	..	..	..	19	4	1	..	5
Brooklyn, N. Y.	Sept. 14.	834,607	323	..	..	..	..	..	..	5	1	13	..	2
Baltimore, Md.	Sept. 14.	500,343	164	..	..	..	..	..	..	6	1	5	..	2
St. Louis, Mo.	Sept. 14.	450,000	165	..	..	..	..	..	..	5	2	5	..	..
Cincinnati, Ohio.	Sept. 14.	325,000	108	..	..	..	..	..	..	3	..	4	2	..
New Orleans, La.	Sept. 7.	254,000	113	..	..	..	..	..	..	1	..	4	..	1
Washington, D. C.	Sept. 14.	250,000	101	..	..	..	..	..	..	6	..	9	..	..
Detroit, Mich.	Aug. 31.	250,000	79	..	..	..	..	..	..	2	2	..	..	1
Detroit, Mich.	Sept. 7.	250,000	67	..	..	..	..	..	..	3	..	2	..	2
Cleveland, Ohio	July 27.	235,000	108	..	..	..	..	..	..	2	..	7	2	..
Cleveland, Ohio	Aug. 3.	235,000	114	..	..	..	..	..	..	3	1	5	1	..
Pittsburgh, Pa.	Sept. 14.	230,000	65	..	..	..	..	..	..	6	1	4	1	..
Louisville, Ky.	Sept. 7.	227,000	65	..	..	..	..	..	..	3	..	..	..	..
Minneapolis, Minn.	Sept. 14.	200,000	28	..	..	..	..	..	..	2	..	1	..	..
Providence, R. I.	Sept. 14.	127,000	50	..	..	..	..	..	..	1	..	4	1	..
Indianapolis, Ind.	Sept. 13.	124,450	24	..	..	..	..	..	..	1	..	1	..	..
Denver, Col.	Sept. 13.	100,000	41	..	..	..	..	..	..	11	..	1	1	..
Richmond, Va.	Sept. 14.	100,000	35	..	..	..	..	..	..	3	..	2	..	..
Toledo, Ohio	Sept. 13.	89,000	19	..	..	..	..	..	..	1	..	1	..	1
Fall River, Mass.	Sept. 14.	69,000	35	..	..	..	..	..	..	2	..	..	..	1
Nashville, Tenn.	Sept. 14.	65,153	17	..	..	..	..	..	..	1	..	..	..	..
Charleston, S. C.	Sept. 14.	60,145	38	..	..	..	..	..	..	..	..	..	..	..
Lynn, Mass.	Sept. 14.	50,000	18	..	..	..	..	..	..	..	..	..	..	..
Portland, Me	Sept. 14.	42,000	17	..	..	..	..	..	..	..	..	..	..	..
Manchester, N. H.	Sept. 7.	42,000	21	..	..	..	..	..	..	1	..	1	..	..
Galveston, Texas.	Sept. 6.	40,000	11	..	..	..	..	..	..	..	..	..	..	..
Binghamton, N. Y.	Sept. 14.	30,000	10	..	..	..	..	..	..	2	..	..	..	..
Altoona, Pa.	Sept. 7.	30,000	6	..	..	..	..	..	..	..	..	..	..	..
Auburn, N. Y.	Sept. 14.	26,000	11	..	..	..	..	..	..	..	..	1	..	..
Haverhill, Mass.	Sept. 14.	25,000	4	..	..	..	..	..	..	..	..	..	..	..
Newton, Mass.	Sept. 7.	21,553	2	..	..	..	..	..	..	..	..	..	..	..
Rock Island, Ill.	Sept. 15.	16,000	.....	..	..	..	..	..	..	..	..	..	..	..
Keokuk, Iowa.	Sept. 14.	16,000	2	..	..	..	..	..	..	..	..	..	..	..
Pensacola, Fla.	Sept. 7.	15,000	11	..	..	..	..	..	..	..	..	..	..	..

Parasitic Fœtus in a Multiparous Woman.—Early in 1888 we published an account of Laloo, the Indian boy, who bears a parasitic fœtus attached to his epigastrium, consisting chiefly of the four extremities and nates. Messrs. Sutton and Shattock reported the case in the "Pathological Transactions" for the same year. Another case of parasitic fœtus is described by Dr. E. Bugnion in the "Revue médicale de la Suisse Romande" for June, 1889. The patient, whose photogravure adorns the paper, is a well-developed young woman with regular features. She was born in 1869. In front of the pubes is attached a rudimentary pelvis bearing two long, deformed, and partly atrophied lower extremities. Rudimentary nipples were found in the integument of the autosite's groin on each side of the attachment of the pedicle of the parasite. There were no signs of any external genitals on the parasite. The vulvar orifice of the autosite is anteriorly encroached upon by the parasite, and is pushed backward so that the perinæum is reduced to a thin septum. The autosite, Louise L., of Reims, walks well; the monstrosity shows but little. She married three months before her fifteenth birthday. In March, 1885, her first, and in December, 1888, her second, child was born. She was suckling the latter when Dr. Bugnion examined her. He describes her as a dipygus parasiticus, or more strictly as a *pubimèle* or *pygomèle pubien*. She is known as the *dame à quatre jambes*, and has been on show for some time, after the fashion of most monsters.—*Brit. Med. Jour.*

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Lectures and Addresses.

AN ADDRESS,

DELIVERED ON THE OCCASION OF THE LAYING OF THE CORNER-STONE OF THE NEW BUILDING OF THE NEW YORK ACADEMY OF MEDICINE,

On Wednesday, October 2, 1889.

BY ABRAHAM JACOBI, M. D.

THE New York Academy of Medicine has called upon the profession and the public alike to assist it in this ceremony of laying a corner-stone. Where we are now standing there will be the home of the Academy, we believe, for generations to come. If we are mistaken, if this large building is too small before long, it will be the pleasant duty of our successors to provide for their wants. That this may become necessary is possible, for the Academy has experienced a development rapid beyond expectation. Forty-three years ago it was founded; for dozens of years it held its meetings in hired quarters; ten years ago it occupied its own building, No. 12 West Thirty-first Street; today we are preparing accommodations such as the profession of New York, or any other city of the country, has never possessed. Meanwhile, however, the spirit and the aims of the Academy have remained intact. Among these aims are the cultivation of the science of medicine and the promotion of public health.

In the words of a circular published nearly two years ago in behalf of our building fund, "these purposes are accomplished by lectures and discussions in the stated meetings of the Academy and its numerous sections; by maintaining reading-rooms which furnish nearly all the medical journals of the world, and by collecting a library containing about sixty thousand books and pamphlets, which are free both to the medical profession and the public." The number of its fellows is nearly six hundred. They have been selected from among those who have practiced medicine in New York city or its vicinity three or more years. Some time ago fellowship was extended to those residing in the State.

In its composition the Academy participates in many of the peculiar features of our political organization, which means to benefit all through the co-operation, if not of all, still of the best. In Europe an academy of medicine means a small body comprising a few select men only, appointed by the body itself when there is a vacancy, or by the political rulers. Thus the academies form an aristocracy of the mind parallel to the aristocracy of birth, with all its exclusiveness and real or assumed superiority. They are representative bodies only in this, that the best minds and most scientific workers are expected or believed to fill the seats.

The New York Academy of Medicine, however, is a democratic institution. It is not limited in numbers; on the contrary, it is desirable that the many respectable physicians should gather round its flag. Like our political commonwealth, it must look for its development and success in the co-operation of the competent and cultured masses. Like the Union, it is a voluntary confederation of peers who make their own laws and obey them because they are of their own making.

The members have common interests both scientific and professional. Since its foundation, with the changes for good and bad appertaining to everything organic, the Academy has prospered constantly, in spite of, or, as I am more inclined to say, in consequence of its very constitution as an independent and democratic body. In the words of the same circular alluded to before, "the Academy is not connected with any school or college. It is self-supporting and is carried on in the interest of the whole profession. There are no fees nor emoluments of a private or individual nature. It is not supported nor subsidized by the State or municipality." Whatever has been accomplished by it: its scientific labors, most of which are laid down in its "Bulletins" and "Transactions," and in the medical journals of the country; the hall in West Thirty-first Street; the library and reading-rooms in the upper stories; the wealth of books and journals at the disposal of those eager to learn, and so numerous that they alone compelled us to look for more appropriate quarters—all of that has been created, with few exceptions, by the exertions and pecuniary sacrifices of the medical men themselves.

All classes of these are represented in the Academy. It shows you the choice of those who are interested and active in the promotion of medical science and art; those who have earned an international reputation; those who have deserved well of the community by a life filled with services rendered to the public; and those who look forward for the fulfilling of their dreams and the reaching of their aims through coming years of honest labor spent on theoretical study and practical work. In this co-operation of the old and young, the illustrious and those yet unknown, but promising or anxious to earn renown, the mature and the maturing, you have one of the features of a unity of the profession.

Another feature of unity, which, moreover, ties the profession indissolubly to the community at large, is the labor performed in the service of one and all. It is in these labors and their results that the community at large ought to take a deep interest. Modern medicine is probably the greatest benefactor of mankind. The more medicine has been founded on the study of the exact sciences, chemistry, physics, and physiology with mathematics, the more has its field of usefulness enlarged. The more theoretical it appeared to become, the more did it develop practical usefulness and dignity. Indeed, the dignity of a science or study rises with its capability of being utilized in the service of mankind. Now, the promotion of medical science and art does not mean only the improvement in diagnosis and in the administration of drugs and remedies, but the discovery of the best means of placing the human being in the best possible condition. The labor of the physician is not exhausted by carrying you through a severe case of illness; he renders you the greater service, less remunerative to him though, of preventing you from falling sick.

The peculiar relations of the individual physician to his

patient or the family intrusted to his care are widened in the relations of the profession to the public. Great epidemics take the place of a single case, the protection of a community that of the guarding a person, the hygiene of schools that of a dwelling, the sanitation of a large city that of inspecting a suspicious trap or sewer in a private domicile. The more in your health department the medical element predominates over the military and political, the more actual benefit will the people derive from it. The hygiene of the whole population—the superintendence of public buildings in which many people, old or young, are gathered, public hospitals, quarantine stations; the questions of physical and mental elevation, of legal responsibility, of the State care of the insane—they all belong to the domain of the profession. This is not theory only. No grave question of the kind has come up without the gratuitous and spontaneous aid of medical men. The health board of the city has long appreciated that. The Academy has furnished a consulting board to all the health department's hospitals. A committee of the Academy was intrusted with the inquiry into and the report on the condition of Quarantine. It is to its report that the first appropriation for the rebuilding of the Quarantine Station was due, and to its recommendations that improvements are being carried out at the present time. In this way the medical profession excludes epidemics, and guards both the physical health and the economic interests of the city. Imagine the pecuniary loss to the city if the cholera and the yellow-fever scare of a year and two years ago had not been prevented by the profession, as indeed it was. A week's panic would have been a pecuniary calamity amounting to the loss of a good many millions.

These are but a few examples of the value of medical services, both paid and unpaid ones, to the public. The health of the city is the foundation of its prosperity. Let epidemics prevail, and not only will your children die, your families be decimated, and the graveyards fill with places where flowers and tears mingle, but your commerce will be drawn to other ports. It is due to increased knowledge and activity on the part of the profession, both official and unofficial, that, in spite of the unchanged severity of the epidemics and the rapidly increasing population of the city, the number of cases of diphtheria shows an absolute diminution.

Such among many are the services of the profession, not to speak of the gratuitous daily work of hundreds of medical men in the hospitals and dispensaries. Nobody can count or calculate, but everybody can appreciate, how many lives are preserved, how many millions are saved for the poor and rich alike. From that point of view a whole-souled, generous woman presented to the Academy twenty-five thousand dollars, in recognition of the services to the public on the part of the profession, and in accordance with the esteem her husband had held the profession in while he was alive. To this consideration we owe the bequest of seventy thousand dollars, coming to us under the will of Mrs. Alexander Hosack, who had spent a large part of her valuable life with illustrious examples of professional worth. All we require now is fifty thousand dollars to complete this building. There must be many who have that sum or a part of it to spare in the interest of the profession; perhaps to commemorate the name of a dear one who has passed away, or to imprint his or her name—and a legitimate ambition it is—on one of the halls of the new building, or to perpetuate the memory of one who has been saved from a premature grave by the endeavors of one of those who are now striving to erect a home for the most practical and beneficent of all sciences and arts.

It is a home we want, more than merely a house. To make the house of the medical profession a home, it requires a library. This is to the profession what a tool is to the mechanic, an engine to the engineer, a telescope to the astronomer. A complete library represents the thoughts, experience, genius, and discoveries both of all previous centuries and of the present time. All these treasures must be accessible to the profession whose knowledge and skill is to be the safeguard of the public's best interests. To accomplish that end, the whole medical literature of all countries must contribute. New York has never been satisfied with anything that is second class; it can not afford to trust itself to a profession without the first order of learning and erudition.

Why do we insist upon physicians being erudite? Do I ask, Why do you apply to a particular watchmaker, an engineer, an architect, a milliner? You select him because you believe or know him to be well informed or skillful. And the physician? His practice is the application of knowledge acquired by hard brain work spent on all the learning and practice which have been evolved out of the labor and efforts of thirty centuries. A learned doctor may happen to be an unsuccessful practitioner, for more reasons than one; but among those reasons erudition is not. An uninformed man is never a good practitioner; under equal circumstances, the more learned man is the better man in practice. Practice and learning do not exclude each other; on the contrary, the former depends on the latter. It ought not to suffice for your selection of a doctor that you met him at a bar, or a ball, or at a church meeting, or at whist, in a concert, or on a hotel piazza, or that he is well dressed, pleasant, and tells you he is your "friend"; all these are fine opportunities and agreeable social and personal qualities which may also be considered when you are credibly informed that he burns midnight oil over medical literature and that his professional brethren speak well of his abilities and achievements. And as far as medical friendships are concerned, your best friend is he who knows best how to protect you and your children and your parents from disease, and to cure them when they are sick.

The erudition we claim for the profession demands a large library of constant growth. A fund of one hundred thousand dollars will enable us to keep abreast with any similar institution. The library of the Surgeon-General's Office in Washington, which contains at present seventy thousand volumes and one hundred and thirty thousand pamphlets, is the result of industrious and systematic collections. It is not much over twenty years old, but it is the richest and most complete medical library in the world. Still its annual appropriations for the purchase of books

have seldom exceeded five thousand dollars. Thus a fund of a hundred thousand dollars will enable us to procure nearly everything medical that appears in any land. Of that sum we have only ten thousand dollars. One half of that sum was set aside by the Academy, the other half is a donation separately administered in perpetual honor of a departed one. Such special funds, or additions to our general library fund, are urgently requested. The citizens of New York have developed a metropolis of large size and commercial power; they can well afford to tax themselves in the interest of medical science, than which there is none more cosmopolitan and humanitarian.

But it is not the medical profession only which will be directly benefited by the endowment of a large and complete library. Our library is a public one, free to the profession and the public. Now, there is a class of literature which in a free and public library like ours ought to be well represented. Laymen intending to avail themselves of it expect to find mental food adapted to their comprehension and taste. That sort of literature is by no means scarce. Much of it is of fair quality, some of it surpassingly good. Books on anatomical and physiological topics, those on subjects connected with natural history, hygiene, and statistics, will always be found interesting and instructive. They ought to be well represented in our library, for they can not be found in large numbers in the public and circulating libraries. Indeed, the frequenters of the latter differ much from the class of readers consulting ours.

The additional knowledge acquired in this matter will not only improve a man's ability to protect himself and his family; it will also facilitate the work of his doctor. A person who has filled his mind with comprehensible ideas and sound facts will no longer study quack advertisements. He who has learned something about the functions of his body, and been taught to consider the correlation of causes and effects, can appreciate a disease to be the result of either a preventible or an unavoidable cause, and recognize that whatever disease was not the result of faith can not be cured by faith, not even by faith in panaceas. The business of the quack may thus cease, the nostrum-mixers may suffer, but individual and public health will be the gainers. There is less sickness in a man who has some knowledge of his body and its requirements; and when he falls sick he expects relief from natural and intelligible sources only. That man is a better patient, more accessible to reasoning, more obedient to the rules imposed in the interest of recovery. If he knows enough to recognize the superiority or inferiority of his physician, so much the better. To-day most people have not a sufficient knowledge to guide them in their selection; there are many who are so little informed that they do not so much as care. If in a matter ever so trifling a medical man is called as a witness before a court of justice, the first question he is asked refers to his membership in a medical society. The uninformed public, however, often select their doctor for reasons known to nobody, least perhaps to themselves. All this would be changed if a small part of what is the basis of a physician's thinking and knowing were made accessible and intelligible to every man and woman. A library like that which we intend to establish is destined not only to supply the professional man, but to furnish healthy mental food to all those who are thirsty for knowledge. Those who have means to spare in the interest of public education, hygiene, and health, can not possibly apply them better than by providing for a library fund sufficient for the gradual accumulation, from year to year, under the supervision of experts, of all the good popular literature on the subjects of anatomy, physiology, hygiene, dietetics, and statistics.

May all this become true. We are preparing this edifice to be the head-center of medical study in the city, an example to the profession of the country, and a resort for the brethren who come to us from near or distant parts. This building when completed will be an ornament to the metropolis. What is still more important is that we mean it to become, and feel assured that it will be, an additional element of intellectual and ethical power, and in its results a blessing to the commonwealth.

Original Communications.

ANGULAR CURVATURE.

NATURE OF THE PHYSIOLOGICAL FAILURES WHICH SUPERINDUCE VERTEBRAL DEFORMITY.

By GEORGE H. TAYLOR, M. D.

We are now in a position to understand more fully the nature, kind, and degree of the several physiological defects which culminate in posterior deviation of form of the spinal column and the morbid changes of figure associated therewith.

Since the spinal muscles are charged with the duty of maintaining the erect position and of executing the motions of the column, these muscles are necessarily associated with its functions of elasticity and flexibility, on which, as has been shown, its nutrition and therefore its health depend. The columnar functions are consequently in a sense derived, inasmuch as the force required in the execution of flexion, elasticity, and even sustentation, is yielded to it by its muscles. The muscular force is resolvable into the two physical forms of mechanical (or dynamic), which changes the relations of parts *en masse*, and the chemical, which changes the relations of constituent elements, and thus the constitution of the mass. The manifestation of force or energy in the above-named forms implies expenditure of material entering the organism as nutrition, and is the indispensable condition for the resupply of such material to the acting muscles. Muscular nutrition requires muscular expenditure; otherwise it becomes both faulty and insufficient.

Failure of the spinal and associated muscles leaves the column unsupported in proportion to the degree of such failure. Insufficient power of these muscles affords inadequate support, and at the same time withdraws from the column its elastic and its flexile functions, and thereby inflicts on it grievous injury, which, if continued, becomes incorporated in some morbid form in its tissue.

The immediate effect of suspension of muscular power is well illustrated in a case of falling asleep in the sitting posture. The head and shoulders are surrendered to gravitation, are pulled forward, causing the column, the posterior boundary of the body, to become *bent*, the convexity being backward. When, therefore, a posterior curvature is observed, the inference is unavoidable that the weight of the upper portion of the trunk has for some time been inadequately or improperly supported by the parts to which nature has assigned that duty. The difference in the two cases is that, in case of sleep, the supporting muscles immediately resume control when slumber has departed, while in that of deformation the loss of control of the column by its muscles is absolute. A renewal of the supporting power of the appropriate muscles is required alike in both instances. Substitutional and indirect methods of support are impracticable; if practicable, then injurious, because undermining the vital power of the muscles, on which the responsibility of support ultimately falls.

The above statements, so far as representing the supporting function of the spinal and associated muscles, are too obvious to admit of question. Indeed, the therapeutics of angular deformities is practically based on them. But mechanico-dynamic facts are only partial, and alone afford erroneous therapeutic views and practice. The inseparable accompaniment of the mechanico-physics of muscular function is its chemico-physics. It is essential that this department of muscular function be practically recognized. Otherwise the therapeutist is indifferent as to the source and the nature of support, and falls into the error that mechanism will serve the desired end, even though vito-chemical physics, of which muscles are the sole source, be omitted, even ignored. For muscular support of the column, though dynamic and mechanical as respects the column, yet involves change of the substance yielding the energy affecting every cell of the muscles engaged, and as far beyond as the motor influence extends. This last process is as essential to the maintenance of the muscle and the perpetuity of the supporting power as are the motions communicated to the column to the maintenance of *its* nutrition and functions. Both necessarily fail in the absence or even decline of these indispensable conditions. Nutritive acts are the fundamental basis of all organic power, and it is idle to devise substitutes therefor.

The attempted substitution of mechanical devices for the natural supporting power, under the idea that such substitution is somehow remedial, grows out of the restricted conception of the needs of this class of cases, and of the physiology of muscular functions above shown. The necessity to the sufferer for the vito-chemical phase of muscular functioning is lost sight of, and all provisions for supplying that need are consequently omitted. When, therefore, it is found that the spinal column has developed a posterior projection, angular or otherwise, much more is signified than defect of mechanical support. The disastrous consequence to the form of the vertebræ is ushered in and, in general, attended by defective functioning of muscles in their vito-chemical phase of function, precedent to their mechanical failure. It is easily seen that the supply of mechanical support by art, however perfect this may be, can not have the least influence toward restoring an adequate vito-chemical phase of muscular function, nor can such supply mitigate the consequences arising from defective chemical functioning of muscles.

The morbid posterior projection of the spinal column includes, therefore, the following particulars: Defective support and defective control of the motions due the column by the muscles on which this mechanical function devolves; defective evolution of energy in its dynamic form by the same muscles; defective degree attained by their vito-chemical functioning; defective elimination of products of waste due to such functioning; injurious retention of unfunctioned, and therefore unstable, ingredients. The muscles henceforth become incapable of providing for the nutrition and renewal of their own substance. This defect imposes the same disadvantage on the tissues of the column, which have been shown to depend on the energy developed in muscular substance. These failures are necessarily self-perpetuated. Remedies are required to reach, not merely *one*, but each and all these several defects above shown.

Spinous Processes and their Functions.—To show more clearly the way in which muscular failures operate upon the mechanism of the column to produce the morbid form, further details respecting its mechanical and its vital constitution are necessary. In describing the vertebræ, their *spinous processes*, projecting posteriorly from each, were mentioned. These processes are very intimately connected with the development of the morbid form under discussion —not merely because of the extraordinary prominence of one or more of them which characterizes and affords the earliest intimation of the disease, but also because these processes have a direct and important mechanical function in connection with the supporting muscles.

The spinous processes may be assumed to project from a half-inch at the lower part of the column to an inch and a half at its upper portion. They incline downward (the upper much more than the lower), thus overlapping each other, and, when the column is erect, consolidating the vertebræ into a whole of extraordinary resisting power, since the arrangement described practically increases the antero-posterior diameter of the column.

The great importance of these spines lies in their function as mechanical levers, through which the control of the column by its muscles is increased many times. Their aggregate length determines the aggregate leverage they afford for any force applied at their ends—the fulcrum being the center of the vertebræ. The physiological purpose of this mechanism is too clear to be mistaken. It affords a practical and effective counterpoise to the weight of the trunk anterior to the column so long as it is available. This counterpoise declines and ceases with the decline and suspension of the power by which it is made effective. Thenceforward the column is practically shorn of its spines. They become again operative through restoration of the spinal muscles to their due power, while under artificial mechanical support they are of no account.

The spinous processes present an extensive surface for the attachment of the muscles which control the column

through them. The peculiar and complex arrangements of these muscles, their divisions and subdivisions, their extension from the bodies of vertebræ to the spines of other vertebræ, and the contrary, well known to students of anatomy, are admirably adapted to afford all the complex motor results which the column is well known to manifest. The acts of bending, twisting, and combinations of these motions become practicable and easy. In these motions the spinous processes engage, and thereby become instrumental in largely increasing the initial energy afforded by the spinal and associated muscles.

The importance of the forces, dynamic and vito-chemical, having their seat in the spinal and associated muscles, is so great and so liable to escape recognition in practice, and the consequences of failure are so difficult to overcome, that further illustrations tending to enforce the leading facts appear justifiable.

Let us imagine a piece of wood or whalebone similar to what is sometimes used by ladies—long, thin enough to secure elasticity, and wide enough to resist efforts to bend it in its transverse or widest diameter. Let notches be so deeply cut very near each other, at uniform depth in its breadth, that the uncut portions shall be of nearly equal thickness in both directions. The parts between the notches are comb-like teeth or serrations. These may represent the spinous processes, and the whole (Fig. 1) is a similitude of the spinal column. The piece of wood or bone thus prepared yields to force applied in any direction at any part.

Should a thin slip or string of elastic rubber be deftly attached to the ends of all the projecting spines, the representation of a column would be fitted with a similitude of spinal muscles. If, now, attempts be made to bend this preparation in the direction *opposite* to the spines and rubber, such attempts would be met with stout resistance, and the resistance will be proportionate to the *length* of the teeth or spines. It is thus shown that the spines of the column are true levers, and, by assisting to counterbalance the weight of the anterior part of the body, have the effect of practically moving the center of bodily gravitation forward of the column.

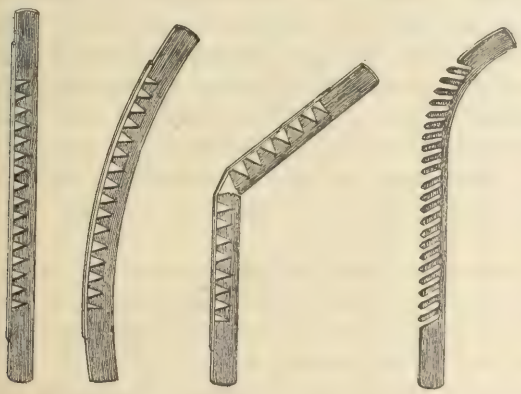


Fig. 1. Fig. 2. Fig. 3. Fig. 4.

Further experimenting with the same mechanical device shows that when the combined resistance of the uncut part and of the rubber is uniform, the act of bending causes it to assume the form of a segment of a circle (Fig. 2). When, however, force is applied in excess of resistance, the device yields at *one* point only, while the remainder, being entirely released from strain, assumes the form of two straight lines meeting at the yielding point, and the angle formed is exaggerated by the nearest spine becoming thrust outward (Fig. 3).

A slight modification of the device above described enables it to become helpful for the illustration of another mechanical principle represented in the column. If the notches in the elastic object be made diagonal instead of at right angles to the uncut part, the teeth or spines will overlap each other. When it is bent, after connecting the rubber with the ends of the spines as before, these ends are projected outward and upward. The spinous levers, becoming horizontal, are extended further from the body or uncut parts; they are practically longer and afford more leverage (Fig. 4). This shows that when the body is bent, especially forward, nature provides a special mechanism to antagonize the evident mechanical disadvantage of the position. This becomes inoperative in proportion as the spinal muscles are weakened or restrained from any cause.

A very important function of the spines connects them with the form of the column. All healthy persons have *natural* curves of the column, throwing the shoulders and hips backward and the chest and abdomen forward, the center of gravity corresponding with a perpendicular line between these extremes. It is pretty certain that the action of the spinal muscles, acting through the levers provided therefor, is instrumental in causing these curves. The curves are absent in children, and appear with the use of spinal muscles. These curves, therefore, naturally disappear with the suppression or with the loss of muscular power. But the maintenance of the erect position *necessitates* the maintenance of the same perpendicular over the base. The decline and loss of musculo-spinous sustentation causes the trunk to fall forward; the hips are therefore compelled to project in the same direction, and the *intervening part of the column* is carried in the *opposite* or *backward* direction from mechanical necessity.

Review of the Consequences of Insufficient Power of Spinal and Associated Muscles.—The results toward which decline of function of the sustaining muscles of the column tend may now be clearly understood. The advantages of spinous leverage are unavailable; the weight of the anterior superior portion of the body is unantagonized; the trunk falls forward, dragging the column after it, into a curved or inclined form. The anterior longitudinal half of the column is shortened; its tissues, by virtue of their elasticity, become compressed. This compression takes effect only in the frontal portions of the vertebræ and intervertebral cartilages.

It is under these circumstances that the distinction between the natural *alternate* or interrupted compression and *continuous* compression may be realized. The one is physiological, the other pathological, leading to further advanced pathological states. Physiological compression is never constant; it is alternate and interrupted; in other words, rhythmic. This form of motion is everywhere present in living organisms. The substitution of *continuous* pressure in place of the *interrupted* form is equivalent to suspension

and ultimate destruction of vitality. Decline of the motions characteristic of the column is as fatal to that organ as would be decline of mechanical action of the lungs, the abdomen, the circulatory and other special mechanisms of the body. It means impairment of tissue nutrition; it is a morbid condition and the harbinger of the gravest consequences.

It is necessary at this point to remind the reader that the disclosures of *post-mortems* and the distorted vertebræ seen in pathological museums do not in the least indicate the *causes*, or rather the nature, of the failures of the physiological order to which such results are due. They only represent the stages arrived at in special instances of the disease, not the initial or the intermediate stages, nor the primary factor of the affection. This is simply defective function and cognizable by the understanding rather than the eye.

Continuous pressure of the anterior portion of the columnar tissues produces local consequences which next demand attention. The diminished space into which the structures of the column are crowded urges therefrom the fluid contents of the interspaces of the tissues, closes the inlets for arterial blood, and deprives them of supplies, both of nutritive materials and of oxygen. At the same time the lack of *alternations* of motion prevents that exchange of material necessary for the maintenance of local vitality.

Compression as above defined not only debars inflow of fluids bringing support of vitality, but unquestionably facilitates outflows; for structural parts, under the circumstances of diminishing and departed vitality, tend toward a liquid exit form, and are urged *from* the point suffering morbid compression, to join contiguous venous fluids. This process is technically known as *absorption*. The anterior parts of the vertebral bones and cartilages under this process become thinner than the posterior parts of the same, or wedge-shaped.

A change of form superinduced by local absorption under pressure is by no means confined to the columnar tissues. It is a common occurrence in other tissues subjected to the same or similar causes. Examples are abundant in physiology, pathology, and therapeutics. Local loss of substance is inevitable when vital structures are compressed, whether spontaneously or through the intervention of art. This statement is corroborated by reference to the local effects of the hernial pad of the truss, to the leg on which is worn a tightly fitting garter, to the waist of the would-be fashionable. Local compression is used as a successful surgical recourse to restrain morbid increase, as of tumors. The ligation of arteries to restrain a morbid supply of nutritive materials for a region of the body is a neat instance in point. The effect of pressure in each case accords with what is above stated to occur in the columnar tissues. Examples are not wanting of the same consequences of local compression in osseous structures, as when instruments are applied to crooked limbs, superinducing compression of one side of a shaft of bone to secure straightening. The misshape of vertebræ seen in *lateral* curvature of the column is but another example of morbid compression, partly from weight, with the co-operation of unequal development or asymmetry of the two lateral halves of the body.

Even the hardened bones of the aged are not exempt from the operation of the same law. The rounded form of the shoulders of old men and women and of those whose occupation compels much continuity of compression of the anterior longitudinal half of the column, are familiar illustrations. Even the lower segment of the column has been molded to a curve under similar influences.

The inquiry will be made, Why is the angular form assumed by the column in some instances, while the curved form results in others apparently similar? The angular form is in accord with the mechanical principles engaged, as has been shown. When a stick is overstrained it breaks at one, not at several points. No object, physical or vital, can possess throughout absolutely uniform powers of resistance. Even this quality could avail nothing, because no assurance would be afforded that morbid forces would be presented to all parts with absolute uniformity. Local manifestations of disease in general indicate the weaker—that is, less resisting—points of the organism.

The plausibility of the theory that local injury to the column is the usual cause of localization, if not of the disease itself, has led to its adoption by many pathologists. When, however, it is considered that children and youth receive numberless blows, shocks, and hurts upon the column, with no other result than rapid recovery, the same as follows in case of injury to other parts, the probability as regards the class of causes mentioned is much diminished. Besides, the most searching inquiries usually fail to elicit any history of previous mechanical injury in angular cases that could be fairly construed as an adequate cause of the morbid outline.

Radical Sources of Angular Deformity.—The mechanical and the dynamic failures which ultimate in vertebral affections have now been outlined. These failures clearly have their source in defective energy due from muscles. The spinal column is composed of tissues which have no motory power, while diversified motory functions are demanded of the column, the execution of which is confided entirely to appropriate muscles, the non-performance of which is in itself morbid and leads to further expressions of disease.

But the failure of musculo-dynamics was stated above to account in part only for the pathological situation, this form of failure being as evident in lateral and other morbid curves of the column as it is in the angular form. Other considerations must be added to complete the pathological picture, and to afford the necessary therapeutic suggestions.

The muscular system has been shown to possess two coordinate functions—that of mechanico-physics, which has been sufficiently explained, and that of chemico-physics, whose importance demands further elucidation. While mechanical energy is being expended, whether for objects exterior to the vital organism or those interior to it, organic ingredients are being converted at corresponding rates into the well-known emergent forms. As shown in another connection, the constituent ingredients of the vital organism, together with all superfluous nutritive matters, become in

this way transformed from unstable to stable forms. So far as is known, the muscular system, including the involuntary as well as the voluntary muscles, is both directly and indirectly responsible for the execution of this work.

Now, defective functioning of muscles on the chemico-physical plans may be regarded as resulting in two principal ways, depending on the vital capacities of the subject, natural or acquired. It is unnecessary to refer here to but one of these ways. In this the subject *inherits* weak muscles, especially of the involuntary class—those belonging to internal organs. Or, being bred in unhygienic surroundings, such as defective ventilation, too high temperature of living-rooms, lack of adequate incentives, mental and physical, etc., the same sort of laxity of muscle is *acquired*, especially in youth. The essential defect consists in insufficient motor impulse derived from muscles to insure the desired degree of chemico-vital physics. The consequence of imperfect functioning is that either the gross expenditures are insufficiently transformed, or that a part only of such matters reach emergent forms, while a residue remains unaffected, and of necessity is retained.

The circumstance which determines the last-mentioned condition is the different degrees of susceptibility to the influence of oxygen of the different classes of organic ingredients. The nitrogenized class is much more refractory than the non-nitrogenized, and to secure the physiological degree of oxidation a certain degree of expenditure of motor energy is demanded. This natural difference is, therefore, greatly increased when the amount of oxygen supplied to the system is restricted by the feeble working of the respiratory mechanism, and when it is again restricted by the inadequate incentive arising from too feeble contact of changing ingredients entirely due to defective motions.

Whether or not the proposition be accepted that excess of albuminoids in some form is characteristic of the scrofulous series of diseases, this fact is undeniably recognized in practice, if not by formal statements. It is the *source of this condition* which most needs recognition. Ordinary prescriptions for the benefit of the scrofulous condition, however manifested, are quite certain to include what may properly be termed *reducing* agents, designed, both directly and indirectly, to aid in various ways the process of transforming irrelevant, superfluous, and obstructive ingredients of the vital organism to some stable and emergent form.

If further reasons are required why angular instead of circular forms of the column supervene under the physiological failures above detailed, it may be sufficient to note that the scrofulous condition is one of less vitality than exists in any other, and therefore more favorable to physical morbid changes from physical causes. The least, even temporary, increase at one point of morbid impulse determines the permanent fate of such locality.

The principal reasons for the very moderate and questionable success of the usual therapeutics of angular curvatures have now been shown in the statements above made of the nature of the physiological failures from which this affection arises and on which it depends. Therapeutic requirements have a natural basis in physiological defects. To substitute something else to maintain appearances is unworthy of the profession. What is plainly required in these cases is restoration of the supporting power of muscles, restoration of the elastic and flexile functions of the column, through which alone *its* nutrition becomes possible, and, from first to last, restoration of the chemico-physics of the spine in connection with that of the whole organism by such means as render these permanent and not deceptive.

SOME POINTS IN THE PATHOLOGY AND TREATMENT OF DISEASE OF THE NASAL PHARYNX.*

By JOHN N. MACKENZIE, M. D.,
BALTIMORE.

That the nasal pharynx is exquisitely sensitive to reflex-producing impressions is a fact which has been known for some time, and the older medical literature contains isolated examples of neurotic phenomena of various kinds emanating from pathological conditions of this region. These reflex neuroses of the nasal pharynx were, however, almost unknown except to special workers in this field until the publication of a brochure by Dr. Tornwaldt, of Dantzig,† in which prominent attention was drawn to the subject, and which invested the so-called bursa pharyngea with a pathological importance hitherto unrecognized and undescribed.

According to Tornwaldt, this bursa is a constant integral part of the rhinoscopic picture, and can always be recognized, sometimes as a furrow-shaped, sometimes as a blind *cul-de-sac*, directly in the middle line in the center of a curve drawn from the upper edge of the posterior nares to the atlas. This sac is the frequent seat of various pathological processes—hyperæmia, cystic formations, hypersecretion, and simple and purulent inflammation; and these often lead to reflex disturbances—such as asthma, cough, nasal polypi, various ear troubles, neuralgia, inflammatory conditions of the naso-bronchial tract, etc. He furthermore maintains the proposition that naso-pharyngeal catarrh has its starting point, in very many cases, in a localized pharyngeal bursitis, and that its cure is only possible after destruction of the bursa itself. His treatment, accordingly, consists in the obliteration of the bursa by means of nitrate of silver, following insufflations of this agent (one to ten) with the application of the fused solid directly to the sac. Tornwaldt's hasty enthusiasm carries him to the startling statement that, of 892 cases of naso-pharyngeal disease examined by him, 202 were primary affections of the pharyngeal bursa.

There are many objections which may be urged against the theory of Tornwaldt. In the first place, the very constancy and existence of the pharyngeal bursa is a subject of dispute among distinguished anatomists, and, according to my experience, the appearances described by Tornwaldt are by no means constant in the rhinoscopic image.

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* Read before the American Laryngological Association at its eleventh annual congress.

† "Ueber die Bedeutung der Bursa Pharyngea," etc., Wiesbaden, 1885.

In the second place, when we consider the changes which take place in the pharyngeal vault during the different stages of inflammatory affections of the nasal pharynx —the frequent formation of cysts of varying shape and contents, the formation of depressions, furrows, and other conditions of the pharyngeal tonsil—it will be readily understood how easily mistakes in diagnosis may occur, or how difficult it often is to differentiate between well-recognized appearances in the pathological anatomy of post-nasal inflammation and the theoretical primary bursitis of Tornwaldt. That such errors have been indeed committed is evident from some of the literature on the subject.

It is highly improbable, nor are there any just grounds for belief, that an organ of such comparatively trifling anatomical and physiological importance should be vested with the peculiar privileges assigned to it by the followers of Tornwaldt. Since I became aware of Tornwaldt's researches I have searched in vain for what might be unequivocally termed a primary pharyngeal bursitis. When the bursa has been involved, it has been so invariably in connection with well-marked and far-advanced naso-pharyngeal disease. So that, from the standpoint of my own clinical experience, I am unable as yet to confirm the observations of Tornwaldt. Naso-pharyngeal disease is the most common affection of this climate, and the innuendo of Carroll Morgan—that the postulate of Tornwaldt regarding the great frequency of primary disease of the bursa, living, as he does, in a city of small population, has not been confirmed by the vast majority of specialists residing in large cities, and commanding an immense amount of clinical material—may possibly carry with it considerable force.*

While, then, Tornwaldt's observations must, for the present, be taken with a considerable amount of reservation, they have, at least, directed prominent attention to a field of naso-pharyngeal pathology of exceedingly great interest and importance. From them we may learn the lesson that, in order to dissipate certain inveterate naso-pharyngeal affections, we must not rely on astringents, alteratives, *et id omne genus*, but we must destroy the source of the discharge.

My own observations concerning this class of naso-pharyngeal neuroses may be briefly summed up in the following propositions:

1. The nasal pharynx is, in quite a large proportion of individuals, exceedingly sensitive to reflex-producing stimulation.

2. The areas chiefly involved are the posterior portions of the turbinated erectile tissue and various points along the upper and posterior portions of the naso-pharynx.

3. In consequence of this extreme sensitiveness, a local pathological process, which in many persons would give rise to no reflex neuro-vascular changes, may awaken a host of neurotic phenomena referable not only to the region primarily involved, but also to other and even remote organs of the body. These may include cough, asthma, and various neuralgic affections, or the local structural lesion may be the starting point of the various sympathetic affections of the respiratory tract.

4. That this class of naso-pharyngeal neuroses are explicable on the same general principles laid down in the article read before this association, May 29, 1886 (*vide* "Transactions," page 154 *et seq.*), and the pathology of the nasal and post-nasal affections is, therefore, one and the same.

5. That the treatment should be carried out according to the general directions laid down in the article just mentioned.

6. That when the morbid process originates in the pharyngeal tonsil, attention should not be directed to the bursa alone, but an endeavor should be made to extirpate the tonsil, as far as possible, in its entirety.

7. That, while a favorable prognosis can not be safely predicted by treatment of the bursa alone, extirpation of the pharyngeal tonsil often offers the most favorable prospect in long-standing cases of post-nasal inflammation.

* "Maryland Medical Journal," March 19, 1887.

PARAPLEGIA FROM A GUNSHOT WOUND OF THE SKULL OVER THE CORTICAL LEG CENTERS.

By FREDERICK PETERSON, M. D.

The following is the history of a unique case of simultaneous injury to both cortical leg centers, occurring in the practice of Dr. W. H. Heath, attending surgeon to the Sisters of Charity Hospital at Buffalo:

J. P., a male, aged fifty-seven, widower, born in America, served in the army during the late war, and was perfectly healthy up to that time. Since then his only illness has been of a rheumatic nature. He never had syphilis. During the early part of this year he became low-spirited and despondent from want of employment, but his was not a case of melancholia. On April 30, 1889, in a fit of desperation, he shot himself with a 32-caliber revolver. The remarkable feature of the shooting was the spot selected to receive the discharge. Directing the muzzle of the weapon against the top of his head, he shot vertically downward. The bullet entered exactly in the antero-posterior median line, something like an inch posterior to the bregma and about seven inches anterior to the occipital protuberance. It became impacted in the bone, splintering the inner table of the skull. Consciousness was apparently lost but for a few seconds. Almost immediately he felt a sensation "like an electric shock," and the lower extremities became completely helpless. He was taken at once to the Sisters' Hospital, and the disc of bone containing the impacted ball was removed. A number of loose particles of the inner table were also removed. The injury had lacerated the longitudinal sinus, so that the wound had to be plugged to check the hæmorrhage. The dura was slightly injured by spicules of bone, but the cerebral substance beneath it apparently escaped exposure or visible laceration. Dr. Herman Mynter first saw the patient, and sent him to the hospital. There was some retention of urine the first day from shock, and it was drawn off with a catheter; but there was no evidence of sphincter paralysis, and has been none since the shooting. The knee-jerks were enormously exaggerated from the first, and ankle clonus was very marked. Both legs were paralyzed. There has been no muscular atrophy, no anæsthesia, and no analgesia, and no cranial nerve was affected. Up to about the middle of July he was confined to his bed by the loss of voluntary control over his lower extremities, but before that some

improvement had taken place, and the amelioration of the paralysis had gradually advanced, apparently from above downward, so that on July 15th the thigh muscles had regained considerable power, and at the date of this writing (August 14th) he is walking about with a cane. Though there is a great gain of voluntary power, as shown in his ability to walk, yet the slightest touch upon the patellar tendon still produces a violent response, and the ankle clonus remains as before.

There has been no disturbance of his intelligence, nor at any time any tendency to convulsive seizure in the lower extremities.

An exact localization of the injury according to the rules of cranio-cerebral topography has not been made, but the statements given afford an approximate estimate of the relation of the bullet wound in the skull to the cerebral convolutions. In the first place, the ball entered precisely in the antero-posterior median line, depressing the inner table and lacerating the longitudinal sinus; hence, if any injury to the brain substance itself occurred, it must have been along the margins of the longitudinal fissure. The area for the lower extremity, as is well known, includes the upper portions of the anterior and posterior central convolutions, and the convolution around the upper extremity of the Rolandic fissure which, upon the median surface, is known as the paracentral lobule. The leg area extends, therefore, from the convexity over upon the median surface, and the margin of the hemisphere at this spot is the most prominent part of the area. The upper extremity of the Rolandic fissure does not pass over the margin, and is situated between 40 and 60 millimetres behind the bregma, according to Dana. From Dr. Heath's measurement we learn that the bullet entered one inch behind the bregma, or 25 millimetres, leaving a distance of 15 millimetres, or possibly more, between the anterior border of the bullet wound and the fissure of Rolando. The hole made by the ball itself could scarcely be less than 10 millimetres in diameter, and radiating from the wound were the depressed spicules of the inner table for probably 10 millimetres more, which would bring the farthest limit of bone injury to some 45 millimetres behind the bregma. As the leg center extends at least as far as 15 millimetres in front of the fissure, it is evident that the motor area lay to some degree below the injured portion of the skull. The pathological nature of this lesion is mysterious. Paraplegia followed immediately upon the presumed injury to the cortex of the motor centers for both lower extremities. Was it shock to the centers, or sudden compression, or sudden hæmorrhage? The longitudinal sinus was injured and bled freely from its upper wall, and a subdural hæmorrhage is also a possibility; the sinus being lacerated, blood might have flowed out and formed a large clot between the paracentral lobules. But any attempt at explanation must be purely speculative. The lesion was local from the symptoms developed, and from the fact that unconsciousness was merely momentary. If it had been irritative to the leg centers, would there not have been a tendency to spasm?

I do not know of any other case like this in medical literature, and it is to be hoped that Dr. Heath will keep it under observation for some time to come, that further data may be added to the valuable notes which he has furnished me.

AN UNFORTUNATE RESULT OF WHITEHEAD'S OPERATION FOR HÆMORRHOIDS.

By CHARLES B. KELSEY, M. D.

The following case is that of a patient brought to me a few days since by Dr. Peckham:

A woman, aged thirty-five, was operated upon eight months since in one of our city hospitals for hæmorrhoids by Whitehead's method. "The operation had never healed."

On examination, the anus presents a circle of excoriated mucous membrane ending suddenly in healthy skin. The mucous membrane, which has been drawn outside of the rectum and united to healthy skin, is an inch broad for one half the circumference of the anus and half an inch broad for the remainder. In other words, the circular incision in the operation was entirely outside the margin of the anus, and the mucous membrane has been drawn down to it, changing a muco-cutaneous opening into one covered by mucous membrane.

The plan of treatment advised was to dissect this mucous membrane loose, cut it off, bring the skin up as near the verge of the anus as possible, and allow the wound to heal by granulation. A stricture of the anus would, of course, be the natural consequence, but one which I think could be managed and would be better than the extensive ulceration which is sure to follow the excoriation now begun.

It is needless to say that the patient's present condition is a very miserable one.

Creasote in Tuberculosis.—Professor Sommerbrodt, of Breslau, in two communications to the "Therapeutische Monatshefte," declares that an experience of over five thousand cases has proved to his own satisfaction that creasote is not merely a useful drug for the symptomatic treatment of tuberculosis, as has been conceded by others, but that it exerts a specific influence on the disease by the resistance it offers to the cultivation of tubercle bacilli. Dr. P. Guttmann had by his experiments shown that tubercle bacilli could scarcely be cultivated in sterilized serum containing $\frac{1}{4000}$ of its volume of creasote, and the culture entirely failed when the solution was a little more concentrated. He concludes that if it were only possible to administer sufficient creasote for the blood to contain that drug for some time in the proportion of $\frac{1}{4000}$ of its own quantity, tubercle bacilli would probably cease to develop. This, he contends, is impossible, not only because the required quantity of creasote in the blood would be more than twenty grains, but because it would be impossible to determine what quantity of creasote would have to be administered to make twenty grains of it circulate in the blood. Sommerbrodt believes that it is possible to give the necessary quantity of creasote. He has been prescribing for some time to many hundreds of tuberculous patients capsules of creasote, each containing one grain of the drug. These capsules were taken, three the first day, and every succeeding day one more until the eighteenth day, after which the same quantity—from twenty to twenty-five grains per day—was continued for many months. The author says that it is impossible to presume that the twenty grains of creasote have already entirely passed out of the blood by the time the second or third dose of the drug is given, so that probably such an accumulation of creasote takes place in the tissues as to fulfill Dr. Guttmann's postulate. He has, at any rate, had the most gratifying success with this medication, and his experience was that the more creasote a patient could bear in a day the greater was this success. The *modus operandi* of the creasote, Dr. Sommerbrodt says, has not yet been sufficiently cleared up. . . . He suggests, therefore, that serum from a man who has for some time taken more than twenty grains of creasote be used to cultivate tubercle bacilli, so as to find out if this acts differently from the serum of another person used for the same purpose.—*Lancet.*

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THE RELATIONS OF INFLAMED TONSILS TO RHEUMATISM.

A comparison of the experience of various observers in regard to a given subject is always of value, especially when the personal equation is reduced to the minimum and the collated experience may be verified—without deductions for errors of observation—by any interested student. Of such a character was the discussion on "Tonsillitis, its Varieties and Relations to Rheumatism" that took place at the recent session of the Laryngological Section of the British Medical Association ("British Medical Journal," September 14, 1889).

Dr. C. W. Haig Brown classified tonsillar inflammations as simple and specific, the latter being subdivided into exanthematous (scarlatinal, morbillous, etc.) and diphtheritic, also as sporadic or epidemic and as follicular or interstitial. The follicular variety, he said, was most common, and the disease appeared when the air was saturated with moisture, in December and January, and again after hot, dry days with high humidity. Drain poisoning frequently caused the disease; and he referred to an institution in which the repair of improper drainage had reduced the percentage of amygdalitis to five and rheumatism to one, against twenty-one and four before the repairs were made. Of 119 educated persons with inflamed tonsils, 28 had rheumatoid pains with the attack, 38 had had previous attacks of rheumatism, and 10 had rheumatic parents, though they were free from this disease themselves. The aptitude of each disorder to recur, the sour-smelling perspiration, the pain in the back and limbs independent of arthritic pain, due to inflammation of the fibrous elements of the muscular fascia, the occurrence of cardiac murmurs in amygdalitis, as well as of endocarditis and pericarditis in rheumatism, lent a similarity to the diseases that outweighed their points of difference. He had not found that the salicylates, beyond their sedative power, influenced amygdalitis. This causative and clinical relationship led to the conclusion either that rheumatism as frequently found expression in the throat as in the fibrous or serous membranes, or that the inflamed tonsil, having received the rheumatic poison, became the medium of its transmission to the circulation, or that specific germs manifested their presence by inflammations of the tonsils and the fibrous and fibro-serous membranes. The last, by analogy with other diseases, seemed the most probable conclusion.

Dr. A. E. Garrod acknowledged the frequent association of sore throat and rheumatism, and reviewed the various observations that had referred to this association. He considered that the fact that many sufferers from rheumatism had amygdalitis was evidence that the arthritic pain accompanying the latter was rheumatic, and that the frequent association of pharyngitis, amygdalitis, and rheumatism was evidence that the former was a manifestation of the rheumatic state, though it was, of course, conceded that there were many cases of sore throat that had no connection with rheumatism. When sore throat was the leading feature of the attack there was little tendency to affection of the endocardium or pericardium. No importance was attached to arguments based on the results of treatment.

Mr. Lennox Browne, who professed to have been the first to insist upon the ætiological, semeiological, and therapeutic analogy between tonsillar inflammations and the rheumatic diathesis, agreed with Sir Andrew Clarke that the sudden suppression of the generation and discharge of lymph-cells by the tonsil, the accumulation of effete matters in the crypts, and the filling up of lymph spaces with the products of bacterial life and evolutionary matter contaminated the blood and originated the rheumatic troubles. He believed that the action of sodium salicylate in inflammation of the tonsils proved the rheumatic character of the disease.

Dr. R. Hingston Fox referred to amygdalitis accompanying the exanthemata, distinguished between epidemic sore throat and simple tonsillar inflammation, and accepted Dr. Cheadle's seven phases of the rheumatic series: endocarditis, pericarditis, pleurisy, amygdalitis, exudative erythema, chorea, and subcutaneous nodules. In this series the lymphatic system, with which the tonsils, the ileo-cæcal glands, the serous cavities, and perhaps the joints were connected, was especially concerned. The association between these diseases was further shown by the facts that often one individual was attacked at different times by two or more of them, and that several members of one family might be attacked by them.

Other speakers expressed themselves to much the same purpose. While there is a consensus of opinion regarding the association of the diseases in question, and the importance of inquiring about rheumatic symptoms in amygdalitis is emphasized, yet the latter symptoms seem to be the result of a ptomaine poisoning. A more extensive study of both diseases is necessary to arrive at an exact conclusion regarding their pathological identity.

A GOVERNMENT REPORT ON THE SWINE DISEASES.

The Commission of the United States Department of Agriculture, appointed in December, 1888, to investigate swine plague and hog cholera, has made a report, of which the chief conclusion is that these are distinct diseases, and not the same disorder, as has been maintained by Dr. F. S. Billings and some others. The Commission, composed of Dr. E. O. Shakespeare, of Philadelphia, chairman, and Dr. Meade Bolton and Dr. T. J. Burrill, journeyed far and wide and experimented diligently in order to settle the points in dispute. Their report is provisional and introductory to further and closer laboratory work.

One important observation made by the Commission is worthy of mention, as having an application to human infective diseases, since it recognizes a principle of cumulation in infection which explains what is called the alleged deficiencies of

vaccination and other protective agencies. To quote from the report briefly: "There is no known infectious disease, either of man or beast, capable of producing by one attack a degree of protection which is surely and absolutely effective against a second attack. Experience has abundantly shown that animals which are naturally or artificially protected can be *practically overwhelmed* by enormous doses of the germs of the disease and thus be made to suffer a recurrent attack, which may even be fatal." Thus it is that we not infrequently observe a second attack of small-pox in a person who, having "no fear of the disease," as it is often expressed by some such thoughtless person, so comports himself that a needless and wanton degree of exposure is incurred. That such an exposure does not engender the second attack oftener than is the case is surprising. In other words, the antidote being limited in its supply or potency, and the poison being practically unlimited in supply and fresh and virulent as to its potency, there ought to be nothing surprising, or, indeed, contrary to a rational expectation, in the recurrent attack as a result of an excessive exposure to the germs of infecting diseases. In such instances it is not the correct view to ascribe them to the "failure" of the protective agency applicable to each respective case: they are simply cases where the doses of poison have been so great as to overwhelm the protection. These views are not unfamiliar as matters of speculation and of analogy, but it has only been within the last few years that the work of the bacteriologist has brought the matter to the point of demonstration, that there is a quantitative, as well as a qualitative, element in germ-disease production. And the primary lesson to be deduced is that already suggested—that any unnecessary exposure to infectious disease is unwise.

THE ENTRANCE OF AIR INTO THE CIRCULATION.

Until within recent years it has been an accepted fact that the entrance of air into the venous or arterial circulation was rapidly fatal; and many cases of sudden death during operations have been attributed to this cause. Recently Dr. Hobart A. Hare, of Philadelphia, in the "Therapeutic Gazette" for September, has reported a series of experiments on more than seventy dogs, in which he injected air in quantities varying from a minute bubble to forty cubic centimetres into the jugular vein or the carotid artery. Experiments with a cannula left tied in the proximal portion of the jugular vein did not show any suction of air. Death did not follow the injection of air into the vein; but, when it was injected into the artery, death occurred almost at once, if as large a quantity as twenty cubic centimetres was injected. The author remarks that, in operations, the collapse of the walls of vessels will generally prevent such an accident. The reported cases of sudden death are probably due to clot, and the evidence seems to Dr. Hare inconclusive that any of these deaths were due to air entering the vessels.

These experiments agree with those of Senn, whose work seems to have been overlooked by Dr. Hare to some extent. In his exhaustive consideration of the subject of air embolism ("Transactions of the American Surgical Association," 1885), Dr. Senn found that the injection of twenty cubic centimetres of air into the carotid artery did not cause death, but that larger quantities were fatal, though less so than when thrown into the veins, the contractions of the left ventricle forcing the air into the venous circulation. The fatal issue in the latter condition appeared due to the mechanical overdistension of the right ventricle of the heart, with consequent paralysis, or to asphyxia consequent on pulmonary embolism. In his experiments he found that an elevation of the wounded part—as of the head in wounds involving the longitudinal sinus or the jugular vein—favored the entrance of air into the veins. In this paper quite a number of reported fatal cases from the entrance of air into the circulation were analyzed, and the evidence seemed sufficient that there was paralysis of the heart, and that there were air bubbles in that organ and in the blood-vessels.

Undoubtedly quite a number of the reported cases of sudden death from air embolism rest on insufficient foundation; in many no necropsy was made to verify the reported cause of death. It must also be remembered that even such moderate surgical interference as the introduction of an aspirator needle has caused death; and such traumatic shock has probably been the actual cause of death in many of the obscure supposed cases of air in the blood-vessels. In the last analysis of the work of these American experimentalists—substantiated as it is by European observers—it seems demonstrated that the accidental introduction of small quantities of air into the blood-vessels during an operation is not fraught with danger to the patient. Where dangerous symptoms are presented, Senn recommends aspiration of the right ventricle or auricle.

MINOR PARAGRAPHS.

THE MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

The fifteenth annual meeting, which was held in Evansville, Indiana, on the 10th, 11th, and 12th of September, under the presidency of Dr. George J. Cook, of Indianapolis, was in every way a most successful one. The programme included nearly a hundred papers, many of which, however, were read only by title, as the time allotted for the meeting would not admit of the carrying out of the full programme. The attendance, which was large, included that of many representative men from Ohio, Kentucky, Tennessee, Missouri, Indiana, Illinois, and Pennsylvania; also visitors from some of the Eastern States. The association, which is a growing one, bids fair to rival the American Medical Association in membership. By its by-laws all questions of ethics and differences between members are referred without debate to the Judicial Council, whose decision is final. Thus nothing that might tend to produce unpleasant feelings can be brought before the association, whose time during its sessions is devoted entirely to scientific work. The social features of the Evansville meeting were of a most enjoyable character, and, like the arrangements for the meeting, reflected great credit upon the Committee of Arrangements, of which Dr. A. M. Owen, of Evansville, was chairman. The association will hold its next meeting in Louisville, under the presidency of Dr. J. M. Matthews, of that city.

THE NEW YORK ACADEMY OF MEDICINE.

The exercises incident to the laying of the corner-stone of the Academy's new building, on Wednesday afternoon of this week, doubtless went far, as they ought to have gone, to further the general interest in matters calculated to improve the medical profession, and especially in the Academy's own prosperity, that has sprung up in New York within the last few years. On that occasion the profession itself was most creditably represented, and the participation of so popular an ex-President as Mr. Cleveland doubtless drew the thoughts of many influential laymen to the desirableness that the community should do everything in its power to raise the status, and thereby the efficiency of its medical men. In particular, Dr. Jacobi's address, which we publish in this issue, ought of itself to secure the objects in pursuit of which he spoke. It was straightforward, simple, and to the point, suggesting the good wine that needs no bush. If such a succession of presidents as Dr. Barker, Dr. Jacobi, and Dr. Loomis can be continued, the Academy will not be at a loss for suitable spokesmen whenever occasion arises for it to come before the public with appeals for the aid and encouragement that are its due.

HOW MUCH SHOULD A CITY PAY ITS HEALTH OFFICER?

The Michigan State Board of Health has recently published a paper by its secretary, Dr. Henry B. Baker, in which he asks how much the average city or village can afford to pay its health officer. He answers the question by saying that statistics which can not be questioned prove that in those localities in Michigan where the recommendations of the State Board of Health are carried out about eighty per cent. of the deaths from diphtheria and scarlet fever are prevented by the thorough isolation of all infected persons and the thorough disinfection of all infected persons, things, and places. Statisticians, he adds, usually value a person in the prime of life as worth to the community about a thousand dollars. Dr. Baker thinks that in a village of fifteen hundred inhabitants a health officer can easily save the lives of two children and one grown person in each year, and he concludes that such a village can well afford to pay its health officer two thousand dollars for the prevention and restriction of scarlet fever, diphtheria, and typhoid fever, and save money by the transaction.

ST. JOHN'S GUILD.

The report of the past season's work by the St. John's Guild shows that over 30,000 children and mothers were received on the floating hospital, and 1,500 sick children and others were treated at the Cedar Grove Seaside Hospital belonging to the Guild. The expenses exceeded the receipts by $3,000.

LEPROSY IN THE SANDWICH ISLANDS.

According to the "British Medical Journal," Dr. Lutze, who until recently was an assistant in Dr. Unna's clinic at Hamburg, has been invited by the Hawaiian Government to proceed to Honolulu, to remain there for some time to study leprosy in its habitats, and to investigate the effects of certain newly proposed methods of treatment.

ITEMS, ETC.

The Kings County Asylum.—Dr. Walter S. Fleming has been appointed medical superintendent of the Kings County Insane Asylum at Flatbush. He succeeds Dr. J. J. Shanks, resigned, being promoted from the position of assistant physician at the St. Johnland Branch Asylum.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending October 1, 1889:

DISEASES.	Week ending Sept. 24.		Week ending Oct. 1.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	63	16	55	11
Scarlet fever	24	4	34	3
Cerebro-spinal meningitis	0	0	1	1
Measles	9	0	13	2
Diphtheria	55	15	55	14

The late Dr. Joseph Beale, of the navy, who died on September 23d, in his seventy-fifth year, was Surgeon-General of the Navy from 1873 to 1877, and had been on the retired list for twelve years. He was a native of Philadelphia, was educated there, and spent his last years there. He entered the navy as an assistant surgeon when he was twenty-three years old, and was on the active list for forty years. During the late war he participated in blockades and engagements at various points from Fort Hatteras to Mobile.

The Toledo Medical College.—Dr. F. B. Robinson, of Grand Rapids, Wisconsin, has been appointed to the chair of anatomy.

The New Haven Hospital.—By the wills of the late Philip Marett and of his daughter, Mrs. Gifford, the hospital will receive about $200,000, and the New Haven Dispensary $5,000.

Changes of Address.—Dr. Elizabeth Neely Bradley, to No. 32 East Forty-fifth Street; Dr. Louise Fiske Bryson, to No. 159 West Forty-eighth Street; Dr. E. L. H. McGinnis, to No. 35 West Thirty-eighth Street; Dr. Henry Macdonald, to No. 334 West Thirty-fifth Street.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from September 22 to September 28, 1889:*

Pope, Benjamin F., Major and Surgeon. By direction of the Secretary of War, the leave of absence granted in S. O. No. 54, August 17, 1889, Department of Texas, is extended one month. Par. 6, S. O. 224, A. G. O., September 26, 1889.

Loring, Leonard Y., Major and Surgeon. By direction of the Secretary of War, the station is changed from Fort Mojave, Arizona Territory, to Fort Wingate, New Mexico, and he will report for duty at the latter accordingly. Par. 7, S. O. 219, A. G. O., September 20, 1889.

Chapin, Alonzo R., Captain and Assistant Surgeon. With the approval of the Secretary of War, leave of absence for fourteen days is granted. Par. 10, S. O. 223, A. G. O., September 25, 1889.

Burton, Henry G., Captain and Assistant Surgeon, will, by direction of the Secretary of War, report in person, on the expiration of his present sick leave of absence, to the commanding officer, Davids Island, New York, for temporary duty at that station, and by letter to the superintendent of the recruiting service. Par. 3, S. O. 223, A. G. O., Washington, September 25, 1889.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending September 28, 1889:*

Gorgas, A. C., Medical Director. Detached from Examining Board and ordered to hospital, Philadelphia, Pa.

Hord, W. T., Medical Director. Detached from hospital, Philadelphia, Pa., and to wait orders.

Bogert, E. S., Medical Inspector. Detached from New York Navy Yard and assigned to Examining Board.

McMurtrie, D., Surgeon. Detached from U. S. Steamer Vermont, and ordered to Navy Yard, New York.

Babin, H. J., Surgeon. Ordered to the Receiving Ship Vermont.

Hall, C. H. H., Passed Assistant Surgeon. Resigned from the Naval Service, to take effect November 1, 1890, and resignation so accepted.

Society Meetings for the Coming Week:

Monday, *October 7th:* New York Academy of Sciences (Section in Biology); Medico-chirurgical Society of German Physicians; Morrisania Medical Society (private); Brooklyn Anatomical and Surgical Society (private); Utica Medical Library Association; Boston Society for Medical Observation; St. Albans, Vt., Medical Association; Hartford, Conn., City Medical Association; Chicago Medical Society; Monmouth, N. J., County Medical Society (Freehold).

Tuesday, *October 8th:* New York Medical Union (private); Medical Societies of the Counties of Albany (annual), Chenango (tri-annual), Greene (semi-annual—Cairo), Jefferson (quarterly—Watertown), Oneida (quarterly—Utica), Ontario (quarterly), Rensselaer, Schoharie (semi-annual), Tioga (Owego), and Wayne (semi-annual), N. Y.; Newark, N. J., and Trenton (private), N. J., Medical Associations; Bergen and Cumberland (semi-annual), N. J., County Medical Societies; Litchfield, Conn., County Medical Society (annual); Baltimore Gynæcological and Obstetrical Society.

Wednesday, *October 9th:* American Rhinological Association (first day—Chicago); New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medico-legal Society; Tri-State Medical Association (Port Jervis, N. Y.); Pittsfield, Mass., Medical Association (private); Franklin (quarterly—Greenfield), Hampshire (quarterly—Northampton), Middlesex South (Cambridge), and Plymouth (special), Mass., District Medical Societies; Philadelphia County Medical Society.

Thursday, *October 10th:* American Rhinological Association (second day); New York Laryngological Society; Society of Medical Jurisprudence and State Medicine; Brooklyn Pathological Society; Medical Society of the County of Cayuga, N. Y.; South Boston, Mass., Medical Club; Pathological Society of Philadelphia.

Friday, *October 11th:* American Rhinological Association (third day); New York Academy of Medicine (Section in Neurology); Yorkville Medical Association (private); Medical Society of the Town of Saugerties (anniversary).

Saturday, *October 12th:* Obstetrical Society of Boston (private); Worcester, Mass., North District Medical Society.

Letters to the Editor.

A FORMULA FOR MEMORIZING THE CAUSES OF ABNORMAL INTRACARDIAC SOUNDS.

Washington, *September 10, 1889.*

To the Editor of the New York Medical Journal:

Sir: I propose the following formula for memorizing the causes of abnormal intracardiac sounds as one of the simplest yet proposed:

A, B, C,
B, C, D.

Murmur heard loudest at *A*pex: With first sound = *B*ackward flow, or mitral regurgitation. With second sound = *C*onstricted orifice, or mitral stenosis.

Murmur heard loudest at *B*ase: With first sound = *C*onstriction of orifice, or aortic stenosis. With second sound = *D*ownward flow, or aortic regurgitation.

C. V. N. Callan, M. D.

Proceedings of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

Fourth Annual Meeting, held in Washington, D. C., on Wednesday, Thursday, and Friday, September 18, 19, and 20, 1889.

The President, Dr. Francis Minot, of Boston, in the Chair.

The President's Inaugural Address dealt with the subject of the progress of medicine during the past fifty years. If such strides were made in the future as had characterized the last half decade, we had every reason to hope the time was not far distant when medicine would approximate the exact sciences. Bacteriology had revolutionized our notions of the causes and nature of many diseases and of their proper management. Much useless and pernicious medication had been abandoned, while the number of valuable remedies had been greatly increased. The possibility of prevention was advancing with the knowledge of the causes of disease, and hygiene had become an important branch of medical education. Even in tuberculosis, that wide-spread and most fatal of maladies, the results of prophylactic treatment, founded in part on the great discovery of Koch, were found to be most encouraging. It was not unreasonable to hope that this dread disease might in time become as amenable to control as small-pox. Medicine he considered almost as much indebted for its present position to chemistry and other branches of the physical sciences, and even to the mechanical arts, as it was to clinical observation and pathology. He felt he ought to touch also upon the great influence of the medical press in elevating the standard of the profession and in diffusing scientific knowledge to all parts of the world. This it did by the publication of original articles, clinical and other lectures, reports of interesting and instructive cases, and proceedings of societies and conventions. Thousands of practitioners unable to leave their homes were thus brought into communication with the highest authorities in medicine, and could avail themselves of the most recent advances of medical science. Finally must be recognized as one of the great advantages of medical conventions the privilege of becoming personally acquainted with the men from all parts of the country of whom they had heretofore known only by reputation or through their writings. In this way the profession was more closely drawn together, prejudices were laid aside, and harmony on the subject of medical ideas was promoted. The organization of the association he had the honor of addressing was peculiarly adapted to aid the progress of medical science. It represented no one section of the country, but included practitioners from all parts of the United States and Canada, whose experience, observation, knowledge, and ability were thus concentrated for comparison and mutual instruction. The president concluded his address with a respectful tribute to the memory of H. D. Schmidt, J. Call Dalton, R. P. Howard, and E. T. Bruen, deceased during the past year.

After a short session devoted to general business, the reading of papers was formally commenced.

The Early Stage of General Paralysis. Dr. C. F. Folsom, of Boston, contributed this paper. It was compiled to express the author's opinion that there was perhaps a tendency to ignore, depreciate, or underestimate a train of insidious yet palpable symptoms, which, if more carefully observed, would assume importance as evidencing the initial brain lesion. He then went on to cite at length a number of cases in which some transient deviation from the normal mental equilibrium, antedating by a considerable period any pronounced symptoms, had led him to make a diagnosis of approaching general paralysis, which had been subsequently confirmed by the disease fully developing. These cases also illustrated that in the early stage of the disease the motor disturbances might be very slight or might altogether escape detection. That striking loss of muscular power or control generally regarded as a part of the disease was not always apparent until a later period. The mental symptoms were difficult to detect, but this could be more readily done in some vocations than others. For instance, the requirements for an orchestral leader being of so complex an order, the least failure was detected. In professional and business men a less degree of impairment would be recognizable than in mechanics. In routine employment, without much thought, a large degree of deterioration might exist unnoticed. In day-laborers an early diagnosis was impossible. The earliest signs of paralysis would probably be the slightest possible brain failure. If, for instance, a strong, healthy man at or near the prime of life, distinctly not of the nervous, neurotic, or neurasthenic type, showed some loss of interest in his affairs or an impaired facility in attending to them; if such a man became varingly absent-minded, heedless, indifferent, negligent, apathetic, inconsiderate; if, while able to follow his routine duties, his ability to take up new work was, no matter how little, diminished; if he gave less willing mental attention and concentration, showed less power in conception, perception, reflection, or judgment; if there appeared lack of initiative, and exertion caused unwonted mental and physical fatigue; if the emotions were intensified or excited readily by trifling causes; if the sexual instinct could not be reasonably controlled and the finer feelings were even slightly blunted; if the person in question regarded with a placid apathy his own acts of indifference and irritability, and especially if at times he was able to see himself in his true light, and then suddenly failed to do so; if any symptom of cerebral vaso-motor disturbance became evident, however vague or variable—the foregoing might be regarded as suspicious indications, though there might be more or fewer in any given case. The group of symptoms given might seem very striking, but were really compatible with the performance of usual duties and required careful and prolonged observation of the patient and painstaking interrogation of his family and friends for their detection. They would be recognized perhaps as much from the peculiar quality of the mental impairment, difficult to describe, as from its degree. These often antedated, at least in time of their recognizability, any physical symptoms. The latter, when they appeared, might be so slight as to be unappreciable for a long time except as an unusual sense of fatigue and weariness. Commonly there was loss of flesh. There were always elements of uncertainty in the early diagnosis of general paralysis, for there existed few forms of mental disease in adult life that it might not simulate in obscure cases. It might be confounded with Bright's disease, epilepsy, hysteria, lead or mercurial poisoning, cerebral complications, and so forth. Its relation with syphilis was too frequent to be accidental, yet it could not be classed as properly a stage of that disease, nor was it benefited by specific treatment. He did not deem the prognosis so hopeless as it was generally considered. The present methods adopted in treatment were really detrimental, and even when nothing but partial cure or marked amelioration could be hoped for such would be best achieved by methods which secured the patient absolute rest.

Dr. J. J. Putnam, of Boston, thought that it was a most essential thing to recognize the disease at the earliest possible moment. There seemed to be some mysterious connection between it and syphilis. He would like to ask whether Dr. Folsom had had any case in which chronic lead poisoning might have entered as a factor.

A case had come under his notice a few weeks ago in which a diagnosis of general paralysis had been made, and in which the symptoms, he was forced to admit, would readily allow of such conclusion. Still this patient was not so far gone as not to be able to appreciate his own condition, and had suggested the possibility that to the drinking of water which there was reason to think had been richly charged with lead his symptoms might be due. And it was also true that in this case there were local indications suggesting lead poisoning.

Dr. William Pepper, of Philadelphia, thought the disease due to slow degenerative changes in some group of cortical cells. Then any depressing cause might act in elaborating this morbid process. Still he believed there must be a period during the initial change when progress might be stopped and recovery be possible. He considered the ground taken in Dr. Folsom's paper as most important, and would suggest that he be asked to read again that portion of his paper which dealt with the appreciation of the earlier indications of general paralysis.

Dr. Folsom, in his reply, stated that he had never seen any cases of the pseudo-general paralysis of lead. As to cures, he regarded this as meaning a capability on the part of a patient to return for a time to his usual work. Speaking of the alleged syphilitic cases benefited by iodide of potassium, he could cite one in which the patient had been treated for every stage of syphilis. He had developed certain symptoms pointing to general paralysis. Under the iodide treatment, during which he had been given as much as a hundred grains a day, a perfect recovery had apparently been made, and the case might have been regarded as a cure from the speaker's test. Two months ago a circumstance had come under his notice which had indicated that the disease had made considerable progress, and the case would surely go on to terminal general paralysis.

Tetany.—Dr. James Stewart, of Montreal, after dealing in his paper with the subject-matter from a general standpoint, illustrated his remarks by describing in detail the following case. The patient, a man, forty years of age, had suffered for eight years with regularly recurring attacks of tetany. He had served as a soldier during the American civil war, during which, and since, he had been a victim to chronic dysentery and malarial attacks. The first subjective symptom of the tetany had been diplopia, followed soon after by characteristic contractions of the flexors of the hands. Sometimes the flexors of the forearms and the adductors of the arms had become spastic. The muscles of the face had constantly suffered, while those of the lower extremities had been but rarely involved.

The galvanic irritability of the nerves had been found to be materially increased, as was the mechanical irritability of both nerve and muscle. The knee-jerk, which had been exaggerated during an attack, had been absent during the intervals. The quantity of urine excreted in the course of the attacks had been normal in amount, but had been found to contain both urea and indican in considerable excess. Herpetic eruptions with œdema of the hands and arms had not infrequently appeared as sequelæ of an unusually severe attack. The general symptoms presented by the patient, who had been under observation now for some years, were those of gradually increasing

dullness and apathy; he could not reply promptly to questions, and complained of a general numbness. There existed also some swelling of the lips and face. These symptoms closely resembled those of myxœdema, and the idea had forced itself upon the author that perhaps there existed a myxœdema grafted upon the tetany. His researches upon the subject of his paper had led him to the following conclusions: Tetany might be divided into three varieties:

1. Epidemic or "rheumatic" tetany, common in Europe but extremely rare in America, the course of which was acute and favorable.

2. Tetany from exhausting causes, such as lactation, diarrhœa, etc. Course also chronic and favorable.

3. Tetany from removal of the thyreoid gland. The cases after such operations either were quickly fatal or became chronic and incurable.

4. A very fatal form of tetany produced by dilatation of the stomach.

From this enumeration infantile tetany was excluded, because, though it was doubtless true that tetany might occur in childhood, that which was frequently so designated was in reality not the disease at all. When the thyreoid gland was removed from animals for the purposes of experimentation, a condition supervened very similar to the typical tetany in the human subject. Of the many forms of muscular contractions seen in man, in none, excepting perhaps in chorea, would be found such marked increase of the electric irritability of the nerves and muscles.

The investigations by pathologists seemed to throw no light toward a possible ætiology for the disease, and no morbid anatomical changes which could in any way be deemed characteristic have been described, but it appeared that tetany following removal of the thyreoid gland was due directly to such loss, and that the gland itself influenced the nutrition of the nervous system. Possibly it might be accepted as a general proposition that impoverishment of the nerve centers acted as a prime factor in the production of tetany.

Tetany and a New Theory of its Pathology.—In this paper the author, Dr. JOHN T. CARPENTER, of Pottsville, Pa., said that tetany might best be defined as a nervous disorder, accompanied by spasms of an intermittent character, extending from the extremities to the muscles of the jaws. These spasms might, during the intermissions, be reproduced at will by compressing the affected parts, either in the direction of the principal nerve trunks or over their blood-vessels, thus impeding the circulation. But this definition failed to reach the underlying pathology of the disorder; indeed, later observers had taken the ground that there is no definite lesion connected with the disease. This might be true—no definite lesion, perhaps, but still a definite cause. Was tetany a special disease, or the sequel of precedent phenomena? Was it an independent morbid entity, or the consequence of some other diseased condition of the system? These questions might be answered by an analysis of the conditions and circumstances under which tetany had been observed, which had been many and varied. Diarrhœa had frequently been a condition; so also had constipation. The post-puerperal state and lactation in women had been frequently noted. But, again, children and adult males were also subjects of tetany. Typhoid fever and phthisis had furnished a number of cases. So had exudative disease of the pharynx. Could we make any generalization among all these varying conditions? Could we make clearly evident any fundamental peculiarity among all these different morbid states? He believed this could be done. Such a study had led him to the conclusion that the well-known general condition of systemic infection called sepsis might be safely asserted and surely proved to underlie or accompany every antecedent disease that had been observed to be connected with tetany. From these deductions might be formulated the axiom that tetany, as a general rule, follows upon such diseased conditions of the system as are observed to produce morbid discharges from mucous surfaces whose absorption is known to cause symptoms in remote parts of the body due to the circulation of septic poison. Taking first the post-puerperal state, modern obstetric physicians believed that sepsis was usual at this period, and to its influence they justly ascribed the so-called "milk fever," the puerperal inflammations, and many other of the disorders of puerperal women. If, then, a septic condition could exist sufficient to cause these disorders, it was not difficult to see that such might readily account for the appearance of tetany in the post-puerperal. He then went on to consider seriatim, in this connection, diarrhœa, constipation, and phthisis, his summing up being that, in all recorded observations of morbid processes antecedent to tetany, a probable sepsis might be inferred; and no other cause, common to them all, has so far been discovered. To this fundamental peculiarity, therefore, must be assigned the causation of the final result, as a disorder consequent thereupon.

Dr. F. P. KINNICUT, of New York, said that he had seen two cases of intermittent tetany from dilatation of the stomach in pyloric stricture. The cases had both been cancerous and very favorable to the absorption of poisonous material.

Dr. A. JACOBI, of New York, took exception to the theory of Dr. Carpenter. There might be cases in which sepsis might have some influence; but when the attack was temporary the immediate influences which produced it were temporary too. He looked for the proximate causes still in nerve irritation. The disease was not, as had been stated, frequent in Europe. When it occurred it was usually limited to attacks of localized, circumscribed convulsions. He remembered, during thirty-six years of practice, to have seen only five cases, and of these only one was that of an adult.

Thrombosis of the Cerebral Sinuses and Veins.—Dr. A. B. BALL, of New York, read a paper on this subject, and in the course of an exhaustive and elaborate survey stated that the conditions which underlay thrombi of the cerebral sinuses and veins were essentially the same as those which determined thrombi elsewhere in the venous circulation. These conditions were still very imperfectly understood. As to the influence of the blood when at complete rest in inducing the thrombotic process, it was still a matter of dispute whether blood stasis was ever by itself the initial cause. There was a theory promulgated by Eberth that white thrombi were formed mainly by agglomeration of blood plates, differing in this respect from ordinary blood coagula. Whether we took this view or that advocated by Weigert, Walshe, and others, that thrombosis and coagulation were essentially the same process, there was no doubt that slowing of the circulation must be regarded as of great importance. If the initial step were acknowledged as being an adherence of the formed elements of the blood to the vessel walls, obviously such adhesion was more likely to occur with a retarded blood-current. In situations where an active circulation was maintained—as in the heart, in the aorta, and even in some aneurysms—excessively roughened surfaces might be present without being covered by a thrombotic deposit, such slight adhesion of the formed elements of the blood to the vessel wall as might occur from time to time being swept away by the blood-current, and in absence of thrombosis these were readily disposed of in the general circulation. The speaker then considered the part played by vessel lesions and morbid blood changes as factors in thrombosis. He concluded by giving an interesting history of cases of artificial occlusion of the cerebral sinuses in dogs. If dogs were the same as men, then the very extensive occlusion

which could be tolerated before a characteristic train of symptoms appeared and death supervened, as demonstrated during the series of experiments made by Ferrari, threw grave doubts on the reported cases in which fatal cerebral lesions had been assumed to depend upon a comparatively limited obstruction of cerebral sinuses.

In the course of the remarks which followed the reading of this paper Dr. Jacobi observed that among the causes of thrombosis he thought he might enumerate a disproportion between the white and red corpuscles; by this he did not mean a condition of leucocythæmia. Then the absence or relative absence of muscular tissue in the walls of the veins, and it was here that ergot came in as a remedy. Again, absence of water in the blood or too little water. Patients in certain conditions were not given water enough, and it would be found that such could be relieved by injection of water or salt water. Then, again, it was always good treatment to stimulate the heart in every disease which would last long or had a tendency toward producing heart failure. He believed we did not make proper use of heart stimulants, and usually waited too long before we began with them. Any of the four causes he had touched upon might produce thrombosis.

Effusion of Chyle and Chyle-like Fluids into the Serous Cavities.—Dr. Samuel Busey, of Washington, read a paper on this subject, in which he considered the morbid processes possibly concerned in effusion of chyle into the pleural cavity, of chylous and oily fluids into the peritoneal cavity, and of chyle-like and fatty fluids into the tunica vaginalis testis. He pointed out the infrequency of chylothorax and chylous ascites and the increase in cases of lymphocele and elephantoid diseases in this country. Chylothorax he described as mainly the result of injury, and chylous ascites as caused by rupture of chyle-convey, ing vessels, produced by pressure of abdominal and thoracic tumors, cicatrices, inflammatory adhesions, cardiac affections, diseases of the coats of the thoracic duct, receptaculum chyli and lacteals, and other conditions impeding the movement of chyle or its exit into the left subclavian vein. Oily ascites was generally associated with tuberculous and cancerous affections. Lymphocele was the result of gland obstruction, caused by embolism with the ova of filariæ. A diagnosis of these conditions he said was only rendered positive by examination of the fluids, and the prognosis was unfavorable in cases of effusion into the pleural and peritoneal cavities, but favorable in lymphocele, in which latter the treatment would be surgical, in the former expectant.

Substitutes for Opium in Chronic Diseases.—Dr. J. F. A. Adams, of Pittsfield, Mass., contributed this paper, in which he began by stating that there were times when the dangers and disadvantages of this most brilliant of drugs seemed wholly out of proportion to its benefits. A growing dissatisfaction with opium was the motive of his paper. The disadvantages of opium consisted in the fact (1) that in an overdose it was an active poison. (2) In an ordinary dose its benefits might be largely offset by various functional derangements. (3) Its use involved the danger of the opium habit. The usual reason for giving opium was the belief that no other remedy was capable of accomplishing the result desired. Recent discoveries had, however, done much to lessen our dependence upon it. The avidity with which the new analgesics were seized upon by the medical profession and their powers tested was an indication of the deep-seated antipathy to opium, and the desire to be emancipated from its rule. He then went on to define in detail the advantages and disadvantages of the following drugs when employed as analgesics, in their order of value: antipyrine, acetanilide, and phenacetine. Other analgesics of great value were quinine in neuralgia, especially the malarial variety, cocaine, used hypodermically, galvanism, and massage. The hypnotics which might with advantage supersede opium were paraldehyde, hydrate of amyl, and sulphonal. For chronic diarrhœa he had almost discarded the use of opium, preferring to treat all such cases antiseptically. To this end he was now in the habit of using sodium salicylate and salol, and both these had proved most satisfactory. Naphthalin had been highly recommended for the same disorder. In recapitulation, he said that we now had remedies at command which might be used instead of opium in all of the chronic affections in which this remedy was formerly our main dependence.

(To be concluded.)

AMERICAN GYNÆCOLOGICAL SOCIETY.

Fourteenth Annual Meeting, held in Boston, September 17, 18, and 19, 1889.

The President, Dr. H. P. C. Wilson, of Baltimore, in the Chair.

(Concluded from page 361.)

A Case of Abdominal Lipoma simulating Ovarian Tumor.—Dr. A. Reeves Jackson, of Chicago, read a paper with this title. One such case had been seen by the author of the paper, an erroneous diagnosis of ovarian tumor having been made. The abdomen had been opened and the tumor found to consist of large masses of fat springing from the mesentery and other portions of the peritonæum. It had not been considered feasible to remove them; the incision had been closed, and the patient had seemed no worse after recovering from the operation. Péan had reported two similar cases, which were embodied in the paper. The diagnosis of ovarian tumor had been made in both. Sir Spencer Wells had also reported a case, the operation for which had resulted fatally. Byford, of Chicago, had operated successfully on one case, and Homans, of Boston, had had two fatal cases. Thus the diagnosis in all cases had been faulty, and all but two of the operations had resulted fatally. The conclusion was that such tumors were exceedingly rare, and that operations in which their removal was effected almost always resulted fatally.

Dr. S. C. Gordon, of Portland, Me., reported one case which had occurred in a male patient. He had been unable to remove it. The patient had recovered from the operation, but had died a short time afterward.

Dr. W. C. Goodell, of Philadelphia, thought such tumors usually coexisted with large masses of fat in the abdominal parietes. He had seen one case. He differed with the diagnosis of ovarian tumor which an associate had made. The tumor had been a mass of fat attached to the omentum, and had not been removable. The patient had died soon afterward.

Dr. E. C. Gehrung, of St. Louis, had seen a case which he had considered inoperable. The patient had lived seven years after his opinion had been given, the tumor reaching enormous dimensions. An operation had been performed, which had quickly proved fatal. The tumor had been a vast mass of fat, weighing sixty-eight pounds.

Dr. Fordyce Barker had seen one case in which the patient had died on the third day after the operation.

Dr. G. J. Engelmann doubted whether all the cases reported were lipomata, to which the discussion should have been limited.

The president, Dr. H. P. C. Wilson, of Baltimore, Md., delivered the annual address, which was largely historical and reminiscential. He proposed as a question for discussion the propriety of laparotomy during or just before menstruation. Storer had recommended the first week after the conclusion of

menstruation as the most desirable time for such operations, but the speaker believed it was better to operate during the uterine *flood* than during its *ebb*, the flow from the uterus perhaps tending to prevent inflammation. He had been driven to this opinion by certain experiences in which he had been compelled to act, and had never seen occasion to regret such action.

Dr. Goodell had performed ovariotomy six times while menstruation had been in progress, and thought that such a time was not inopportune. He would prefer, however, to decline to perform hysterectomy or myomotomy during menstruation.

Dr. A. P. Dudley had frequently observed that a discharge of blood from the uterus was to be expected within a few days after the performance of laparotomy, and it had occurred to him, in view of this fact, that the normal flow of menstruation should not contra-indicate an operation. He had operated several times during the past year while menstruation had been in progress, and did not think he would refuse to do hysterectomy at such a time.

Dr. R. Battey, of Rome, Ga., said it was a historical fact that the original Battey's operation had been performed while menstruation had been in progress. Metrostaxis might be expected, in almost all cases, two or three days after laparotomy had been performed.

Dr. Kollock, of Cheraw, S. C., had operated twice during menstruation, and saw no objection to operating at such a time.

Dr. H. C. Coe believed that some women would bear an operation performed during menstruation favorably, and others would not. The latter class would include those who were very susceptible to pelvic inflammation.

Dr. P. F. Mundé had not observed that hæmorrhage was more profuse when laparotomy was performed during menstruation than when it was performed at other times. He considered that the question of menstruation was insignificant in deciding as to the propriety of an operation, but extra care should be used to prevent sepsis in case an operation were done at such a time, an absorbent pad being applied to the vulva. He would not advise the removal of a myomatous uterus during menstruation.

Dr. A. J. C. Skene, of Brooklyn, N. Y., thought the experiences narrated proved nothing as to the propriety or non-propriety of operating while menstruation was in progress. In general, surgical operations should be avoided during the performance of any function. In case of a patient who suffered with dysmenorrhœa, he would prefer to operate before the menstrual period to economize her vital force.

An Experience with Sloughing Intra-uterine Fibroids.—Dr. Ely Van de Warker, of Syracuse, read a paper with this title. The paper was based upon the following cases:

Case I.—Sloughing intra-uterine fibroid in a subject of extreme obesity. Operation of total removal abandoned, and the sloughing layers of the tumor removed with the curette. Recovery, and death some years subsequent to operation, with symptoms of malignant uterine disease.

Case II.—The patient had been forty-six years of age; had had one child; history of repeated abortions. Extreme blood loss and high temperature, with œdema of extremities; cervix very resistant. Rapid dilatation and removal of fibroid in sloughing condition. Recovery, and death in a year after from chronic nephritis.

Case III.—Patient aged thirty, sterile; fibroid extruded entirely from the uterine cavity and pendulous within the cavity of the cervix, with low insertion of pedicle. Tumor in a sloughing condition; hæmorrhage and pyrexia. Operation and recovery.

Case IV.—Patient, aged forty, had had three children. Rapid disappearance of a pelvic tumor, attended by severe flooding, and demonstrating the presence of an intra-uterine fibroid in a sloughing condition two weeks subsequently. Extreme high temperature and exhaustion. Operation and recovery, complicated with hystero-tetanus without trismus, preceding the operation. The neurotic symptoms relieved by bromide of potassium and asafœtida.

Case V.—Patient, aged fifty-one, had had several children. Long-continued error in diagnosis, the uterine symptoms being ascribed to cancer for fourteen years. Blood loss continued with more or less activity for that period. Sloughing intra-uterine fibroid demonstrated. Pyrexia for about four weeks; exhaustion extreme; blood loss so excessive that mucous membranes were blanched. Operation and death from shock.

The following summary was based upon the facts connected with this group:

1. The use of the curette to remove the sloughing periphery of an intra-uterine fibroid when non-removable from any complication, as in Case I from excessive obesity, or in cases of extreme exhaustion that rendered extirpation extra hazardous.

2. That the process of sloughing began at the outer layers of the mass and extended layer by layer into its deeper structure.

3. Rapid dilatation of the cervical canal afforded ample space through the parts for the manipulations of removal; and that sponge tents and other slow methods of dilatation were unnecessary (Case IV).

4. That fibroids, formerly intra-uterine, when extended from the uterus and pendulous in the cavity of the cervix with its pedicle therein attached, were rarely found in a sloughing condition; and that Case III was an exception to this rule.

5. That a form of hystero-tetanus, without trismus, might follow either certain forms of blood-poisoning or uterine lesion (Case IV). Within the experience of the author this condition, only met with in the puerperal state, was attended with septicæmia.

6. That blanched mucous membranes, in excessive and long-continued blood-loss due to intra-uterine fibroids, afforded a certain indication that the limits of safety had been reached in operative treatment of sloughing fibroids, and that a doubtful prognosis must be given (Case V).

7. That septicæmia with long-continued pyrexia was necessarily a fatal condition when due to a sloughing fibroid, unless relieved by the removal of the offending mass; that removal, wholly or in part, was a life-saving operation and was imperative; that the operation was comparatively easy and attended with but little danger, except in cases of blanched mucous membranes.

Dr. M. D. Mann narrated one successful and three fatal cases of sloughing fibroid which he had treated. They showed the danger of the condition and the danger and difficulty of operative measures for its relief.

Dr. Battey had seen one case in which sloughing of a fibroid tumor had followed removal of the ovaries. Such a result might also follow the use of ergot.

Dr. Wylie recommended the free application of antiseptics to a tumor several hours before an operation was undertaken. He objected to the use of a vaginal or uterine tampon after operation, as it might interfere with drainage, which was of fundamental importance. Atrophied fibroid tumors in old women would sometimes present symptoms resembling those which accompanied sloughing fibroids.

Dr. Goodell thought that operations for the removal of sloughing fibroids should not be unduly prolonged. It was better to do two or several operations, if necessary. A tumor could sometimes be removed with facility by using a guarded obstetric crotchet.

Dr. Gordon attributed the sloughing in the class of tumors under discussion to an imperfect vascular and nerve supply.

Dr. Van de Warker, in concluding, believed that the sloughing was caused by a special mechanism in which pressure was the principal element. The nerves and vessels were affected secondarily. The antiseptic applications advised by Dr. Wylie seemed to him useless, as they could hardly penetrate in a few hours beyond the sloughing zone.

Death from Visceral Lesions following Ovariotomy.—Dr. H. C. Coe, of New York, read a paper thus entitled. It was a gratifying fact that as ovariotomy became more thoroughly understood and facility in operations increased, the death-rate was greatly lowered. A great extension of the limits of abdominal surgery had resulted, and conditions which were once considered incurable were now within the pale of legitimate surgery. Unfortunately, reliable records of laparotomy cases which had proved fatal and were followed by autopsy were very scanty. He had been able to collect fifty cases in which the records were satisfactorily complete. These formed the basis of his investigations.

Cardiac lesions were first to be considered, the most frequent being fatty degeneration, dilatation, and mitral disease. Heart failure might not occur until several days after the performance of laparotomy. Serious cardiac complications might arise from the pressure of a distended stomach or intestines, and this was most frequently seen in those cases in which opium was used for the relief of pain. Cardiac irritation reflex in character might also arise, owing to disturbance of the abdominal sympathetic plexus. Lung complications had sometimes been found at autopsies when their existence had not been suspected during life. Dyspnœa existing before an operation might be caused by an overlooked pleurisy rather than by the pressure of a tumor. After operations there might be reflex irritation of the lungs, bronchitis, pneumonia, or œdema, the latter frequently resulting just before death. Renal complications were also frequently overlooked during life. There might be albuminuria due to the pressure of a tumor, and pus in the urine with vesical or renal trouble or both. After an operation there might develop hydronephrosis, acute pyelitis, and interstitial nephritis.

Acute or chronic gastro-intestinal disease might precede or follow laparotomy. The stomach might be irritable from venous stasis. It often suffered acute dilatation after an operation. Gastro-intestinal inflammation might cause diarrhœa which would speedily tend to a fatal issue. Intestinal stricture with its serious resulting conditions might follow peritoneal inflammation with adhesive bands, and the latter were much more common than was usually supposed. The spleen, the lymphatics, the liver, etc., might be diseased and complicate ovariotomy in cases in which a favorable prognosis had been ventured. All of this taught that sepsis was not the only ill to be anticipated in abdominal surgery, and that a more careful and thorough interrogation of the abdominal and thoracic viscera than was usually accorded was necessary if one would eliminate an important factor in causing a fatal termination to ovariotomy.

Renal Diseases caused by Disease of the Pelvic Viscera.—Dr. G. J. Engelmann, of St. Louis, Mo., read a paper with this title. Disease of the kidneys might result from urethral disorder, pressure upon the ureters or kidneys, perverted nervous influence, etc., the influence of the nervous system in causing the disease being especially important. Disease of the bladder which was due to the pressure of a tumor was usually discovered, but the diseased conditions of the ureter resulting from pressure were more obscure and might not be discovered until fatal mischief had been wrought, the sequence of evils beginning with ureteritis and ending with contracted kidney. Disease of this character usually made slow and insidious progress, backache being one of its prominent symptoms. That such conditions might occur was readily suggested by the exposed course of the ureter from the kidney through the pelvis. It was exposed to pressure everywhere—from tumors, from inflammatory exudate, from the hard surface of the brim of the pelvis. In malignant disease of the pelvic organs the ureters and kidneys were very frequently involved. This might not be apparent until an autopsy was made. Cardiac complications were rare even though the kidneys might be in a state of degeneration. Pressure from ovarian tumors was less likely to cause renal and ureteral complications than that from hard and unyielding fibroids. Active interference should begin as soon as there was the least suspicion of pressure upon the ureters. Pain in disease of the kidneys might be obscured by that which was due to coexisting pelvic disease. The pain sometimes seemed to dart along the course of the ureter from the kidney to the bladder. There might be associated with it vesical tenesmus, frequent and scanty micturition, burning and lancinating pains in the back, with lassitude, etc. The pain might extend toward the liver or across the small of the back, and it might continue for hours or days with scarcely an intermission. All these phenomena might appear suddenly, as after a fall, an attack of cystitis or cellulitis. Œdema of the extremities with uræmia might quickly follow. Examination of the urine at such a time would reveal the presence of pus, phosphates, hyaline, granular, and epithelial casts. It was fortunate if the disease were limited to one ureter and kidney. The prognosis was serious unless the case were seen before the disease had made much headway. If it were possible, the cause of pressure—be it tumor, or whatever else—should be removed. Ergot internally might be of service, also the use of heat, iodine externally, and the galvanic current. Catheterization of the ureter by opening its lumen and possibly draining off the pus from the kidney might be of service.

Dr. W. M. Polk coincided with the statements which had been made that in pelvic disease there were other organs which should also be interrogated before deciding upon laparotomy. Women in fashionable life who indulged in the pleasures of society and the pleasures of the table seemed quite prone to complications of kidney disease with pelvic disease. Such women bore ether and the shock of operations badly. After operations upon such cases there were also intestinal complications frequently, and excretion in general was interfered with or suspended.

Dr. Howard Kelly wished to emphasize the propositions laid down by Dr. Engelmann. Reports of cases in which pelvic and renal disease coexisted were common enough. It was easy to understand that such complications might exist, bearing in mind the anatomical relations of the ureter and kidney. Tuberculosis of the bladder, cancer of the uterus, bladder, and vagina, retro-peritoneal sarcoma, peritoneal adhesions, and vesico-vaginal fistula might all complicate or be associated with disease of the ureter and kidney. The ureter was often encroached upon by the gravid uterus in the latter months of pregnancy, and inflammation of its vesical extremity was a very common condition. Palpation of the ureter was readily performed, and would clear up many uncertainties. Catheterization could also be performed if indicated.

Dr. B. B. Brown, of Baltimore, had seen a case of hydatids of the ureter in which a diagnosis had been made after dilating the urethra and exploring the bladder and ureter, which had been dilated by the tumor, with the finger.

Dr. Coe, in concluding, recalled several cases in which hy-

dronephrosis had been found after death which had been unsuspected when laparotomy had been performed. The operation of kolpo-uretero-cystotomy which had been recommended for certain cases seemed to him an uncalled-for operation, as it was impossible to say that it would be efficient in any given case. He had seen a case in which it had been performed, the pelvis of the kidney being washed out while there were several abscesses in the cortex which could not be reached by the irrigation.

Dr. ENGELMANN, in concluding, reiterated the necessity of careful investigation to ascertain the presence or absence of renal disease in connection with disease of the pelvic organs. The subject was one which would broaden the field of gynæcological work.

Pelvic Congestion versus Pelvic Inflammation.—Dr. S. C. GORDON read a paper on this subject. Of all conditions which had given rise to dispute and misunderstanding among surgeons, none was more prominent than pelvic inflammation. The term chronic pelvic inflammation which was used by many writers was a misnomer, for while the condition indicated by the term presented some of the phenomena of inflammation, it was not an inflammation in the proper sense of the term, and this had long since been shown by Peaslee and others. Acute pelvic inflammation might recur an indefinite number of times, the result being resolution, suppuration, or an indurated mass, and it was the latter which was so often termed chronic inflammation. With the induration coexisted venous congestion. This implied hypernutrition and eventually hyperplasia. The pelvic tissues and organs in general might be involved, and patients so affected seemed especially susceptible to renewed attacks of acute inflammation. It had appeared to him that such a condition existing in cases where operations upon the cervix uteri were required was not benefited by the preparatory treatment advised by Emmet as a preliminary to such operations. It seemed more logical to him, besides more economical of time and money to the patient, to operate upon such patients at once, relieve the passive congestion by free bleeding during the operation, and expect resolution to follow. This plan had been adopted by him, operations upon the cervix being preceded by thorough curetting of the uterine mucous membrane, and the method had been entirely satisfactory. It was unnecessary to say that such operations should always be performed under anæsthesia. Indeed, so fearful was he of exciting pelvic inflammation that he preferred to use an anæsthetic if only an intra-uterine application were to be made.

Dr. T. A. EMMET stated that he did not advocate preparatory treatment, except while an acute inflammation existed. As to pelvic tenderness, that could be excited by pressure of the finger at any time after pelvic peritonitis had existed and the peritonæum had become scarred and folded. It was a fundamental fact that inflammation of the pelvic connective tissue meant destruction of that tissue; its vessels were deprived of support, venous congestion or phlebitis and lymphangeitis resulting, and the proximity of the peritonæum must in most cases also necessitate peritonitis. This process might result in resolution or abscess, and it was frequently followed by peritoneal scars and bands. The venous congestion was frequently relieved by steady pressure from a vaginal tampon of cotton-wool.

Dr. A. P. JOHNSTONE, of Danville, Ky., believed that the peritoneal bands and adhesions which were of such frequent occurrence were in many instances the primary cause of the susceptibility to pelvic inflammation which was common to so many women. The tension and pressure of these adventitious products prevented the growth of epithelium in the tubes and uterus. The lymphoid tissue of the endometrium normally developed into epithelium, but faulty conditions, including the one which had been mentioned, caused the development of connective tissue instead of epithelium.

The Surgical Treatment of Posterior Displacement of the Uterus.—Dr. W. M. POLK read a paper with this title. Backward displacements of the uterus could not always be relieved by pessaries; hence arose the necessity for other means of treatment. Brandt's method of treating such conditions by massage would not be considered, as the reader had not sufficient knowledge or experience of it to discuss it intelligently. There remained treatment by measures purely surgical. Such measures consisted in the operation from the outside, or Alexander's operation, and, on the other hand, the various operations which necessitated laparotomy. Matured experience had led the reader to prefer Alexander's operation in all cases in which it could properly be done, supplementing it by the use of an intra-uterine stem pessary in certain cases. Should prolapse of the ovaries coexist with the uterine displacement, this condition would likewise be relieved simultaneously with the other. Procidentia uteri could also be relieved by this operation, though there might be a field for hysterectomy in severe cases. Repair of the pelvic floor should be accomplished in addition to Alexander's operation in all cases in which it was indicated. If the round ligaments had undergone fatty degeneration, it was obvious that laparotomy must be done and an intra-abdominal operation performed. The same treatment would be required if the retroflexed uterus were firmly adherent to the pelvis, or if the tubes and ovaries were diseased. Many operations had been proposed for shortening the round ligaments within the abdomen. All of them implied either the use of existing supports or the making of new ones. Of those in which the latter procedure was adopted, ventro-fixation seemed the most useful, though it had certain objections which were obvious. Of those in which existing supports were utilized, Tait's and Imlach's consisted mainly in reefing the broad ligaments, the tubes and ovaries having first been removed. Wylie's consisted in doubling the round ligament upon itself, stitching the folded portions together, and the reader's consisted in drawing the ligaments together in front of the uterus and stitching them together in that position.

Dr. W. H. BAKER, of Boston, agreed with the reader of the paper that Alexander's operation must always be a safer procedure than any in which the abdomen was to be opened, and hence was always to be preferred whenever it was feasible. If the abdomen were to be opened, he preferred ventro-fixation as an operative procedure. An objection to it was that the attachment of the uterus to the abdominal wall had given way in some instances and necessitated a secondary operation.

Dr. HOWARD KELLY preferred ventro-fixation to the attachment of the uterus to the anterior segment of the pelvis, as advocated by Zweifel, as the latter procedure brought the uterus into a faulty position, and would be likely to produce vascular derangement. His own results with ventro-fixation had not always been as desirable as could be wished, but they had improved since he had adopted the plan of casting his sutures around the utero-ovarian ligaments from behind forward. He had tried Schücking's method of ventro-fixation with good results in two cases.

The Relation of Uterine Retro-deviation to Pregnancy.—The secretary read a paper by Dr. A. MARTIN, of Berlin. It was an admitted fact that pregnancy was impossible at least in some cases in which retroflexion of the uterus existed. The paper which was presented was based upon the experience of the author, which included seventy-nine cases seen in hospital practice and forty-two in private practice. In all of these cases there were typical symptoms which resulted from the displacement. Two questions must be considered in the discussion of

the given subject: 1. Was retro-deviation a bar to pregnancy? 2. Was retro-deviation during pregnancy as serious a condition as had been commonly supposed?

The symptoms which had presented themselves in many of the author's cases had been hæmorrhage, uterine catarrh, tubal disorder, and peritonitis. In other cases no such disturbing symptoms had arisen, and pregnancy had gone to term without mishap. If retroflexion were congenital, sterility would probably ensue, and it might be that the majority of cases in which sterility coexisted with retroflexion were of this character, though it was necessary, of course, to interrogate the procreative ability of the husband in all cases before giving an opinion. It was not believed that retroflexion of the gravid uterus in multiparæ was due to improper care or treatment during childbed, at least not in all cases. Conception frequently occurred in cases in which retroflexion existed, and this proved that retroflexion was not necessarily a bar to pregnancy. If there were abrasions or catarrh of the uterus, the same careful treatment was indicated as in the non-gravid state. In all of the cases in the author's table there had been abortion in only four, and in ninety-seven there had been delivery at term. Diagnosis of the retroflexion had been made at periods ranging from the second to the sixth month. Replacement of the uterus was indicated in all cases in which it could be done without the use of undue force. Of course this excluded cases in which adhesions were dense and firm. The bladder of the patient should first be emptied; she should then be placed in the knee-elbow position, and replacement effected by pressure with one or two fingers. A pessary should then be introduced, and this might remain until the sixth month of gestation. If replacement or a pessary were inadmissible, a vaginal tampon of cotton-wool might be serviceable in giving support to the uterus. Many cases of retroflexion were relieved by spontaneous replacement, and in many others there was no consciousness on the part of the patient of any morbid condition. In extreme cases one must consider the propriety of emptying the uterus, or even of extirpating it.

Dr. Bache McE. Emmet had seen few cases in which pregnancy had been complicated with retroflexion—in fact, he had usually considered such a displacement as a bar to pregnancy. In cases in which retroflexion could not readily be cured he thought that conception might be favored if the womb were raised by a vaginal support, and if pregnancy were present such a procedure would favor its continuance.

Dr. Howard Kelly had experienced the importance of curing uterine retroflexion in the cure of sterility which resulted. He believed that retroflexion of the gravid uterus was cured spontaneously in most cases, and that abortion or other severe accidents rarely resulted. The uterus might develop in an abnormal and very faulty position, even though its position were normal at the time of conception. He could conceive of the necessity and propriety in extreme cases of opening the abdomen and relieving a displaced uterus.

Dr. T. A. Emmet considered that backward displacement was always an indication of local inflammation. Such a displacement had little to do with the question of conception, in his opinion, especially if the Falloppian tubes were permeable. He believed he had succeeded in preventing abortion in retroflexed gravid uteri by the use of vaginal packing. If replacement of the uterus were possible, he preferred to place the patient in the knee-elbow position for that purpose, but the replacement would be likely to result in abortion unless it were done without violence. He would not use a pessary after such displacement, as it was attended with danger.

Dr. A. J. C. Skene did not believe that any condition could arise which would justify the extirpation of the retroflexed gravid uterus.

Dr. H. F. Hanks, of New York, emphasized the necessity of treating retroflexion during pregnancy to prevent abortion, and preferred vaginal tampons to pessaries.

Dr. J. R. Chadwick believed that pessaries were allowable in the cases under discussion. He thought that abortion in such cases was an infrequent accident. Pregnancy rarely occurred if the retroflexed uterus were firmly fixed by adhesions.

Dr. Boldt had read reports of cases in which death had resulted from inability to reduce retroflexion of the gravid uterus. It was in such cases that abdominal section was justifiable.

Results of Repression of Menstruation.—Dr. E. C. Gehrung read a paper with this title. It had been sufficiently demonstrated to him by an experience of several years that menstruation might safely be repressed by the vaginal or uterine tampon in cases in which the patient could illy afford the loss of blood which accompanied that process. Such a treatment was useful both for prophylactic and for curative purposes. A sanguineous discharge was not a necessary accompaniment of menstruation. In many cases there were only molimina, or a discharge of mucus, or a serous discharge. A bloody discharge was only an accidental accompaniment of ovulation, œstivation, etc., and failed to produce harm in many cases, just as was true of other transmitted habits. In many other cases it was the recognized cause of anæmia. He had never heard that this loss of blood could serve any useful purpose, and its occurrence was not more reasonable than the doctrine of Broussais that men should be bled monthly. If plethora were present, it should be treated rather by redistribution than by abstraction of blood; and if bleeding were ever a safety-valve, it was only in rare instances. What advantage was it to women that they made blood rapidly if they were to lose it as rapidly? It was dangerous to teach that by bleeding, superfluous elements were disposed of. The vaginal tampon was the best means for stopping menstruation, as it gave no shock to the nervous system and communicated no poison to the organism, as did ergot and other drugs. It was indicated with excessive menstrual or intermenstrual flow in all cases. With the scanty menstruation which was often a condition in anæmic women it would prove a source of relief to the anæmia and to the accompanying nervous symptoms. If amenorrhœa were present, the depraved general condition which usually coexisted must first be corrected by diet, tonics, etc., which would tend to restore menstruation. Then the tampon should be used periodically until health returned. The paradox was only apparent; the cause of the morbid condition must first be relieved, and then the morbid condition itself. Other conditions for the treatment consisted in certain neuroses and neuralgias, and in suitable cases it had been found efficient. It was not known that the method had ever been attended by bad results. It would relieve many cases in which mutilating operations would be necessitated if it were not used.

Dr. H. J. Boldt could not consider menstruation a pathological condition, nor its hæmorrhage accidental. Common as free menstruation was in women, anæmia from such a cause was relatively rare. Again, anæmia might persist after the uterine appendages were removed and menstruation had ceased, thus being entirely independent of menstruation. Cases of purpura hæmorrhagica in which the effusion occurred periodically after the ovaries and tubes had been removed also showed the power of the habit of menstruation as a physiological function. If menstruation were excessive, the vaginal tampon would be indicated, but it would not be well to retain it as long as seventy-two hours, the limit which had been made by the reader of the paper. If it was indicated in women who flowed too freely, it would be well to begin its use two or three days before menstruation was due.

Dr. A. W. Johnstone thought it an error to consider menstruation pathological. It was as necessary a function as respiration. Its object was probably to wash away over-ripe lymphoid corpuscles. The lower animals with whom the womb was in a horizontal position did not menstruate, though there was with them a discharge resembling menstruation, while in apes and monkeys which stood erect menstruation was a regularly performed function, and the flow might be profuse. If the vaginal tampon were used, plugs should also be placed at the mouths of the Falloppian tubes, and, this being done, danger would follow the unrelieved congestion in the broad ligament, which would tend to produce an indication for removal of the tubes and ovaries instead of the contrary, as the reader had stated. The speaker could not help the conviction that menstruation was a portion of the mechanism which prepared woman for pregnancy, for which condition she seemed physiologically intended.

Dr. A. Reeves Jackson was not satisfied with a theoretical explanation when it was opposed to observed facts. The method of repression for excessive menstrual flow had been used by him for years, and always with beneficial results, and in so far as the reader's method applied to excessive flowing it was indorsed by him.

Dr. Gehrung, in closing, stated that he had proposed to use repression only in cases in which the loss of blood during menstruation could not be well sustained. He still thought that excessive menstruation depended more upon vascular than upon nervous influence, the womb and its vascular system being in a weakened condition.

Intermediate Trachelorrhaphy.—Dr. H. J. Boldt read a paper on this subject. It was admitted by most gynæcologists that a great variety of ills might follow extensive lacerations of the cervix uteri, Nöggerath and a few others of prominence not conceding this proposition. Symptoms resulting from such lacerations had been observed by the reader as soon as three months after parturition, but they were usually delayed for a much longer period. An analysis of the histories of three thousand parous women had been made by the reader with the result that one hundred and nine were found in which positive symptoms existed which seemed to be traceable to injuries of the cervix. It being a fact, therefore, that lacerations of the cervix and resulting bad symptoms were possible, and that too in a considerable number of cases, there was a fair foundation for consideration of the expediency of anticipating such bad symptoms by an early operation in cases in which severe lacerations were found. In twenty-six cases the reader had adopted such a plan, in only four of which had there been an unsatisfactory result. Such an operation might be done within a month after parturition; it could be done in one's office without anæsthesia, the patient could go home and attend to her customary duties, and there would be no loss of time, which to many housewives meant a great deal. In doing the operation the surfaces of the torn portions were scraped and the angles freshened, after which catgut sutures were carefully and not too tightly placed. A straight trocar needle was used, a very sharp scraping instrument, and a tenaculum devised for the purpose. The object of the operation was to prevent the conditions which necessitated Emmet's operation.

Dr. Bache McE. Emmet thought that the object which was sought by the proposed operation was a good one, but he questioned whether there were cases in which such an operation was indicated. It would be impossible to say in advance that Nature would not repair the mischief which had been made, and if she did, no operation of any kind would be indicated. At the early period suggested after labor it was improbable that the uterine tissues would be in condition to favor a successful operation in most cases. He also strenuously objected to the recommendation to do such operations in one's office, and felt, in addition, that the skill of a gynæcologist was required for such cases—that is, that they should not be performed by the general practitioner before he dismissed his obstetrical patients, should the propriety of such operations be admitted.

Dr. Skene disapproved of the proposed operation as unnecessary. Bad symptoms should be the only indication for the performance of Emmet's operation. It should not be done without an anæsthetic, in his opinion, nor in one's office.

Dr. B. C. Baer, of Philadelphia, understood the proposition in question to be, Was laceration of the cervix *per se* a lesion or not? If it were a lesion, the reader of the paper was right in proposing that an obstetric patient with such a lesion should not be discharged until that lesion was repaired.

Dr. T. A. Emmet believed that the proposed operation should not be performed, nor should trachelorrhaphy in any form be done in the absence of symptoms. If a puerperal patient received proper care, the injury which resulted from a severe labor would be repaired by nature, such care including proper diet, sunshine, vaginal douches, etc. One could not say within a month after labor whether an operation would ever be required. Women who had many pregnancies, which followed each other in quick succession, were the ones who most frequently required trachelorrhaphy.

Dr. Engelmann did not think the paper had been quite fairly discussed, in view of the fact that the extent of the injury to the cervix after labor was frequently so great that an operation would almost certainly be required at a future time on account of the characteristic symptoms. He did not approve of doing such operations in one's office.

Dr. Boldt, in concluding, still believed that intermediate trachelorrhaphy would be beneficial for those who would be almost certain to require such an operation at a subsequent period if it were not done. In view of general disapproval, he would waive the propriety of doing it in one's office.

The Value of Laparotomy in the Diagnosis and Treatment of Minor Forms of Intra-abdominal and Intra-pelvic Disease.—Dr. T. A. Ashby, of Baltimore, Md., read a paper thus entitled. The limits of laparotomy would apply in general to obscure conditions within the abdomen or pelvis in which all other available means of diagnosis and treatment had been unsatisfactory. There was still an unreasonable prejudice against laparotomy for diagnostic purposes in certain quarters, for it must be remembered that there was no danger in an abdominal section *per se*, but in the way in which it was done. There should be no mortality from simple abdominal section, and it was proper to perform it for any condition which could not be diagnosticated by other means. For tubal and ovarian disease he would not advise it, with the rash, who advised it for every such case, nor with the ultra-conservative, who seldom if ever advised it, but with those who followed a middle course in such matters. Laparotomy was indicated for morbid growths within the abdomen, which might be small, but in which relations could not be determined by other means. It was always indicated, he thought, in ectopic gestation, and was much to be preferred, as an expedient, to the use of electricity. It was also indicated for persistent pelvic pain, whether from neuralgic conditions or displaced organs, provided other measures had failed to accomplish the desired end. It was also indicated for many forms of intra-abdominal and intra-pelvic hæmorrhage.

Partial Rotation of the Ovum in Early Pregnancy as a Cause of Placenta Prævia.—Dr. E. W. Sawyer, of Chicago, read a paper suggested by two cases in practice. It was admitted that the ovum was not very firmly attached to the decidua during the early days of pregnancy, hence it was not im-

possible that transmitted violence to the womb might succeed in detaching it, causing it to rotate downward on its axis and lodge in the lower segment of the uterine cavity. This was on the supposition, which was usually accepted, that the ovum was normally attached at first in the upper zone of the uterus. As the ovum became implanted in its new situation, new villosities would develop from the chorion, and the placental site would thus be transferred from the upper to the lower zone in greater or less proximity to the os internum; that is, there would be more or less pronounced placenta prævia. Two battledoor placentæ illustrative of this condition were exhibited, also diagrams hypothetical of the process described.

The Protective Influence of Vaccination during the Intra-uterine Life of the Fœtus.—Dr. C. Kollock, of Cheraw, S. C., read a paper on this subject. Congenital malarial fever had many times been observed by the reader in new-born infants in the malarial country in which he lived. The germs of this disease being transmissible during fœtal life, it was certainly a fair presumption that vaccinia was equally transmissible. French investigators indeed had proved this, and his own investigations had been merely confirmatory of theirs. He had inoculated thirty-six pregnant women, fourteen being primiparæ. The children were also all vaccinated after birth, failure resulting in five of the children of primiparæ, and in sixteen of the multiparæ. That is, this number of children had been protected by vaccination of their mothers. It was probably better to vaccinate during the later months of pregnancy, when the fœtal circulation was active.

Dr. Sawyer, of Chicago, corroborated the statements which had been made, his experience being based upon thirty thousand vaccinations made during the past few years.

A Case of Nephrotomy for the Removal of Calculus of the Kidney.—Dr. J. R. Chadwick, of Boston, read a paper thus entitled. In the case narrated calculus of the left kidney had been diagnosticated by eminent authorities, and an operation had been performed for its relief. The kidney had been opened, carefully explored with the finger, and thoroughly irrigated, but no calculus could be found. Since the operation the bad symptoms had returned, and were always exaggerated when the patient worried. It was believed by the reader that the symptoms were purely of nervous origin.

Dr. A. F. Currier, of New York, suggested that the stone might have been in the cortex of the kidney, but so small that it was overlooked, not being appreciated by the examining finger, and so impacted that it could not be washed out. A case presenting somewhat similar phenomena was narrated.

Dr. G. J. Engelmann suggested that the possibility of obscure pelvic disease should receive consideration in such cases as the one which had been narrated, and that important information might thus be gained.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

(*Continued from page 271.*)

Some Points in the Pathology and Treatment of Disease of the Nasal Pharynx.—Dr. J. N. Mackenzie, of Baltimore, read a paper on this subject. (See page 371.)

Some Personal Observations upon the Acute and Chronic Enlargements of the Adenoid Tissue at the Vault of the Pharynx, and the Means used for their Relief.—Dr. D. Bryson Delavan, of New York, read a paper with this title. (To be published.)

Dr. F. H. Hooper, of Boston: I have been much interested in both of these papers and agree, in the main, with what has been said. I think Dr. Delavan's explanation of the case seen by Sir William Dalby and others correct. The extreme vascularity and erectile nature of this adenoid tissue were impressed upon me by one of my own cases. A young lady, twenty years of age, came to me with an attack of acute coryza, and I found what I considered a good-sized adenoid growth at the vault. After the acute attack subsided the growth had almost entirely disappeared.

I think the post nasal probe an indispensable instrument for a proper examination of the naso-pharyngeal cavity in adults. The parts often look smooth when examined with the mirror, and I have been surprised in these cases, when examined with the probe with the aid of the mirror, to find what a large amount of hypertrophied tissue might be present. In many cases we might be deceived regarding the condition of this cavity if we relied upon the eye, while an examination with the probe or the finger would set us right. When adenoid tissue is present it ought to be removed as thoroughly as possible. The two chief indications for its removal are obstructed respiration and defective hearing. When a child's nasal breathing is obstructed by these growths they should be removed immediately, no matter what the season of the year might be. With regard to the question of hæmorrhage, I have never seen alarming bleeding except in one case. This was in a very sickly boy, ten years of age, with typical hæmophilia, on whom I declined to operate in the usual manner. In this case fatal hæmorrhage followed gentle scraping of the adenoid mass with the finger-nail. The amount of secretion during the operation depends, I think, upon some idiosyncrasy of the patient rather than upon the nature of the anæsthetic, whether chloroform or ether.

Dr. S. W. Langmaid, of Boston: There is one thing that has not been mentioned in regard to anæsthetics. As Dr. Hooper has said, we do not give chloroform. We give ether, with the greatest confidence as a stimulant, to patients with a failing pulse. If the pulse is feeble, it increases in volume and strength during the administration of ether. Yet, confident as we are in the use of ether, I had an experience a few weeks ago which is not uninstructive. I was asked to operate at the Children's Hospital. I had not seen the child until it was brought to the table. It was a scrofulous, rather weak child, and I was told that it had hip disease. I proceeded in the ordinary way and removed the adenoma. All at once there was heart failure, requiring the rectal injection of ammonia and brandy, and also the subcutaneous injection of the same drugs.

Dr. Harrison Allen, of Philadelphia: I wish to confirm the statements of Dr. Delavan. I had intended to prepare a paper upon the subject which he has so admirably treated. This is now unnecessary. It may interest the fellows to know that the cases that I have had confirm in every particular the conclusions which he has presented. There is a state of pharyngeal distress and ear distress in adults due to something at the vault of the pharynx. Whether it is a recession, or a juvenile condition, or pharyngeal palsy, or some other factor, the truth remains that there is something which the eye will not detect, but which the probe will detect, and, above all things, the finger will detect. The finger can not be used without the employment of an anæsthetic. I think that this is an important thing to be considered. I always insist that an anæsthetic should be given if the condition of the heart admits. This condition is not one that can be treated by nagging processes. Under anæsthesia you can clear out the pharynx and you have the aid of the sense of touch. I have noticed that this material may remain at the anterior part of the vault over the sphenoid bone. I have not been able to dissociate it from some trouble connected with the union of that suture. There is often a recession which is not detected by the mirror.

In respect to ear complications, we read in books devoted to

the ear of obstruction of the Eustachian tubes. I have never found mucus in the tubes where aural trouble was complained of, and you may often see a quantity of mucus, pus, or something else occupying the tube and no ear distress. Is it not possible that the ear distress is due to a state of vascularity and congestion determined by pressure outside of the tube by the adenoid? At any rate, a very small amount of this tissue will cause these symptoms, and often nothing but the finger-tip will reveal its presence. Doubtless this may exist without symptoms, but where reflex symptoms are complained of and the patient comes for diagnosis and treatment, we should make a thorough exploration under an anæsthetic, and if anything is found, take it away. I have often etherized patients and found nothing, but I have never regretted it. There is often no way of determining the presence or absence of this condition without anæsthesia. I always use ether. I was educated never to use chloroform, and I am timid about it. Whether or not this is simply the result of early impressions I am unable to say; I am not able to analyze it. I have used ether without accident.

Dr. J. C. Mulhall, of St. Louis: I have for several years laid it down as an axiom for practical guidance that the pathology of the pharyngeal tonsil was exactly the same as that of the faucial tonsil. Some two years ago a physician of St. Louis came to me with an acute attack, with a temperature of 103° and a great deal of distress and pain about the ears. On examination, I told him he had a follicular inflammation of the pharyngeal tonsil, and he was very much surprised. There was a great deal of swelling of the parts with some exudation from the follicles. That we may have acute exacerbations of the hypertrophy of this part there is no doubt.

I wish to call attention to an instrument which has been very satisfactory in my hands and which was invented by Dr. Gradle, of Chicago. The only objection that I have to it is that the blades open laterally. In one case, in attempting to use this instrument, I caught a portion of the soft palate and tore it. Another objection to the instrument is that it is difficult to grasp that portion of the adenoid that lies close to the septum, and that you are liable to grasp the septum. I have had a forceps constructed with the blades opening antero-posteriorly, and with this instrument I have always been able to remove all the tissue in that region. I have operated a great many times, and only in two or three instances did I require an anæsthetic. Since the introduction of cocaine I have found that the disagreeable part of the operation, which is the scraping of the instrument against the healthy pharyngeal wall and palate, can be avoided. I have applied cocaine thoroughly to these parts, and have succeeded without general anæsthesia. I have never seen any shock in these children. Only on one occasion, where, by the way, this adenoma had escaped detection for ten years, was there any difficulty in inducing the child to return. I have never seen any hæmorrhage. I should like to repeat the fact, not generally known to the profession, that the pharyngeal tonsil is liable to the acute diseases that affect the faucial tonsil.

Dr. F. I. Knight, of Boston: I should like to give, as I have no doubt that it will be of interest, the experience of one of our surgeons in pre-rhinoscopic days. This surgeon had had a great deal of experience in the removal of naso-pharyngeal tumors. One day he told me that he had a case of naso-pharyngeal tumor, and that he would like me to look at it with my mirror. He had done a preliminary tracheotomy, and intended to slit the palate and remove the tumor. I examined the patient and told him that I did not see anything except a little hypertrophied gland tissue. He replied that he had felt a tumor with his finger. He again introduced his finger, and the look of astonishment that came over his face was wonderful. It was one of those cases of acute exacerbation of the adenoid hypertrophy—one of those cases which occur but once in a lifetime.

In regard to chloroform, we have always been instructed that, while chloroform may be given with perfect safety in the recumbent posture—as, for instance, in midwifery—we have always been told not to give it in the sitting posture. I would ask Dr. Delavan if he operates with the patient in the sitting or recumbent posture.

Dr. Delavan: I always place the patient on his back. I should not consider it safe to use chloroform in the sitting posture.

Dr. W. E. Casselberry, of Chicago: There is one point concerning the technique of the operation for naso-pharyngeal adenoma which I have not seen mentioned. I am impressed with the importance of thoroughly eradicating these growths. This was especially shown in two cases recently in which the operation was performed for the relief of reflex symptoms. In one case spasm of the glottis, and in the other spasmodic asthma, was associated with adenoid enlargement. In both cases material relief followed the operation. The patient with spasmodic asthma, from having the attacks every week or every few days, remained free on one occasion as long as six months. The spasm of the glottis, attacks of which had recurred several times daily, now came only two or three times a month. In neither case was the operation sufficiently thorough to eradicate all the growths, as prominences here and there could subsequently be seen with the rhinoscope, and sufficed, doubtless, to occasion the remnant of symptoms.

With a view to greater thoroughness, I thought it might be possible to see what was being done during the progress of the operation. In order to do this I tied the velum forward with an elastic band passed through both nostrils and out through the mouth. I used the Vienna chloroform mixture, for two reasons —first, because I thought that it might occasion less secretion, and, second, because I desired to have my gas-lamp in immediate proximity. I operated with the patient in the sitting posture, and ether no doubt would be safer, and, with the substitution of the electric light for the gas flame, would be unobjectionable. The operation, so far as seeing was concerned, was not an entire success. In one case I could sponge out the blood and occasionally get a view; in the other case I was unable to do even this. I, however, found that tying the velum forward facilitated the operation. It was no longer necessary to hook the velum forward with the finger, which delays the operation. It might be urged in this connection that tying the velum forward would prevent the ready swallowing of the blood, and thus favor its entrance into the air-passages. To obviate this, as soon as a piece was taken out I had the patient's head and body inclined forward. It is important to do this at all times when there is anything like free hæmorrhage, and when operating with the patient in the sitting posture. The tying of the velum forward and the inclining of the patient forward are two points in the technique of the operation which have given me great satisfaction.

Dr. J. N. Mackenzie, of Baltimore: In operating I do not adopt the plan referred to by Dr. Delavan and Dr. Hooper. Unless the patient is young, or unruly, or comes from a distance, I generally operate at different sittings, removing a portion every day, or every other day, for about a week or ten days. In this way I get rid of the growth with no hæmorrhage to speak of, with very little pain, and without the use of anæsthetics. If the patient seems to feel pain, I use cocaine or some other local anæsthetic.

In regard to the point made by Dr. Hooper with reference to passing a probe over a smooth and apparently healthy surface, I have had this experience. Some time ago I treated a

case of obstinate post-nasal catarrh in which there was apparently no hypertrophy of the pharyngeal tonsil as seen by the mirror. An immense quantity of muco-purulent discharge poured out of the pharynx every day, and I became completely dissatisfied with my work. It suddenly occurred to me to make a deep incision in the pharynx, and, with the acquiescence of the patient, I made an incision with a curved knife into the smooth and apparently healthy tissue. This was followed by the discharge of a large amount of a colloid sort of matter, and with great relief to the patient after a few days. He is still under observation. I am trying to remove as much as possible of the pharyngeal tonsil. Since the incision the amount of discharge has lessened very notably.

I have seen only one case in which hæmorrhage was very severe. It was the case of a young colored girl sent to me from one of the lower counties of Virginia. The growth was apparently of an adenomatous character. The soft palate was pushed forward almost to the teeth, the whole mouth was filled with this enormously stretched palate, and nothing could be seen beyond the mass of flesh and tumefaction. There was a little slit on the side through which she could take liquid nourishment. The child was badly nourished, and also had a large adenoid tumor of the neck. When I put my finger into the naso-pharynx, it caused a most alarming hæmorrhage. When I examined the nose, a tremendous flow of blood took place from both nostrils. She had also strabismus, and both eyes were exophthalmic. I hesitated about performing any operation. I took her to the Baltimore Academy of Medicine, and several surgeons examined her. One of them put his finger into her mouth, and the bleeding was so great that we thought she was going to die. None of them would undertake the case, and neither would I. Afterward she left the hospital by climbing a tree and jumping the fence and escaping.

As a rule, the hæmorrhage in operating is very slight. It may pour out of the nostril, but it always stops of itself. I think that hæmorrhage on digital examination may be considered almost a diagnostic sign.

I have never met with any accident. The only thing that I recall was in the case of a little girl who was thoroughly anæsthetized and the operation done at a single sitting. A bichloride solution was left with which to syringe out the naso-pharynx. The next day there was a rise of temperature to 103° or 104°, with some pyæmic symptoms. These all passed away after washing out the retro-nasal space.

I consider these cases of adenoid growths as among the most brilliant that we meet with in nasal surgery. There is only one other point to refer to, and that is the nature of these growths. They have been spoken of as adenoid. The growths that I have seen in Baltimore have been of a papillomatous character. I have examined a number of them under the microscope, and their structure does not differ from that of papillomatous growths in other localities. There is, however, a variety which is adenoid; and I believe that is the form which Dr. Hooper sees in Boston, and which Meyer saw most frequently in Copenhagen. We should distinguish between these different varieties. The adenoid growths are more difficult to remove, and occasion more pain than the soft papillomatous growths.

Dr. Delavan: I have nothing to say in addition, except to reiterate the fact, which I appreciate the more the oftener I operate, that the operation is painful and that in many cases cocaine does not meet the requirements. Indeed, it seems impossible that it should in a growth of considerable size, for the cocaine can only be applied to a small portion of the surface, and that the most remote from the pedicle. The operation is painful, and in the majority of cases an anæsthetic will give great help not only to the operator but to the patient.

Note on the Galvano-cautery in the Treatment of Hypertrophied Tonsils. Dr. C. H. Knight, of New York, read a paper with this title. (To be published.)

Dr. T. A. DeBlois, of Boston: I think that the principal objection to the removal of the tonsil, or rather snipping it off, is the production of a scar in the mouth. I have not cut a tonsil for a great while. I used to cut every one that I could. I have used the cautery point in two cases of enlarged tonsil, with excellent results. I have not heard Dr. Knight refer to the use of the electrolytic needle, which I have employed with satisfactory results. The pain under cocaine is very slight. A very small amount of electricity will produce chemical changes in the fluids of the part. Half a dozen punctures each day will in a short time, in the majority of cases, produce a great diminution in size. I use this only in adults. I do not employ it in children, for in them the tonsils are very apt to lessen in size.

I agree with Dr. Knight in regard to the pain and distaste of the cautery point. The smell is very objectionable, particularly in the clinic room, where the smell will last half the morning. These patients do not come back if they can help it. I think even then it is preferable to the use of the guillotine.

Dr. Charles E. Sajous, of Philadelphia: I have frequently used the galvano-point. I think that in his first paper Dr. Knight stated that eight or ten applications were sufficient to bring down certain tonsils. Such has not been my experience. It has generally taken eighteen or twenty sittings to reduce tonsils of any size. So far as the odor and pain are concerned, I think that after the first or second visit we have very little trouble with the patient on that score. I can lend my voice to that of Dr. Knight in support of the galvano-cautery point in the treatment of enlarged tonsil, especially where the density is not great. In these cases cicatricial contraction assists in reducing their size. I burn as deep as the knife will go—about a third of an inch.

Dr. W. H. Daly, of Pittsburgh: If we wish to retain the respect of one another and of the profession generally, it seems to me that we should do our surgical work in a surgeon-like manner. I must say that I have very little patience with methods of treatment of enlarged tonsils which would subject the patient to half a dozen sittings with a plaything like the instrument that my friend Dr. BeBlois speaks of. I am astonished that a man of his proportions, mentally and physically, would indulge in the use of such a child's toy as that. I speak of this derisively because I have used it repeatedly until I satisfied myself that I was wasting my time and stultifying not only myself but my patients.

I believe that in the normal throat there is no tonsil that you can discover beyond the line of the half arches, and that should be the rule to guide us in abscission—and I mean abscission and not burning with the galvano-cautery knife. We should have one object in view, and that is to restore the abnormal throat to a condition as near anatomically perfect as possible. First use the amygdalotome if you wish to, but this will not do the work completely. Then with a probe-pointed curved bistoury and toothed forceps trim off the remaining portion of the tonsil until the half arches fall where nature intended them to fall—to their proper places. You will then have improved phonation and improved general health, and, if the patient has a predisposition to pulmonary disease, he will not be handicapped by a condition of affairs which God Almighty did not intend should exist in health at least.

I reiterate, then, that if we wish to retain the respect of each other and of the profession—for our special branch is the youngest of all—we must throw away our toys and playthings and do our work like sensible men and surgeons.

Dr. DeBlois: If Dr. Daly wishes to cut off tonsils with an axe, he may be allowed to do so. If he wishes to cut them off behind the horns, he ought to be permitted to do so. But there are other ways of reducing the size of tonsils. I do not think that he should speak of the electrolytic needle as a toy, for it does its work. I do not think that he should be permitted to sit down upon the whole system because it did not happen to work in his hands. I have seen tonsils atrophy under its use. There is no reason because we do surgery that everything should be cut off, and nothing treated so as to atrophy, if that is possible.

Dr. F. H. Bosworth, of New York: I have listened with no little amazement to this discussion. I believed that the simplest operation in surgery in the hands of a competent laryngologist was cutting out of the tonsils. I can conceive no possible justification in submitting a patient to eighteen or twenty operations when the whole thing can be done in a moment. I indorse every word that Dr. Daly has said. The enlarged tonsil requires to be taken out just as much as a fibroid tumor of the uterus, and it should be taken out entire, not in pieces. I do not suppose that any man would say that a fibroid tumor of the uterus should be partially removed. In the same way there is no justification for removing a part of the tonsil. No one would think of removing a fibroid tumor in eighteen or twenty sittings. There is no case on record of death from hæmorrhage after the operation of cutting out the tonsils, and this is the only danger attendant upon the operation. I do not think that Dr. Daly's remarks are in the least overdrawn.

Dr. C. C. Rice, of New York: There are a few cases of enlarged tonsils in which the use of the galvano-cautery is the best operation that can be employed. I have in mind a case operated on within the last few weeks—that of a gentleman about forty-five years of age, who has had attacks of suppurative amygdalitis repeatedly; the tonsil was very large, very firm, and filled with blood. One tonsil had been excised by a physician in New York and the man nearly bled to death. He bled, in fact, until syncope took place. I saw him some weeks later, when he was suffering with a fresh attack of amygdalitis. The tonsil which had been removed was excised with the guillotine and the pillars were not injured. I preferred, with such a history, to use the galvano-cautery for the remaining tonsil. I would say to those who think that little can be accomplished with the galvano-cautery, that the whole of a large tonsil in an intelligent adult can be removed at a single sitting. The tonsil was treated with cocaine, and the edge of the galvano-cautery point was inserted into the tonsil at the level of the pillars and the tonsil cut through. The whole of the tonsil down to the pillars was removed at one sitting. There are a few such cases in adults, where there has been a history of hæmorrhage and where frequent attacks of inflammation have left the tonsil immensely congested, where the galvano-cautery used in this manner is efficient. In excising large congested tonsils in adults I have several times proceeded in the following manner: I have employed a dull amygdalotome, and have pushed the blade down very slowly. Cocaine is used so that the patient can easily tolerate the instrument in the mouth for some time. There is little pain. In this way the blood-vessels are compressed before they are cut.

Dr. C. H. Knight, of New York: My object is to call attention particularly to the loop operation, which in my opinion is superior to ignipuncture. It can be done at one sitting. The portion of tonsil removed does not indicate the extent of the operation. A good deal of the tissue that remains will slough, and contraction takes place. The thoroughness of the cautery-loop operation has been equal to that with cutting instruments. I would not for a moment be suspected of opposing amygdalotomy. Yet we sometimes meet with cases which can not be cut. It is to these exceptional cases that the galvano-cautery is adapted.

Dr. Daly: I merely want to add a word in justification of my remarks, that may have seemed bold and harsh. I do not get up to apologize. I apprehend that this is a society for scientific advancement. It is not a mutual admiration society. It is well enough to indulge in our love feast with our legs under the mahogany at our annual banquet. I believe that here is the place where candid opinions should be expressed, even if they are not expressed in as polished language as they ought to be. This is better than to pat a man on the back and say, "You are doing the very thing—just go on in that way," when in truth we believe he is doing the wrong thing, while he is quite capable of doing what is creditable and efficient, both for himself and for his patients.

The Treatment of Diseased Tonsils when unattended with Hypertrophy.—Dr. John O. Roe, of Rochester, read a paper on this subject. (To be published.)

Dr. H. L. Swain, of New Haven: I have had an interesting case in which the recurrence of swelling of the lingual tonsil was due to the presence of these hard or caseous masses in the faucial tonsil. I only succeeded in subduing these attacks by treating first these crypts in the faucial tonsil. The treatment which proved successful, and easily so, was the laying open of the crypt with the galvano-cautery knife and thoroughly cauterizing the interior, more by ignipuncture than by any attempt to burn out the whole cavity. The case has been watched for several months and the result remains good.

Dr. J. Solis-Cohen, of Philadelphia: These conditions of the tonsil have given me a great deal of trouble for years. I find that many cases of spasmodic cough are due to nothing else than the presence of these masses in the crypts and lacunæ of the tonsil, sometimes even without any evidence of their presence on the surface. I find these not only in the enlarged tonsil, but also in the apparently contracted tonsil. It is sometimes necessary to produce some gagging so that the posterior surface of the tonsil will present itself before you detect the mass. In obscure cases of spasmodic cough I have for a long time carefully examined the tonsil as a possible source of reflex irritation.

Where the tonsils are enlarged I believe the best treatment to be excision. In those cases where the tonsil is atrophied or apparently atrophied—for even here the tonsil may be as large as a large almond—I press the matter out with a blunt scoop, and then use a simple astringent consisting of one grain of creasote, one grain of iodine, and five grains of iodide of potassium to the ounce of glycerin. By getting this well down into the lacunæ, you can sometimes cure these cases. Where this does not answer, I have taken a pair of curved serrated scissors, such as were long ago recommended for other purposes by Dr. Benjamin Ward Richardson, to cut the crypts open. One blade is put into the orifice and the part is cut through, and then with a dull scoop the crypts are scraped as thoroughly as possible. Sometimes this leaves ragged edges, but these can readily be snipped off.

I believe that this disease is not so well appreciated by the profession as it should be. I have seen many cases of prolonged cough, extending over a period of five or ten years and longer, completely and permanently relieved by treatment of this condition.

Dr. Delavan: My experience is entirely in harmony with the statements of Dr. Lennox Browne upon this subject, and I agree with the reader of the paper. The pathological tonsil is, I think, by no means limited to the one in which hypertrophy alone is present. There are many other conditions of the tonsil

which give rise to difficulties both direct and reflex, and which can only be relieved by attention to the tonsil.

Dr. Daly: There is another condition which was not brought out in the paper, and which I have more than once observed in cases where the lacunæ had become filled with cheesy matter, and that is that the patient would become really ill, suffering with headache, loss of appetite, lassitude, and other evidences of disordered secretion; and, before I adopted the method of abscising the tonsil and obliterating the lacunæ, I made sufficient observations to satisfy myself that these accumulations were the cause of the general symptoms by an auto-infection.

There is another point: these accumulations render the breath exceedingly offensive, and to some persons this is especially disagreeable. I am much obliged to Dr. Roe for giving us this excellent paper and dealing with this subject in such a common-sense way. I believe that the treatment should be radical and curative, not tentative.

Dr. F. I. Knight: It seems to be a question whether or not in such cases the underlying condition is not some constitutional fault, or possibly some digestive disturbance. In some typical cases I have seen the follicular exudation not only upon the tonsil, but also upon the tongue, the lingual tonsil, the soft palate, and the back of the pharynx. It seems as though they frequently came in connection with some constitutional disturbances, and we shall not succeed in relieving the patient entirely from this exudation until we modify the constitutional or digestive condition.

I had one notable case, such as Dr. Cohen describes, where the patient for years had an irritative cough, and discomfort always referred to one side of the throat. The cause of the trouble had escaped detection by several observers, and I did not discover it for several visits. On making her gag and throw out the tonsil, I found the point of one of these exudations. I then passed a probe in as far as possible and scooped out a cretaceous mass as large as a pea or larger. The symptoms were at once relieved.

As far as local treatment is concerned, I would say that I have had satisfaction with the cautery point, or with any destructive agent which I have had the patience to introduce into each one of these follicles after it was emptied.

Dr. S. Johnston, of Baltimore: As bearing upon this condition of the tonsil, I would state that in three cases which have come under my observation the exudation from the follicles, instead of being a soft, cheesy material, resembled little spicules of bone or small crystals of alum. These adhered with great tenacity to the tonsils, to which, however, they were not confined, but were also found on the fauces and the post-pharyngeal wall. They can sometimes be drawn out with great difficulty, and are exceedingly painful to the patient, who often complains of a foreign body in the throat. Two of my cases were in children and the third was a physician from a neighboring county. I tried a great variety of remedies, but the best results were obtained from chromic acid in ten-per-cent. solution. After one application, the parts being previously sprayed with an antiseptic solution of phosphate of sodium and carbolic acid, these crystals could be drawn out with the forceps. The specimens were not examined microscopically. If any of the gentlemen have had similar cases I should be glad to hear of them.

Dr. Rice: I have recently seen a most remarkable case of retained tonsillar secretion—remarkable on account of the large amount of cheesy material present; not only does it fill the lacunæ of the faucial tonsils, but the lymphatic tissue at the back of the tongue is whitened with the deposit. In this case the tonsils are normal; there are no adhesions to the pillars. I have listened with interest to the remarks of Dr. Daly, and I had hoped that some information would have been gained as to the constitutional conditions causing or associated with this retention of tonsillar secretion. I have tried to discover any constitutional peculiarities in my case. The patient has had diphtheria two or three times, and everything in the way of an explanation seems to point toward local causation.

I can bear witness to Dr. Daly's belief that this retention affects the general health. It also causes an offensive breath. While the general condition of my patient is quite good, she suffers with headaches, symptoms of indigestion, and is frequently tired and miserable. The tongue is very much coated. This tonsillar cheesy material has been found by a German investigator to contain putrefactive bacilli.

I am treating my case with the galvano-cautery puncture.

Dr. Daly: I fear that I did not make myself clearly understood. I desire to emphasize the point that the retention of this fœtid filthy material in the tonsillar lacunæ is the cause of the general illness of the patient.

Dr. Roe: I am glad to know that the observations of so many of the fellows present have been in accord with those which I have made on these particular diseased conditions of the tonsils. There is one point regarding the ætiology of the first condition of the tonsils described in my paper that has been, I believe, entirely overlooked. It is that this lacunar catarrh and disease of the crypts are the result of hypertrophy of the tonsil, and that the closing up of the lacunæ often results from the attempts that are made to reduce the size of the tonsil during childhood by repeated applications of astringents, which have no other effect than to close the external orifice of the lacunæ and to cause a retention of the secretion which distends the crypts of the tonsils, and the secretion, becoming decomposed, adds to the abundance of the discharge. The tonsils, accordingly, become diseased throughout, and are in appearance, when cut through, much like a honeycomb. I have found the application of remedies thrust into the openings of such tonsils to be of no value, because so few of the crypts can be reached. The only radical treatment is the removal of the diseased portion. This is also the case with the fibrous form, which results from atrophy of the stroma and the deposit of fibrous tissue. In both of these cases the function of the tonsil is practically abolished, and the only way to remove the difficulty is to remove the diseased mass.

Miscellany.

The New York State Examination of Persons intending to Study Medicine.—The Board of Regents of the University of the State of New York has issued the following circular:

1. The Legislature during its recent session enacted the following law to elevate the standard for admission to practice medicine:

"AN ACT to provide for the preliminary education of medical students.

"Approved by the Governor, June 13, 1889. Passed, three fifths being present.

"*The People of the State of New York, represented in Senate and Assembly, do enact as follows:*

"Section 1. Before the Regents of the University of the State of New York or the trustees of any medical school or college within this State shall confer the degree of doctor of medicine on any person, who has not received a baccalaureate degree in course from a college or university duly authorized to confer the same, they shall require him to file with the secretary or recording officer of their university or college

a certificate showing that, prior to entering upon the prescribed three years' study of medicine, he passed an examination conducted under the authority and in accordance with the rules of the Regents of the University of the State of New York, in arithmetic, grammar, geography, orthography, American history, English composition, and the elements of natural philosophy, and such certificate shall be signed by the secretary of the regents and countersigned by the principal or commissioner conducting said examination.

"SEC. 2. This act shall not apply to persons who have already entered upon the prescribed three years' study of medicine, nor shall it alter the time of study or the courses of medical instruction required to be pursued in the medical colleges of this State by existing statutes.

"SEC. 3. This act shall take effect immediately."

2. For the accommodation of candidates under this law, special examinations will be held at the times and places noted in the annexed schedule. All correspondence on this subject should be addressed to Edward I. Devlin, A. M., the commissioner in charge of such examinations, at the Regents' Office, Albany, N. Y.

3. All candidates must notify the commissioner, by letter, at least one week in advance, stating at what place and in what studies they wish to be examined. No fee will be charged, and candidates will be informed of the result within twenty days from the close of the examination.

4. To insure success, the candidate should have a thorough knowledge of the whole of a standard school text-book on each of the required subjects, but cube root will not be included in the arithmetic examination.

5. Printed question-papers will be issued from the office of the Regents for each examination. The answers must be written in ink on legal cap paper, and arranged and numbered in the same order as the questions. Candidates should bring paper, pen, ink, and blotter.

6. Seventy-five per cent. of correct answers is required in all subjects except orthography. In the latter study, the candidate must spell correctly eighty-five out of one hundred words, such as are commonly used in current literature.

7. In the examination in arithmetic the entire operation required for obtaining the result must be given, and the answer or result must be reduced to the simplest form.

8. The candidate must write at the top of the first page of his answer-paper (1) the place of examination, (2) the subject, (3) the date, (4) his own full name, (5) his post-office address.

9. At the conclusion of his answers on any subject, or at the expiration of the time allotted for such subject, the candidate must make and subscribe to the declaration given below, by writing on the lines immediately succeeding the last answer the words: *I do so declare*, and then his name. Every paper lacking this declaration and signature will be rejected. The declaration to which he thus subscribes is as follows:

[*Form of Declaration.*]

"Do you now, at the close of the examination in arithmetic (etc., as the case may be), conscientiously declare that you had no knowledge of the questions to be proposed, that you have neither given to any other candidate nor received from any source explanations or other aid in answering any of them, and that you have not spent more than the allowed time? If so, write *in the next line after the end of your set of answers*, near the right side of the paper, the words *I do so declare*, and underneath *subscribe your name.*"

10. All papers which fall below the required standard will be returned to the candidate. For those accepted, pass cards, certifying such proficiency, will be issued, and when all the subjects are completed, the certificate provided for in Article 14 will be sent.

11. Candidates may offer at any trial one or more of the subjects required, and the subjects passed at such trial will be placed to their credit on the records of the Regents. In like manner, subjects passed in the regular Regents' examinations in the academies will be allowed and credited to candidates. Should a candidate allow an interval of five years to elapse without passing an additional subject, he will be deemed to have relinquished his candidacy, and will be dropped from the records.

12. Examinations in the subjects required by this law also form a part of the system established by the Regents and conducted in the 308 academical institutions under their visitation throughout the State. The dates for the current academic year are November 18–22, 1889; January 20–24, 1890; March 3–7, 1890; June 9–13, 1890.

13. While candidates will find the special examinations better adapted to their purpose, they may enter the examinations held in the academies; *provided*, in all cases, that they make application to the principal at least two weeks in advance, and pass the examinations in the several subjects at the same time and under the same regulations, as the candidates in attendance at such academies; and *provided* that they pay to such academies a fee of one dollar for each subject entered for examination. The answer-papers of persons so examined will be reviewed at the Regents' office in the same order as those of pupils in regular attendance, but they will lose no time by necessary delay at this office, if their papers are satisfactory.

14. Whenever all the subjects required have been passed by a candidate, and he has mailed to the commissioner, at Albany, a claim specifying when and where each subject was passed, the Regents will grant him a special certificate, known as the *Medical Student's Certificate.* This certificate is to be signed by the commissioner or principal conducting the examination. It will not be issued to pupils in regular attendance at an academy, but only to those who have finished their academic course and are actually entering upon the study of medicine.

15. These instructions are subject to such changes as may from time to time be deemed necessary.

SCHEDULE OF EXAMINATIONS, 1889–'90.—1. *Special Examinations for Medical Students:* Albany, October 8–10, 1889, October 29–31, 1889, February 18–20, 1890, at the Albany High School. Binghamton, December 17–19, 1889, at the Binghamton Central High School. Buffalo, September 30–October 2, 1889, February 4–6, 1890, at the Buffalo High School. Elmira, May 13–15, 1890, at the Elmira Free Academy. Ithaca, October 15–17, 1889, at the Ithaca High School. New York city, October 23–25, 1889, April 1–3, 1890, in the amphitheatre of Bellevue Hospital, Twenty-sixth Street and First Avenue. Poughkeepsie, January 7–9, 1890, at the Poughkeepsie High School. Rochester, December 10–12, 1889, April 8–10, 1890, at the Rochester Free Academy. Saratoga Springs, May 27–29, 1890, at the Saratoga Springs High School. Syracuse, October 3–5, 1889, at Syracuse University, Medical Department; January 21–23, 1890, at St. John's Catholic Academy, Lock Street. Utica, March 25–27, 1890, at the Utica Public Library.

The order of studies at all examinations will be: First day—Arithmetic, 10 A. M. to 12.30 P. M.; geography, 2 to 3.30 P. M.; orthography, 3.30 to 4.30 P. M. Second day—English grammar, 10 A. M. to 12.30 P. M.; American history, 2 to 4.30 P. M. Third day—Rhetoric and English composition, 10 A. M. to 12.30 P. M.; elements of natural philosophy, 2 to 4.30 P. M.

All candidates for these special examinations must notify Commissioner Devlin at Albany, by letter, at least one week in advance, stating at what place and in what studies they wish to be examined.

2. *At academies, examinations will be held as follows:* November 18–22, 1889; January 20–24, 1890; March 3–7, 1890; June 9–13, 1890.

All candidates for examination at the academies must notify the principal at least two weeks in advance, stating in what studies they wish to be examined. The principal will then order question-papers for them and inform them of the days and hours of examination.

The American Rhinological Association will hold its seventh annual meeting at the Palmer House, Chicago, on the 9th, 10th, and 11th inst., under the presidency of Dr. John North, of Toledo, Ohio. The programme includes the following items: "Report of a Case of Brain Abscess emptying into the Naso-pharynx," by Dr. L. B. Gillette, of Omaha, Neb.; "The Reason why so many Physicians fail in Treating Chronic Rhinitis," by Dr. Thomas F. Rumbold, of St. Louis; "Conjunctival Troubles the Result of Nasal Disease," by Dr. J. G. Sinclair, of Nashville, Tenn.; "Ocular Reflex Symptoms in Nasal Diseases," by Dr. C. H. Moore, of Indianapolis; "Therapeutic Measures in Rhinology," by Dr. N. R. Gordon, of Springfield, Ill.; "Report of the Insane Asylum Committee appointed at the last meeting to make rhinal examinations and report 'On the Relation of Rhinal Inflammation to the Mind Affec-

tions,'" by Dr. Thomas F. Rumbold, of St. Louis, chairman; "Reflex Symptoms of Rhinal Diseases, with Reports of Cases," by Dr. C. L. Dreese, of Goshen, Ind.; "The Administration of Quinine where there is Defective Hearing," by Dr. E. L. Sessions, of Hillsboro, Tex.; "Rapid Operations in removing Foreign Bodies of the Nasal Chambers," by Dr. Carl Von Klein, of Dayton, Ohio; "Surgical Treatment in Diseases of the Nose," by Dr. A. De Vilbiss, of Toledo, Ohio; "Catarrhal Neuralgia," by Dr. A. G. Hobbs, of Atlanta, Ga.; "Constitutional and Hygienic Treatment of Rhino-pharyngeal Inflammations," by Dr. R. S. Knode, of Omaha, Neb.; "The Prescribing of Sprays to be used by Patients," by Dr. Frank D. Green, of Louisville; "Asthma is a Neurosis, or the Ætiology, Pathology, and Treatment of Asthma," by Dr. J. G. Carpenter, of Stanford, Ky.; "Reflex Inflammation of the Nose and Throat," by Dr. E. L. Siver, of Fort Wayne, Ind.; "Climatology," by Dr. T. F. Rumbold, of St. Louis, Mo. In addition, papers by Dr. A. B. Thrasher, of Cincinnati, and Dr. E. McClellan, of Chicago (titles not specified), are announced.

The New Tri-State (Alabama, Georgia, and Tennessee) Medical Association will meet at the Chamber of Commerce, Chattanooga, Tenn., on the 15th and 16th inst. The secretary announces the following items: Demonstrations with the microscope, by Dr. James A. Reeves, of Chattanooga; "Stricture," by Dr. Daniel H. Howell, of Atlanta, Ga.; "A Case of Typhoid Fever with Subnormal Temperature and Subnormal Pulse," by Dr. A. S. Wiltse, of Kismet, Tenn.; "A Plea for the Medical Education of Females," by Dr. Charles P. Gordon, of Dalton, Ga.; "Cholecystotomy, with a Case," by Dr. E. E. Kerr, of Chattanooga; "Report of a Case," by Dr. W. T. Blackford, of Graysville, Ga.; "The Physiology of the Heart and its Valves," by Dr. W. L. Gahagan, of Chattanooga; "The Relation of the Specialist to the General Practitioner," by Dr. F. W. Skillern, of Pikeville, Tenn.; "Some Points in the Diagnosis of Skin Diseases," by Dr. E. A. Cobleigh, of Chattanooga; "Imaginary Foreign Bodies in the Throat," by Dr. Max Thorner, of Cincinnati; and "Antiseptic Midwifery," by Dr. F. W. McRae, of Atlanta, Ga. Besides these, papers by Dr. F. B. Sloan, of Cowan, Tenn., and Dr. W. C. Maples, of Bellefonte, Ala. (titles not mentioned), are expected to be presented.

Mortality in Cities in the United States.—The following table represents the mortality in the cities named, as reported to Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, and published in the abstract of sanitary reports received by him during the week ending September 27th:

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—										
				Cholera.	Yellow fever.	Small-pox.	Varicloid.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y.	Sept. 21.	1,582,077	683	..	..	..	..	..	..	18	3	10	..	8
Chicago, Ill.	Sept. 21.	1,100,000	352	..	..	..	..	..	..	22	3	22	..	5
Philadelphia, Pa.	Sept. 21.	1,040,245	377	..	..	..	..	..	..	20	5	9	1	....
Brooklyn, N. Y.	Sept. 21.	834,607	325	..	..	..	..	..	..	5	..	17	..	2
Baltimore, Md.	Sept. 21.	500,343	156	..	..	..	..	..	..	4	..	..	..	..
St. Louis, Mo.	Sept. 21.	450,000	165	..	..	..	..	..	..	5	..	7	..	....
Cincinnati, Ohio.	Sept. 21.	325,000	94	..	..	..	..	..	..	4	1	10	..	....
New Orleans, La.	Sept. 14.	254,000	107	..	..	..	..	..	..	..	..	2	..	....
Detroit, Mich.	Sept. 14.	250,000	74	..	..	..	..	..	..	..	1	4	..	1
Cleveland, Ohio	Aug. 10.	235,000	130	..	..	..	..	..	..	2	1	3	1	1
Cleveland, Ohio	Aug. 17.	235,000	102	..	..	..	..	..	..	4	2	7	..	....
Pittsburgh, Pa.	Sept. 21.	230,000	83	..	..	..	..	..	..	11	3	8	..	....
Louisville, Ky	Sept. 21.	227,000	52	..	..	..	..	..	..	2	..	1	..	....
Rochester, N. Y.	Sept. 14.	130,000	42	..	..	..	..	..	..	1	..	..	..	....
Providence, R. I.	Sept. 21.	127,000	46	..	..	..	..	..	..	1	..	1	..	1
Indianapolis, Ind.	Sept. 20.	124,450	32	..	..	..	..	..	..	1	1	2	..	....
Denver, Col.	Sept. 20.	100,000	31	..	..	..	..	..	..	7	..	1	..	1
Toledo, Ohio	Sept. 20.	89,000	21	..	..	..	..	..	..	1	..	2	..	....
Fall River, Mass.	Sept. 21.	69,000	29	..	..	..	..	..	..	2	..	..	..	1
Nashville, Tenn.	Sept. 21.	65,153	21	..	..	..	..	..	..	2	..	..	..	....
Charleston, S. C.	Sept. 21.	60,145	50	..	..	..	..	..	..	1	..	..	..	....
Lynn, Mass.	Sept. 21.	50,000	20	..	..	..	..	..	..	..	..	..	..	....
Manchester, N. H.	Sept. 14.	42,000	16	..	..	..	..	..	..	..	1	2	..	....
Portland, Me	Sept. 21.	42,000	20	..	..	..	..	..	..	..	..	..	..	....
Galveston, Texas	Sept. 13.	40,000	9	..	..	..	..	..	..	..	..	..	..	....
San Diego, Cal.	Sept. 11.	32,000	6	..	..	..	..	..	..	..	..	..	..	....
Yonkers, N. Y.	Sept. 20.	31,000	9	..	..	..	..	..	..	..	..	..	..	....
Binghamton, N. Y.	Sept. 21.	30,000	8	..	..	..	..	..	..	2	..	..	..	....
Auburn, N. Y.	Sept. 21.	26,000	4	..	..	..	..	..	..	..	..	1	..	....
Haverhill, Mass.	Sept. 21.	25,000	7	..	..	..	..	..	..	..	..	..	..	....
Keokuk, Iowa	Sept. 21.	16,000	2	..	..	..	..	..	..	..	..	..	..	....
Pensacola, Fla.	Sept. 14.	15,000	5	..	..	..	..	..	..	1	..	..	..	....
Pensacola, Fla.	Sept. 21.	15,000	8	..	..	..	..	..	..	1	..	..	..	....

The New York Academy of Medicine.—At the next meeting of the Section in Surgery, on Monday evening, the 14th inst., Dr. B. Farquhar Curtis will read a paper on "Knots, Ligatures, and Sutures," and cases will be presented illustrating the surgery of the hand.

Effects of Prolonged Chloroform Anæsthesia.—"Some observations, made about two years ago by Dr. Ungar, pointed to fatty degeneration of the heart and liver as the cause of death after repeated prolonged administration of chloroform. Further experiments on dogs have recently been made by Dr. Strassman, which appear to confirm this view. Dr. Strassman found that the first organ to be affected was the liver, then the heart, and after that other viscera. The nature of the morbid change was not a fatty degeneration, but fatty infiltration. The actual cause of death in fatal cases appeared to be the cardiac affection, as in all such a very marked degree of change was found in the heart. In non-fatal cases the morbid change was found to have disappeared in a few weeks' time. When morphine was given previous to the chloroform, less of the latter was required, and, consequently, the changes produced were not so considerable as when the ordinary amount was given. Animals suffering from hunger, loss of blood, etc., were especially predisposed to the morbid changes due to chloroform."—*Lancet.*

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

SOME PERSONAL OBSERVATIONS UPON THE ACUTE AND CHRONIC ENLARGEMENTS OF THE ADENOID TISSUE AT THE VAULT OF THE PHARYNX, AND THE MEANS USED FOR THEIR RELIEF.*

BY D. BRYSON DELAVAN, M.D.,
PROFESSOR OF LARYNGOLOGY IN THE NEW YORK POLYCLINIC.

THE subject of adenoid hypertrophy at the vault of the pharynx, although not a new topic, is one which has by no means been exhausted. Many points connected with it have yet to be recognized and explained. No apology, therefore, would seem necessary for its study, if to it could be brought new facts, clearer light, or fruitful discussion.

It is not the object of this paper to deal with matters long ago investigated and already fully understood. It is hoped, however, that a few practical suggestions, gained through clinical study and tested in the light of experience, may be added to the present stock of information bearing upon the matter. With the history of the subject and with the already recorded experience of others it will be unnecessary, for the most part, for us to deal; nor can the usual categorical arrangement of matter be made, since the points to be presented are more or less disconnected, independent, and fragmentary. Still, it has seemed desirable that they should be collected and thus presented at once.

The material presented herewith may be classed under three general headings—namely, as relating (1) to ætiology, (2) to pathology, and (3) to treatment. As to the origin and development of adenoids, the theory has generally been accepted that they usually commence to grow during childhood, that they remain stationary during youth, and, finally, that, if left to themselves, they will shrink away and disappear with maturity. Hence it has been taught, so far as they themselves are concerned, that they might be allowed to remain without interference on the part of the surgeon, the disastrous symptoms which are caused by them in the child being the immediate reason for their removal.

While, in a majority of instances, the above assertions are beyond question true, there are, on the other hand, many cases which seem to prove them incomplete, and which in themselves would offer abundant material for special consideration. Indeed, when carefully studied, the exceptions will be found, we believe, to embrace several large and important groups of cases—cases which occur by no means uncommonly, and which are capable of giving rise to annoying and even to serious symptoms.

Again, with regard to the pathology of the condition, much has yet to be learned as to the varieties of deformity which it may show, the relative importance of these varieties and of the symptoms growing out of them, and of the influence which it may exert upon surrounding organs.

In the treatment of adenoids many improvements upon the methods usually adopted are possible, several dangers are to be avoided, and greater certainty and accuracy of result are to be attained.

And, first, with regard to the origin of adenoids, one of the most important statements quoted above is to the effect that hypertrophy begins in early life.

While, without doubt, many cases originate during early childhood in some one or more of the causes already familiar to us, it now and then happens that a patient will refer the first symptoms of the difficulty to a period later than puberty. Of such cases it is my belief that many are the immediate and direct sequelæ of an attack of diphtheria or scarlatina, most commonly of the former. The structure and pathology of Luschka's tonsil are largely analogous to those of the faucial tonsil. A general condition of enfeeblement, repeated catarrhal attacks, and other well-known causes may result in hypertrophy of the faucial tonsil at almost any age short of middle life, and, to a certain extent at least, the same may be true of the adenoid tissue at the vault of the pharynx. Not alone may it happen, therefore, that the enlarged Luschka's tonsil may not atrophy as the child grows older, but, as has been stated above, hypertrophy may even take place after the period of childhood has been passed. Cases are not uncommon in which enlargement sufficient to cause injurious results has persisted through middle life. The writer lately operated, with marked relief, upon a gentleman aged forty-four. In another patient, a well-known surgeon of over fifty, he has observed a distinct enlargement, dating back to childhood and even now giving rise to troublesome catarrhal symptoms, cough, and reflex irritation.

Among adults, however, he has seen a condition of moderate hypertrophy, most frequently in women of thirty or under. This class of patients are usually somewhat stout in figure, and resemble each other in general type. They may or may not have concurrent disease of the faucial tonsil. They are subject to attacks of catarrh of the upper air-passages. They are apt to suffer from various impairments of digestion. Many of my own cases have been in singers, whose voices have been directly injured in consequence of the above irritation, vocalization being difficult, the notes husky or at least impaired as to their brilliancy, and moderate efforts being followed by fatigue. All of these symptoms are aggravated by the slightest cold. Often the patient is able to locate with considerable accuracy the seat of maximum irritation. Examination of the upper pharynx shows a pharyngeal tonsil which very rarely extends below the upper margin of the Eustachian prominence, but which is distinctly enlarged and congested, and bathed in mucus. The Eustachian prominence, meanwhile, is pressed upon by it, in some cases with injurious force, and while the thickening may be but apparently slight, its effects may be serious. Among other results, impairment of hearing may be quite out of proportion to the amount of hypertrophy present; but it is often, however, wanting. Local topical treatment in these cases seems of little or no avail, while operation is followed by distinct relief.

One of the most interesting phases of adenoid disease is

* Read before the American Laryngological Association at its eleventh annual congress.

that condition in which a temporary enlargement of the tissue at the vault of the pharynx takes place under special excitation, the enlargement subsiding with the disappearance of the cause. As this condition has not been heretofore described, so far as the writer is aware, special attention is called to it. It is well illustrated by the following case, which is exceedingly instructive as explaining a very possible source of error and disagreement.

A young lady of eighteen, blonde, somewhat delicate, but on the whole well developed and in the enjoyment of fair health, was treated by an eminent American otologist during one winter for deafness, with tolerably good results. In the following summer she went abroad. While in London she consulted Sir Richard Dalby, who, making a digital exploration of the upper pharynx, stated that he found there a considerable mass of adenoid growths which, in his opinion, should have been long ago recognized and removed. Sojourning in Paris, the patient was placed under the care of one of the best specialists in Europe, who made a rhinoscopic examination and failed entirely to confirm the diagnosis of the London physician. In the fall she returned to New York and again visited her American physician. He, having heard the testimony from abroad, re-examined the vault of the pharynx and found an abundant hypertrophy. He admitted his failure to find it at former examinations, said that the criticisms of the gentleman in London were merited, and sent the patient to me for operation. In the course of time she appeared. Careful rhinoscopic examination of a pharynx remarkably easy of demonstration revealed absolutely nothing except a decided redness and a very slight degree of thickening at the pharyngeal vault. With this series of successive contradictions the parties concerned were much discomfited.

It was not possible that any of the observers could have made an error in a condition so plain and so easy of demonstration, and it occurred to the writer that some cause based upon an acute attack must have been present at the time when the enlargement was noticed.

Further investigation developed the fact that the patient had contracted a severe coryza both on the outward and the homeward voyage, and that she was suffering from these colds when examined in London, and afterward in New York. Examined before her departure, again in Paris, and finally in New York after the subsidence of the acute symptoms, no appreciable enlargement was present. The hypertrophy, therefore, was due to these acute attacks; it existed during their course, and finally, when they subsided, it disappeared. This phase of adenoid disease does not seem to have been described. Certainly it is so little understood as, in the present instance, to have misled three of the most eminent specialists living. It appears to be analogous to the acute enlargement of the tonsils commonly seen in patients in whom these glands are irritable and liable to swell during attacks of cold. It is a condition capable of causing much annoyance. Perhaps the best descriptive title which could be applied to it is acute recurrent enlargement of the adenoid tissue at the vault of the pharynx.

While cases such as this, in which the subsidence of the hypertrophy is nearly complete, are unusual, the acute enlargement of pharyngeal adenoids already to some extent hypertrophied is a matter of the commonest occurrence, and opportunities for studying it are constantly afforded. The condition is important, on account both of the temporary inconvenience which it causes and also of the tendency which it manifests to leave behind a permanent enlargement of greater or less degree.

Chronic hypertrophy, as generally met with, is of two tolerably distinct varieties. In the first the adenoid element seems to predominate, while externally the surface of the enlargement is irregular, often simulating a true papilloma. The consistency of this variety is one of its chief characteristics, for it is soft to the touch, friable, easily broken up, and showing a tendency, when torn away, to separate in large, spongy masses. In the second variety the conditions are essentially different. The hypertrophied mass partakes more of the nature of a well-defined tumor, its base being tolerably small, its surface smooth, its consistence firm, and its substance composed more largely of fibrous tissue elements. Operation upon the latter variety is far more difficult than it is upon the former, as its dense structure offers greater resistance to the efforts of the surgeon, which, when successful, result in the detachment of but small fragments of firm tissue, in marked contrast to the large masses which are easily torn away in the variety first mentioned.

The actual amount of hypertrophy present may be no criterion of the amount of occlusion or of irritation which it may cause, for, in some cases, a comparatively small growth will give rise to symptoms of considerable severity. Again, thickening of the tissue at the vault of a degree hardly sufficient to attract attention may indicate the existence of a condition such as described in Case IV, and thus become of great value as a diagnostic sign. Palpation in such cases is not a sufficiently exact means for determining the truth, and recourse must be had to the rhinoscope, aided, perhaps, by the probe, to establish the diagnosis.

Although the general effects of obstructed nasal respiration are sufficiently well understood, there is one series of results which merits more careful attention than it has yet received—namely, the permanent deformities of the bony framework of the nose and hard palate, due primarily, as it appears, to atmospheric pressure and associated with obstruction to nasal respiration. While with the angular upper jaw and high-arched hard palate it is sometimes possible to find a normal nasal septum, the contrary is the rule. Some of the most aggravated conditions of septal deformity are met with in these cases. The well-known experiment of occluding one nostril in a growing rabbit has proved conclusively that marked asymmetry of the nose may result, and there is every reason to believe that similar causes acting in the young child may be followed by like deformities, and that, too, at a very early period in the child's history. That marked deformity of the septum and of the other bony structures of the nose may arise early in life from obstruction to nasal respiration due to adenoid hypertrophy in the naso-pharynx is certain, so that impeded nasal respiration from the presence of adenoids during the period of constructive activity is a constant menace to the healthy development of the osseous structures of the nose. The following case (III), observed by the writer, is instructive as illustrating the truth of the above:

T. M. O., aged three years and a half, a mouth-breather, was found on examination to have a large adenoid which was confined to the left side of the pharynx, the right side being comparatively free. The right nasal cavity was abnormally wide and unobstructed; the left was absolutely occluded, the septum being pressed tightly against the turbinated bodies. The adenoid was removed under chloroform, and it was proposed subsequently to restore the position of the septum by gradual pressure. Meanwhile, however, the child was encouraged to breathe as much as possible through the left nostril. The effect of this, within a few months, was to cause such decided improvement in the position of the septum that special efforts at dilatation seemed unnecessary.

The location of the growth is a matter of considerable importance, not alone with regard to the means used for its removal, but also because of the influence exerted upon the auditory apparatus. While it is not uncommon to find that a very considerable amount of hypertrophy may be attended with little or no impairment of hearing, the converse is generally true. Congestion, deafness, and tinnitus are often present in cases where the amount of attendant hypertrophy is remarkably slight.

In proof of this, the following typical case will serve as an illustration:

Miss S., aged twenty-four, at twenty-one had an attack of scarlet fever, following which she suffered a progressive loss of hearing until the deafness became almost complete. Examination of the tympanum showed a moderate degree of opacity. Examination of the upper pharynx revealed a small amount of hypertrophy of all of the adenoid element of the locality; the tissue at the vault was not so markedly involved as that at the lateral walls of the pharynx, posterior to and a little above the posterior pillar. The enlarged tissue at the vault was removed by slow degrees at repeated sittings by means of the curette, the galvano-cautery, and chromic acid, and was only accomplished after the exercise of much trouble. A fair degree of improvement in the hearing distance followed this, but the best results were not attained until the whole of the offending tissue had been removed from the lateral walls of the pharynx. Subsequent to this the tinnitus vanished and a rapid and gratifying return to little less than the normal hearing distance was accomplished.

To this case might be added the records of many more, all more or less striking. Thoroughness, therefore, is of considerable importance in the removal of these growths, and we are forced to believe that testimony to the contrary is unsafe; although even so careful and accurate an observer as Dr. Hooper states that, in his belief, it is not necessary to be too energetic, or to imagine that every particle of the growths must necessarily be brought away. The principal object of the operation, he says, is to establish free nasal respiration. If this be effected, a small amount of adenoid tissue left behind may not do harm. The vitality of the remaining tissue is probably destroyed, and it will atrophy. The growths do not recur after removal.

With these opinions, as applied to certain cases at least, experience has forced us to disagree, for, as we have just seen, the establishment of free nasal respiration is by no means the only end to be attained, although we may freely admit that it is the principal and most important one.

As is now well known, the idea that a partial removal of the faucial tonsil will be followed by atrophy of the part left behind is, generally speaking, incorrect. As a rule, only so much will ultimately disappear as has been taken away by the surgeon. The same appears to be the case with Luschka's tonsil. In several cases which the writer has had an opportunity to examine at intervals for several years after operation, the tissue left by him at the time of the operation has remained, going through the same processes of congestion under the influence of attacks of cold and of improvement under favorable conditions which were observed in the original growth. From the history of such cases as the one exemplified in Case II, in which the injurious effects of even small hypertrophies are shown, it seems worth while to insist that operations for the removal of adenoid tissue of the upper pharynx should be thorough and complete. If, as often happens, the thorough removal of the tissue is not easily accomplished in one operation, there can be no impropriety in so informing the parents and in operating again. At least, the patient should be occasionally examined, and the case not abandoned until the removal of all offending tissue has been radically effected. Failure in the above precaution may seriously invalidate the result of a really good operation and reflect unmerited discredit upon the operator. It is impossible to overestimate the importance of this precaution, to which fact your attention is particularly called.

Not uncommonly the subjects of this disease are the children of tuberculous parents. Indeed, the frequency with which it is found associated with a tuberculous history is somewhat remarkable. Hereditary syphilis, too, is responsible for many cases, some of the worst which have come under the observation of the writer having been in the children of syphilitic parents. This, of course, is no more than would be expected, as the hypertrophy of the pharyngeal adenoid tissue is but another expression of the general strumous condition under which such patients labor. In operating upon pharyngeal adenoids, the greatest difficulty seems to be in the thorough removal of the tissue anterior to the vault and just above the roof of the nasal cavities, and of that upon the lateral walls in the region of the fossa of Rosenmüller. Particular attention should be paid, therefore, to these localities, and, if necessary, any remaining tissue subsequently removed.

Jelenffy and others have referred to the danger of fragments of detached tissue falling into the larynx and thus causing asphyxia. While this might happen in the course of an operation done with the ring-knife or curette, with the forceps carefully used it would not be likely to occur. It is far more probable that dangerous obstruction of the larynx should arise from the impaction of blood-clots in the glottis, an accident which has happened in the experience of the writer, with startling although not with serious results.

In operating, great care should be taken not to wound the healthy parts, as laceration of the mucous membrane is liable to be followed by persistent bleeding, if not by more serious results. In the use of the forceps, particularly with the patient in the recumbent position, it is absolutely necessary that the uvula be held carefully away from the grasp

of the instrument. Failure to observe this precaution may result in the seizure and injury of this important organ, if not in its destruction.

An English writer advises that the patient be examined the day after the operation and all ragged ends and fragments of mucous membrane found hanging from the posterior wall of the pharynx carefully trimmed away with a pair of scissors! Such a procedure should never be necessary, since it does not seem that the condition mentioned could arise excepting from great carelessness in operating. Nevertheless, the writer has seen one case—that of a young woman of twenty-two, a slender blonde, in whom the pharynx was remarkably narrow antero-posteriorly and the mucous membrane delicate—where the removal of a fragment of adenoid tissue from the vault by means of a modified Loewenberg forceps was attended with the loss of a strip of mucous membrane from the median part of the posterior pharyngeal wall of about an eighth of an inch in width and extending downward to a point below the uvula. At a subsequent sitting the same accident threatened, and was only prevented by the employment of unusual care. It is possible, therefore, that, while with the exercise of ordinary skill stripping of the mucous membrane from the posterior wall of the pharynx should not occur, in exceptional cases it may be necessary to observe unusual precaution in order to avoid it. The accident may be best prevented by following up the detached mass with the finger inserted into the upper pharynx, and, while pulling forward with the forceps, tearing away from below with the finger-nail any adherent fragments of tissue. The question of hæmorrhage after these operations is important. Occurring violently during the operation, it will be an effectual impediment to the progress of the work, but can always, of course, be recognized.

The appearance or continuance of bleeding after the operation has been completed, and, possibly, after the departure of the physician, is a far more serious matter, and one which might easily lead to disastrous results. Fortunately, cases in which either of these things has happened are unusual, and, if recognized, the bleeding should be tolerably easy to control.

Thus far only five instances have come to the notice of the writer. In one child, a victim of hæmatophilia, fatal hæmorrhage was caused by the simple exploration of the pharynx with the finger—certainly a most unusual accident. In another case a small forceps was introduced into the pharynx for purposes of diagnosis, and one small mass of tissue removed. Bleeding continued for two days. Dr. R. J. Hall informs me that he was called upon to control a severe hæmorrhage in a mulatto of nineteen from the vault of the pharynx, following an operation upon that part, and succeeded in doing so by means of an astringent tampon.

My friend Dr. George A. Richards operated upon a young boy in whom profuse bleeding occurred during the operation and continued after it until syncope supervened. The child was exsanguinated, and remained in an anæmic condition for some time. In one of my own cases, in a delicate boy of four, bleeding was profuse, and the effects of the operation were felt for two months.

There can be no question that the forcible removal of adenoids is a painful operation. From all patients, old as well as young, comes the same testimony. Time and again the writer has operated upon adolescents and upon adults at repeated sittings. Time and again he has had the testimony of intelligent subjects to the effect that the act of operating was exceedingly painful. Time and again he has seen the same patient suffer for a number of hours after each sitting with neuralgia, headache, and sometimes with pain in the ears. He has found it not uncommon for a patient to run down under the shock of repeated operations to such an extent that the nervous system was severely impressed.

By reason of these considerations he has been forced to believe that in a large number of the more severe cases operated upon anæsthesia is a most valuable adjunct. Not that the risks of anæsthesia should be incurred needlessly in a patient of good nervous force and in whom the amount to be removed is small, but that, on the other hand, the great majority of patients suffering from the complaint under discussion are abnormally weak, timid, and nervous. They are difficult to operate upon, the work is apt to be imperfectly accomplished, and the results are by no means so satisfactory as when full opportunity is given to explore the pharynx at leisure, and to remove at once every vestige of adventitious growth that can be reached.

What particular anæsthetic should be used must be determined by each individual operator. Of late the writer has had chloroform administered, and, with an experience of about sixty cases, he is able to speak favorably of it. Its special advantages over ether in this operation, aside from its quickness, lack of irritating qualities, and less nauseating effects, are its ease of administration during the operation, and the fact that it does not cause the same abundant secretion from the faucial region of viscid mucus which is excited by ether, and which in many cases becomes a cause of much embarrassment during operation.

The writer has seen one case in which the removal of an adenoid from a strumous boy of fifteen was followed by a mild double otitis, which subsided after a few days. He has known the same accident to follow the work of other operators. Its possibility, therefore, should not be lost sight of.

It is highly important, when once the necessity for operating is recognized, that the operation be performed without unnecessary delay. The choice of time for operating, however, is a matter of some importance, as the operation may be followed by more or less general depression and the patient be exposed, therefore, to greater risk from the diseases most dangerous to children. The late spring and early summer offer the greatest immunity from danger, while the late autumn and winter are the most unfavorable periods. Any possibility of infection from diphtheria should be most rigorously avoided.

In a case operated upon by the writer in a large apartment house, in which a marked rise of temperature persisted for several days after the operation, with other ill-defined but threatening symptoms, it was finally discovered that an epidemic of diphtheria was present in the house.

The immediate effect upon the voice of an operation may be disappointing, the faulty pronunciation being retained. This is sometimes due, not to imperfect removal of the pharyngeal obstruction, but to a condition of paresis of the velum which has been caused by the presence of the adenoid, and which may persist for some time after its removal.

Finally, as to the general conduct of these cases it must be insisted that they are surgical, and therefore that they should be treated upon correct surgical principles by men well versed in these principles, both in theory and in practice.

I consider it most important that, after a radical operation for the removal of adenoids, the patient should remain in bed until the shock of the operation is evidently past; that he be placed upon a course of tonics, particularly iron and quinine, until any loss of blood shall have been made good and any depressing result of the operation done away with; and, finally, that it be not taken for granted that every possible benefit has been gained with the completion of the operation. Patients should be examined after recovery from the operation, and not only should the imperfect removal of tissue be remedied, either by surgical or topical means, but the attendant catarrhal symptoms which may remain should be treated, and the general condition of the patient investigated and, if necessary, improved. In this way the best ends may be secured, and what has been a good operation be made to yield finally the most brilliant results.

The all-important question, What degree of hypertrophy constitutes a pathological condition? is one which must arise in the experience of every careful observer, and which has never yet been satisfactorily answered, particularly when it is remembered that simply the removal of obstruction is by no means the only end to be attained. Certainly, an enlargement sufficient to give rise to troublesome symptoms should be regarded as important, and, if not remediable by topical means, should call for the employment of those of a more radical nature.

NOTE ON THE GALVANO-CAUTERY IN THE TREATMENT OF HYPERTROPHIED TONSILS.*

By CHARLES H. KNIGHT, M. D.

In a paper on this subject, read at a meeting of this association two years ago, the following opinion was expressed: "Galvano-cautery should be reserved for a comparatively small proportion of cases, including those in which the hæmorrhagic diathesis is present or suspected, those in which vascular anomalies may be recognized, those in which anatomical conditions prevent a sufficiently complete excision of the organ, and those in which the use of a knife is positively declined." With regard to adults it was recommended that "a patient above the age of twenty years be allowed his option after a fair presentation of the risks and advantages of the two methods"—namely, cauterizing and cutting. During the last two years my experience in eighteen selected cases in hospital and private practice has, on the whole, confirmed my original conclusions. As to cauterizing tonsils in young children, it may be said that it is next to impossible to persuade children under ten years of age to submit to galvano-puncture often enough and to a degree sufficient to accomplish much, and the use of the cautery-loop is in them out of the question, except under general anæsthesia.

The experience of Saint-Germain,* who is a rather extravagant advocate of ignipuncture, has been decidedly different from my own. The ages of his patients, as recorded in twenty observations, range from two to fifteen years, but it is noticeable that in his younger cases a single cauterization sufficed. The inference is natural that he is satisfied with less complete results, especially since he remarks that tonsillotomy should be practiced only *when the tonsils meet in the median line.* It seems to be accepted in this country that tonsils which do not reach this degree of enlargement may be sources of irritation and should be removed. Paul Balme,† who follows the teaching of Ruault, advises the amygdalotome for children of from two to five or six years. After the latter age he finds electro-puncture practicable. He is in the habit of transfixing the tonsil at four or five places with an electrode brought to a white heat, the cauterizations being repeated three to six times, at intervals of ten or twelve days. To one who has witnessed the terror of a child who has once felt the heat of the cautery point when it is proposed to repeat the experiment, this statement seems almost incredible. In my opinion the guillotine is far preferable in children, and in those of highly nervous temperament it should be used under nitrous-oxide gas or ether, the anæsthesia with the latter not being profound. For these cases nitrous oxide is the ideal anæsthetic. Its effect is rapid, recovery is prompt, and the period of unconsciousness is ample. Thus, much of the shock attending an excision of the tonsils may be avoided, the bleeding is not appreciably more, and the operation may be done with equal thoroughness. In older children and in adults the galvano-caustic point and knife, and more particularly the cautery-loop, are of service in the treatment of hypertrophied tonsils. My attention has been especially directed to the effect of cocaine, and to a comparison of the degree of pain experienced by the same individual under different methods of operating on either tonsil. It is very difficult to estimate pain. One patient will declare that excision of a tonsil does not hurt at all, while another will make the most vehement demonstrations. But at least an approximate idea of the pain may be formed by adopting a different operation for the second tonsil.

This procedure was resorted to in five of my cases. In every case cocaine in ten-per-cent. solution was applied on a pledget of cotton or sprayed into the fauces. In one the cold-wire snare was used on one side and the galvano-cautery loop on the other. In this case the pain of the cold-wire operation was so intense that, when nine days later the

* Read before the American Laryngological Association at its eleventh annual congress.

* "Rev. des mal. de l'enfance," 1884, ii, 520; see, also, "Trans. of the Ninth Internat. Med. Congress," vol. iii, p. 457.

† "De l'hypertrophie des amygdales," Paris, 1888.

removal of the second tonsil with the cautery loop was undertaken, the patient, a young woman of seventeen, was so nervous and restless that great difficulty was found in applying the loop. Consequently, the cold-wire operation proved to be the more radical. There is no question, however, that in this case the hot wire was less painful, more rapid, and was followed by less inflammatory reaction than the cold snare. After the latter the pain persisted, and for several days the formation of a phlegmon was threatened.

The histories of the four remaining cases, in which the cautery loop and the amygdalotome were used, are very similar. That of my most recent case will answer for all.

The patient was a colored girl, twenty-four years old. The right tonsil was removed completely two weeks ago with the cautery loop. Five days later, reaction having subsided, the left tonsil was excised with the tonsillotome. The contrast in the behavior of the patient on these two occasions and in the subsequent appearance and action of the wounds was not remarkable. The base of the first tonsil was cut through by the hot wire in less than a minute, the patient offering but very little objection, and not a drop of blood being lost. The soreness and pain in swallowing began to subside at the end of thirty-six hours, the patient meanwhile using a carbolized gargle at short intervals. On the third day there remained a little œdema of the uvula, and there was considerable inflammatory swelling of the pillars of the fauces. Except for the slough, which was beginning to separate and which involved to a slight extent the posterior pillar, the parts presented precisely the appearance expected after an excision of the tonsil. The left tonsil, considerably smaller than the right, was removed with Mackenzie's amygdalotome on the fifth day. Hæmorrhage at the time was much less than usual. The patient asserted that the pain was much more than with the preceding operation. In this case there was no subsequent bleeding, the soreness was of rather shorter duration, and the wound healed more quickly, which may be attributed to the relatively smaller dimensions of the second tonsil.

As a general rule, it is impossible to distinguish any marked difference in the sensitiveness of the stump or in the rapidity of the healing process.

These tests have satisfied me that the pain caused by the cautery-loop operation is not so much greater as to constitute a valid objection. Electro-puncture is in the aggregate more painful because of the frequent repetitions required, and is adapted only to cases in which for any reason the snare can not be used. By the use of cocaine it seems to me that but little, if anything, is gained beyond securing more complete rest for the parts and so facilitating the adjustment of the wire loop. In some cases even this effect of cocaine is defeated by the nausea which the drug is apt to produce.

In the technique of the galvano-cautery operation there is but little new. For the purpose of tucking the loop around and behind the tonsil, and holding it in position until the wire can be tightened, a little two-pronged instrument made of copper, so that it may be bent at any desired angle, and held firmly in a handle, will be found very convenient. It is a good plan, the moment the loop is seen to encircle and be in contact with the tonsil, to turn on the current for an instant. The wire adheres and may be tightened at leisure without danger of slipping or being thrown off by the act of gagging. In spite of the utmost care, the pillars of the fauces are in some cases more or less damaged, but the injury is generally superficial. In many cases, owing to the shape of the tonsil, the adhesion of a pillar, or the intolerance of the patient, it is very difficult to include more than half of the tonsil. These difficulties may be in part overcome by preliminary training of the patient and by thoroughly releasing an adherent pillar.

Additions to the literature of this subject have been rather numerous. The galvano-caustic method has been approved by Dr. F. H. Potter,* of Buffalo, in a paper read before the New York State Medical Association, and in a short communication from Dr. Jonathan Wright,† of Brooklyn. Dr. E. G. Kegley ‡ reports a case of extreme tonsillar hypertrophy in a man forty-three years old, in whom spasmodic attacks resembling hay fever, with the additional symptom of profuse salivation, were entirely relieved upon removal of the tonsils with the galvano-cautery loop. Noquet # reports a case of chronic abscess in the stump of an excised tonsil cured by use of the galvano-caustic point. This author, as well as Heryng and Charazac, expresses a preference for the galvano-cautery in removing enlarged tonsils. On the other hand, Moure prefers the amygdalotome, and he professes to have seen in children the development of retropharyngeal and circumtonsillar abscess after the use of the galvano-cautery. Three cases similar to that of Noquet have been observed by Garel,‖ who strongly recommends the cautery in hypertrophied tonsils, especially in cases showing a tendency to suppurative inflammation. Kafemann △ recommends the galvano-cautery, while G. Dodart ◊ maintains that amygdalotomy should be employed but rarely, on account of the numerous accidents possible, and that ignipuncture is the operation of choice. Barette ↕ describes the methods of operating, and expresses a decided preference for the thermo-cautery or the galvano-cautery as compared with the bistoury and the amygdalotome. In a paper by Ouspenski,↕ on "The Treatment of Enlarged Tonsils in Children," based on fifty-two observations, the method by galvano-puncture is highly praised; and Valat,‡ after noticing the fact that hæmorrhage following excision of the tonsils, rare in children, is by no means infrequent in adults, advises the use of the thermo-cautery.

Wilhelm Roth,** of Fluntern, advises the employment, under cocaine in ten- to twenty-per-cent. solution, of the finest point of the thermo-cautery inserted at three or four

* "Med. News," Philadelphia, March 10, 1888.

† "Med. News," Philadelphia, March 24, 1888.

‡ "N. Y. Med. Jour.," Sept. 22, 1888.

"Arch. de laryngol., de rhinol.," etc., June 15, 1888.

‖ "Ann. des mal. du larynx," etc., January, 1889. See also Ricordeau, "Thèse de Paris," 1886; Gache, "Thèse de Paris," 1888; and Chauveau, "Thèse de Paris," 1888.

△ "Deutsche Med.-Ztg.," No. 23, 1889.

◊ "Thèse de Bordeaux," 1888.

↕ "Rev. gén. de clin. et de thérap.," Oct. 22, 1888.

↕ "Ann. des mal de l'oreille, du larynx," etc., July, 1888.

‡ "Gaz. des hôp.," No. 132, 1888.

** "Lancet," London, Feb. 16, 1889.

places in the tonsil, the operation being repeated four or five times at intervals of two or three days. He finds this sufficient to reduce the tonsils to their normal size, with scarcely any pain and without the risk of troublesome hæmorrhage, which, contrary to my own experience, he says is not uncommon, *especially* in young children.

In commenting on the views of Saint-Germain, Delavan* expresses his disagreement for three reasons: 1. The process is far more difficult and painful than amygdalotomy. 2. There is not an authentic fatal case of hæmorrhage after tonsillotomy on record. 3. While he has seen and performed hundreds of amygdalotomies without having known diphtheria to occur in the wound in a single instance, he has known four cases in which the disease immediately followed the use of the galvano-cautery. The first objection should be modified to read "*somewhat* more difficult and painful." It is true that the galvano-cautery operations, at least those with the loop, require more time and trouble, possibly more manipulative skill, and somewhat elaborate apparatus. The second point may be admitted, and yet it is not much comfort to a patient who has lost a pint or so of blood, who is just on the verge of syncope, and who is already frightened almost to death, to be told that no one has ever yet bled to death after amygdalotomy, and he probably will not. All the statistics in the world will not reassure him. With regard to diphtheritic infection, it seems to me unreasonable to suppose that the germs of disease are any more likely to invade the system through a wound covered by an eschar than through an open wound left by amygdalotomy. The period of incubation in diphtheria varies from two days to a fortnight,† fresh wounds being earliest affected, and constitutional symptoms often preceding the appearance of the local lesion. It seems perfectly fair to assume that in these cases of immediate diphtheritic development, such as Delavan refers to and as cited by Saint-Germain,‡ the patient was already under the influence of the disease at the time of the operation. Such an accident has not occurred with either operation in my experience, and, indeed, it seems to me quite as apt to occur in the condition of the tonsils for which their removal is demanded as it is after any operation whatever. An enlarged tonsil, its crypts deepened and distended by inspissated and decomposing secretion, would seem to offer most excellent soil for the lodgment of disease germs.

One of the strongest arguments in favor of the galvano-caustic method is the fact that it insures against hæmorrhage, but a case recently reported by Werner# would seem to show that our contention in this particular must not be too positive. His patient began to bleed five days after treatment with the galvano-cautery, and is said to have been saved by compression of the carotid for ten days. Not having access to the original, I can not give further details. In the case of Capart, mentioned in my former paper, hæmorrhage was undoubtedly provoked by immoderate use of the voice. I suspect that to this cause, and perhaps indiscretion in diet, may be added as possible factors deficiency of heat and excessive traction on the loop during the operation. It is easy to conceive that in such case the resulting eschar might fail to give sufficient protection to the stump of the tonsil. Violent exercise, loud talking or singing, or an irritating particle of food might easily be the exciting cause of hæmorrhage. We can not too closely observe precautions in these particulars, especially when we have reason to mistrust the caustic effect of the wire.

My zeal in advocating this method of treating hypertrophied tonsils is tempered by two facts, which I at least feel obliged to admit. First, burning, if not more painful, is at any rate more disagreeable to most people than cutting; second, the prevalent dread of hæmorrhage after excision of the tonsils is not warranted by clinical experience. I am more firmly convinced that the danger of hæmorrhage after the use of Mackenzie's amygdalotome, which is by far the most convenient, most efficient, and safest cutting instrument, has been unduly magnified. This is especially true of children, and in adults it seems to be the rule that bleeding ceases on the occurrence of syncope, if not before, and seldom recurs to an alarming extent. This statement has been verified by three cases which have come to my notice within the last eighteen months, by the case reported by Fuller,* in which the common carotid was tied without effect, and by numerous other instances. Excluding hæmatophilia, which is under any circumstances an alarming condition, we are not likely to meet with bleeding after amygdalotomy which need cause any anxiety. Perhaps Mackenzie's statement for tanno-gallic acid as a hæmostatic is exaggerated. Should it fail, however, without wasting time with other styptics, so justly condemned by Levis, we may confidently resort to the use of the tenaculum as suggested by that writer,† or the loop of the cold-wire snare may be applied, possibly with the aid of a transfixion needle. Cases in which ligation of the external carotid artery will need to be considered should become exceptional. The researches of Zuckerkandl‡ have proved that the course and relations of the internal carotid artery must protect it from injury at least in guillotine operations. No one should be deterred from securing the relief afforded by amygdalotomy by fear of bleeding to death. Delavan asserts that there is not on record a single case of fatal hæmorrhage after the use of the guillotine for simple hypertrophy. The detrimental effects of enlarged tonsils are too obvious to be ignored. The benefit following their removal is with many of us a matter of almost daily observation. The risk of the operation itself need excite no apprehension.

At the same time the limited class of cases included in my enumeration must in some way be provided for, and for these the galvano-caustic method seems to combine the most desirable with the fewest objectionable features. The removal of a tonsil in this way requires a little more time,

* "Annual of the Univ. Med. Sci.," 1889, vol. iv, p. 13, E.

† Jacobi, "Treatise on Diphtheria," p. 67.

‡ "Rev. des mal. de l'enfance," 1884, ii, 520.

"Würtemberg. med. Corr.-Blatt," No. 31, 1888, in "Jour. of the Resp. Organs," January, 1889.

* "Am. Jour. of the Med. Sci.," Apr., 1888.

† "Med. News," Philadelphia, Dec. 8, 1888.

‡ "Med. Jahrb.," Wien, 1887, p. 309.

but in the majority of my cases the pain has not been excessive, the extirpation has been thorough, and the final result in every respect satisfactory.

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ANGULAR CURVATURE.
THE MECHANICAL REMEDY.

By GEORGE H. TAYLOR, M. D.

The simple and abiding faith commonly accorded to instruments professedly adapted to correct misshape of the spinal column is a legitimate matter for examination and criticism. Such instruments, it is believed, are recommended with more fervor than accuracy of knowledge, both as to the actual needs of this unfortunate class of invalids and to the force and mechanical consequences of the devices employed. Instruments to be worn on the person—*supporters*, as they are named from what is wanted of them—are adopted with too much haste, and their use continued for reasons quite opposed to those that ought to prevail. The nature and the gravity of this class of cases render it due that inquiries like the following be satisfactorily answered before the utility or necessity of "supports" is conceded. Are the mechanical contrivances commonly supplied for the purpose adapted to produce the effects asserted and desired of them? Do the principles they involve accord with or do they oppose and subvert the uncompromising facts and principles of physiology embodied in the vital organism? Such inquiries demand intelligible and satisfactory answers. The present purpose is, accordingly, to place before the reader the mechanical, physiological, and pathological principles involved, the consequences accruing to the vital organism in general and to the column in particular from the use of this class of remedies.

An intelligible presentation of the subject requires a statement of the leading causes concerned in the development of the columnar angle, so that the adaptation or want of adaptation of the means usually employed to the ends in view may be clearly seen. The column acquires its morbid form in consequence of defective function of the general and especially of the spinal muscles. No one supposes that columnar deformities occur otherwise. The too feebly sustained column is dragged forward and downward by the uncounterpoised weight of the upper part of the trunk and head. Gravitation curves the column sharply forward, and thus unsettles equilibrium of the body. The necessity of keeping the center of gravitation within the base compels other changes of the shape of the column. A corresponding forward projection of the *lower* end of the column is made necessary; this throws backward the intermediate or central part of the column. Were these last-mentioned changes not to occur, the person would be unable to stand erect. The nature and necessity of the case seem to imply that some effort on the part of the subject may be required to maintain an erect posture, and that such effort must be expended in urging the central part of the column backward, thus increasing the deforming tendency.

The purpose of instruments to be worn upon the person is simply to force back the deviating portions to a position approximating the natural axial line of the column, and to keep them there by mechanical force. This remedy does not regard the pathological, but only the mechanical problem. The pre-existing and the present sources of the affection are neglected, and the pathological conception is reduced simply to exterior appearances. Even the superficial effects are equivocal and untrustworthy. The instrument is adapted to *conceal* rather than to *remove* the external manifestation. The instrument is believed to have a remedial purpose quite beyond the scope of its power and adaptation to fulfill; the confidence which is placed in it diverts attention from true remedies directed to the sources of the affection, and thus it is a means of affording a false security quite inimical to the true interests of the patient.

It becomes apparent, therefore, even upon a superficial survey of the subject, that in seeking remedies for the angular column two distinct considerations are encountered—the *mechanical* and the *physiological*. The mechanical is regarded as paramount, at least as relates to practice. There are many facts indicating that this is the *reverse* of the natural and true order, and that ill consequences of a serious and permanent character flow from this misapprehension. Attention will now be directed to some of these consequences.

Mechanical Features of "Supports."—The functions or work desired of apparatus to be worn on the person are those of such partial lifting or urging upward of that portion of the body *above* the affected points as shall relieve the affected vertebræ from the pressure to which they have been exposed. To this purpose is added that of applying force and counter-force to the points of the column which deviate from the correct axial line, so as to press them back to that line. The additional purpose of preventing motion, both of the column and of its muscles, is sometimes avowed.

The mechanical problem is that of overcoming the aggregate resistance of weight and rigidity of structural parts by mechanism carried on the person. The means resorted to is not dissimilar to what would be required to straighten wood or metal. The evident inadequacy of the means to the ends is expected to be compensated for by persistency in wearing the instrument. The benefit expected is relegated to the distant future, while the idea that a removable cause exists, or has existed, is seldom practically entertained.

The varieties of instruments provided by orthopædists are legion. In scarcely any direction has there been shown greater prodigality of invention. This fact indicates difficulties of uncertain nature not yet overcome—some important factor of the affection to be provided for. It is to be noted that this wealth of invention is expended in details, and therefore fails to extend a knowledge of principles involved in these cases. The organism is treated by all alike as an inert substance, susceptible of being molded at pleasure. The general purpose of instruments being mechanical, it will be necessary to subject the more usual adaptations found in the different varieties to a somewhat critical examination, to learn to what extent these adaptations are capable of complying with their purposes, and what are the ultimate consequences to the form of the column.

The first inquiry relates to the value of mechanism to prevent the weight of the upper part of the body—the part above the affected vertebræ—from resting upon them, and to resist the tendency of the stature to become shorter. The plainest and most typical of the adjustments for this purpose is the *crutch* designed to lift the body, or at least some part of its weight, by upward pressure under the arms. Whatever form be given the instrument, the top of the crutch must be continued downward through its staff; this must have a firm connection with a band about the pelvis. Thus the weight falling on the crutch is transmitted to the legs through another than the columnar or normal channel. It is evident that, if the band moves or shifts its position, the supporting purpose is worse than defeated; the patient leans upon an insecure and uncertain support and goes down with it. This consequence is obviated only by engaging the band with the top of the pelvic bones, a difficult thing seldom successfully accomplished.

The proper mechanical details being present, it is assumed that the elongation of the staves of the crutches produces the effect of urging the shoulders upward, and that the head, neck, chest, and the upper part of the column necessarily follow, and are practically *raised* by such extension of the staves of the crutches. It is assumed that a part, at least, of the weight is sustained, and that compression is diminished at the point where loss of vertebral substance is indicated by the morbid form of the column. The weight of the above-named parts is, it is taken for granted, transmitted to the pelvis through the two staves at either side of the body, instead of through its normal channel, the column. The effect of this mode of sustentation is assumed to inure to the advantage of the column.

The above-named assumptions are, in the main, mechanically erroneous. The immediate and direct consequence of mechanism having the action and relations stated is quite the reverse of that assumed. Crutches bearing upward under the arms cause the stature to *diminish*, cause *more* compression of the affected vertebræ than is due to normal weight, and cause an *increase* of the columnar angle. These statements will be clearly understood by the reader who duly follows up the necessary explanations and demonstrations. The purpose of the mechanism for lifting the shoulders relates solely to the column; not at all to the limbs, upper and lower, and to the trunk only as it is inseparable from the column. To attain an impartial and full comprehension of the action and effect of *all* instruments which include the above-described purposes, it is advisable to conceive the trunk as divested of limbs, including the bony and muscular appendages of the limbs; the shoulder blades, shoulder muscles, thighs, and glutei muscles—all may be considered as absent. The remaining trunk has an ovoid form, and contains the column in which mechanical changes are desired. The two ends of the trunk thus bereft have a tapering form; they are roughly conical. A straight edge applied to the exterior of the pelvis and to the exterior side walls of the chest marks the sides of triangles; the base of the inferior or pelvic triangle corresponds with the top of the pelvis; the base of the superior or chest triangle corresponds with the central part of the diaphragm. The weak and uncertain hold of the pelvic band on the pelvis as a base for the support of the crutches (if that were of any consequence, which it is not) is made obvious by the tapering shape of the pelvic bones.

The decidedly conical form of the chest renders the difficulty of securing a reliable connection of the crutches with any part of its exterior still more obvious, even were there no weight of head, neck, chest, and the muscular action, which tends to destroy such connection. With the arms and their appendages replaced, there is an appearance of capability of resistance to the upward thrust of crutches. But the appearance is deceptive. The pressure of the crutches can not reach the shoulders to any effective degree; nor is such pressure or thrust communicated to parts connected with the shoulder joint; it is received and distributed otherwise.

Every one may know the significance of the deep hollows under the shoulder joints. These unfilled spaces are the intervals between large and strong masses of muscles whose junction with the arm-bone below the joint, before and behind, forms and bounds these spaces. The other ends of these muscles (which are chiefly the two pectorals in front and the latissimus dorsi behind) radiate, fan-like, over the chest and are attached mainly to the ribs. Their action is continued by the intercostals to the lower borders of the ribs. It is with the heaviest part of these muscles where their united fibers leave the walls of the chest and pass to the arms that the crutches engage. Under pressure from crutches these masses become consolidated, tense, and resisting, so that the spaces under the shoulders referred to are not obliterated. The whole upward thrust of the mechanism is received by the muscles, and is transmitted by them to the exterior walls of the chest; it is, in fact, converted into an upward pull or traction, urging outward the walls of the chest. This action is as decided and unequivocal as that of a rope over a pulley in lifting a weight. The oblique position of the ribs in the walls of the chest determines and greatly facilitates the mechanical effect of the force transmitted to them through the mechanism. The force is directed to increase the *diameter* of the chest, and, in fact, fulfills that purpose. But the air-space is *not* increased; nothing is effectual for producing that effect but to cause a *need* for more air, which the action described does not. The increase of breadth of the chest is therefore at the expense of its perpendicular measurement. The chest is *widened*, but proportionally *shortened*.

Note now the consequence as respects the spinal column. This column is a component of the posterior boundary of the chest, and inseparable from it. To diminish the height of the chest is to shorten the column. But the column is shortened only by becoming bent. The chest bulges out in front, causing the breast-bone to be displaced and deformed; also behind, causing a similar displacement and deformity of the column, and in the latter superinducing absorption of tissue which is always a consequence of uninterrupted compression of vital parts. The anterior perpendicular measurement of the column is thus permanently diminished. The head and neck necessarily follow—that is, descend in proportion to the bending of the column, and

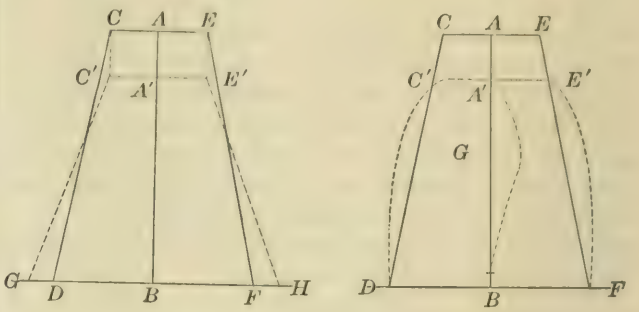
the stature of the individual is diminished, as the effect of and in proportion to the power of the instrument.

As the foregoing statements are of considerable importance, and will be found applicable in forms of instruments in which the crutch is omitted, it may gratify the reader to be able to demonstrate its mechanical correctness, and in a simple way to silence all cavil on the subject. For this purpose he may cut a narrow slip from a piece of pasteboard, say six inches long, find its center, and break it at that point, but not to separate the two equal parts; these are bent round so as to approach each other, and may be called legs. The two ends, placed upright on a table, represent a triangular figure, of which the table is its base, and the pasteboard slip the two equal sides. The apex of the triangle we may conceive as indicating the head; its two legs, the side walls of the chest; the space between the ends, the base of the chest; while a thin slip of paper attached to the apex, dropping loosely and perpendicularly midway between the legs, indicates the location of the column. Now *separate* the ends of the legs resting on the table. It is at once seen that the apex, standing for the head, is *lowered;* its distance from the line between the lower ends of the legs is diminished in exact proportion to such separation, or increase of transverse diameter. Another important fact is conspicuously shown. The perpendicular slip, bisecting the triangular space, is seen to *bend* in proportion as the distance from the apex to the base is diminished. The superfluous length of the perpendicular becomes diminished by assuming a curved form. If this slip representing the column be *notched*, and so weakened at any selected point, at just that point an *angle* appears on diminishing its height, while the parts both above and below remain uncurved. This shows that the yielding of any point protects all the remaining points.

This physical experiment corroborates mechanical principles, the demonstration of which is daily witnessed. Persons are met with whose heads appear as if beaten down, while the shoulders are thrust upward at each side of it; the chest bulges forward, while the spinal column approaches an angular form. This inference is legitimate, and to those who have attended to the subject, unavoidable, that such persons have, at some previous, perhaps distant, period been subjected to mechanical influences which have become permanently recorded in the form of the chest.

The mechanical effects of instruments designed to correct angular deformity of the spinal column may be illustrated by the following diagrams.

Let A B indicate the spinal column, and C D E F will represent the exterior of the chest. Move the point D outward to G, and the point F outward to H. It follows that the line C A E is *depressed* to the line C′ A′ E′, and therefore that the perpendicular bisecting the figure and representing the position of the column is shortened, as seen at A′ B. The same effect on the column is produced if the distance between the side-walls be increased at the middle, or any other part, as will be seen below. The sides C D, E F, instead of remaining as straight lines, are converted into arcs of circles, whereby the points C and E are brought nearer to the points D and F. The points A and B are therefore brought nearer each other—that is, the distance between them is diminished and the line A B is caused to deviate from the perpendicular at whatever yielding point it may have, as at G. The same changes of form may be considered in their connection with *force.* Thus, the power required to move D to G and F to H was also employed in changing the horizontal line C A E to C′ A′ E′.



In the second diagram, the power expended in increasing the space by converting the straight into curved lines was also employed to depress the line C A E, and in causing the straight line A B to become bent at G.

The conclusions to which mechanical principles point, and which are also confirmed by practical observation, are these: The weight of the upper part of the body can not be even partly sustained, nor the spinal column raised and straightened, by apparatus whose mechanical principles and action, worn upon the person, are of the order above shown. It is further made clear that the practical mechanical consequences of such instruments or supporters is to depress or pull down the head, neck, and top of the spinal column, to diminish the stature, and to deform the chest by unnaturally increasing its transverse diameter, especially in the antero-posterior direction, projecting forward the frontal bone (mediastinum) and backward the spinal column. In consequence of these changes, the perpendicular measurement is diminished. All these mechanical consequences are exactly the reverse of those sought and promised. Such grave alterations of the form of the bones are necessarily permanent and irretrievable. These effects arise from radical misconceptions of the mechanical properties and powers of a single feature incorporated in apparatus. We may next turn attention to other features.

The mechanical effects of the *crutch* appendage of "supporters" have been here described, not because this is the form most in use, but because most typical and easily understood by unprofessional readers. Instruments which omit the crutch are pressed upon the attention of physicians by orthopædists. These often produce the same effects in a covert manner. Instead of obviating, some of these produce additional ill effects. The potential crutch is, in fact, concealed in the construction. These are the more dangerous, because the adverse effects are unsuspected. The probability of the above statement appears when it is remembered that the conical form of the chest and its smooth, bare exterior afford no point by which it may be held while extending force is being transmitted to the de-

formed column, except in such way as forces apart the side-walls of the chest.

In the more common form of construction of the "support," the effect of crutches, or, more correctly, their modified form, is secured as follows: From the base about the hips arise two flat steel uprights—one each side of the column. These are connected at the top, and the connection extends *under both arms* entirely around the top of the chest and fastened by a buckle.

It is easily seen that the posterior upright bars, with the band encircling the top of the cone of the chest, are crutches in disguise. The bars are the staves moved to the rear, and the band is equivalent to the two tops of the crutches joined, and thus continued around the chest. The conical form of the chest causes the band to rest upon the muscular masses under the arms, to push them up, and thus transmit tensile force to the lower borders of the ribs, in the same way as in case of crutches. The instrument is operative in this way to the extent of the pressure of the band (or crutches) upon the combined muscles at the armpits, whether produced by tightness of the band, or by the inevitable leaning forward of the wearer, or motions of the body which produce a tendency to an upward displacement of the apparatus.

This form of instrument has, however, an additional function. The upright bars thus located are not only the means of the upward push under the arms, but are also *levers*. Their fulcrum is the posterior prominence or angle of the column. When the top or frontal band is tightened, compression of this prominence is caused, urging it *inward*, while the pressure of the band urges the top of the chest, and therefore the column, in the opposite direction—both, in fact, toward the medial line from opposite directions. Another, usually broader, band encircling the abdomen below the angle, connecting with the uprights, completes the mechanism for the application of force and counter-force applied for straightening the column.

Apparatus embodying these purposes inflict the following mechanical consequences, in proportion to their mechanical power: The upright bars in close proximity with and at each side of the column virtually destroy its mechanical peculiarities and adaptations. It is no longer flexile or elastic, but rigid. And if the purpose is fully achieved, it ceases to bear the weight of the superimposed parts of the body. The natural mechanical bodily movements are prevented. The inevitable consequence is suspension of the nutrition of the column, by withdrawing the conditions requisite therefor. These relations are morbid, and necessarily superinduce morbid consequences, even in case the column were previously healthy.

The mechanical effect of the leverage of the uprights at the back is likewise to diminish the stature. The wedge-shaped vertebræ are already diminished in perpendicular measurement of the anterior portion. The act of straightening transfers the weight resting on the whole mass to their *posterior* portions—from a whole to a half or less of resisting substance, practically doubling the pressure of the diminished area. This causes the same effects in the posterior that has previously been produced in the anterior portions of the vertebræ, so that absorption occurs in the two parts successively—in one through loss of support and of motion, and again by enforced compression and restriction by the instrument. The affected vertebræ therefore become still further reduced in height, and the stature shortened by the mechanism designed to produce the opposite effect. This effect is, however, transient—in most cases probably too transient to be productive of serious injury. The shortening of the posterior longitudinal measurement is soon followed by still greater shortening of the anterior, due to physiological as distinguished from mechanical influences, and is to be pointed out.

Another cause of vertebral absorption, and consequent shortening of the column, is contributed in a high degree by the compression of the pad, always necessary in this form of instrument, over and near the columnar angle. This point, it will be remembered, serves as a fulcrum. It consequently receives the pressure arising from tightening both the anterior bands, and the weight of the body, or such portions of it as falls upon the instrument. This compression, joined with that before described, can not fail to be productive of very serious local injury at the point least capable of bearing it, since the functions necessary for the maintenance of local health, motion, flexion, and elasticity are restrained.

These mechanical considerations indicate that neither of the leading purposes of supports worn upon the person are adapted to produce the mechanical results expected of them. The transverse measurement of the chest is increased and the perpendicular diminished, the stature shortened, and the acuteness of the angle of the column, instead of becoming diminished, is positively exaggerated. It now remains to point out the physiological consequences of the same remedial method.

Physiological Effects of "Supports."—The ill consequences of apparatus whose mechanical power is exerted in a direction quite opposite to that expected and desired are insignificant in comparison with the physiological deterioration inseparable from its use. Even the superficial and disinterested observer can not but recognize in the levers, bands, buckles, screws, fulcrums, leather, and steel, of which these instruments are constructed, engines of repressive power, antagonistic to the motor purposes and uses of the vital organism. However well adapted a mechanical apparatus may be to mold and reshape inert substances, such adaptation and such power are no proof of efficacy in case of an entirely different class of bodies—those whose welfare is governed by interior causes, whose purposes relate to the interior development of energy, and whose laws refer to the orderly succession of the ingredients of their own composition.

To support the column or any part by mechanism is to supersede functional support, and to that extent to repress those activities from which the *power* of support, by parts to which that duty is assigned, is derived. The capacity for supporting is thus diminished, and is liable to be finally extinguished. Let us see how this principle applies to the spinal column. In health the spinal column exercises the functions of *resistance*, *elasticity*, and *flexibility*. These

functions are either suspended or very much diminished by apparatus. Indeed, the restriction or abolition of these physiological actions is the *purpose* of the instrument. It is even contended that the exigencies of these cases demand the *prevention* of all motion of the column, as though health might be restored in the absence of function in this or in any part of the organism. The idea that flexile motions of the column are incompatible with restoration is theoretical, and lacks any basis of physiological facts for its support. Statements of such an import are made by persons whose experience is too limited and meager to justify them. The physiological fact is that the spinal column *requires* flexile and elastic motions in both health and disease; and that in the latter condition this organ particularly requires the motions natural to it to dissipate the hyperæmia present or imminent, and which necessarily occurs in the absence of the local causes for changing the fluids the tissues contain.

Use or function involves *alternations* of compression. This is necessary for the health not only of the column, but of the shafts of the bones of the limbs. Pathological museums often present examples of bones whose use has for some reason—as paralysis or lameness—been for a prolonged period suspended. Examination of such examples demonstrates that the specific gravity of such bones has thereby been diminished, that the spongy portions have increased, and that the laminar divisions of cells have to a considerable extent disappeared. These facts show one of the consequences of suspended function. The peculiar location and constitution of the vertebral bones, by adding compression to defective activity, superadds *local absorption* at points where such compression is greatest, and distorted form is the result.

Scarcely second in pathological importance is repression of spinal and other muscles superinduced by all instruments worn upon the person. The degree of injury to muscular power is proportionate to the supposed efficacy of the instrument. Any mitigation of ill effects secured by diminishing the mechanical power of the instrument effects no change in its principles of action. These effects are not necessarily rendered less dangerous by becoming more stealthy. The studied effects of this class of apparatus in all its varieties, from the simple corset with springs of whalebone or steel to the posterior levers and bands for raising the column, are those of repression and not of development. Repression occurs wherever parts of the instrument press upon muscles—under the pad at the fulcrum of leverage; beneath the flat bars overlying the spinal muscles; under the bands passing around the trunk; and under the pelvic base band. The continued pressure at these points restrains muscular action and nutrition, and hinders the manifestation of both their mechanical or supporting and their chemical or regenerating functions. It also facilitates the degenerative and absorptive process, and therefore the decline and disappearance of muscular tissues.

Now, it is the failure of the vito-dynamic and the vito-chemical functioning of muscles that superinduces the disease for which a remedy is sought. The removal of the columnar symptom of this disease is clearly impossible, while the morbid condition on which it depends remains. The inconsistency of supplying remedies which are well calculated to superinduce the affection for whose cure they are prescribed is too apparent to justify comment. Repression of muscular function is equally injurious for the ill and the well. So is excessive functioning. Both the continuance of good health and the recovery, or rather the bettering, of ill health, require proper *adjustment* of conditions to circumstances, not the abolition of conditions.

Respiration suffers from wearing repressive instruments in many ways. One way is through the deformation of the chest, caused both by the crutch and by the lever attachments common with these instruments before shown to increase the transverse, and to the same extent diminish the perpendicular, measurements of the chest. A not less conspicuous and certain effect is that of restricting the extent of the respiratory movements. The action which distends the chest and keeps its walls asunder also prevents the expiratory act from being free and complete. It follows that the amount of air changed at each respiratory act is lessened. This fact is shown and more fully understood under test conditions. The wearer of an apparatus is prevented from making much physical exertion, because exercise increases respiration, and therefore increases the extent of the motions of the walls of the chest—a condition he is unable to fulfill. Attempts to ascend stairs or even moderate acclivities put the inthralled individual "out of breath," and he is compelled to desist. This experience proves that the oxygen attainable under the diminished extent of respiratory movements is insufficient for the emergency, or, indeed, any emergency requiring it to be increased. No advantage the instrument is reputed to confer can in the least compensate for this disadvantage.

Another way in which respiration suffers is through the diminished demand of the organism for oxygen. Restricted muscular activity diminishes the force of contact of chemical ingredients of the organism, and therefore the extent and degree of the chemico-vital activities of the organism and the amount of oxygen required. The amount of that element taken by the blood from the air of respiration is correspondingly diminished. There can be in the nature of things no remedial substitute for this loss, and the organism consequently suffers permanently in its chemical phase of function. The attentive observer may also notice that the mechanical form of the respiratory act is changed for the worse by supporting instruments. The limitation of the *lateral* respiratory movements compels the substitution therefor of a *perpendicular* form of respiration, in order to secure enough air. The subject is seen not only to breathe laboriously, but at the very top of the lungs, the movement often ascending even to the throat. Now, this mode of breathing involves far more physical labor than the natural mode, because the resistance to be overcome is greater. There is not only the bony frame which bounds the top of the chest, but the weight of all the viscera, which have to be overcome at each respiratory rhythm, when it is forced into the perpendicular form, instead of being allowed the easiest and spontaneous form. Many a poor victim of apparatus has languished under the physical labor of an un-

natural and exhausting respiratory process, which in its natural form is strength-giving. Under this expenditure there remains little or no strength to serve the volitions. The *reserve* capacity of the chest becomes so limited as to prohibit a quickening of pace or in any way creating demand for increased respiration.

It may be further observed that the perpendicular form of respiratory rhythm is liable to be prejudicial to the column, weakened by the withdrawal of muscular support, by the hyperæmia arising from diminished circulation, and by the mechanical disadvantage of the abnormal form. Every inspiratory act now becomes a sort of blow, forcing the chest, and particularly the spine, downward. The natural tendency of this physical cause is to co-operate with the other causes enumerated to increase the angle of the column.

Apparatus modified to diminish their Injurious Tendency.—Numerous examples of instruments are made whose harsher features above pointed out have been in various ways and in all degrees softened, till, in the mildest forms, little or nothing is left but the corset, similar to that with which not a few women delight to repress their powers. The objections above presented, of course, proportionally diminish, but can not be removed while any degree of functional repression remains.

Of late years a form of "supporter" has obtained extensive vogue which curiously blends physiological requirements with the above-described ill effects. This is the so-called *plaster jacket.* Its ostensible purpose is to secure the improved form, forcibly and quickly produced by a retentive incasement. Plaster of Paris, which is easily mixed and used and quickly and firmly sets, and can be renewed as often as desirable, is the typical substance used for the purpose, but many substitutes have been employed for the same purpose. Gutta-percha, raw hide, and felted wool stiffened with shellac, have been applied to the same use, according to the notions of different specialists. The essential peculiarity about this "support" is the mode of applying it, or rather of fitting it to the form of the wearer. The whole body of the invalid is subjected to all the tension or strain of muscle that can be well borne. The processes of being hung or *suspended* by the arms or head, or both combined, are the usual means. We have already seen that other and even more effectual processes are both more agreeable and more successful.

The reader will perceive the very important physiological effects superinduced by the process, which is the essential part of the so-called plaster-jacket treatment. The patient exchanges *continuous* compression of vertebræ for *alternations* of pressure—the muscular inertia for the most vigorous action of every fiber and cell. The hyperæmia of the column is consequently removed, the collateral channels of the circulation are broadly opened, arterial contractility is vigorously resumed, the chest expanded to the utmost, synchronously with the incitation of its muscles. These effects are extended, corroborated, and confirmed by the increase thus superinduced in the vito-chemical physics of the whole organism, through which the *quality* of the blood and fluids of the organism is approximately restored to the normal standard; and this is done in the only way in which the special morbid quality of the blood can be permanently and satisfactorily antagonized. No wonder at the disparity in results of procedures which do and those which do not include the above-named physiological effects. The ideal purposes of remedies have in a fashion been complied with, though in many instances the intrinsic nature of the process may have been but imperfectly understood. A prolonged wearing of the instrument may and often does turn the beneficial to injurious effects. From its great weight and impermeability to air and the emanations of the body, the plaster jacket may become the most oppressive as well as repressive of instruments. The improvement temporarily assumed is then found to be deceptive, and can not be maintained unless the motor is made paramount to the restrictive in the combination of the two methods which this device practically presents.

A mode of treatment of the columnar angle is pursued in Berlin with commendable success which purports to be a modification of that above described. The "supporter" is reduced to a nominal place, being retained apparently out of deference to the prejudices of physicians and patrons who *expect* that appendage, and who have little accurate knowledge concerning it. The physiological factor of the treatment is pursued with great ardor and perseverance. The plaster jacket is replaced by felt, parts of which may be stiffened with shellac, or even straightened to conform to the shape by strips of thin, narrow, light steel, affording not the slightest pressure and counter-pressure. The restriction afforded to the bodily movements is less than that of an ordinary corset. The instrument is removed for the daily physiological or motor treatment. This consists of the application of *massage*, and of applied or specialized semi-exercises, prescribed and adjusted with great accuracy to the special defects of the patient. Stretchings of spinal muscles in connection with alternations of compression of the vertebræ are important features of the treatment. There is suspension and partial suspension by the arms, neck, etc., repeated at proper intervals by means of differently devised apparatus. A modification of hanging, producing the same effects, easily controlled and whose use may be prolonged, is the pivoted tipping couch or table. The patient is attached to it by the head or arms, or both, and, when *tipped*, the weight of the body causes the column to be compressed or distended, according to the direction in which the weight is made to act by the variations of position.

The *degree* of these effects, and the rate of alternation with which these variations may be passively supplied, are under instant and perfect control. The good effects on the spine of this and similar mechanical processes are direct and unequivocal.

The Health of Michigan.—According to the State Board of Health's Report for the four weeks ending September 28, 1889, diphtheria was reported from thirty-four places, scarlet fever from twenty places, typhoid fever from seven places, and measles from seven places. Reports from all sources show diphtheria reported at thirteen places more, scarlet fever at two places more, and typhoid fever at seven places more than in the month of August.

MODERN MEDICAL SCIENCE.

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It is a question whether the practice of medicine, until within the memory of people now living, has been a material benefit to mankind, aside from surgery and hygiene. Even now, judging from the vast amount of misapplied and useless drugs consumed by the people, it is a question whether the benefits from their use are not counterbalanced by their abuse. There are many reasons why medical science is behind all other sciences in its development and practical application to the wants of the people. Since Hippocrates, the founder of rational medicine, no real advancement was made until within the last century. The chief reason is that it has been subordinated to the vague speculations of philosophers and metaphysicians and the mysticisms of the priesthood, although long before the last century a solid foundation was being laid by the study of anatomy, physiology, histology, chemistry, and therapeutics, but no application of the knowledge thus obtained to the cure of diseases could be made until the teachings of medical science had become emancipated from the traditions of the past, and freed from their dogmatic spirit by rejecting all hypothesis and returning to the unbiased study of natural processes as shown in health and disease. Before that period the history of medicine is a dreary and barren record of endless disputes postulated upon abstract theories of the founders of rival schools, which had no foundation in nature or nature's processes. Such is the theory of Galen: of four elements—hot, cold, wet, and dry—which, mixed in proper proportions, constitute the norm of the body, and disease results from a disturbance of these proportions; of the methodists, that diseases are due to relaxations and contractions of the minute passages of the body; of Paracelsus's microcosm, the counterpart of the macrocosm, with the indwelling spirit of Archæus and his arcana of panaceas and specifics for all human ills; of the humorists and solidists and other schools of medicine which followed and disappeared, leaving nothing of value save a few chemical discoveries made by the alchemists in searching for the essence of matter, elixir of life, and philosopher's stone, and the knowledge of the therapeutical value of a few medicinal herbs. This meager outline presents a picture of childish conception of the internal structure of the body and theory of health and disease. Yet they were the net results of concrete facts resulting from the efforts of the brightest intellects of centuries. If it is impossible to postulate a true theory of health and disease, which, subjectively and objectively, are under daily observation, how absurd it is to attempt to postulate a true theory of the invisible world, which is so absolutely hidden from our senses! Metaphysics and theology, until within a comparatively recent period, absorbed and misguided all efforts to advance rational medicine and place it on a scientific basis. Metaphysics has no foundation in the real or natural world and leads nowhere, and ends in vain strivings to realize the unattainable. It consists of vague and shadowy definitions and juggle of phrases, without definite or comprehensible meaning, and, when divested of its flowers of rhetoric and dialectical subtleties, leaves nothing tangible behind. Its only useful purpose is to train the faculties in dialectics and rhetoric, but it creates an ideal world out of airy nothings, which is so far removed from this mundane sphere that it is impossible for it to bear fruit in relieving suffering humanity, but leads the ignorant and imperfectly educated into gross vagaries—illustrated at the present time by many absurd methods of curing diseases which have seized upon the popular mind. "Christian science" is ideal philosophy run to seed—abstract idealism reduced to the concrete and applied to the wants of humanity. All beyond the objective world is vague and incomprehensible, and all speculation pertaining thereto always has resulted in gross anthropomorphism or vague and shadowy idealism, leading on the one hand to gross superstition, inciting the passions to inhuman and barbarous cruelty; on the other hand, the speculative dreamer to fantastic conceptions of the origin of the material world and the laws governing it. To the anthropomorphic conceptions of the Deity are due the cruel and bloody religious sacrifices and frightful persecutions by Christian zealots. Theories and conceptions of the invisible world are always changing and varying as much as light varies from darkness—never stable, resting on the secure foundations of eternal truths and verities—notwithstanding the vast expenditure of the efforts of genius that has revolutionized the currents of thought and marked the epochs of time.

Natural laws or nature's processes are immutable, and the advancement of civilization, morally and physically, has kept pace with the knowledge obtained from their investigation and application to the wants of mankind. The human organism is of exceeding complexity; animated by vital force, the most complex of the forces of nature; hence medical science is the most difficult and complex of all sciences, and is yet in its infancy. It has made rapid advances in the last two decades. The pathology and natural history of a large number of diseases have been rescued by more exact methods of clinical observation and the more minute investigation of the pathologist from the obscurity in which they were shrouded. Pathological and structural changes, with their concomitant symptoms, have been traced from their beginnings. But there is a vast field yet under investigation and awaiting solution, more especially as to diseases whose causes are supposed to be due to bacteria or pathogenic germs. Unfortunately, the general practitioner, whose province is to apply this improved knowledge to the wants of the people, has not improved in equal ratio, and the public, whose enlightenment depends upon the general practitioner, is nearly as ignorant of the possibilities and limitation of medicine in curing diseases as it was when rational medicine was unknown to the profession, or before it became emancipated from the traditions of the past; when disease was supposed to be a separate entity of a supernatural origin that had taken possession of the organism; or some malign influence of the stellar and planetary system that had to be driven out by exorcisms, or conjured away by incantations, or await a more favorable conjunction of planets or stars as deter-

mined by the horoscope of the astrologer. Great faith was placed in the varying phases of the moon for good or for evil, and the potency of medicinal herbs depended upon gathering them during its favoring changes.

Many farmers, otherwise intelligent, still wait upon the changes or phases of the moon to plant their crops, and I have met an officer of the navy high in rank who had an abiding faith in the malign influence of particular phases of the moon and conjunction of the planets. The fault lies in imperfect and insufficient teaching and false conception of the duty of the practitioner in not instructing his patrons relative to the natural history of their complaints and the possibilities and limits of medicine in giving relief, and in not withholding medicine when it is not needed. The practitioner often justifies himself for his want of candor to his patrons by the Jesuitical casuistry that the patient is resolved to have medicine anyway, and, if he does not prescribe some harmless placebo, will go somewhere else and get it, and perhaps fall into the hands and become the prey of some ignorant quack, to his great harm. The patron is kept in ignorance of what is of great importance for him to know, and the profession is discredited and reduced to the level of the most arrant quackery, and by its example encourages the growth of and causes to flourish the most rank and shameless charlatanry. Consciously or unconsciously, the arts of the conjurer and spiritual medium are practiced upon the credulous and confiding people, fostering the element of mysticism which seems inherent in all ignorant and imperfectly educated minds.

It is the province of scientific medicine to raise the profession above the plane of the common pretender and charlatan, and divest it of all appearance of mysticism to the people, making the separation so plain and palpable that the common mind can discriminate between the well-trained and skillful physician and the wily and pretentious quack as readily as it can between the well-trained jurist and the shyster, or the common laborer and the skilled mechanic. Before this result can be accomplished the people must be taught the causes and natural history of their complaints, the possibilities and limitations of remedies, and that nearly all diseases have a tendency toward recovery under favorable conditions by the conservative powers of nature and time; and that medication, at best, has only a temporary influence in favoring the cure. As long as the average practitioner, through ignorance or design, avails himself of the ignorance of his patrons and assumes the credit due to the conservative powers of nature, he keeps himself on the level of the charlatan. In nine cases in ten for which the practitioner is called upon for advice, little or no medication is needed. All that is required is to calm the fears of the patient and give advice as to regimen, and nature will soon correct whatever is amiss. Perhaps the tenth case is one of those diseases, obscure in its origin and insidious in its development, running through considerable cycles of time in its exacerbations and remissions before a fatal termination, and the structural changes have become too far advanced to effect a cure before the patient has become conscious that anything serious is the matter with him. Nothing can be done save to palliate the more distressing symptoms and defer the fatal termination as long as possible. Such are the gradual degeneration of the spinal cord resulting in locomotor ataxy, progressive muscular atrophy, spastic muscular paralysis, and other spinal diseases depending upon the locality of the lesions; also degeneration and sclerosis of the larger arteries, causing hypertrophy of the heart and dilatation of the left ventricle, and impairing the nutrition of the heart; and also chronic disease of the kidneys. Often these diseases are not recognized in their incipiency, or give so little trouble that the patient is not sufficiently alarmed to consult his medical adviser until it is too late to obtain permanent relief. As scientific medicine progresses by tracing diseases to their beginnings with their concurrent symptoms, diagnosis is simplified and made easy, and the importance of hygienic and prophylactic medicine becomes more apparent, and also the almost criminal fallacy of the indiscriminate prescribing of drugs upon general principles. In this matter it is the duty of the general practitioner to await the results of the more careful and scientific experiments of trained experts. "To make haste slowly" will save much valuable time, avoid many errors, and prevent much harm, disappointment, and humiliation, resulting from imperfect observation, hasty generalizations, and crude theories. One very essential factor is too much ignored by modern investigators in determining the ætiology of diseases and its bearing on treatment. A recent writer upon the "Progress of Medical Sciences" says: "The fallacy of the old medical systems, of which Boerhaave, Van Helmont, and Brown were founders, is now acknowledged, and the attempt to explain the causation and treatment of diseases on the 'pneuma' or 'vital forces,' humors, and the 'archæus' has been frustrated by the more accurate and better-equipped labors of the nineteenth century, while the theories advanced by these brilliant intellects have fallen into disrepute." There is a tendency in modern research to ignore or not give its due importance to this factor which, in a vague way, entered into the theories of nearly all of the exploded systems of causation and treatment of diseases, designated as the "pneuma" or archæus, the indwelling spirit, now called "vital force," and trace the causes of diseases to "disordered functions, impaired nutrition, and consequent structural changes," and to infections from pathogenic germs. If there were no other factors than these to be considered, the problem of the causation and treatment of diseases would be much simplified. Under the same conditions and surrounding influences the effects of causes and results of treatment would be more uniform. All exposed to pathogenic germs would be affected alike; no one would be exempt. There are inherent in some families and individuals great powers of resistance to diseases. They are exposed to and pass through frightful epidemics unscathed, or, if attacked, throw off the malady with ease, or survive surgical operations which are apparently hopeless, or frightful injuries which would be inevitably fatal to the average individual. This factor of resistance, whose value it is impossible to estimate, enters into the problem of causation and treatment of all diseases and vitiates the deductions and generalizations based upon data gleaned from clinical observation and experiment.

It is evident there is a potential principle or latent force, whether the "pneuma," "archæus," or some other indwelling spirit vaguely recognized by the founders of the old schools of medicine, inherent in the germ of all organisms, which controls and presides over their growth, regulating their form, features, and physical and mental development, including the powers of resistance to diseases. In some organisms the vital force is vitiated and feeble, and the organism becomes the prey to surrounding destructive or disintegrating agencies and internal abnormal processes. In others it is strong and vigorous, and gives the organism a perfect physical development, symmetrical and harmonious in all its parts, capable of resisting ordinary assaults from without from destructive agencies which destroy the weak. This vital principle animates all organic life, animal and vegetable, and is governed by the laws of its being and presides over the destinies of its species, preserving the strong and eliminating the weak by depriving them of the power of reproduction or causing them to be pushed to the wall by the strong in the struggle for existence. In the economy of nature the welfare of the individual is subordinated to the welfare of the species. Tendencies to disease are often due to inherited vitiated and weakened vital force, which defects often remain latent until the organism is called upon to resist an unusual strain; then it succumbs to the first rude shock; or the defects may manifest themselves by abnormal processes within, in malignant neoplasms, degeneration and decay of tissues of the spinal cord or the inner coats of blood-vessels, tubercular deposits in glands or other organs, without any apparent cause. The production of the specific pathogenic germ in each respective disease does not prove absolutely that these germs are the causes of their respective diseases as long as a perfectly well constituted organism resists all of these diseases under the same conditions and influences. There is a defect in the *a priori* reasoning; the bacilli may be the result, not the cause, and as "innocent of mischief as maggots in a neglected wound." There may be and probably is another factor which prepares the soil for the reception and propagation of these germs. All healthy and perfectly constituted organisms resist fungous and other parasites which prey upon decaying or imperfectly vitalized organic matter. Fungous growths are not found on healthy and vigorous plants, or vermin on healthy and well-nourished animals. It is only after their vital forces are weakened by disease or the rigors of a severe winter and by insufficient and unwholesome food. In the history of the cholera epidemics which have swept over this country before the comma bacillus was known or dreamed of, the disease suddenly burst upon communities with great virulence, and left as suddenly as it came, after expending its force, leaving no trace behind, save the deserted homes and widows and orphans bereft of their natural protectors. No efforts were made to destroy the comma bacillus save general sanitary policing, which, according to our present lights, was wholly inadequate to prevent a perpetuation of the disease by propagation of the germs. Any research intended to trace diseases to their ultimate causes and apply remedies for their prevention and cure, without giving the factor of vital force its due importance, will result in failure and disappointment. It is one of the ultimate facts of nature; we know that it exists only from its phenomena manifested in the growth and decay of all organisms; it determines the normal development and duration of life of the organism, of its species, and its perpetuation by reproduction. The limits of that life can not be prolonged, but may be lessened by the many accidents of life and by violation of the laws of its existence. Powers of reproduction are vitiated and weakened by violation of these laws, which are inexorable, and will exact the penalty to the last farthing. A perfectly well constituted organism contains from the germ sufficient force in reserve for its perfect evolution of fœtus, infancy, puberty, reproductive period, and vigor of manhood, when it displays its full powers, and declining old age, when the last reserve is called upon, and at the final expenditure of force the vital spark fades gently and becomes extinguished, having accomplished its perfect and complete round. Any inherent defect becomes more pronounced during the evolution of the climacteric periods, of puberty, and decline of reproductive functions, and the puerperal state, from an increased demand upon the vital powers of the organism. It is evident, then, that the ultimate causes of many diseases are due to inherent defects of the organism transmitted by inheritance, which remain latent until some exciting cause develops them. From three years' service in the army during the War of the Rebellion, and several years' service as pension examiner subsequent to the war, I have observed that those soldiers who bore the tremendous hardships and privations of the field without becoming disabled thereby have since become prematurely old and decrepit, some of them without any assignable cause save the premature expenditure of the reserved vital forces; others from faulty nutrition, indicated by degeneration or sclerosis of the spinal cord and arteries and resulting disease of the heart, and chronic rheumatic troubles affecting mostly the spinal and sciatic nerves. It is a noticeable fact that nearly all of the prominent generals of both sides who served through the war have died prematurely.

Ocular Massage.—The "Lancet's" Paris correspondent writes to that journal as follows:

A communication was recently made to the Academy of Medicine on this rather novel, or, as it would appear, modification of the ancient use of massage by M. Costomiris, of Athens. He said that if the ancient Greeks employed massage in eye affections it was not by means of the pulp of the finger on the conjunctiva and cornea, such as he had been in the habit of employing for many years. His method was, after everting the lids, to spread a thickish layer of fine boric-acid powder on the conjunctiva, and then with one of the fingers to rub, in massage fashion, the parts so covered with the powder. He then washes the eye in boric-acid solution, and for the few following days applies a lotion composed of 1 in 200 of nitrate of silver to prevent the inflammation which sometimes follows the manipulation. He next rubs the outer surface of the lids in the same way, which he finds lessens any pain caused by the internal massage. It is as well in every case to begin with a short and very light friction, then to increase it and again decrease it, and this should be repeated once daily and continued for two or three weeks after cure. M. Costomiris speaks very highly of this method in the treatment of granular lids or follicular conjunctivitis, in parenchymatous keratitis, in hypopyon, in infiltrations, and in abscesses or ulcers of the cornea; but in deep-seated ocular mischief he can not recommend it.

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"GYNAIA."

IN a recent issue of the "Pacific Medical Journal" there was published a review of a monograph by Dr. Steinerkopf which affords abundant food for reflection. To this article we are indebted for all the facts as to the nature and treatment of the disease which has been described by its discoverer, and which he has named "gynaia," defining it as "the simulated existence of feminine moral qualities in the person of a man"; for the original brochure has been inaccessible to us. But enough is related by our contemporary to place Dr. Steinerkopf's right to the title of *savant* beyond doubt, despite the unfortunate fact that in callow student-life he affiliated with the misguided followers of the cult founded by Hahnemann. But, even if he is a medical heretic, he at least is consistent in his practice, for he is an enthusiastic exponent of "high dilution" therapeusis, though stopping short of "olfaction."

The discovery made by Dr. Steinerkopf is that what has been yclept effeminacy is in reality a disease which is curable, and not a concomitant of congenital anorchidia or a resultant of an early training analogous to the subalar rearing of the offspring of a uniparous hen, when occurring in a male. This disease, "gynaia," is characterized by the exhibition of timidity, aversion to tobacco and to dogs of non-personal allegiance, manners of ratiocination untrammeled by the friction exerted by logic, and other qualities commonly observed in the typical human female. Given the symptoms, the proper treatment to be followed was plain; and to a homœopathic high dilutionist the selection of the specific remedy was a mere bagatelle. The only stumbling-block in the way was the difficulty of diluting femininity to that degree of attenuation needed to prevent it from aggravating the disease. It is a well-known fact that the most important scientific discoveries have been made through sudden and accidental suggestions afforded by trivial and common occurrences. The case in question was no exception to the rule, for the nonplussed scientist saw in an "allopathic" journal a would-be crushing statement, emanating from the venomous malice of a ribald scoffer, to the effect that the fiftieth dilution of "lachesis" contained an amount of the alleged drug which would be present in a mixture of a single drop of the mother tincture with the whole Atlantic Ocean. This apology for a sally of inexpensive wit was to Dr. Steinerkopf what the falling apple was to Newton, the unaccustomed bath to Archimedes, and the post-mortem kick of the frog's leg to Galvani; for the statement revealed the hidden path which was to lead to success. In brief, the moment at last presented itself when a solitary girl was bathing in the surf at a sea-side resort under Dr. Steinerkopf's observation; and, as her bathing-suit was ultra-Parisian in scope, an exceptionally favorable chance to obtain the requisite dilution of the drug was offered. From a bucketful of water secured at that time, the essence of manliness, retired hoop-skirts, boots, other inorganic matter, and domestic animals were eliminated, and a sterilized solution of chemically pure femininity was obtained. This was labeled "*puella domestica*, seu *officinalis*, seu *æstiva*, 50th," as, in spite of the attractive appearance of the crude drug, the doctor was too intent on his purpose, and perhaps on the bathing-suit, to be able to recognize it when attired in conventional raiment, thereby being unable to discover the exact variety of "puella" in his preparation. Whatever the variety, it was the correct remedy, as in both "provings" and curative power it surpassed his wildest dreams. His own "proving" of the drug resulted in the temporary acquisition of feelings and habits to which he had before been an entire stranger. He could only sit down in comfort when one of his feet was interposed between the seat and his own person; when a fellow-bachelor crony came later than usual to the *Gasthaus* in which they had for years met nightly, Dr. Steinerkopf burst into passionate tears and upbraided his friend for his heartless conduct with "that woman" who had kept him away; he experienced singular feelings of uncertainty as to the location of and method of access to his pockets, and carried all his journals and specimens in those placed in the skirts of his coat; he regarded with horror the progress of baldness in his own case, and was actually on his way to a perruquier's when the effect of the drug passed away. After another dose he sought to put on his trowsers by the same series of movements and by the same route as those by which he donned his shirt.

The foregoing symptoms are only a few of those observed, and all, when due to disease, vanished before the might of the drug. Though not as yet proved, it is reasonable to expect that the remedy will be equally effectual in those maladies cognate to "gynaia," and will mitigate the chromatic disagreement of shirt and collar, as well as lessen the evidences of intracranial baldness, that are so often observed in such cases. May it not promote absorption of the pre-ocular disc of window-glass that serves to dim the vision of a patient to the looks cast upon him by intelligent men, or to create a desire for other diet than that composed of the heads of walking-sticks? In the interests of posterity let this drug be administered to the *jeunesse dorée*, in the hope that the race of intellectual invertebrates will become extinct, and that hereafter the scions of a virile family stock will show an atavism reflecting the renaissance of ancestral manhood and not the development of an androgynous fungus on the family tree. Then may these anthropoid things, after an amœboid existence has terminated by the yielding up of a hebetudinous ghost by the same oozy exosmosis that marks the passing of a life-weary oyster, be known only through clay-bank intaglios or masses of adipocere unearthed by the coming race. Who knows but that they might thus fulfill their destiny by bearing fossil testimony that Darwin was no wild dreamer in his search for a "connecting link" as the missing key-stone of his evolution arch, and furnish a much-needed subject for

contention between the Church and the science of a century hence. We can not urge too strongly upon the profession the advisability of following up this discovery of Dr. Steinerkopf's, for true philanthropy demands that our descendants should be spared, as far as may be, the shame and disgrace of this blight of emasculation-mildew from which we suffer. The possibilities are too great to be ignored.

THE DANGER OF SUCKING THE TRACHEOTOMY-TUBE.

To the "Lancet," animadverting upon this danger, a correspondent of that journal replies that, if anybody who can swim is justified in trying to save a fellow-creature from drowning by jumping into deep water, it must be allowed that a surgeon is justified in sucking a tracheotomy-tube in order to clear a blocked trachea or the large bronchi. Such action, the writer says, must depend upon the personal character of the operator, and whether or not he has "near and dear relatives dependent upon him," since no instrument is so effective as the mouth, and the dangers of infection can be effectually overcome by rapidly placing one's self under the influence of mercury.

As an exhibition of false sentiment, bad logic, and thoroughly dangerous practice, this should not be allowed to pass unnoticed. According to the first and fundamental law of moral philosophy, "man's first duty is to himself." From this dictum there is no appeal, whether we may have others dependent upon us or not; although it may seem selfish at the first glance, there are many cogent reasons why, even in the matter under present consideration, it is particularly true, and therefore not to be disregarded. Logically, the situation would have been more accurately portrayed if the writer had likened it to a case of drowning in which the would-be rescuer could not swim.

Practically, an ordinary piston syringe, to the nozzle of which is affixed a short piece of rubber tubing, is an admirable substitute for the operator's mouth, and an instrument which should constitute a part of the armament of every tracheotomist.

As to the risk to the operator of sucking the trachea, the application of a razor to the throat would be a more agreeable if not a more certain means of suicide. We can recall a score of cases where valuable lives have been directly sacrificed by it, while a sharp attack with a tardy convalescence of six months has been the writer's personal experience in the matter. Indeed, in a somewhat large experience, he has never known of an instance in which the act has not been followed by some reaction in the operator's throat.

In Billington's admirable work on diphtheria, it is a pleasure to note the views expressed by that dispassionate author upon this very question. "Diphtheria," he says, "is communicated in a variety of ways. The first of these is by direct contact, or the deposition of diphtheritic matter on the mucous membrane, or upon wounds of the skin. Examples of this mode of transmission are furnished by numerous well-known instances in which physicians have contracted the disease by sucking out tracheotomy-tubes, or by receiving the secretions of the patient in the mouth or nares. . . . The demonstration afforded by the instances referred to is not at all weakened by the fact that many other physicians have sucked out tracheotomy-tubes and have received diphtheritic secretions in their mouths and nares, or that others have kissed infants affected with diphtheria, or that M. Peter and others have painted their own fauces with solutions of false membrane, without diphtheria resulting. . . . A limited number of positive examples of the communication of diphtheria by direct contact, among many negative ones, is all the proof of its occurrence that could be rationally demanded." Such practices, therefore, as admit of the possibility of bringing the diphtheritic poison into contact with the mucous membrane of the throat are absolutely reprehensible and not to be countenanced.

MINOR PARAGRAPHS.

MORTALITY FROM "CHRISTIAN SCIENCE."

A LEADER of the so-called "Christian Scientists" has been arrested in Brooklyn, on the charge of manslaughter. The charge against him states that he contributed to the death of a young woman, not over twenty-four years old, who, until about a week before her death, had apparently been in blooming health. She was taken sick with a fever, probably typhoid, on a Friday, and on the following Thursday was dead. All proper medical care was denied the sick woman. A physician was called in by the accused, in whose household the patient lived, "to comply with the law," as she said. Religious observances were performed about the sick-bed for some days, as the sole means of cure. And, even after death had taken place, the prayers and other ritual were continued in order to call upon the deceased to "arise again in the flesh." This imposture was even in progress at the time when the arresting officer reached the house of the accused, and the body had already been placed in the ice-box used by undertakers. The leader, in this instance, belongs to an ignorant and superstitious class of society, and his followers are from the same class. The hold of this novelty or "fad" upon the "better element" in our cities has been relaxed, and now the poorer and more ignorant are beginning to suffer from it. As is sure to be the case with regard to every manifestation of quackery, the poor and defenseless suffer the most from it. Since the arrest above referred to another death by neglect has been reported from among the same coterie of deluded people.

LONDON POST-GRADUATE COURSES.

IT has always been a reproach to London, says the "British Medical Journal," that the unrivaled clinical material of its numerous hospitals is not fully utilized for the purposes of medical education. It is not that teaching power is wanting; on the contrary, the metropolitan schools could furnish among them a body of men thoroughly fitted to make London the center of the medical world, as it undoubtedly ought to be. Owing to want of organization, however, a large amount both of material and teaching power is wasted. Nowhere is the loss of potential educative energy more evident than in the hospitals to which no medical school is attached. It is therefore with peculiar satisfaction that we hail the announcement that the medical staffs of the Brompton Consumption Hospital, the Hospital for Sick Children, Great Ormond Street, the Hospital for the Paralyzed and Epileptic, Queen Square, the Moorfields Ophthalmic Hospital, and the Hospital for Diseases of the Skin, Blackfriars, have decided to unite their forces, and give courses of instruction to qualified medical men in the various important branches

of medical science and practice which these institutions represent. The teaching is intended to be thoroughly practical, and the convenience of men engaged in the active exercise of their profession has been studied in the arrangement of the hours at which the courses will be held.

FOOD ANALYSIS IN THE RUSSIAN ARMY.

The Russian Ministry of War has found it necessary to submit the army ration to a closer inspection and analysis than has been hitherto adopted, on account of the frequency of scurvy and other dietetic diseases among the soldiers. It has been decided to furnish to each army corps an ambulatory laboratory with chemists, who must report upon the quality of the food delivered by the commissariat.

CRURAL VACCINATION.

The "Medical Press and Circular" has an item, taken from some unnamed French source, which raises the question as to the best place on the body for the insertion of vaccine. A French physician has done a sufficient number of vaccinations upon the leg to be able to say that that member is superior to the arm—in his experience. They were all cases of re-vaccination in school-children. His proportion of failures he states to have been, in the arm, 53·8, and in the leg 45·5 per cent.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending October 8, 1889:

DISEASES.	Week ending Oct. 1.		Week ending Oct. 8.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	55	11	69	11
Scarlet fever	34	3	33	6
Cerebro-spinal meningitis	1	1	0	0
Measles	13	2	18	1
Diphtheria	55	14	67	19

The Health of Johnstown.—There was a limited prevalence of typhoid fever during September at Johnstown, and there are now twenty-two cases of that disease at the hospital of the Red Cross Association. Those who have had the fever are, for the most part, from among the transient population of the town. Sickness and death are not infrequent, however, among the townspeople proper, their causes in many instances being referable to the great calamity.

A New College of Pharmacy.—The Kings County Pharmaceutical Society has had under consideration plans for the establishment of a college of pharmacy in Brooklyn. It is reported that the preliminaries have all been agreed upon, and that before many months a fully equipped school will have been launched.

The Manhattan Eye and Ear Hospital. — Dr. W. M. Leszynsky has resigned from his position on the medical staff.

Society Meetings for the Coming Week:

Monday, *October 14th:* New York Academy of Medicine (Section in Surgery); New York Ophthalmological Society (private); New York Medico-historical Society (private); New York Academy of Sciences (Section in Chemistry and Technology); Lenox Medical and Surgical Society (private); Boston Society for Medical Improvement; Gynæcological Society of Boston; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private); Baltimore Medical Association.

Tuesday, *October 15th:* New York Academy of Medicine (Section in Theory and Practice of Medicine); New York Obstetrical Society (private); Medical Society of the County of Kings; Ogdensburgh Medical Association; Medical Societies of the Counties of St. Lawrence (semi-annual) and Westchester (White Plains), N. Y.; Hunterdon, N. J., County Medical Society (Flemington); Baltimore Academy of Medicine.

Wednesday, *October 16th:* Northwestern Medical and Surgical Society of New York (private); Harlem Medical Association of the City of New York; Medical Society of the County of Allegany (quarterly), N. Y.; New Jersey Academy of Medicine (Newark); Philadelphia County Medical Society.

Thursday, *October 17th:* New York Academy of Medicine; New Bedford, Mass., Society for Medical Improvement.

Friday, *October 18th:* Chicago Gynæcological Society (annual); Baltimore Clinical Society.

Saturday, *October 19th:* Clinical Society of the New York Post-graduate Medical School and Hospital.

Letters to the Editor.

PULMONARY CONSUMPTION.

Devil's Lake, North Dakota, *September 17, 1889.*

To the Editor of the New York Medical Journal:

Sir: So much has been written upon consumption that it seems like presumption to attempt anything further, and yet the subject is far from exhausted, nor is its status entirely satisfactory to the practical physician.

The *Bacillus tuberculosis* is acknowledged by all as an entity, by many as the sole *causa morbi* of tuberculosis, by the few and more conservative as a mere sequence or at most as one only of two factors causing the disease. Our fathers taught that in certain individuals there was a diathesis either inherited or acquired. What did they mean by a diathesis? Simply this: if a rattlesnake bites a non-venomous snake, a dog, or a rabbit, certain morbid phenomena result. If the venom is examined microscopically, it will be found swarming with bacteria having a wonderful power under certain conditions to promote putrefaction. If, however, this venom is injected into a rattlesnake, there will be no effect other than traumatic. The non-venomous reptile, therefore, has a physiological condition, or, as our fathers would say, diathesis, entirely differing from the rattlesnake's. This diathesis can be inherited. To understand how this occurs, let us briefly review the three or four well-known laws governing the generation of plants and animals. These laws are as follows: 1. A plant can place no constituent in the seed not possessed in itself. 2. All parts of the plant are subservient and contribute to the production of the seed. 3. The seed contains all the constituents of the parent plant or plants, and these constituents have a ratio to the constituents of the parent plant. 4. The seed under certain conditions has the power to draw *similia ad simile.* The first law is evident and needs no example to substantiate or illustrate it. In proof of the second law is the well-known fact that, if cattle are dehorned for generation after generation, horns will at last fail to grow upon the progeny. Under this law it must not be supposed that a constituent comes from a part like a rill from a mountain to

be deposited in the *gone*, but that there exists a constituent in the economy to nourish any given part and from this a modicum is laid down drawing to itself similia, and thus the plant or animal generated has a similar part.

In proof of the second law also is the fact that, if a part or an organ is augmented or distorted through successive generations, the augmentation or distortion will appear in the off spring. The story of the *Macrocephali* is a case in point. The dehorned cattle, the bald-headed man, and the eyeless fish are all illustrative. In conformity to this law it appears to me, I will digress to say, impossible that a disease like syphilis can be transmitted. The germ upon which the disease depends is one fact or has its own separate organic existence. It is an invader and lives at the expense of the recipient and can never become an organized constituent of the sufferer. It can therefore no more be deposited in the *gone* than the worm in the body of a tree can be transmitted to the seed thereof. The child becomes diseased by contact as the father or mother did. I have myself seen children perfectly healthy born of syphilitic parents. On the other hand, the healthy child of diseased parents afterward contracting the disease will suffer slightly less than if the parents had been pure.

The worm in the tree is there because it finds that which is pleasant to itself and sustaining to life. This substance it removes more or less from the tree, and as a consequence trees generated from worm-eaten trees contain less of those constituents agreeable to the worm, and thus the genera are protected. Small-pox among people who have been vaccinated or suffered the disease becomes comparatively mild, but when the North American Indian, secluded from the virus through a great but unknown number of years, finally meets the microbe, the destruction is terrible. To illustrate the third law, one may examine the seed of the maple. This will be found a miniature tree, differing from the parents only in the quantity of constituents. Grafting is a beautiful illustration of the fourth law. The graft, containing only ingredients of the tree from which it was taken, accepts only like constituents in its augment from the tree upon which it is placed. The fruit, therefore, is like that of the parent tree.

I have briefly reviewed these laws, not that I think they are not well known and understood, but simply to recall them to mind and that a clearer conception may be had of the term diathesis. Reverting now to phthisis, it will be noticed that those who say that the bacillus is the sole *causa morbi*, also affirm that it has the power of multiplying; that where at first there were only a few, soon there are many. Now, to assert this is to admit the reception of an augment by the bacilli. What is this augment? Whence does it come? Why does it exist in A but not in B? And is it possible for tubercular bacilli, having *per se* the *vis vitæ* to sustain, to do this and generate themselves without it? Is it not true that, if we knew the nature of this augment and could withdraw it from the human economy, the bacilli must of necessity perish? We may not now be able with the microscope or by direct experiment to demonstrate the exact nature of this pabulum; but, as the astronomer by reasoning from cause to effect predicts the position of an unknown celestial body long prior to its discovery and location by the telescope, so, too, by the same process of reasoning, the physician may and often does discover the hidden origin of disease. There is a law of pathology that, if an apocrisis occurs in an organized body, resulting in a stasis of the substance separated, in whatever part or organ the stasis occurs there will be morbid manifestations. A stone in the bladder, the pus in an abscess, and the deposit in scrofulosis, all exemplify the law. There is also another law, that, if the apocrisis is abnormal in amount, in the part or organ from whence it comes there will be abnormal manifestations, either of the part or of its functions. Anæmia and dilatation of the heart are illustrative. In the latter the thinness of the heart walls is not wholly due to outward pressure, but partly to overwork, the waste of tissue going on more rapidly than repair. Applying these two laws to phthisis, the morbid manifestations of the stasis are apparent to all, and by just as much as these are the easier of detection, by so much the thoughtless physician directs his attention thereto. Under the second law we find that the abnormal evidences are most persistently and constantly noted in the nervous system, and infer that the apocrisis therefrom is the pabulum or augment upon which the bacillus thrives and has its being. I may point to the crystals of cholesterin found in the deposit, which are now known to be a part of the detritus from the nervous system; but other evidences of a clinical nature, inasmuch as they are familiar to all experienced physicians, I need not repeat. There is, however, one remark of Watson's which is very impressive—viz., precocity of mind and intellect, while it delights the fondness of the parent, awakens the fears of the more far-seeing physician. It is well known that mental activity will produce asitia, nor did this fact escape Shakespeare, who makes Cæsar exclaim: "Let me have men about me that are fat, sleek-headed men, and such as sleep o' nights. Yon Cassius has a lean and hungry look. He thinks too much." *Vice versa*, asitia will produce nervous irritation, and thus the diathesis may be temporarily acquired, as after fevers, from confinement and impure air, or from the actual want of food.

In the latter case the prognosis is much better than in the former, for, if the diathesis is inherited, it will exist though we make our patient fat, whereas, if it is acquired, we have only to remove the cause and the diathesis will vanish with everything depending upon it, including the bacilli. It will be noticed, too, that the inherited diathesis was detected by our fathers long prior to the advent of the second fact, or the one which, united with the former, produces the disease proper. This goes far to prove the initial point to be in the nervous system, as in the precocious child mentioned by Watson. The diathesis acquired through generations of mental worry is, of course, transmitted to the offspring exactly as the *Macrocephali* passed down to their children their distorted heads, and, when once acquired, is so abhorrent to Nature that she stamps it out as soon as possible, even at the expense of destroying some of her most beautiful works. We can not hope to thwart Nature in her purposes, but, having discovered the bacillus, can we thereby do anything to assist her, as Jenner did with the modified virus of small-pox? Of course, by secluding phthisical persons we may protect those having a temporary diathesis; but what of those in whom it is permanent? Here is a field for experiment, though, for one, I fear the result will be unsatisfactory. In treatment, that physician is most successful who can remove quickly the asitia and nervous excitability. When the condition is congenital, narcotics that do not interfere with nutrition are very useful. In a recent case I was furnished the fluid extract of lactucarium by Parke, Davis, & Co., of Detroit. It proved satisfactory, having the beneficial without the ill effects usual to narcotics. In sending a patient from home, not so much asepsis as freedom from care and a climate affording the greatest possible number of days in which exercise can be had in the open air, is the desideratum. When there is fever, exercise should cease and be resumed when the fever has been subdued. Another very important point in management is this: No patient should be accepted for treatment until he fully understands his situation—that it is a fight for life, and that the medication and hygienic rules must be submitted to through a possible period of years.

W. T. O'Donnell, M. D.

Proceedings of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

Fourth Annual Meeting, held in Washington, D. C., on Wednesday, Thursday, and Friday, September 18, 19, and 20, 1889.

The President, Dr. Francis Minot, of Boston, in the Chair.

(*Concluded from page 380.*)

A Case of Slow Pulse.—Dr. D. W. Prentiss, of Washington, introduced a patient as a subject of clinical interest whose pulse-rate for the past two years had ranged from thirteen to forty in a minute. He was a man of about fifty-eight, said to be without organic cardiac lesion and to enjoy good health. The cause had been ascribed to tobacco or malarial poisoning, or perhaps both. The interest in the case turned on the pathology. It was a moot point whether the slowness of the pulse resulted from overstimulation of the inhibitory nerve, from paralysis of the sympathetic, or from lesion of the nerve centers.

The Relation between Chlorosis, Simple Anæmia, and Pernicious Anæmia.—Dr. F. P. Henry, of Philadelphia, read a paper on this subject. He said that the title of his paper might be criticised on the ground that it assumed certain relations to exist between these various affections of the blood. To such exceptions it might be replied that the selection of such a title was the expression of the universal medical belief that these affections were allied, and it was in the highest degree improbable that such a unanimous verdict could be reversed. Considering, then, first the question of pernicious anæmia, the exact status of which was of fundamental importance, it was admitted by all that most of the clinical features of this disease also obtain in numerous other affections, and notably so in atrophy of the gastric glands and cancer. Those, however, who argued most strongly in support of the theory that it was an independent disease, excluded from the category of pernicious anæmia all cases in which an anatomical lesion was found in any organ. This struck him as most unscientific, because an independent disease was one which rested upon a constant anatomical basis, or was invariably produced by the same specific agent. Hunter had endeavored to establish pernicious anæmia as an independent disease by the demonstration of an excess of iron in the liver in cases of that affection, and had regarded that as an essential anatomical feature of pernicious anæmia. The work of Hunter had been of great value, and he had certainly demonstrated the existence of an excessive hæmolysis in that disease. In the author's opinion, however, this hæmolysis was a consequence of defective hæmogenesis. In support of this theory there were certain facts which showed the red corpuscles of pernicious anæmia as abnormally weak and perishable. Chlorosis was universally admitted as being due to defective hæmogenesis, and he therefore regarded it and pernicious anæmia as closely related affections. Transition from one affection to the other had been observed by himself and others. His conclusions therefore were (1) that pernicious anæmia is a process, not a disease; (2) that it is closely related to chlorosis; (3) that it may be the terminal stage of other diseases, and especially of cancer of the stomach and atrophy of the gastric glands. Leucocythæmia and Hodgkin's disease—in that they are always associated with lesions of the blood-making organs, spleen, lymph-glands, bone-marrow, etc.—might be regarded as independent diseases, or rather different stages of the same disease, for transitional processes had been recorded.

The Relation of Anæmia to Chlorosis.—This paper, by Dr. F. Forchheimer, of Cincinnati, was read, in the absence of the author, by Dr. Pepper. It opened with the statement that the first thing which came up to confuse, in consideration of the subject, was the difficulty in finding apt and comprehensive definitions for the two diseases. Immermann began his definition as follows: "The conception of the term anæmia is somewhat indefinite in its elasticity," going from this into an elaborate definition, drawing as a final conclusion the inference that, partly from clinical and partly from direct (analytical) evidence, we are justified in stating that anæmia is that condition in which there is a diminution of red blood-corpuscles, as well as of the albumins of the plasma in the blood (hypalbuminosis). Again, Strümpell had stated that the essential element in anæmia was a diminution in the red corpuscles, or so-called oligocythæmia, further stating that oligocythæmia was not invariably accompanied by a diminution in the amount of serum albumin (hypalbuminosis). The conflicting ideas as to the proper definition of anæmia were clear when compared with those on chlorosis. One writer had said: "I believe chlorosis to be a form of anæmia depending upon similar changes, and therefore to be considered as falling under the head of idiopathic anæmia." Zender conceived chlorosis to consist in defective formation of red blood-corpuscles, both quantitatively as well as qualitatively, adding that, as iron was diminished in the blood and not excreted, the fault must lie in defective absorption. Then other authors, like Strümpell, defined anæmia as oligocythæmia, stating that chlorosis was a mild form of essential anæmia, such as is common to females at the time of puberty. Something approaching a sharp, distinctive definition had been enunciated by Duncan, who appeared to be the first to make the distinctive feature, oligochromæmia, characteristic for chlorosis—that was to say, that in chlorosis we found the individual red corpuscle deficient in hæmoglobin. It would readily be seen that a deficiency in hæmoglobin would exist in any condition in which the number of red corpuscles is diminished, and this would be called anæmia according to definitions herewith accepted. But the red corpuscles being normal as to quantity, and the hæmoglobin being at the same time diminished, one would be justified in concluding that each individual red corpuscle carried too little hæmoglobin, and either condition would be called chlorosis. Perhaps, unfortunately for this condition, the term chlorosis was essentially a clinical one, by far the greater number of reported cases being probably no chlorosis at all. This error obtained both abroad and at home. In this country the author of the paper had seen an American girl who had been compelled to stay in St. Petersburg for several years. She had been there pronounced chlorotic by an eminent physician. Examination of her blood had revealed oligocythæmia (about 70 per cent.) and a proportionate oligochromæmia. The girl had been very anæmic, but, according to the conception he asked for the term, she had not been chlorotic. The fact that oligocythæmia and oligochromæmia might occur in the same individual made the term chloranæmia justifiable. As to causation, it would be found that almost every cause put down for anæmia would hold good for chlorosis. Generally, it might be stated that sex, age, a peculiar composition of the blood, and certain vascular anomalies were held characteristic of chlorosis.

But in regard to the chlorosis of males one must be warned against the too ready acceptance of cases of anæmia as chlorosis. The fact urged that these cases were relieved by energetic chalybeate treatment was urged in favor of the chlorosis theory, but then in the so-called cases of school anæmia we expected good results after removal from school and the administration of iron. He considered the relation of the symptoms of anæmia to chlorosis depended upon the conditions of the blood and the anatomical substrata. Given, then, a case of anæmia in which there was only a reduction of hæmoglobin as a result of oligocythæmia, and a case of chlorosis in which there was a reduction of hæmoglobin as a result of oligochromæmia,

and metabolism in both these cases would be approximately the same. True, the patient with chlorosis might have a different facies; as the essence of the affection lay in the oligochromæmia, the amount of reduction in hæmoglobin, if due to oligocythæmia only, would be so great as to become a physical impossibility inconsistent with life. But if, in anæmia, we had oligocythæmia as well as hypalbuminosis, said to co-exist in the majority of cases, then the metabolism must be different from that of a pure case of oligochromæmia. As a result of reduction in hæmoglobin there was reduction in the process of oxidation in the body; at the same time the waste products were carried off and sufficient food carried to the tissues by the plasma of the blood, which suffered no change. In this way the nutrition was not generally interfered with; indeed, there might be increased deposit of material in chlorosis because oxidation was not sufficient to utilize the albumin of the plasma. The result of this suboxidation would be a deposit of fat, a point which Immermann spoke of as the "nucleus" of the clinical difference between anæmia and chlorosis. As to symptoms, if Virchow's anatomical lesions were accepted as belonging only to chlorosis, then there existed no difference between the symptoms of the two diseases. Symptoms on the part of the nervous system had been made one of the characteristics for chlorosis, but hysteria and allied conditions were of such common occurrence nowadays that it was unreasonable to make any one condition responsible for them. The author concluded his paper by referring to the therapeutic side of the question. Although the indiscriminate use of iron in anæmia must be deprecated, yet, upon the whole, iron was looked to as a specific in anæmia as well as in chlorosis. While not willing, then, to separate anæmia from chlorosis, we were justified in the statement that iron ought to be given in every case of chlorosis on account of the rapidity of the chalybeate effect.

Dr. William Osler, of Baltimore, said that he was sorry to take issue with Dr. Henry. He had devoted a considerable amount of time to blood work. He must continue, as the result of his work and observation, to regard chlorosis as one of the essentials of anæmia and as a disease absolutely distinct from pernicious anæmia. He had never seen a well-defined case of chlorosis in the male. With respect to progressive pernicious anæmia, we had not facts enough at command to formulate an opinion as to whether it was a separate disease or simply a symptom of several other affections.

Dr. Pepper said that he was not prepared to admit the analogy between chlorosis and pernicious anæmia, for want of essential data.

Gastric Neurasthenia.—Dr. G. M. Garland, of Boston, read a paper dealing at length with the subjects of dyspepsia nervosa, anorexia nervosa, and vomitus nervosus. The writer cited in detail cases from his own practice. The paper evidenced careful and exhaustive study of his subject, with much clinical accuracy as to objective findings and the various phenomena incident to his own cases. The sum and substance of his conclusions, based as they were necessarily upon the scanty knowledge and bewildering hypotheses as to the specialization of the nerve-supply to the stomach, resolved themselves into a tersely expressed opinion to the effect that the secretion of hydrochloric acid in the stomach must be governed by a special system of nerves which had a definite center of departure. Like other similar systems, these nerves appeared at times to become functionally deranged, when they performed their work with a reckless disregard of the comfort of their possessors.

Primary Cancer of the Gall Bladder and Ducts.—Dr. John H. Musser, of Philadelphia, in his paper on the subject stated that he had arrived at the following conclusions in respect to this disease: 1. Primary cancer was not so rare a disease as we had been led to believe. 2. It occurred in females three times as often as in males. 3. The larger number of cases occurred before sixty, and it was not a disease of later life, as had been stated. 4. Gallstones were an exciting cause, especially in a person predisposed to this affection. 5. The organ was not generally much enlarged except occasionally by the secondary pressure of dilatation. 6. Metastasis was not widespread. It occurred by contiguity after involvement of neighboring organs. 7. Adhesions to adjacent organs and ulceration and perforation were not uncommon. 8. Pain, jaundice, emaciation, cachexia, and the presence of a tumor were observed in a large number of cases, while indigestion, vomiting, constipation, diarrhœa, and ascites were of more frequent occurrence than supposed, and were important associated phenomena by means of which the disease was recognized. 9. Pain in sixty-two per cent., at first hardly definite, became localized to the right hypochondrium, and was lancinating. 10. Jaundice appeared in sixty-nine per cent. of the cases, gradually increasing in intensity. 11. The progress of the disease was continuous to a fatal termination. 12. Complications were due to occlusion of the ducts, ulceration and perforation of the gall bladder, secondary growths in various organs, etc. 13. The duration of the disease was about six months, and two thirds shorter in its course generally than any other cancer of internal organs. 14. Death took place from exhaustion, biliary obstruction, metastasis, or peritonitis.

How far may a Cow become Tuberculous before the Milk becomes Dangerous as a Food Supply?—This was the title of a valuable and interesting paper contributed by Dr. H. C. Ernst, of Jamaica Plain, Mass. The author had been and still was engaged in the conduct of a long series of elaborately planned and accurately executed experiments upon cows for the purpose of truthfully formulating an answer to a question of vital import to this and all communities. Koch's theory had been that the danger was limited to milk coming from cows with tuberculosis of the lacteal tract. The speaker's conclusions, as the result of work done so far, which it would take still another year to amplify and complete, were as follows: 1. That the milk from cows affected with tuberculosis in any part of the body might contain the virus of the disease. 2. That the virus was present whether there was disease of the udder or not. 3. That there was no ground for the assertion that there must be a lesion of the udder before the milk could contain the infection of tuberculosis. 4. That, on the contrary, the bacilli of tuberculosis were present and active in a very large proportion of cases in the milk of cows affected with tuberculosis, but with no discoverable lesion of the udder.

Dr. H. F. Formad, of Philadelphia, read a paper on the **Anatomical and Physiological Relations of Lesions of the Heart and Kidneys.**

The Frequency with which Lead is Found in the Urine.—Dr. James J. Putnam, of Boston, read a paper supplementing that on a similar subject last year. He said that the conclusions which his investigations seemed provisionally to justify were as follows:

1. That it was not probable that lead was to be detected in the urine of more than fifty per cent., at most, of persons not presenting symptoms of disease, and the finding of lead in a larger percentage for any special group of cases would be presumptive evidence that lead was connected, directly or indirectly, with the production of the symptoms.

2. That lead was an occasional cause of pure neurasthenic symptoms, and the presence of a fine muscular tremor strengthened the probability of this diagnosis.

3. That workers in rubber were liable to suffer from lead poisoning.

He then went on to state the results of observations and analyses, and illustrated his subject by microscopical sections depicting the morbid changes in the spinal cord consequent upon lead poisoning. He stated, however, that there was obviously a danger in seeking to account for pathological conditions of obscure origin that arose in the presence of an agent like lead. We might too readily, by including symptoms due to some other cause, obscure instead of illumining the true clinical picture. The summing up of one of the author's cases typically exemplifying the theory that lead might act as an indirect cause of spinal sclerosis by causing general anæmia and exciting hypertrophy of small vessels ran thus:

A man in middle life, living under comfortable circumstances, suffered for two years with paræsthesia, anæsthesia, and progressive muscular weakness, with focal symptoms. He had exaggerated knee-jerk, ankle clonus, and a moderate diminution of electrical reactions. These symptoms were associated with very marked paleness of the skin, which was of a light-yellow cast. General emaciation and weakness ensued, the whole increasing steadily and terminating in complete paraplegia, incontinence of urine, slight cerebral symptoms of a general character, and death apparently from exhaustion.

To explain all this, there were found anatomically, besides generalized anæmia, which the author was not in a position to refer to as a definite cause, a combined sclerosis of the posterior and lateral columns of the spinal cord, and, representing a later process, a subacute breaking down of the tissues at the seat of the older sclerosis; also, beyond the limits of these areas, more or less hyaline hypertrophy of the vessels, degeneration of the ganglion cells of all the groups in the middle of the lower dorsal region, diminishing in intensity above and below. There was also a marked degeneration of the posterior nerve roots of the dorsal and lumbar portions and, to a lesser extent, the anterior roots, and this process was not characterized by signs of acute inflammation, except, to some extent, at the level of the greatest active change. There were to be found also indications of some degeneration of the muscular and cutaneous nerves, though far less than would be expected had the whole process been primarily one of neuritis. The patient's occupation had exposed him to chronic lead poisoning, and lead had been twice found in his urine.

Dr. F. Gervais Robinson, of St. Louis, read a paper on **The Contagium of Diphtheria.**

Hot-air Inhalations in Tuberculosis. — A paper on this subject, contributed by E. L. Trudeau, of Saranac Lake, N. Y., aimed a telling and merciless blow at the recently vaunted and loudly heralded method of Weigert. The clinical evidence had brought no positive proof in favor of the treatment, and from the bacteriological research the following facts were noted:

In all the cases the bacilli which were present before treatment remained in the sputum, and no effect was produced on this important element of the disease. The allegation of diminished violence was tested by inoculations made on rabbits before, during, and after treatment. The sputum of one of the patients who improved was found, fifteen weeks after the uninterrupted daily breathing of hot air, to produce tuberculosis in the animals injected as promptly and to a similar extent as that injected before the treatment had been instituted.

Conclusions.—(1) The therapeutic value of hot-air inhalations in phthisis was doubtful; (2) the evidence obtained by the bacteriological study of the cases recorded did not confirm the assumption that inhalations of heated air could either prevent the growth of the tubercle bacillus in the lungs of living individuals or diminish the violence of this microbe when it had gained access to them.

Election of Members.—The following-named gentlemen were elected members: Dr. William G. Thompson, Dr. William H. Thomson, and Dr. J. West Roosevelt, of New York; Dr. Charles Carey and Dr. Charles G. Stockton, of Buffalo; Dr. Victor C. Vaughan and Dr. Heneage Gibbes, of Ann Arbor, Mich.; Dr. Charles W. Purdy, of Chicago; Dr. Starling Loving, of Columbus, O.; Dr. W. H. Geddings, of Aiken, S. C.; Dr. William C. Dabney, of Charlottesville, Va.; Dr. B. F. Westbrook, of Brooklyn; and Dr. Henry P. Walcott, of Cambridge, Mass.

Officers for the Ensuing Year. — The following officers were elected: President, Dr. S. C. Busey, of Washington; first vice-president, Dr. William Pepper, of Philadelphia; second vice-president, Dr. Henry M. Lyman, of Chicago; recorder, Dr. I. Minis Hays, of Philadelphia; secretary, Dr. Henry Hun, of Albany; treasurer, Dr. W. W. Johnston, of Washington; member of council, Dr. G. Baumgarten, of St. Louis; representative on the Executive Committee of the Congress of American Physicians and Surgeons, Dr. William Pepper.

The Next Annual Meeting.—Dr. Busey asked that the date of the next meeting be fixed between the 30th of May and the 15th of June, 1890. This was agreed to and no more exact date was fixed.

Book Notices.

The Pathology, Clinical History, and Diagnosis of Affections of the Mediastinum other than those of the Heart and Aorta. With Tables giving the Clinical History of Five Hundred and Twenty Cases. Being an Essay to which was awarded the Fothergillian Medal of the Medical Society of London, March, 1888. By Hobart Amory Hare, B. Sc., M. D., etc. Philadelphia: P. Blakiston, Son, & Co., 1889. Pp. 9 to 150.

This is a very carefully prepared and valuable monograph, on a subject that has received but little attention. Affections of the mediastinum are among the rarest and most difficult to diagnosticate, and are confined, for the most part, to the neoplasms found in this region and to mediastinal suppuration. In this essay five hundred and twenty cases of mediastinal disease are tabulated under ten different heads, including mediastinal cancer, sarcoma, lymphoma, fibroma, hæmatoma, abscess, non-suppurative inflammation, dermoid cysts, hydatid cysts, and other various forms of mediastinal disease. Nearly half of all the cases come under the head of cancer or that of sarcoma; one hundred and fifteen are cases of mediastinal abscess, and the remainder are made up of small numbers of cases of various forms of disease. The pathology, ætiology, and symptomatology of the more common forms of disease found here are taken up separately, and the book concludes with a short summary embodying the most important deductions to be made from the study. These are: 1. That cancer is found in the mediastinal spaces more frequently than any other affection. 2. That abscess is the morbid process next in frequency of occurrence. 3. That sarcoma occupies the third position as to frequency. 4. That lymphomata occupy the fourth place, but are much rarer than the others mentioned. 5. That the anterior mediastinum is affected far more frequently than the two other spaces. 6. That most mediastinal growths occur in adults. 7. That more males than females are affected by mediastinal disease, be that disease what it may. 8. That cancer and sarcoma of these spaces are necessarily fatal. 9. That abscess is recovered from in about forty per cent. of the cases.

It seems probable that from these tables carcinoma appears to occur more frequently than is really the case, for in a large proportion of the cases reported in this monograph the diagnosis was not confirmed by microscopical examination. While there can, perhaps, be no doubt that primary cancer does occur in this region, still, it is equally certain that sarcoma or lymphoma is far more frequent than cancer. The characters of the tissue contained in the mediastinum are such as become most frequently the site of development of lymphomata or sarcomata and not of carcinomata.

The award of the Fothergillian medal for this essay is ample proof of the careful and scholarly character of the work. It will well repay a careful perusal.

Transactions of the Royal Academy of Medicine in Ireland. Vol. VI. Edited by William Thomson, M. A., F. R. C. S., General Secretary, etc. Dublin: Fannin and Company, 1888. Pp. xxxv–482.

This volume, like those that have preceded it, contains a large number of exceedingly interesting and important papers, many of them profusely illustrated. Among those read in the Section in Surgery may be mentioned one on "Enterectomy and Enterorrhaphy," by Mr. J. S. McArdle, surgeon to St. Vincent's Hospital; a "Report of a Case of Epidural Hæmorrhage with Secondary Trephining," by Mr. W. Thornley Stoker; and one on "The Treatment of Advanced Conditions of Equino-varus," by Mr. R. L. Swan. Among those read in the Section in Medicine, there is a paper on "The Fever of Over-exertion," by Dr. J. F. Knott, of more than usual interest, and also one by the same writer on "Heredity in Purpura Hæmorrhagica." There are reports of an interesting case of a rare form of mental disease, the *Grübelsucht* of the Germans; gastric epilepsy; foreign body in the œsophagus; and traumatic aphasia. A careful article on "The Distribution of Enteric Fever in Dublin and its Causes" is contributed by Dr. J. W. Grimshaw and Sir Charles A. Cameron; and one on "Epidemic Dysentery and its Ætiology," by Mr. Conolly Norman. There are also some careful notes on "Anatomical Variations and Anomalies," and several interesting papers on obstetrical and gynæcological subjects. The illustrations are excellent, and the book has been thoroughly and carefully edited.

Contribution à l'étude des corps étrangers des voies aériennes. Par le Dr. E. J. Moure, Professeur libre de laryngologie, otologie et rhinologie, etc. (Communication faite à la Société de médecine et de chirurgie de Bordeaux.) Paris: Octave Doin, 1889. Pp. 5–24.

In this interesting study the author concludes that the use of sternutatories and emetics is inadvisable, sometimes favoring the deeper penetration of the foreign bodies into the air-passages; and considers that the popular treatment of suspending the sufferer by the heels, thus favoring the displacement of the object by gravity, is more desirable. In the latter procedure chloroforming the patient may be advantageous, to prevent laryngeal reflexes and consequent spasm of the glottis. He condemns blind groping in the larynx with the forceps or finger, as local anæsthesia with cocaine will allow of exploration with the laryngoscope. If the physician's hand is not sufficiently sure to seize bodies in the ventricles of Morgagni or between the vocal cords with a forceps, he advises tracheotomy rather than thyreotomy. Of course, tracheotomy is advised for bodies that are below the larynx, in the trachea or bronchi.

For obvious reasons operative interference in such cases should not be delayed; and, if the body is not found at the operation, the cannula may provoke attacks of coughing and the body be easily expelled.

BOOKS AND PAMPHLETS RECEIVED.

Ophthalmology and Ophthalmoscopy for Practitioners and Students of Medicine. By Dr. Hermann Schmidt Rimpler, Professor of Ophthalmology and Director of the Ophthalmological Clinic in Marburg. Translated from the Third German Revised Edition. Edited by D. B. St. John Roosa, M. D., LL. D., Professor of Diseases of the Eye and Ear in the New York Post-graduate Medical School, etc. One Hundred and Eighty-three Woodcuts and Three Colored Plates. New York: William Wood & Company, 1889. Pp. xv–3 to 571.

Outlines of the Clinical Chemistry of the Urine. By C. A. MacMunn, M. A., M. D. (Dub.). With Sixty-four Woodcuts and Plate of Spectra. Philadelphia: P. Blakiston, Son, & Co., 1889. Pp. xvi–254. [Price, $3.]

A Manual of Minor Surgery and Bandaging, for the Use of House-Surgeons, Dressers, and Junior Practitioners. By Christopher Heath. F. R. C. S., Surgeon to University College Hospital and Holme Professor of Clinical Surgery in University College, London, etc. Ninth Edition. Philadelphia: P. Blakiston, Son, & Co., 1889. Pp. xvi–361. [Price, $2.]

On the Healing of Aseptic Bone Cavities by Implantation of Antiseptic Decalcified Bone. By N. Senn, M. D., Ph. D., etc. [Reprinted from the "American Journal of the Medical Sciences."]

The Effect of the Entrance of Air into the Circulation. By H. A. Hare, M. D. [Reprinted from the "Therapeutic Gazette."]

The Disposal of the Dead. By John M. Peacocke, M. D., Brooklyn, N. Y. [Reprinted from the "Brooklyn Medical Journal."]

Rapid Dilatation of the Cervix Uteri. [Reprinted from the "Transactions of the Ninth International Medical Congress."]—Surgical Treatment for Laceration of the Perinæum and Pelvic Floor. [Reprinted from the "Transactions of the American Association of Obstetricians and Gynæcologists."]—A Successful Vaginal Hysterectomy for Carcinoma Uteri. [Reprinted from the "Transactions of the Southern Surgical and Gynæcological Society."]—The Pathology of Ectopic Pregnancy and Pelvic Hæmatocele. [Reprinted from the "American Journal of Obstetrics and Diseases of Women and Children."] By W. H. Wathen, M. D., Louisville, Ky.

A Report upon Two Hundred Experimental Cases of Injection of the Brown-Séquard Testicular Secretion. By H. C. Brainerd, M. S., M. D., Cleveland, O.

Note on Some Forms of Purpura Rheumatica. By William A. Edwards, M. D., San Diego, Cal. [Reprinted from the "University Medical Magazine."]

Cirrhosis of the Pancreas; or, Pancreatic Anæmia. By C. W. Earle, M. D., Chicago, Ill. [Reprinted from the "Transactions of the Thirty-fourth Annual Meeting of the Illinois State Medical Society."]

The Responsibilities and Duties of the Medical Profession regarding Alcoholic and Opium Inebriety. Address of President C. W. Earle, delivered at the Thirty-ninth Annual Meeting of the Illinois State Medical Society, May 21, 1889.

The Treatment (not Preventive) of Puerperal Fever. By C. W. Earle, M. D., Chicago. [Reprinted from the "Chicago Medical Journal and Examiner."]

Cephalæmatoma of the New-born. By C. W. Earle, M. D., Chicago. [Reprinted from the "Journal of the American Medical Association."]

Retained Débris as One of the Causes of Puerperal Fever. The Intra-uterine Douche and Curette. By C. W. Earle, M. D., Chicago. (Read before the Chicago Gynæcological Society.)

Antiseptic Obstetrics. By C. W. Earle, M. D., Chicago. [Reprinted from the "Transactions of the Thirty-seventh Annual Meeting of the Illinois State Medical Society."]

The Influence of Sewerage and Water Pollution on the Prevalence and Severity of Diphtheria. By C. W. Earle, M. D., Chicago. [Reprinted from the "Archives of Pædiatrics."]

Observations in Vienna. The General Hospital, Billroth, Carl Braun, Bandl, and Others. By C. W. Earle, A. M., M. D. [Reprinted from the "Western Medical Reporter."]

Infant Feeding. By C. W. Earle, M. D., Chicago. [Reprinted from the "Journal of the American Medical Association."]

Lavori dei congressi di medicina interna. Primo congresso tenuto

in Roma nell' Ottobre 1888. Pubblicazione fatta per mandato del comitato ordinatore del Professore Edoardo Maragliano, Ordinario di clinica medica nella R. Università di Genova.

Reports on the Progress of Medicine.

...cutaneous tissue, and it is the hardness of this which gives us the clinical idea of the disease. Little islands of this soft substance being scattered through the whole diseased parts, gives us a very varying picture when seen on section. The skin follicles are sometimes destroyed, sometimes intact and normal. The sweat-glands are generally wanting, though their ducts may be found either intact, or widened or with their walls thickened. The blood-vessels have about their walls and within them an infiltration of round cells, but these are usually normal in appearance. In some places the lumen of the vessels is narrowed, and in some entirely obliterated, while in others there is well marked endarteritis obliterans. The lymphatics are greatly dilated. It would seem that the skin and the outer parts of the nasal mucous membrane become only secondarily and very gradually diseased from the deeper-lying parts. The characteristic cells of rhinoscleroma are uniformly round, strongly refractive to light, and contain a coarsely granulated, sharply contoured protoplasm, and a large oval or round, light-colored nucleus. In the neighborhood of these cells are often seen larger round cells, with clear, finely granulated, irregularly contoured protoplasm, and with a less bright nucleus. Rhinoscleroma bacilli (enveloped in a capsule) are found in this protoplasm. It is probable that the damage caused by the bacilli in this disease is due far more to their mere presence and growth than to any poisonous products generated by them. [This article contains much of interest to the histologist, but, unhappily, does not lend itself easily to the purposes of the abstractor.]

The Treatment of Lupus, as now practiced in Hamburg, is, according to Clasen ("Monatshft. f. prakt. Dermatologie," 1889, Bd. viii, No. 11), the following: The Paquelin cautery is first used to destroy the lupus tissue, the patient being under chloroform. Upon the fresh tissue surface is penciled or rubbed a solution of corrosive sublimate, gr. 25; carbolic acid, ʒ jss.; and ether, ʒ j. M. Then a plaster muslin is applied, either of salicylic acid, five drachms, and birch creasote ten drachms to the yard, or of salicylic acid, five drachms, guaiacol, two drachms and a half to the ounce, the plaster being cut a little larger than the surface to which it is to be applied. The whole is covered with a zinc paste and a bandage. The dressing is changed every twenty-four hours, the surface of the wound being washed off and penciled with cocaine, and suspicious points bored out before the plaster is reapplied. A cure is effected in two or three weeks. For the plaster-muslin may be substituted an ointment of twenty parts of salicylic acid and forty parts each of creasote and cerate, which is to be spread upon doubled muslin and covered with a solution of gutta percha. Where it is impracticable to use any energetic treatment, the cure can be effected by the use of the salicyl-creasote ointment during the night and by painting with an eighty-per-cent. solution of silicate of potassium in linseed-oil during the day. If the lupus patch is very much inflamed it should be painted with a watery solution of ichthyol during the night and simply anointed with the ointment during the day.

Acquired Leprosy as seen in England.—Hutchinson believes ("Brit. Med. Jour.," June 29, 1889, *et seq.*) that the poison of leprosy is a specific one, and that the disease is acquired, not by contagion, or climate or quality of food, but by the ingestion of "some very special kind of poison of rare occurrence taken in connection with food." The bacillus of Hansen may possibly be the bearer of the poison. He would direct subsequent investigations to the food question and the special poison. The disease may be arrested by change of diet.

Creolin Eczema.—Dr. Wackez, of Munich, has given this much-praised remedy a trial in seventeen cases of slight wounds of children, and reports ("Therapeutische Monatshft.," June, 1889, p. 264) that in ten cases the wounds healed by first intention, while in seven cases there was an outbreak of eczema soon after beginning its use. The eczema usually began on the second day, taking its origin at the site of the wound and being accompanied by rise of temperature of the skin, swelling of the neighboring lymphatics, loss of appetite, headache, and vomiting. The solution used was 1 to 1,000. Examination of the urine showed that it contained phenol.

Formulæ for Iodol Preparations.—The following are given ("Mntshft. f. p. Dermat.," 1889, No. 9): 1. A solution: Iodol, 1 part; alcohol, 16 parts; and glycerin, 34 parts. 2. Iodol gauze: Iodol, resin, and glycerin, each 1 part; alcohol, 10 parts. 3. Collodion with iodol: Iodol, 10 parts; alcohol (94 per cent.), 16 parts; ether, 64 parts; pyroxylin, 4 parts; castor-oil, 6 parts.

A New Ointment Base is proposed by Wells ("Pharm. Post.," abst. "Montshft. f. p. Dermat.," 1889, No. 9) and is made by melting three pounds of fresh goose fat in an enameled pan, passing it through muslin, and stirring into the mass while still warm half a pound of cacao butter. The mass is to be stirred with a wooden spoon till cool. It is asserted that this ointment is very readily absorbed.

A "Minimal Cautery."—One of the happy accidents that so often suggest useful inventions has recently befallen Dr. P. Taenzer, who stumbled ("Monatshft. f. p. Dermat.," 1889, viii, 401, No. 9) upon the fact that by touching the needle attached to the negative pole of the battery and inserted into a hair follicle, with the opposite pole, the hair would be permanently destroyed. Here the action is not electrolytic but rather galvano-caustic, but so indirect and mild as to cause minimal damage to the skin, producing a scarcely perceptible scar. This put the doctor upon the idea of making a cautery to which he gave the name of "*Minimalbrenner.*" It is made as follows: A piece of medium-sized copper wire about three inches long is fastened into the end of a glass rod about ten inches long by melting the glass. Its free end is then sharpened as fine as possible by filing, and about it is wrapped a fine platinum thread in spiral turns, beginning about half an inch from the point and ending about an inch and a quarter from the end of the glass rod. Both ends of the platinum wire are fastened to the conductors from the battery. The conductors are then bound down to the sides of the glass rod. The current passing through the instrument will cause the platinum thread to glow, and the copper needle will become very hot but not glowing, causing a minimal amount of cauterization. The instrument is used by making multiple punctures, and the operation is well borne. The proper degree of heat is shown by the instrument being easily withdrawn after the puncture. It is useful for a great many purposes, as for the treatment of nævus, lupus erythematosus, and the like.

Hydroxylamine in Psoriasis.—Fabry, an assistant physician in Doutrelepont's wards in Bonn, repeats ("Arch. f. Dermat. u. Syph.," 1889, xxi, Heft 2, p. 203) the warning as to the poisonous qualities of this comparatively new drug, but thinks that its use upon the skin is quite safe under proper precautions. In psoriasis he thinks that its absorption is least to be feared. In the treatment of this disease he used either a spirituous solution (℞ Hydroxylamine, gr. vj–vij; alcohol, ʒ iij; calcium carbonate, enough to neutralize) or an aqueous solution (one part to one thousand, with enough calcium carbonate to neutralize). The first solution is to be used with a brush, and the second is to be applied on wet cloths. Before using either preparation the scales are first to be gotten rid of by prolonged baths, rubbing with green soap, and inunctions of ten-per-cent. zinc ointment. As a rule, pyrogallol or chrysarobin was used on one half of the body to make a comparative test of the newer remedy, as used upon the other half. For a few days after the first application of the remedy there was marked increased redness of the spots and surroundings. Soon, however, there was a paling of the spots, then only pigmentation, then an absolutely normal condition of the skin. When a ten-per-cent. solution of the remedy was used, the epidermis was raised in large lamellæ, and flat bullæ, containing a small amount of serum, appeared, which soon dried up. The normal skin showed the same phenomena. Hydroxylamine proves itself to be a very irritating substance, its irritant action varying with different skins. It is necessary in some cases to use a solution not stronger than one to five hundred and increase strength p. r. n. The drug produces great burning and pain in some individuals, so that its use has to be stopped. The paintings are to be repeated twice a day; the compresses to be renewed every two hours, and only applied to small areas at a time. The urine

is to be watched for the appearance in it of albumin, and symptoms of poisoning carefully noted. Relapses occur after its use just the same as after all other remedies. The advantages of hydroxylamine are that it does not irritate the skin as much as pyrogallol or chrysarobin, that it is cheap, that it does not stain the under-clothing, and that it is quite as rapid in its curative effects as the drugs just named. It took from four to six weeks to remove all traces of the disease in an inveterate case. It should always be remembered that, should symptoms of irritation show themselves, the remedy must be stopped, and some soothing application made until the irritation is reduced, when the remedy may be resumed.

"**Dermatoneuroses Indicatrices.**"—By this term Leloir means ("Ann. derm. et syph.," 1889, x, No. 5) that a number of eruptions depend upon nervous diseases, and appear as forerunners of grave manifestations on the part of the nervous system. They may be indicative of affections of the spinal medulla, or of cerebral affections, or of the peripheric nervous system. They may take the form of erythematous or œdematous lesions, or of hæmorrhages, or of papules and vesicles like an outbreak of eczema, or bullous eruptions, zoster-like or ulcerative lesions, or hypertrophic or atrophic, or pigmentary. Examples of many of these lesions having appeared for a greater or lesser length of time before the appearance of other nervous phenomena are given. Remembering this, in many cases we may well neglect to treat the skin and address ourselves directly to the nervous system.

Alopecia Neurotica is that form of baldness which occurs in a most irregular manner, sometimes unilateral, sometimes in circumscribed, variously shaped and sized areas which shade off into the surrounding parts. It occurs after cerebral disturbances, injuries to peripheral nerves, psychoses, neuroses, atrophies, or other trophic disturbances. Sometimes the bald tracts follow the well-known course of a nerve. Schütz now reports ("Münch. med. Wochnschft.," 1889, xxxvi, 124) six cases of this disease. Of these, one patient was wounded in the back of the head with a barber's shears, the injury being shortly followed by hair-fall. The second received a fall upon the right forehead, followed by unconsciousness. Two weeks after the injury the hair fell from the right side of the head in streaks. Treatment: Galvanism, salt-water baths, washing the head twice daily with spiritus saponis kalinus, followed by rubbing in an ointment of veratrine (one to fifteen). The hair did not grow in for nearly three years. The third had no history of injury. The fourth case was limited to one side of the head, and occurred with attacks of phlyctenular conjunctivitis. In the fifth case both the scalp and chin were affected. The patient was a nervous and hypochondriacal man, and had a good deal of headache and burning of the scalp and chin. The sixth case was a symmetrical one of the beard, with a great deal of itching. All but two of the patients were boys, and all were weak and nervous. The reaction of the skin of the affected areas was normal. In most of the cases the bald space was linear in shape, enlarging especially on its peripheral end, forming a three-cornered figure.

Rejuvenescence of the Hair of the Head and Beard.—A case of this rare occurrence is reported ("Lancet," July 20, 1889, p. 113) by Dr. O'Neil, the subject being a man sixty-five years of age, who was under the author's care for paralysis and accompanying cerebral disturbance. He had been both bald and gray for many years, when during his sixty-second year his hair began to grow in the bald places, and brown hair began to replace the gray. At last his hair had regained its youthful fullness and color. He had been addicted to the use of chlorodyne for some six months previous to the regeneration of the hair, and he and his friends ascribed the hair growth to the excessive use of the drug.

The Treatment of Hypertrichosis, as recommended by Jamison, of London ("The Practitioner," 1889, xliii, 1), consists in the free use of ethylate of sodium. It seems specially applicable to large, hairy nævi. The case reported was that of a child first operated on at three months of age, and several years were employed in the treatment. After five years the case is reported as cured and without disfigurement. It was a hairy mole of the whole of the right side of the forehead. The operation was done under chloroform.

Trichomycosis Nodosa a Bacillary Disease of the Hair.—This disease is, according to R. G. Patteson ("Brit. Med. Jour.," 1889, i, 1166), "a peculiar condition, generally nodose in character, affecting the hairs of the axilla and scrotum, and due to the growth and encapsulation in the cortical layers of the shaft of a small rod-shaped bacterium." The author thinks that the disease may take on different appearances at times, such differences depending upon varying and individual conditions of heat and moisture and personal habits of life. It is probably the same disease that Paxton described in 1869, and that Wilson called "leptothrix" in 1878. It has been confounded with trichorrhexis nodosa. Eberth, in Virchow's "Archiv," Bd. lxii, p. 504, was the first even to approximate to a correct description of the bacteria causing the disease. It is due to a short rod bacterium, the colonies of which,

ly. Outlines of the Clinical Chemistry of the Urine. By C. A. Macirnnn, M. A., M. D. (Dub.). With Sixty-four Woodcuts and Plate of pectra. Philadelphia: P. Blakiston, Son, & Co., 1889. Pp. xvi–254. Price, $3.]

A Manual of Minor Surgery and Bandaging, for the Use of House-Surgeons, Dressers, and Junior Practitioners. By Christopher Heath. F. R. C. S., Surgeon to University College Hospital and Holme Professor of Clinical Surgery in University College, London, etc. Ninth Edition. Philadelphia: P. Blakiston, Son, & Co., 1889. Pp. xvi–361. [Price, $2.]

On the Healing of Aseptic Bone Cavities by Implantation of Antiseptic Decalcified Bone. By N. Senn, M. D., Ph. D., etc. [Reprinted from the "American Journal of the Medical Sciences."]

The Effect of the Entrance of Air into the Circulation. By H. A. Hare, M. D. [Reprinted from the "Therapeutic Gazette."]

The Disposal of the Dead. By John M. Peacocke, M. D., Brooklyn, N. Y. [Reprinted from the "Brooklyn Medical Journal."]

Rapid Dilatation of the Cervix Uteri. [Reprinted from the "Transactions of the Ninth International Medical Congress."]—Surgical Treatment for Laceration of the Perinæum and Pelvic Floor. [Reprinted from the "Transactions of the American Association of Obstetricians and Gynæcologists."]—A Successful Vaginal Hysterectomy for Carcinoma Uteri. [Reprinted from the "Transactions of the Southern Surgical and Gynæcological Society."]—The Pathology of Ectopic Pregnancy and Pelvic Hæmatocele. [Reprinted from the "American Journal of Obstetrics and Diseases of Women and Children."] By W. H. Wathen, M. D., Louisville, Ky.

A Report upon Two Hundred Experimental Cases of Injection of se Brown-Séquard Testicular Secretion. By H. C. Brainerd, M. S.,). D., Cleveland, O.

Note on Some Forms of Purpura Rheumatica. By William A. dwards, M. D., San Diego, Cal. [Reprinted from the "University edical Magazine."]

Cirrhosis of the Pancreas; or, Pancreatic Anæmia. By C. W. Earle, . D., Chicago, Ill. [Reprinted from the "Transactions of the Thirty-ourth Annual Meeting of the Illinois State Medical Society."]

The Responsibilities and Duties of the Medical Profession regarding Alcoholic and Opium Inebriety. Address of President C. W. Earle, elivered at the Thirty-ninth Annual Meeting of the Illinois State Medical Society, May 21, 1889.

The Treatment (not Preventive) of Puerperal Fever. By C. W. arle, M. D., Chicago. [Reprinted from the "Chicago Medical Journal nd Examiner."]

Cephalæmatoma of the New-born. By C. W. Earle, M. D., Chicago. Reprinted from the "Journal of the American Medical Association."]

Retained Débris as One of the Causes of Puerperal Fever. The ntra-uterine Douche and Curette. By C. W. Earle, M. D., Chicago. Read before the Chicago Gynæcological Society.)

Antiseptic Obstetrics. By C. W. Earle, M. D., Chicago. [Reprinted om the "Transactions of the Thirty-seventh Annual Meeting of the llinois State Medical Society."]

The Influence of Sewerage and Water Pollution on the Prevalence nd Severity of Diphtheria. By C. W. Earle, M. D., Chicago. [Reprinted from the "Archives of Pædiatrics."]

Observations in Vienna. The General Hospital, Billroth, Carl 1889, May, p. 202) that chloasma can be made to disappear by the following treatment: The part is to be scrubbed with green soap until it is somewhat reddened. Then equal parts of mercurial ointment and vaseline are to be worn all night spread on muslin and covered with rubber cloth. This is to be washed off with warm water in the morn-

ing, and during the day an ointment composed of carbonate of bismuth and kaolin, each ʒ ij, and vaseline, ℥ j, is to be worn.

The Histology of Rhinoscleroma is put forth at much length by Dr. V. Mibelli in the "Monatshefte f. prakt. Dermatologie," 1889, vol. viii, No. 12. The study was made upon material obtained from a patient of the doctor's, an Italian. He found the most pronounced alterations in rhinoscleroma, represented by an unusually soft, almost fluid tissue, which was the most characteristic material found in the disease. This is not found everywhere, but mostly deep down in the coverings of the nose next to the cartilage. About it is always placed a more or less indurated cutaneous tissue, and it is the hardness of this which gives us the clinical idea of the disease. Little islands of this soft substance being scattered through the whole diseased parts, gives us a very varying picture when seen on section. The skin follicles are sometimes destroyed, sometimes intact and normal. The sweat-glands are generally wanting, though their ducts may be found either intact, or widened, or with their walls thickened. The blood-vessels have about their walls and within them an infiltration of round cells, but these are usually normal in appearance. In some places the lumen of the vessels is narrowed, and in some entirely obliterated, while in others there is well-marked endarteritis obliterans. The lymphatics are greatly dilated. It would seem that the skin and the outer parts of the nasal mucous membrane become only secondarily and very gradually diseased from the deeper-lying parts. The characteristic cells of rhinoscleroma are uniformly round, strongly refractive to light, and contain a coarsely granulated, sharply contoured protoplasm, and a large oval or round, light-colored nucleus. In the neighborhood of these cells are often seen larger round cells, with clear, finely granulated, irregularly contoured protoplasm, and with a less bright nucleus. Rhinoscleroma bacilli (enveloped in a capsule) are found in this protoplasm. It is probable that the damage caused by the bacilli in this disease is due far more to their mere presence and growth than to any poisonous products generated by them. [This article contains much of interest to the histologist, but, unhappily, does not lend itself easily to the purposes of the abstractor.]

The Treatment of Lupus, as now practiced in Hamburg, is, according to Clasen ("Monatshft. f. prakt. Dermatologie," 1889, Bd. viii, No. 11), the following: The Paquelin cautery is first used to destroy the lupus tissue, the patient being under chloroform. Upon the fresh tissue surface is penciled or rubbed a solution of corrosive sublimate, gr. 25; carbolic acid, ʒ jss.; and ether, ℥ j. M. Then a plaster muslin is applied, either of salicylic acid, five drachms, and birch creasote, ten drachms to the yard, or of salicylic acid, five drachms, guaiacol, two drachms and a half to the ounce, the plaster being cut a little larger than the surface to which it is to be applied. The whole is covered with a zinc paste and a bandage. The dressing is changed every twenty-four hours, the surface of the wound being washed off and penciled with cocaine, and suspicious points bored out before the plaster is reapplied. A cure is effected in two or three weeks. For the plaster-muslin may be substituted an ointment of twenty parts of salicylic acid and forty parts each of creasote and cerate, which is to be spread upon doubled muslin and covered with a solution of gutta percha. Where it is impracticable to use any energetic treatment, the cure can be effected by the use of the salicyl-creasote ointment during the night, and by painting with an eighty-per-cent. solution of silicate of potassium in linseed-oil during the day. If the lupus patch is very much inflamed, it should be painted with a watery solution of ichthyol during the night, and simply anointed with the ointment during the day.

Acquired Leprosy as seen in England.—Hutchinson believes ("Brit. Med. Jour.," June 29, 1889, *et seq.*) that the poison of leprosy is a specific one, and that the disease is acquired, not by contagion, or climate, or quality of food, but by the ingestion of "some very special kind of poison of rare occurrence taken in connection with food." The bacillus of Hansen may possibly be the bearer of the poison. He would direct subsequent investigations to the food question and the special poison therein residing. The disease may be arrested by change of climate to a region where it is not endemic. Some twelve cases of leprosy are cited to show that the eating of fish plays an important part in the dietary of leprous patients. They had all acquired the disease in countries in which leprosy was endemic.

A Case of Leprosy apparently arrested is reported by Cottle ("Brit. Med. Jour.," July 6, 1889, p. 12). The subject had resided for twenty-four years in Jamaica, and the disease appeared some seven months after his return to England. The treatment used was chaulmoogra-oil, in doses of from twenty to ninety minims three times a day. Improvement began under doses of sixty minims t. i. d., and in about one year he had hardly any symptom of his disease. The oil was taken continuously for nearly ten years, and the patient is still under observation with no return of his disease.

The Cure of a Case of Leprosy is reported by Dr. Sandreczky, of Jerusalem, in the "Monatshft. f. prakt. Dermatologie," 1889, No. 11. It was that of a child of eight years, in whose family and connections leprosy had never occurred. He was under treatment for four years, and it was directed upon general principles, such as fresh air and exercise, massage, iron and quinine; bathing with green soap, sulphur, iron, or salt, the water being very hot and the bath being followed by free sweating under proper covering. The tubercles were treated with chrysarobin, green soap, or iodine without any effect. After two years of general treatment marked improvement showed itself. There has been no relapse, and all signs of the disease have disappeared excepting the atrophy of the hands, which is, of course, permanent. The doctor does not believe that the disease is contagious, and says that that is the view held by the inhabitants of the country.

The Chrome-Water Treatment of Syphilis.—Dr. Güntz, of Dresden, again brings to the notice of the medical profession the virtues of this, his method, of treating syphilis ("Allgemein. Wien. Med.-Zeit.," 1889, No. 14 *et seq.*). The impossibility of finding any universal remedy for the disease is granted, and then the oft-repeated failure of mercury to accomplish a cure is fully dwelt upon, while it is not denied that often it does excellently well. But, alas! it sometimes is in itself responsible for the death of the patient! This it does by causing a disintegration of the tissues. Against this chrome-water works, and, when used with discretion, it will save from death many a person with malignant syphilis. Chrome-water gives the patient a blooming appearance, in marked contrast to the "cheesy" look of him who imbibes mercury. The weight of the patient is reduced, but when its use is combined with that of salt-water baths, extreme thinness is not attained. Never does "that dangerous fatty degeneration" take place that is so often seen with quicksilver after many months or years of small doses. While eighty-two per cent. of the patients treated with mercury suffer from relapses, chrome-water is often abortive in the stage of the initial lesion. It is always efficient. Under its use syphilitic parents beget sound children. You can get this wonder-working water of a certain apothecary in Dresden, and there, too, you may find its enthusiastic inventor.

A Study of Syphilis contracted at Advanced Age has been made by Renault ("Ann. de derm. et syph.," 1889, No. 3, p. 165). The subjects were individuals forty-five years old or over, and the number of them is comparatively small. The period of incubation of the chancre is probably somewhat longer than in younger subjects. The accompanying adenitis is somewhat slower to appear, say from the twentieth day to the seventh week. The initial lesion is likewise slower in its development and remarkably hard. It takes six or seven weeks to heal, or about one third longer than in the younger man. It also shows a decided tendency to enlarge and become phagedenic, and may even become gangrenous. Its diagnosis is often difficult, especially from cancer when located upon the face, and then we must await further developments. The syphilitic fever is often well marked and of typhoid character, or it may simulate an attack of acute rheumatism. The diagnosis is difficult and we must await further manifestations. The relative time of outbreak of the secondary eruptions is not well determined, but probably the interval between the initial lesion and the eruption is longer than in earlier life. The roseola is usually slight and sometimes limited to certain regions, so as to be readily overlooked. The squamous syphilide is very rare. The papulo-tubercular syphilide appears early. The papulo-squamous syphilide is often so covered with scales that it has the appearance of psoriasis. It is also obstinate to treatment, prone to relapse, and at times is followed by purpuric spots. Tertiary lesions appear early in many cases. Mucous patches tend to ulcerate. Multiple adenopathies are the rule. Gummy tumors are frequent, ulcerate somewhat, and heal slowly. Neuroses are common and

appear early. Deafness and ocular disorders are more common than in earlier years, and set in early. Anæmia is marked, as is also cachexia. There is hardly any intermediate stage between the so-called secondary and tertiary periods. The most frequent tertiary manifestations are the tuberculo-ulcerous syphilide and the purely ulcerative. They are characterized by—1. Confluence, tending to invade the whole surface of the body at the same time. 2. Their appearance and changes. They are habitually covered with crusts, and tend, according to some observers, to take on a cancerous change in certain locations. 3. Gravity. The ulcers tend to become large and deep. They become phagedenic or gangrenous, and often lay bare the muscles. 4. Tenacity. They are extremely rebellious to treatment. Indeed, the prognosis of syphilis contracted at an advanced age is bad, and should make the physician use all his skill. This depends upon the fact that old age is naturally the time when retrogressive changes take place and vitality is lowered. Our treatment of these cases should be directed against both the virus and the debility incident to age. Tonics should be given along with the mercury and iodine, and it is usually best to combine the iodide of potassium with the mercury. Unhappily, mercury in these cases is very liable to provoke salivation, stomatitis, and diarrhœa, and its use must be stopped on their appearance. On account of the tendency to diarrhœa it is desirable to use an astringent with the mercury.

Miscellany.

Mortality in Cities in the United States.—The following table represents the mortality in the cities named, as reported to Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, and published in the abstract of sanitary reports received by him during the week ending October 4th:

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—										
				Cholera.	Yellow fever.	Small-pox.	Variolic.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y.	Sept. 28.	1,582,975	641	..	..	..	..	..	..	17	3	17	1	12
Philadelphia, Pa.	Sept. 28.	1,040,245	312	..	..	..	..	..	..	15	2	3	..	2
Brooklyn, N. Y.	Sept. 28.	834,607	308	..	..	..	..	..	..	5	..	13	..	..
Baltimore, Md.	Sept. 28.	500,343	161	..	..	..	..	..	..	9	.	5	..	..
St. Louis, Mo	Sept. 28.	450,000	157	..	..	..	..	..	..	7	2	5	..	2
San Francisco, Cal.	Sept. 20.	330,000	107	..	..	..	..	..	..	3	..	3	..	..
New Orleans, La.	Sept. 21.	254,000	130	..	..	..	..	..	..	..	1	3	..	1
Washington, D. C.	Sept. 21.	250,000	93	..	..	..	..	..	..	8	..	4	..	1
Detroit, Mich.	Sept. 21.	250,000	72	..	..	..	..	..	..	1	..	6	..	1
Cleveland, Ohio	Aug. 24.	235,000	110	..	..	..	..	..	..	8	3	10	..	1
Cleveland, Ohio	Aug. 31.	235,000	83	..	..	..	..	..	..	4	2	3	..	1
Cincinnati, Ohio	Sept. 28.	225,000	121	..	..	..	..	..	..	2	..	14	..	2
Minneapolis, Minn.	Sept. 21.	200,000	43	..	..	..	..	..	..	1	..	3	..	..
Minneapolis, Minn.	Sept. 28.	200,000	50	..	..	..	..	..	..	6	..	6	..	..
Providence, R. I.	Sept. 28.	127,000	54	..	..	..	..	..	..	..	..	1	1	1
Indianapolis, Ind.	Sept. 27.	125,000	35	..	..	..	..	..	..	3	1	5	..	..
Richmond, Va.	Sept. 21.	100,000	35	..	..	..	..	..	..	3	..	..	..	..
Richmond, Va.	Sept. 28.	100,000	35	..	..	..	..	..	..	..	..	2	..	..
Denver, Col.	Sept. 27.	100,000	43	..	..	..	..	..	..	18	..	1	1	1
Toledo, Ohio	Sept. 27.	89,000	31	..	..	..	..	..	..	4	..	3	..	2
Fall River, Mass.	Sept. 28.	69,000	28	..	..	..	..	..	..	3	..	..	..	1
Nashville, Tenn.	Sept. 28.	65,153	26	..	..	..	..	..	..	1	..	..	..	1
Charleston, S. C.	Sept. 28.	60,145	56	..	..	..	..	..	..	1	..	..	..	..
Lynn, Mass.	Sept. 28.	50,000	15	..	..	..	..	..	..	..	..	..	..	..
Portland, Me	Sept. 28.	42,000	..	..	..	..	..	..	..	1	..	..	..	..
Galveston, Texas	Sept. 20.	40,000	11	..	..	..	..	..	..	1	..	..	..	..
San Diego, Cal.	Sept. 19.	32,000	3	..	..	..	..	..	..	..	..	..	..	..
San Diego, Cal.	Sept. 25.	32,000	7	..	..	..	..	..	..	..	..	..	..	..
Yonkers, N. Y.	Sept. 28.	20,000	12	..	..	..	..	..	..	..	..	..	..	..
Binghamton, N. Y.	Sept. 28.	30,000	10	..	..	..	..	..	..	..	..	..	..	1
Auburn, N. Y.	Sept. 28.	26,000	3	..	..	..	..	..	..	..	..	..	..	..
Haverhill, Mass.	Sept. 28.	25,000	8	..	..	..	..	..	..	..	..	..	..	..
Newport, R. I.	Sept. 5.	22,000	10	..	..	..	..	..	..	2	..	..	..	..
Newport, R. I.	Sept. 12.	22,000	12	..	..	..	..	..	..	2	..	..	..	..
Newport, R. I.	Sept. 19.	22,000	9	..	..	..	..	..	..	..	..	..	..	..
Newport, R. I.	Sept. 26.	22,000	6	..	..	..	..	..	..	..	..	..	..	..
Rock Island, Ill.	Sept. 22.	16,600	5	..	..	..	..	..	..	..	..	..	..	..

Creolin Injections in Dysentery.—"Dr. Sosovski has found large enemata of dilute creolin very useful in dysentery. He employed a one-half-per-cent. solution injected into the bowel twice or sometimes three or four times daily, the quantity used for each enema being generally about five pints. The patients did not experience any burning sensation or abdominal pain. The treatment was employed in sixteen cases, not one of which proved fatal, although a considerable number of patients succumbed to the disease during the same epidemic. In two cases the disease was arrested after the second enema, in nine cases the bloody stools ceased on the third day, in two cases on the fifth day, in one on the sixth, and in one on the ninth. The remaining case, though more obstinate, ultimately recovered completely. In addition to these, two children under a year old were treated successfully by means of creolin enemata. Again, another Russian physician, Dr. Kolokoloff, has used a one-per-cent. solution in a number of cases of adults with complete success."—*Lancet.*

ANSWERS TO CORRESPONDENTS.

No. 291.—Those by Chambers and Fothergill.

No. 292.—Its publication seems to have been suspended.

No. 293.—The manœuvre of bringing the shaft of the instrument away from the groin and carrying it up over the linea alba.

No. 294.—Cases have been reported in which the period of incubation seemed to have been less than twenty-four hours.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

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Original Communications.

TUBAL PREGNANCY.*

BY WILLIAM T. LUSK, M. D.

CASE I. *Tubal Pregnancy; Rupture; Laparotomy; Recovery.*—On the 19th of November, 1888, I was summoned in haste to the bedside of Mrs. S., nineteen years of age, who was suffering from shock and intense anæmia.

Of her history I learned that she had been three years married, and that a year previous she had given birth to a dead child at term. Since her confinement she had suffered from profuse leucorrhœa and pain in the right inguinal region. The patient had passed two menstrual periods, but had had no subjective symptoms of pregnancy. On the 10th of November she noticed a sero-sanguinolent discharge from the vagina. On the 11th she was seized with cramps associated with faintness, with nausea, and at times with vomiting. There was no intestinal disturbance to which the abdominal pains could be referred. Similar attacks, but of less intensity, occurred daily, usually in the morning hour, up to the 18th inst. On that date the pains had been unusually severe, when suddenly Mrs. S. became exsanguinated, and syncope ensued, which lasted about twenty minutes. On recovering consciousness she felt chilly and restless, with constant nausea and vomiting.

At Dr. Janeway's suggestion, on the evening of the 19th inst. I was sent for by Dr. Agan, the family physician. As I have stated, I found the patient excessively anæmic; vomiting was constant; pulse was 140; the abdominal pains had ceased. On vaginal examination, the uterus was found to be pressed somewhat to the left. To the sides and posterior to the uterus irregular masses of a soft consistency could be felt, which obscured the palpation of the uterine appendages.

The diagnosis was ruptured tubal pregnancy with intraperitoneal hæmorrhage, a diagnosis which was further confirmed by the expulsion of a decidual membrane on the 20th inst. Laparotomy was recommended, and the next day, in spite of the patient's feeble condition, she was conveyed by ambulance to St. Vincent's Hospital. She arrived in a state of prostration, which seemed to afford little hope of a rally. During the night Dr. Mitchell, the house physician, watched at her bedside and administered hourly an ounce of whisky and five drops of tincture of digitalis every two hours. By eight in the morning the patient's condition had greatly improved. Her pulse had fallen to 100 and possessed more volume.

At 10 A. M. the patient was carried to the operating-room. Operation was performed under ether with the usual antiseptic precautions. When the peritonæum was incised a stream of dark fluid blood, probably not less than two quarts in quantity, gushed out. On introducing the hand, I found the pelvic cavity filled with clots, which were carefully removed. The tube on the left side was enlarged near the fimbriated extremity. On lifting it out of the abdomen the hæmorrhage was seen to proceed from a sac in the broad ligament, which had ruptured into the peritoneal cavity. A strong silk ligature (Staffordshire knot) was made to include the tube, sac, and ovary on the left side. The ligatured mass was removed by the thermo-cautery, and the pedicle dropped. The right tube and ovary appeared perfectly healthy. The abdominal cavity was then irrigated with Thiersch's solution, was rapidly sponged, and a large drainage tube was introduced. The usual antiseptic dressings were employed. The operation lasted about forty-five minutes. By noon the patient had rallied and expressed herself as feeling perfectly comfortable. In the afternoon, while vomiting, so large an amount of bloody fluid was forced from the drainage-tube that at first it was feared a fresh bleeding had taken place. It was noticed, however, that, as regarded her genera condition, the patient was progressively improving; so it was decided to await events in place of reopening the abdomen. The next morning the quantity of fluid removed from the tube at each change of dressings had fallen to a drachm or two, and was more serous in character. However, it was four days before all color had disappeared and the tube was finally removed.

It is to be assumed that the bloody discharge was due to imperfect siphoning of fluid from the abdomen after irrigation, and not to an after-hæmorrhage. The sudden expulsion of the retained fluid during the act of vomiting was, I believe, a lucky accident, which contributed to smooth the path of convalescence.

In the afternoon of the first and in that of the second day the temperature rose to 101° F., with a pulse of 116; with these exceptions, the temperature remained below 100°. The pulse for a few days at times was in the neighborhood of 100 (generally less). At the end of the week it possessed about the normal frequency.

At 2.30 P. M. of the day of operation a teaspoonful of strong tea was given to the patient by mouth every ten minutes, and one quarter of a teaspoonful of brandy every twenty minutes. By rectum, brandy ℥j, tr. opii gtt. xv, aq. ℥iij, was given every four hours. (The patient had no pain. The opium was given solely on account of the cerebral anæmia, and was discontinued at the end of twenty-four hours.)

After the effects of the ether wore off all vomiting ceased. The patient was thirsty and took carbonated waters freely by the mouth. On the third day she took two ounces of brandy and two ounces of milk every two hours in addition to the rectal enemata. On the fourth day toast, boiled rice, eggs, coffee, and tea were given, and were eaten with relish. Convalescence was uninterrupted. The patient slept well; all the natural functions were normally performed, and she rapidly regained color. On December 4th the patient was permitted to sit up in a chair. On December 17th the external wound and the sinus resulting from the tube had entirely healed, and the patient returned to her home. A month later she was able to go to a ball and dance all the evening with enjoyment. Her health since the operation has been better than at any time previous in her life.

The illustration herewith presented represents a longitudinal section through the specimen after it had been subjected to a hardening process by Dr. Dunham, of the Carnegie Laboratory. A certain amount of shrinkage has taken place, so that the specimen is perhaps not more than three fourths its original size. The embryo corresponds to about the sixth week. A clot surrounds the walls of the ovum, and above has so far thinned the tubal walls that it appears to be covered by peritonæum only. Rupture, however, had taken place below. At first a hæmatoma had formed between the folds of the broad ligament. The distension caused by the effused blood had converted the posterior layer at the point of pressure into a sac in which at the

* Read before the New York State Medical Association, September 25, 1889.

time of operation an opening was found of about the size of a man's thumb. The clots in this sac were much softer than that which surrounded the ovum.



Fig. 1.

If we attempt to follow the sequence of events in this case it would appear that hæmorrhage into the tube occurred first, and corresponded to the symptoms experienced on the 11th of November, when the patient suffered from cramps, faintness, and nausea. The thinning of the tubal walls was such that the non-occurrence of intraperitoneal rupture at that time was almost in the nature of a miracle. Possibly the timely formation of the clot served as a protection. If the rupture of the tube was coincident with the occurrence of the first hæmorrhage, the separation of the folds of the broad ligament and the formation of the pouch probably took place gradually. Until the 18th inst. the patient experienced cramp-like pains, but she kept her color and had no symptoms that made her feel apprehensive. The sudden anæmia and prolonged unconsciousness at that date marked the rupture of the sac and the pouring of the blood into the peritoneal cavity. Subsequently the feeble heart action and the formation of clots in the pelvis doubtless served as a temporary check to the bleeding from the opened vessels.

Case II. *Tubal Pregnancy; Rupture; Laparotomy; Death from Bright's Disease on the Eighth Day.*—Mrs. K., aged thirty-six, had given birth to nine children at term, and had had two miscarriages. Her labors had all been easy ones. Her general health previous to the occurrence which was the cause of my first visit had been good. There was no history of constitutional trouble, nor had she been conscious in the past of any pelvic suffering. On the 31st of May, without warning, she was seized with a violent attack of pain, followed by blanching of the surface, and syncope which lasted for several hours. For a time Dr. McSweeney, the family physician, had little hope that restoration could be effected, but she finally rallied. The next day (June 1st) Dr. Janeway and myself were invited by Dr. McSweeney to see Mrs. K. with him in consultation. We found her extremely anæmic, with blanched lips, rapid, feeble pulse, and great prostration, but not suffering greatly from pain. She stated that she had menstruated last about six weeks previous, and had supposed herself pregnant. The undoubted occurrence of intraperitoneal hæmorrhage led to the strong suspicion of ruptured tubal pregnancy. There had been, however, no antecedent symptoms—*i. e.*, no colicky pains, no sero-sanguinolent discharge, no expulsion of decidua. The presence of clots in the pelvis obscured the palpation of the pelvic organs. Still Dr. Janeway and Dr. McSweeney and myself believed that we could recognize an enlargement of about the size of an egg in the course of the left tube.

On the morning of June 2d the patient was conveyed by ambulance to St. Vincent's hospital. Stimulants were freely administered. Laparotomy was performed in the afternoon. Unfortunately, no formal notes were taken at the time, but the history of the operation was a repetition of that of the case already given. The abdominal cavity contained a large amount of fluid blood, the pelvis was filled with clots, and the tube on the left side was found ruptured on its posterior surface above the folds of the broad ligament. The rupture was caused by an ovum which presumably had attained four weeks of development. Through the rent the villi were beautifully apparent.



Fig. 2.

The operation was unusually free from difficulty and lasted hardly more than a half-hour. The patient rallied well. In the evening her general condition was most promising, save in one respect—viz., the water passed in the afternoon contained over fifty per cent. of albumin. During the succeeding days there was little or no fever (temperature rose to 103° F. for a brief period on the second day), there was no pain, the appetite was good, but the albuminuria persisted. Still, the general progress of the case was so favorable that recovery was regarded as cer-

tain. On Saturday (seventh day), however, the urine, which had previously ranged between eighteen and thirty ounces, began to diminish in quantity, and in a short time sank to a few drachms, which became solid on boiling. Death from uræmia occurred on the eighth day.

These two cases illustrate the ordinary history of tubal pregnancy. In both, without antecedent symptoms, at an early period of gestation rupture with hæmorrhage takes place; in the one instance the blood primarily making its way between the folds of the broad ligament, in the other pouring suddenly, without check, directly into the peritoneal cavity. They are simply additions to the long list already furnished by Mr. Lawson Tait upon which he has based his scheme of ectopic gestations.

In Mr. Tait's belief, all cases of extra-uterine pregnancy are *ab initio* of tubal origin. When the ovum develops in the free part of the tube, rupture, he holds, occurs at or before the fourteenth week. If rupture occurs at once into the abdominal cavity, death ensues from hæmorrhage, or later from suppuration of the sac and peritonitis; if rupture takes place in the lower portion of the tube between the folds of the broad ligament, the ovum may develop to full term; may die and be absorbed as an extraperitoneal hæmatocele; may suppurate and be discharged at or near the navel, or through the bladder, the vagina, or intestinal tract; may remain quiescent as a lithopædion; or may become an abdominal pregnancy by secondary rupture. In the tubo-uterine form death occurs from intraperitoneal rupture before the fifth month. Mr. Tait denies the possibility of a primary abdominal pregnancy. The ovarian form he regards as possible but not proved.

There is no question as to the utility of Mr. Tait's scheme. It is based upon his exceptional personal experience and has received substantial support from the observations of others. It has stimulated active inquiry, and has given proper direction to pathological study; but the subject of ectopic pregnancy is still too new to make it possible for any scheme to be regarded as a finality.

The most interesting outcome of Mr. Tait's work has been the change of view as regards the existence of primary abdominal pregnancy. An overhauling of museum specimens, long believed to establish this variety, has so far furnished very nearly negative results, and there is at present a very general agreement that the reported cases are at least open to grave suspicion. It is not *a priori* likely that an ovum immediately after fecundation is capable of forming nutrient connections with the peritonæum. It is not theory, however, but facts with which we are called upon to deal. The discovery of an ovum growing in the peritoneal cavity with the tubes and ovaries demonstrably intact would suffice to establish the abdominal variety. In the early months, before the anatomical conditions are obscured by secondary changes, there is no pretense that such proof has been obtained. In more advanced stages a good many cases of assumed abdominal pregnancy have been placed in evidence. These, so far as my investigations permit me to judge, are divisible into two classes:

1. Cases where the tubes are reported as intact, but in which there exists a direct communication between the tube upon the affected side and the sac cavity. Thus, Treub, of Leipsic, recently reports the following instance:

Patient menstruated last about the middle of April, 1887; peritonitic pains, with symptoms of internal hæmorrhage, on the 12th of June. At the end of July the same symptoms occurred but were more violent. Ballottement was distinct by the end of September. Life was felt a week later. There were no fœtal movements after November 24th. Septic symptoms developed, and laparotomy was performed January 22, 1888, when the patient was nearly moribund. Death ensued the following night.

At the autopsy the annexa on the right side were normal. The left tube measured ten centimetres and a half, which corresponded to the length of the right tube. It was pervious throughout its entire extent. The fimbriated outer end communicated with the sac. There was no apparent distension of the abdominal end of the tube. The sac of the ovum was adherent to the posterior surface of the uterus and of the broad ligament, to a few coils of intestines, to the sigmoid flexure, and to the rectum.

Abdominal pregnancy was assumed by Treub because the tube had its normal length and its natural direction, while the placenta was attached to the posterior sac wall, which contained no muscular elements, even in the vicinity of the tube; but it is much more natural to suppose that a fecundated ovum occupying the infundibulum ruptured the tube walls at an early period of its growth, and thence continued its development between the folds of the broad ligament. It will be remembered that there were unmistakable symptoms of internal hæmorrhage in June and in July. The length of the left tube does not affect the question, as Werth* furnishes cases of unmistakable intraligamentous development where the same feature was noted.

2. Cases where the tubes are reported as intact and not in communication with the sac. Few of these merit criticism. Lately, however, new interest has been excited as to the possibility of primary abdominal pregnancy by a case operated upon in 1879 by Professor Müller,† of Bern. Extra-uterine and intra-uterine pregnancy existed at the same time. At the eighth month spontaneous expulsion of the intra-uterine fœtus took place. The extra-uterine ovum was removed by laparotomy. Death ensued from hæmorrhage. The post-mortem investigation was conducted by Walker who, in a carefully prepared essay, concludes that the case was a typical one of abdominal pregnancy. The tubes and ovaries were in contact, but not adherent to the sac. The latter had started originally from the bottom of the *cul-de-sac* of Douglas, and only in the course of its subsequent development had reached the uterine appendages. The correctness of the author's deductions has not, however, passed unchallenged, most of the recent reviewers regarding the history as indicating a tubal origin.

* Werth, "Beiträge zur Anatomie und zur operativen Behandlung der Extrauterinschwangerschaft," 1887. *Vide* table A, containing sixteen cases of intraligamentous tubal pregnancy. In No. 9, Scott's case, the length of the tube was given at six inches; in No. 12, Dreesen's case, at fifteen centimetres; in No. 15, Martyn's case, the statement is made that the tube was enormously increased in length.

† *Vide* L. Bruhl, "Zur Casuistik der Extrauterinschwangerschaft," "Arch. f. Gynaek.," vol. xxx, p. 70, and Walker, "Der Bau der Eihäute bei graviditas abdominalis," Virchow's "Arch.," vol. cvii.

Schlectendahl* reports the discovery of an ovum near the spleen, containing a fœtus measuring fifteen centimetres in length, in a woman who had died from internal hæmorrhage. The sac was the size of a man's fist, and was surrounded by adherent intestines. The uterus and tubes appeared normal. The value of this case as evidence on behalf of abdominal pregnancy has been denied, but the facts related by Schlectendahl certainly call for explanation.

There is little question as to the occasional occurrence of ovarian pregnancy. The specimen discovered by Patenko† in the Pathologico-Anatomical Museum of St. Petersburg seems to answer all the requirements of a demonstration. The right ovary was of the size of a hen's egg, and contained a cyst with smooth walls filled with serum. In this he found a body of a yellow color, of the size of a hazel-nut, which contained cylindrical and flat bones. The most careful microscopical examination established the fact that the bones were those of a fœtus, and not merely the chance products of a dermoid cyst. The presence of corpora lutea and follicles in the walls of the envelope proved that the body was an ovary. The tube on the corresponding side was nowhere adherent to the sac. The abdominal extremity was closed, and there were no traces of fimbriæ.‡

Paltauf# relates a case of extra-uterine pregnancy in which there was a sacculated condition of both tubes which communicated with a cyst of ovarian origin. The ovaries were closely united. By means of the ovarian cyst a complete communication was established between the two tubes. In the large central ovarian cyst a clot was found which contained an embryo corresponding in size to one of from forty-five to forty-eight days' development. The origin of the condition here met with is naturally a matter of speculation.

But these exceptional cases, however interesting, play an unimportant rôle in the history of ectopic pregnancy. It is the tubal form that, not only relatively to the others but actually, is of common occurrence. Its pathology, diagnosis, and treatment are among the pressing questions of the day.

The physiology of conception, so far as known, consists in the discharge of the ovum from the ovary through rupture of a Graafian follicle, its entrance into the Falloppian tube by the mediation of currents created by the ciliated epithelium of the fimbriæ, and its propulsion through the tube either by ciliated currents, by peristaltic movements of the tubal walls, or by both forces acting conjointly; while in the uterine cavity the descent of the ovum is impeded by the upward current produced by the ciliated epithelium of the uterine mucosa. This latter force undoubtedly helps propel the spermatozoa in the direction of the fundus or the cornua. How far the spermatozoa are hindered from entering the tubes by the opposing current is a matter of uncertainty. That it does not necessarily prevent progression is shown by the fact that in certain animals the entire current is in an outward direction. Wyder,* moreover, reports a case of tubal pregnancy in which he found, in the uterine portion of the tube, ciliated epithelium everywhere present.

As exceptions to the ordinary mechanism, it is possible for an ovum to migrate from the ovary upon one side, cross the pelvis, and enter the tube upon the opposite side; or, possibly, in very rare instances, after entering the uterine cavity, to cross the fundus and find lodgment in the opposite dilated tube.†

In regard to the ætiology of tubal pregnancy, Mr. Tait is unquestionably right in insisting upon the importance of the various forms of chronic salpingitis. Owing to the associated loss of epithelium, the dilatation and other changes in the tube walls, the two active forces which propel the ovum through the tube—viz., ciliated movements and peristalsis—are weakened or destroyed, while free ingress is afforded to the spermatozoa. Or, again, the passage of the ovum may be interfered with by the secondary results of catarrhal inflammations—such as the production of mucous polypi, of adhesions, or of sac-like dilatations. Formerly great stress was laid upon the ætiological importance of flexions and constrictions resulting from old peritoneal adhesions and inflammatory bands. Curiously enough, in recent laparotomies for tubal rupture, this cause has not played an important part. It is not quite clear whether the peritonitis formerly observed so frequently at autopsies was not in most instances secondary. It is, moreover, possible that, as a class, in cases where antecedent peritonitis has existed as a cause, the hæmorrhages resulting from rupture, owing to the agglutination of intestines and pelvic organs, are circumscribed, and do not call for surgical measures of relief.

Recent observations have shown that there is a tendency for tubal pregnancy to recur. Thus Herrmann has reported a case where, in performing laparotomy for tubal rupture, he found the remains of an ovum in the other tube. Tait‡ has reported one and Veit# three cases where, within a year or two after a first operation for tubal rupture, a second laparotomy was rendered necessary because of the occurrence of pregnancy in the tube of the opposite side.

Tubal pregnancy is associated with the formation of a uterine decidua which differs in no wise from the decidua of

* Schlectendahl, "Ein Fall von graviditas abdominalis," "Frauenarzt," 1887, No. 2.

† Patenko, "Casuistische Mittheilungen," "Arch. f. Gynaek.," vol. xiv, p. 156.

‡ Mr. Tait, in his recent work on "Ectopic Pregnancy," refers to a specimen described by Dr. Walter as one of primary ovarian pregnancy (sac had ruptured at fifth month, and fœtus had escaped into peritoneal cavity), which is now in the Dorpat Museum, and suggests a careful investigation as to its real character. At Werth's request this has since been made by Runge, with a complete confirmation of the significance given to it by Walter in his original publication. Werth, *loc. cit.*, p. 64.

Paltauf, "Arch. f. Gynäk.," vol. xxx, p. 456.

* Wyder, "Beiträge zur Lehre von der Extrauterinschwangerschaft," etc., "Arch. f. Gynaek.," vol. xxviii, p. 381.

† In a review by Schaeffer ("Arch. f. Gynäk.," vol. xvii, p. 13) the question of the internal migration of the ovum is once more placed in doubt. In addition to the inherent improbability of the occurrence, Schaeffer declares that in all the cases reported the evidence is open to criticism.

‡ Tait, "British Gynæcological Journal," August, 1888, p. 178.

Veit, Gesellsch. f. Geburtshülfe und Gynäk. zu Berlin, May 10, 1889.

pregnancy, except that the distinction into three layers is less marked. The decidua of the tube containing the fecundated ovum possesses a cell layer alone, as the tubal mucosa contains few if any glands. There is no serotina, nor is there any maternal portion to the placenta. The club-shaped extremities of the villi are simply imbedded in the muscular walls. Concerning the decidua reflexa opinions are conflicting. Frommel and Winckel maintain its existence. None was discovered by Langhans and Leopold.

In the early months the development of the ovum leads to a spindle-shaped dilatation of the tube, associated with hypertrophy of the muscular walls due to increase in the length and thickness of the individual fibers. As regards the degree of hypertrophy, very great individual variations have been observed. Indeed, in the same sac a thickening at one point may be accompanied by an excessive degree of tenuity due to overdistension at another. Now, the ultimate fate of a tubal pregnancy is in large measure dependent upon these anatomical differences. Unquestionably, early rupture, such as occurred in my two cases, is the rule. Mr. Tait says: "Out of an enormous number of specimens which I have examined, I have entirely failed to satisfy myself that rupture has been delayed later than the twelfth week." It seems to me, however, carrying skepticism too far to refuse credence to the positive observations of others, made apparently with the utmost care and with full knowledge of possible sources of error, which seem to show that a tubal pregnancy may exceptionally reach advanced, or even the full term of pregnancy. At present it seems fair to assume that when the sac which surrounds the ovum is composed of muscular and connective-tissue fibers with an external peritoneal envelope, and directly communicates with the Fallopian tube, the sac walls are of tubal origin. Of course it is not possible to assert that no rupture has taken place in the course of development. It is only known positively that rupture occurring at the site of placental attachment gives rise to hæmorrhage fatal to the fœtus; and the same is true, with rare exceptions, where rupture occurs at any point of the peritoneal surface. That rupture has first occurred into the cavity of the broad ligament in all the cases which go on to the period of viability does not seem so absolutely certain. The anatomical appearances in some instances at least indicate that the exposure of the fœtal membranes here and there through the maternal sac results not so much from laceration as from the gradual separation of the muscular fibers due to excessive stretching.* In most of the cases in which the pregnancy reaches an advanced stage the development of the tube takes place principally between the folds of the broad ligament. The support furnished the tubal sac by the gradual unfolding of the ligament layers hinders rupture. More rarely pregnancy may go to the period of viability without encroaching upon the intra-ligamentous space. The tumor then rises above the pelvic brim, and is furnished with a species of pedicle consisting of the uterine end of the tube and of the broad ligament.

The first of the above, or the intra-ligamentous form, lies close to the uterus, which it not infrequently crowds upward and forward. The uterine end of the tube varies greatly in length. The fimbriated extremity is unrecognizable. Usually no traces of the ovary are found. In the so-called pedicled form the uterus is crowded to one side or retroverted. The uterine end of the tube is usually long and thickened. The corresponding ovary has generally been discovered. In both cases the relations of the sac are often obscured by adhesions to adjacent viscera. In the second half of pregnancy rupture of the sac and the escape of the fœtus into the peritoneal cavity may occur without noticeable hæmorrhage or without interruption of pregnancy. As the pressure is removed by the escape of the amniotic fluid, the placental borders curl inward so as to furnish a cup-like space, while the membranes sink downward and cover the upper placental surface. The fœtus in these cases may occupy the abdominal cavity, or a sac may be formed by the agglutination of the adjacent viscera.

Werth has reported a case in which death of the embryo occurred in the second month, and was followed by hæmorrhage which poured through the abdominal end of the tube into the pelvic cavity and gave rise to intraperitoneal hæmatocele. Similar observations have been made by Veit and Westermark. This form Werth terms tubal abortion. In another case described by Wyder the fimbriated extremity of the tube was obliterated, and as a consequence the hæmorrhage following the separation of the ovum converted the ampulla of the tube into a blood cyst the size of the fist.*

In the interstitial form of pregnancy—*i. e.*, where the ovum develops in the uterine portion of the tube—the sac of the ovum forms a whole with the body of the uterus. Of twenty-six such cases collected by Hecker, all ruptured before the sixth month. Tait says that, "so far as known, interstitial pregnancy is uniformly fatal by primary intraperitoneal rupture before the fifth month." Schwarz,† however, reports a case belonging in this category in which the fœtus was expelled into the uterine cavity.

The patient was known to be pregnant. Repeated hæmorrhages indicated a threatened abortion. To avoid further dangers, the cervix was dilated with the view to empty the uterus. On examination with the finger, the uterine cavity was found empty, but at the uterine opening of the left tube was a piece of membrane which was removed. The next day the finger detected membrane at the same site, and beyond a hard body. The uterus began to contract energetically. On the fifth day a fœtus was passed by the vagina, the pains ceased, the tumor largely disappeared, and the patient made a good convalescence.

Martin removed a male fœtus 33 centimetres long (six months) from the left uterine cornu. The patient recovered. Duvelius, who examined the specimen, concluded that the ovum had partially grown into the tube and between the folds of the broad ligament. He thought that rupture did not occur owing to the number of the muscular elements in the sac wall.‡

* *Vide* tables of Werth, "Beiträge zur Anatomie und zur operativen Behandlung der Extrauterinschwangerschaft."

* Werth, "Beiträge zur Anatomie, etc., der Extrauterinschwangerschaft," pp. 105, 106.

† Schwarz, "Wiener med. Blätter," 1886. In the abstract furnished by Grandin in the "American Journal of Obstetrics" (January, 1887, p. 101) the date of pregnancy is not given.

‡ Martin, "Ztschr. f. Geb. und Gynäk.," vol. xi, p. 416.

The burning question at this moment connected with tubal pregnancy is that of early diagnosis. Dr. Hanks has recently stated his belief that a diagnosis can be made in ninety-five per cent. of the cases we are called upon to attend. Mr. Tait, on the other hand, thinks "he may be excused for maintaining a somewhat skeptical attitude concerning the correctness of the diagnosis of these gentlemen who speak of making a certain diagnosis before the period of rupture."

The problem seems simple enough. Given pregnancy, and having ascertained that the ovum is not in the uterus, the diagnosis is effected. But we all know that the subjective symptoms of pregnancy are deceptive, and that the pigmentation, the mammary and the utero-vaginal changes are not always so clearly defined in the first three months as to make it safe in every case to positively diagnosticate pregnancy in even the intra-uterine form. The advice to use the sound to demonstrate the vacuity of the uterus in suspected cases has been the cause of many needless abortions. Fortunately, the sound often does no other harm than to add to our sources of error. Twice within the year past gravid patients have been sent to me with the assurance that the repeated introduction of the sound had shown the empty condition of the womb. In one of them, after an anæsthetic was given, it was easy to determine the presence of the head of the child through the cervix at the internal os; in the other, I felt perplexed and asked the opinion of Dr. Thomas. He pronounced it an ordinary pregnancy, and the event has shown that he was correct. Twice within the year, to my knowledge, the abdomen has been opened in this city for supposed extra-uterine gestation, and only ordinary gravidity has been found.

In the main our dependence must be upon local symptoms and local changes. The former consist of the suspension of the menses, often followed, after a brief period, by a bloody discharge, of paroxysmal pains, and of the discharge of the decidua. But the latter is by no means of constant occurrence. Paroxysmal pains are frequent in other forms of tubal disease, and menstrual disturbances are common phenomena in uterine derangements. In my two cases, and in most of the forty-two reported by Mr. Tait, there was no call for a diagnosis until rupture had taken place. As a matter of fact, the occasion for diagnosis must be very exceptional in the large class in which rupture occurs primarily within the peritoneal cavity. In the intra-ligamentous form the case is somewhat different. Here the swelling to the side of the uterus is easily reached through the vagina. We have as distinctive signs a rapidly growing tumor, early fluctuation, and the presence of pulsating vessels over the site of the tumor. Bimanual examination under an anæsthetic, especially if the thumb be introduced into the vagina and two fingers into the rectum, makes it possible to determine that the tumor is independent of the uterus. I believe in such cases that the chances of error are slight. Of course the diagnosis is strengthened by the existence of concomitant symptoms. I do not understand Mr. Tait to deny the possibilities of a diagnosis under such conditions. He differs only in regarding all intra-ligamentous cases as secondary to tubal rupture. Not much dependence is to be placed upon uterine changes in the early months. These sometimes correspond to those of ordinary utero-gestation, but in the instances I have related in this paper they were insignificant. Neither perceptible enlargement nor cervical softening indicated pregnancy.

After the third month it is not ordinarily difficult to determine the existence of the pregnant state. Ballottement is usually perceptible at an early date, and the fœtal heart makes the diagnosis certain; but the greatest care needs to be exercised in the examination of the patient and in the formation of an opinion concerning the extra-uterine situation of the ovum. In a suspected case violence in the attempt to separate the tumor from the uterus may cause sac rupture. Grandin believes the absence of contractions when frictions are applied to the sac of an extra-uterine ovum should prove a most valuable aid to diagnosis. Küstner* curiously enough maintains that the existence of contractions in tubal pregnancy should distinguish them from other pelvic growths. Evidently here more clinical observations are called for. Mr. Tait cites as a misleading condition an abnormal thinness of the uterine walls. In my own experience, lateral flexion of the uterus often simulates ectopic gestation to a surprising degree. In these cases the fundus containing the ovum lies upon one side of the pelvis. The cervix is crowded to the opposite side. Between the two a deep sulcus is felt. If the patient is hysterical, these deranged relations are exaggerated by contraction of the abdominal muscles. No difficulty in detecting the error is experienced when the patient is completely anæsthetized. Cases of retroflexion of the gravid uterus with incarceration are likewise often difficult to distinguish from extra-uterine pregnancy.

The distinction by physical signs between the tubal, the ovarian, and the secondary abdominal form is scarcely practicable so long as trained anatomists fail to agree concerning them when the abdomen has been opened and the organs are exposed to view.

A review of the subject of diagnosis makes it apparent that many cases of ectopic pregnancy present no symptoms previous to rupture. In another class the existence of a suspicious tumor with few or none of the corroborative signs should lead to a waiting policy, or, when the symptoms are of a threatening character, to an explorative laparotomy. It is well, however, to remember that with reference to this latter procedure recent popular interest in abdominal surgery has a tendency to invest trifling anomalies occurring in gestation with a sinister importance. But there still remains a considerable class where the early diagnosis is scarcely doubtful—as, for instance, that of Hawley,† where the diagnosis made previous to rupture was confirmed by laparotomy.

Upon the fact that in favorable cases certainty of diagnosis is attainable in the early stages of ectopic pregnancy rests the entire argument as to the validity of the treatment by means of galvanism or the faradaic current.

In two cases which I have elsewhere offered in evidence

* Müller's "Handbuch der Geburtshülfe," vol. ii, part 2, p. 541.

† Hawley, "N. Y. Med. Jour.," June 16, 1888.

there were present the early signs of pregnancy, a rapidly growing tumor to the side of the uterus, pulsating vessels, paroxysmal pains, and in one case discharge of the decidua. In both instances the diagnosis was confirmed by Dr. Thomas, concerning whose cool judgment and great experience there can be no question. In both, the faradaic current was used—the positive pole externally, the negative pole through the vagina for five minutes, and then through the rectum for the same period. This treatment was employed twice daily. After a couple of days the tumor had become noticeably flaccid, and in a week had shrunken to a small size. I have seen both patients many times since. Neither have suffered inconvenience, though in each a body of the size of an English walnut may still be felt. One has since given birth to two children without trouble ensuing. These cases are typical, and many similar ones have been reported. The same treatment employed in the forms of tubal distension due to salpingitis has not, in my experience, proved of avail. The use of the galvanic or faradaic current does not call for special skill. The only arguments against the method, except that the results reported carry with them the evidences of ignorance and folly, are that it is likely to cause rupture and that the retained ovum is liable to excite suppuration. But these eventualities are so rare that they may be left, in case of need, to a subsequent laparotomy. It should be understood that the method under discussion is only available in the first three months, and that no one in this country, as is commonly assumed by foreign critics, advocates electro-puncture. Foreign critics state that the results we claim are impossible. But it is unscientific to condemn them without subjecting the method to experimental tests.

The argument in favor of the early use of galvanism does not in the slightest degree impair the value of laparotomy, which must always remain our most important therapeutical resource. Only seven years ago I wrote as follows:

"As, under careful management, rupture of the tube most often proves fatal, Kiwisch recommended in such cases to make an incision four or five inches in length through the abdominal wall along the linea alba. In order to be sure that internal hæmorrhage had really taken place, he advised, when the peritonæum was reached, to first make a small puncture, and to introduce a pipette into the abdominal cavity. If the presence of blood was detected, the peritonæum should then be laid open the length of the abdominal wound, and, after first tying the bleeding vessels, the sac should be removed and the peritonæum carefully cleansed. Strange to say, intelligent as these instructions seem, no one, in these days of abdominal surgery, has so far had the hardihood to carry them into execution. The reasons for this backwardness are probably to be found in the uncertainties of the diagnosis, the risk of finding the sac hopelessly matted to the adjacent viscera, the dislike for operating upon a dying woman, and the fact that a considerable number of spontaneous recoveries occur, either from the mummification of the fœtus or by the limitation of the sanguineous effusion and the production of a circumscribed hæmatocele."

The glory of demonstrating the practicability of the surgical treatment of rupture belongs to Mr. Tait. The sentence I have quoted was hardly printed before he began that magnificent series of operations—according to recent reports, forty-two cases with but two deaths—which is certainly one of the greatest surgical achievements of the last ten years. Many active workers are now following in his footsteps, and the future saving of life by the employment of laparotomy in this field will be to him an eternal monument of fame.

Laparotomy not only possesses the advantage of being the one measure for the treatment of cases where, as in rupture, death is the common alternative, but it enriches our resources in cases of impending danger. Unlike the employment of galvanism, it presupposes the equipment necessary for laparotomy, and the skill that comes from experience. It possesses this advantage—it leaves nothing to chance. All the possibilities are under the control of human intelligence. Except for the question of ethics, it is available before and after rupture. It can be resorted to for the extirpation of the sac after three months have passed, when galvanism is no longer available. But Mr. Tait maintains that we have no right of our own volition to sacrifice fœtal life. That depends. So long as the attempt to remove the fœtus after the period of viability was followed by a ghastly record of maternal deaths, it was necessary to recognize the limitations of our skill and seek to preserve the life of the greatest value.

Recent more hopeful experiences challenge us to a revision of older views. Thus, in addition to the memorable case of Jessop, which formerly stood alone in saving the life of both mother and child, we have now those of Martin,* Lazarewicz,† Olshausen, ‡ Breisky,# Braun von Fernwald, ‖ John Williams,△ and Eastman, ◊ of Indiana, in which the child was alive at the time of operation. In this list Williams alone left the sac *in situ*. Of the others, Olshausen, Breisky, and Eastman removed the sac entire with the placenta. The others controlled hæmorrhage by means of ligatures, and brought a portion of the sac outside the abdominal wound.

These later results leave little reason to doubt that, when the anatomical conditions come to be properly realized, human invention will find means to control the dangers of the so-called primary operation for extra-uterine pregnancy, and it too will find its place in the domain of legitimate surgery.

Reunion of Cut-off Fingers.—Dr. Nikolai P. Engelhardt, of Smolensk, communicates ("Proceedings of the Smolensk Medical Society," 1888) another instructive instance of complete reunion of a cut-off finger. A peasant hacked off with an axe the terminal and middle phalanges of his left forefinger, only a thin palmar cutaneous bridge, measuring not more than one quarter of an inch in breadth, remaining to connect the severed finger with the hand, even the tendons being cut across. Without any delay, the parts were readjusted and sewed together. The wound healed kindly. The injury, however, left, besides a lineal scar, immobility of the interphalangeal articulation and some induration about it."—*Medical and Surgical Reporter.*

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* Martin, "Berliner klin. Woch.," 1881, p. 775.

† Lazarewicz, Repertoire universel des "Nouvelles arch. d'obstétrique et de gynécol.," July 23, 1886.

‡ Olshausen, Berliner Gesellsch. fur Geb. und Gynäk., Nov. 9, 1888.

Breisky, "Wiener med. Presse," 1887, No. 48.

‖ Braun von Fernwald, "Sitzungsberichte," 1889, No. 5.

△ John Williams, "Obst. Trans.," 1887, p. 482.

◊ Eastman, "Am. Jour. of Obst.," Sept., 1888.

CÆSAREAN SECTION IN A CASE OF PRIMARY CARCINOMA OF THE VAGINA.

By JOHN S. HAWLEY, M. D.,

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The recent improvements in the technique and the decrease in the mortality of the Cæsarean section have done much to deliver that time-honored and worthy operation from the obscure recesses of the *oubliette* to which it had been remanded by the greater number of obstetricians, but there is yet extant in the minds of many a deep-seated prejudice against its employment as an operation of election, rather than as a reliable method of granting a merciful euthanasia to an exhausted parturient. True, in times of rare and desperate extremity it was brought forth, furbished up so as to exhibit its brand "*dernier ressort*," and given an opportunity to earn a commutation of its sentence; but this was so hampered by suspicious distrust of the good faith of an attainted felon that its performance, while in a condition due to long inactivity and deficiency of lubricating material, usually led to reincarceration, with an extension of its original sentence. But the world moves, and there is now only a smoldering ash-heap where once was a blazing fire of prejudice. How much influence in the preservation of these half-consumed coals is due to the old fetich-worship of the peritonæum, which adds to its pagan decalogue the prohibition, "Thou shalt not commit abdominal section, nor enter into the peritoneal cavity"; or what may be the exact value as an obstructionist to surgical progress of the blood-stained record of the operation as done in the past—can not easily be determined. But, although it is not disputed that early and unhesitating resort to operation is a prominent factor in that which goes to make the same successful, the practice of waiting until success is well-nigh precluded by ill-judged delay is still followed by many. The sooner it becomes a well-understood and practically accepted principle that, in so far as Cæsarean section is concerned, procrastination will add sneak-thieving to its criminal specialty of temporal larceny and filch from both mother and child the best of their chances for recovery, the sooner will its equitable deserts be granted to the operation, its utility be determined, and the cranioclast be sent to molder where Cæsarean section had been made to vegetate in periodical trances.

The status of the present operation, as modified in scope and technique, is well known, and the consensus of opinion among progressive surgeons is only disturbed by the question of whether or no the uterus should be removed at the same time that witnesses the extraction of the child. This element of discord is not relevant to the subject of this paper, and will not be admitted to a place among more pertinent matters to be considered. But the list of recorded cases in which the improved operation has been performed is sadly in need of re-enforcements if it is to act as the army which is to fight the statistical battles of the procedure; and, although this recruit can not be regarded as an enthusiastic defender of the faith, the fact is in no wise a matter of voluntary choice on its part. The following history of a case which not long since came under my observation is offered, not as a very valuable, but as a rather unique contribution, for it presents some interesting features and an opportunity for critical comment:

C. D., aged thirty-two, married for twelve years, having borne five children and having had two miscarriages, was sent to the New York Cancer Hospital by Dr. A. P. Dudley, and was admitted into that institution on the service of Dr. Cleveland (which was at the time under my charge) on June 27, 1888. She was then in the fifth month of utero-gestation, the catamenia having last appeared on January 20th. During the previous two months she had suffered from severe pain, referred to the vagina and the hypogastrium, and for the same period had noticed the existence of a very fœtid vaginal discharge. Her last pregnancy had resulted in abortion, not quite one year previous. She had had a feeling of malaise and of pain in the head and in the sacral region for three years, dating from her last labor. She had noticed the occurrence of quickening two weeks before, and had felt the movements of the fœtus regularly since that time.

She was fairly well nourished and of not unhealthy appearance, though her facial expression and general demeanor bore her out in her statement that she felt very weak and nervous. Her pulse was feeble, very rapid, and of unsteady rhythm. All the external signs of pregnancy of about five months' duration were present, but neither movements nor heart-sounds of the fœtus could be detected. Vaginal examination revealed the fact that the lower third of the canal was all but occluded by a soft, friable, cauliflower-like mass, sloughing in spots, from which proceeded a discharge of fœtid and characteristic odor, breaking down at the slightest manipulation, with free hæmorrhage, and the seat of extreme tenderness. The hard, infiltrated base of this growth involved the lower third of the posterior vaginal wall and the subjacent tissues almost to the rectal mucosa, the posterior border of the *ostium vaginæ*, and apparently the deeper periproctal tissues. The vulva, the upper portion and anterior wall of the vagina, and the cervix were free from the diseased action, the tendency of which seemed to be to extend its limits downward rather than circumferentially. The softer portion of the tumor which obstructed the vaginal canal having been scraped away, the affected tissues of the recto-vaginal septum were found to be rigid and inelastic, while the extent of infiltration was so great that no hope of radical excision of the growth could be entertained. The mother was certainly past any chance of recovery, and therefore her interests were made subordinate to those of the child in the after-management of the case.

During the ensuing nine weeks the patient's condition became steadily worse. The cancerous cachexia, rapid emaciation, speedy recurrence and extension of the growth, progressive debility and cardiac weakness, all combined to render her condition by the latter part of August one of great exhaustion. Common humanity had demanded the free administration of morphine almost since her admission, for she could not endure the excessive pain. In the middle of July the curetting was repeated, and the discovery was made that the rectal mucosa was involved. Further interference was contra-indicated by the extreme weakness of the patient's condition.

The fœtal heart sounds and movements were recognized at about the middle of July, and all the indications pointed to the existence of a vigorous state of fœtal vitality until the last week in August, when a marked loss of power, both in movements and heart sounds, was apparent. The mother was in a most critical condition, her pulse ranging from 120 to 150 in rate, and showing such feeble and irregular cardiac action that sudden

heart failure seemed to threaten her life at any moment. The whole aspect presented by her case was as ill-omened a harbinger of impending death as would have been a prophetic vision of a Highland seer in which her form had been seen completely muffled in the folds of the fateful shroud. As sudden death of the mother almost certainly involved that of the child, which had reached a viable age—seven months and a half—I was not willing to run so great a risk as was apparently to be taken by delay, especially as the fœtus had manifested the signs of diminishing strength. Therefore, on August 28, 1888, with the kind assistance of Dr. Outerbridge, Dr. McCosh, and the gentlemen of the house staff, I removed by the Cæsarean section a male infant weighing four pounds and eight ounces, well developed for its age and seemingly vigorous. Chloroform anæsthesia was employed for the reason that albuminuria had been discovered in the patient. The incision in the uterine wall was closed with deep and superficial sutures, the former of silk and the latter a continuous fine gut suture including the peritoneal covering only. The uterus contracted firmly and the patient rallied well from the shock of the operation. But, as was expected, the sloughing mass in the vagina played its part of an infectious source of septic poison, and the case was terminated by death on the fourth day. An autopsy revealed the lesions ordinarily found in puerperal metro-peritonitis, but, although a large collection of pus was present between the anterior abdominal wall and that of the uterus, which was found to contain in its cavity and its sinuses a quantity of purulent matter, the incision had closed by primary union, and so completely that the aid of scissors was needed in reopening the uterine cavity through the line of the wound.

The child was placed in an improvised incubator, where it soon adapted itself to its altered environment, breathing well, and soon lifting up its voice in quite a strong appeal for protection of infant industries. I was totally unprepared, therefore, for the news that it had suddenly died, after a gasp or two, some four hours later. Dr. Broun, the house surgeon, informed me that there was a hard lump in its axilla, but he was unable to remove this for examination on account of the vigilant supervision of the father of the infant.

On reviewing the history, in the attempt to decide as to the exact amount of influence on the unsuccessful result exerted by the early resort to operation I can find but one argument, and that a most unstable one, against the practice which was followed. Of course the question refers to the child's life only, as the mother was doomed under any circumstances. Assuming that no valid objection can be made to the choice of the simplest and most rapid method of operation as preferable to laparo-elytrotomy or Porro's operation, the adverse argument can rest alone on the principle that, as every day of intra-uterine life is precious to the fœtus, interference should be postponed until the last moment.

But that this case was an evident exception to this rule will be easily demonstrated by taking into consideration the conditions with which I was confronted in making my decision, and which seemed to threaten the transfer of the case to another court, the jurisdiction of which admits of no appeal from its rulings, should I hesitate for any length of time. A mother in the last stage of exhaustion from the combined effects of cachexia, pain, cardiac weakness, morphinism, loss of blood, as well as probable sepsis, and exhibiting all the signs which portend a sudden and impending death; a viable fœtus, dependent on diseased, poison-laden materials from that mother's system for its existence and growth, showing evidences of failing vital power, whose life was in the same danger as that which threatened the mother momentarily—if there is any confidence to be placed in indicative signs, such were the conditions of the problem; and whether it should be solved by action or by trusting to uncertain future possibilities, the welfare of the child being the only object to be gained, was the question to be answered.

I regarded the conditions under which the child was placed as so unfavorable to its adequate nutrition—if not, indeed, tending to the actual production of a dyscrasia or a morbid condition in the child, dependent, as it was, entirely on the pabulum to be derived from a diseased, degenerated, poison-contaminated source of supply which threatened to fail at any time—that its longer subjection to their influence would be simply murderous extinction of its chances for ultimate survival. Moreover, that the malnutrition of its fœtal existence would, as a detrimental element, more than counterbalance the disadvantages of premature birth and artificial feeding, I was firmly convinced, even if the danger of its sudden death were not taken into consideration. The undesirable character of its intra-uterine surroundings may be indicated by the enlargement of its axillary gland, if it is admissible to draw the most natural inference as to the nature of that enlargement. Though the result can not be regarded as brilliant, the principle of early resort to operation—that is, before absolute emergency or prolonged efforts at labor have occurred—remains unshaken; nor must it be regarded in any other light than as upheld rather than decried by the facts in this history.

One or two points of interest are presented by the history. The primary union in the wound of the uterine wall under conditions most adverse to aseptic repair is additional evidence in support of the statement made by others that such action is not prevented by septic peritonitis, which is not a direct result of the operation itself. The unusual condition which called for operation in this case is also worthy of mention. Primary carcinoma of the vagina is considered a very rare condition by authorities, only twenty-eight cases having been collected from the whole literature prior to 1883.* I fancy, however, that this rarity of the condition is dependent more on paucity of reports than of cases observed, for I have seen four unquestionable cases during the past two years, and had met with several other instances of the condition before that time. But in the character of an imperative indication for Cæsarean section it is veritably a rarity, and, as no implication of uterine tissues in the malignant growth was discernible after death, the present case may be regarded as a clinical curio.

At the risk of appearing in the light of a hair-splitting theorist when I mention as a possible cause of the child's sudden death the effects of morphinism, acquired during its fœtal life from the mother, I venture to allude to such an explanation of the death from apnœa of even a seven-months baby, as it savors of some plausibility, but do not offer it as anything more than a possibility.

In forming a judgment as to the propriety of the course

* Hart and Barbour, "Manual of Gynæcology," 1883.

pursued in the treatment of this case, it is necessary to take all the circumstances carefully into consideration as a whole. The case is, to borrow a simile from Oliver Wendell Holmes, "as unsizable, except in its totality, as a billiard-ball"; and, just as one is tentatively rolled over the table for the purpose of testing its freedom from asymmetry of form and irregularities of surface before it is put in play, this is now sent out to be tested and turned in the lathe of others' criticism, so that in any future contest its perfect action may only be invalidated by faulty execution or miscalculation on the part of the player.

18 East Twenty-fourth Street.

THE SURGICAL TREATMENT OF ERYSIPELAS IN CHILDREN.

By A. SEIBERT, M. D.,

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To open the inflamed skin in erysipelas by means of numerous small incisions made all over the diseased surface, and deep enough to draw blood, has been practiced for some time, and not without success, provided antiseptic lotions (five-per-cent. solutions of carbolic acid, or sublimate, 1 to 2,000) were frequently poured on the dressing. Hypodermatic injections of a two-per-cent. solution of carbolic acid into the healthy skin surrounding the inflamed part have also been in use with varying success. The object in both methods was to bring Fehleisen's coccus of erysipelas, wandering in and along the lymphatics, in direct contact with germicidal fluids. The idea was correct, but its execution deficient in both methods. The incisions in the inflamed cutis closed up too rapidly to admit sufficient antiseptic fluid into its lower layers, and the fluid, brought into the healthy skin bordering on the erysipelas by the hypodermatic needle, found its way too rapidly into the circulation, thus doing no good locally, but often harm constitutionally.

Kraske's method was the first step in the right direction. He made regular incisions on the border of the erysipelas, extending into the healthy skin, and, by crossing these diagonally with others, the incised surface (diseased and healthy) presented an appearance not unlike a rail fence. The object here was to give a good chance to the cocci to get to the surface, and the antiseptic fluid to get to the cocci in the lower layers of the skin, at the same time disinfecting the healthy ground most likely to be invaded next by these germs. To this end the dressing was constantly moistened for the next few days. The results of this method were excellent.

Riedel and Lauenstein ("Deutsch. med. Woch.," March 14, 1889) proposed to improve Kraske's method by locating this fence of incisions entirely in the healthy tissue, about one or two inches away from the border of the erysipelas. This was to avoid possible infection of yet aseptic tissue, and this modification has given better results than any other method as yet practiced. The patients were usually put under an anæsthetic and the whole operation was performed strictly according to the rules of antiseptic surgery.

In three cases of genuine erysipelas in children I have been able to employ this method, and in each case with such success that I may be pardoned for relating them in detail:

Girl, five years old, in private practice. Child had an eruption (varicella); had scratched its legs, causing open sores, and in one of these on the left calf erysipelatous inflammation was set up, beginning with a severe chill and nausea, continuing with high temperature (104° to 105° F.) and other signs of severe illness, and spreading rapidly downward and upward. I saw the child eighteen hours after the chill, and, recognizing its cause immediately, proposed the Riedel-Kraske method. This was flatly refused, because of the anæsthetic. Next day I brought a new vaccination lancet with me, and proposed to make the bloody fence with the little harrow attached to it and without the anæsthetic. This was consented to. The erysipelas had meanwhile spread upward to about an inch above the knee and downward to the ankle joint. I decided to make a fence only around the thigh. After carefully cleansing the whole thigh with soap, water, ether, and a five-per-cent. solution of carbolic acid, and covering the erysipelatous region with a carbolized towel, I firmly grasped the leg, and with long strokes of the harrow managed to open the skin around the thigh to the width of about an inch, and about an inch and a half away from the erysipelas. The longitudinal scratches (which were all deep enough to draw blood) were carefully but quickly crossed diagonally with manifold strokes of the harrow, so as to be sure that all of the surface operated upon was opened. A solution of corrosive sublimate (1 to 2,000) was then rubbed into the wound, and a layer of absorbent cotton applied and fastened with gauze bandages. This dressing was moistened freely with the same solution every fifteen minutes.

The whole operation lasted no more than two minutes. The child's temperature at the time was 105° F., it had vomited all food for two days, and had been awake and delirious most of the previous night. The "fence" was made at 11 P. M. I did not see the child until the next day, when I found it sitting up in bed smiling, with a temperature of 100·5° in the rectum, due to the erysipelatous infiltration remaining in the limb below the "fence." The erysipelas had evidently reached the wounded ring, for on the lower border of the dressing the skin disappeared under it in a red and swollen condition, with a number of blisters spread over it, while on the other side it was as white and cool as could be, and it remained so until seven days later, when I removed the dressing. The temperature never rose again, the appetite returned, the child had slept well, and the subsiding of the severe symptoms had set in about six hours after the little operation.

But I found another patient on that day also sick with the same complaint. The younger sister of the first patient, a very nervous, somewhat anæmic child three years and a half of age, had been attacked the evening before with erysipelas of the right leg, beginning also at a scratch. As the parents consented immediately to the treatment, I was able to make the bloody ring just below the knee, and to thus stay the advance of the erysipelas in that direction. The temperature of the child fell from 104·5° to 101° F. within four hours, the erysipelas traveled down to the toe-nails, but never crossed our fence, the child meanwhile feeling perfectly well.

The third case was that of a baby but thirteen months old. I first saw the child at the children's department of the German Dispensary, on September 10th, when it was brought there for a severe attack of cholera infantum. As it was collapsed, I washed out its stomach. This had the effect of checking the vomiting and of virtually curing the case. But two days later erysipelas

began just above the knee, showing great tendency to spread rapidly upward, thus threatening the child's life. I resolved to operate the next day in spite of the child's weak condition. When I did make the fence the child's condition appeared almost hopeless, the temperature registering 105·5° F., and the strength of the baby being almost exhausted. As the inflammation had spread anteriorly nearly to Poupart's ligament, I had to make the ring just below it, coming up from behind half way over the buttock. The mother being a Bohemian and quite unable to understand me, I had to make myself intelligible more by signs than by words, and yet our combined efforts resulted in a complete success, for the next day the baby's temperature was normal and the child made a speedy recovery.

I had the satisfaction of being enabled to present the three children to my class at the New York Polyclinic, and there removed the dressings for the first time, showing exactly the line of demarkation and its remarkable action. I am positive that this method will check and cure every case of erysipelas if employed in time. My three cases demonstrate that my modification of operating with the vaccination-harrow and without an anæsthetic can be easily made use of in children, its advantage being that parents will more readily consent to this treatment.

122 East Seventeenth Street.

SOME GENERAL SUGGESTIONS IN DERMATOLOGICAL THERAPY.*

By SAMUEL SHERWELL, M. D.,
BROOKLYN.

1. *A Simple Method of treating Scabies.*—The following plan is one I have long used, and for which I claim originality, certainly not as to the antiparasitic element itself, sulphur, which is as old as dermatology; but the manner of employment I have never seen referred to except by Greenough, of Boston, who casually refers to one of the means in a late monograph on the subject of scabies. I have employed and advocated the method as below given for many years, almost to the exclusion of others.

Instead, then, of the use of the odious and, as I believe, totally unnecessary inunctions with possibly rancid and certainly evil-smelling unguents, all that I find needed in my practice is to give a sufficiency of the dry precipitated sulphur to the patient, which I direct him to rub fairly well, but without violence, into the parts of the person where the lesions of the disease are manifest, or most manifest, once a day, preferably on retiring; to also sprinkle or dust a little, say about a small teaspoonful, of the same powder on the sheets or blankets, etc., of the bed—on the clothes, in fact, coming most intimately in contact with the individual. A simple bath of soap and water is ordered, with total change of under-clothing and bed-clothing about twice, at most three times, a week.

This plan seems to obviate all the discomfort, moral as well as physical, felt by the patient during his treatment, which makes him feel so like a leper under the ordinary, and certainly so under the more stringent, treatments, and I am as certain of good result as in the latter ways. I maintain and believe that the sulphur by this method, with the increased sebaceous secretion of the stimulated skin, makes the best unguent, enough of the unguent, and certainly the least irritant unguent; and as such one far less liable to cause any of the violent eczemas which so often follow the use of the recommended and applied ointments, etc., of the authorities, especially the older ones.

A little spirit of lavender or any other mild perfume may be sprinkled on the linen, etc., to cover the slight sulphurous odor, which in such way is made barely perceptible and is in striking contrast to the pronounced diabolism of the ordinary method. If thought best, occasionally a mild inunction with some bland oil (such as sweet-almond oil) might precede the rubbing on of the sulphur; but I seldom or never find it necessary. Particularly do I recommend my method in cases where perhaps, as is natural, all the family are affected, though the disease is most manifest, as is usual, on only one or two of them. It can readily be perceived how easily all may be treated and yet hardly perceive it. Particularly do I lay stress in these cases upon the dusting of the bed-clothes.

It happens very commonly in my practice that the servant-girl fresh from Scotland, Scandinavia, or some other foreign country, brings it with her from the steerage, and becomes the focus of contamination. On one such set of causes and cases treated within the last fortnight I have now a letter from the family attendant. They were all cured without the slightest trouble. The disease had been present some months. I have treated in all eight cases during the past thirty days in the same manner with a perfect result and no trouble.

In all the foregoing, however, I do not seek to maintain that this mode would be so promptly and rapidly efficacious in those phenomenal cases we read of in literature as the Norway itch, etc., where, from the pachydermatous condition of the patients, a bath of caustic soda would seem to be a good preliminary to any treatment; my plan is adapted to the conditions under which we see the disease here—among families of perfectly, or at least relatively, cleanly habits and persons.

2. *Eczema Ani.*—I do not see in the works of skin authorities generally—when speaking of this exceedingly annoying affection and its accompanying distressing pruritus, both of which may have extended, and usually do, to the genital regions and parts surrounding—enough reference, or at any rate reference stringent enough, to what, in my opinion, is almost always a concomitant, and probably oftenest a cause—viz.: slight fissure of the mucous membrane of the sphincter, or oftener indeed inside the sphincter and well up the bowel.

In these latter cases generally I find the other name for fissure, "painful ulcer of the rectum," to be a misnomer, as it is often unattended with pain, or at least great pain. I scarcely ever now pretend to treat a marginate eczema of these localities without making a specular examination of the rectum first, and frequently find a lesion of this character, which, with its peculiar irritant secretions, both liquid and gaseous, renders it difficult, if not impossible, for a cure

* Read before the American Dermatological Association at its thirteenth annual meeting.

to be obtained by external applications alone, or even by slightly deeper excursions beyond the vermilion edge.

Every one knows how a fissure should be treated; but a good many patients, feeling no pain, can not understand the necessity for a surgical operation or procedure, and will not readily submit. In these cases I am in the habit of advising and instituting the use of rubber bougies—the hard variety (they are sold in nests like test-tubes)—and gradually increasing the caliber of the bougie introduced, letting them remain in some five to ten minutes every other night.

In several patients of late—one or two of whom (themselves professional brethren) had been treated before by celebrated specialists, and had been stretched, cut, and cauterized with nitrate of silver—I have found decided proctitis involving a large portion of the bowel; and it is for those cases peculiarly that there seems to be a reason for my speaking here, for their pruritus was something dreadful. It is this state of things that causes the evil secretions I have mentioned above, and a person may medicate the superficial surface of the anus and the adjacent region and, as aforesaid, the surface of the external sphincter for even some distance up, but no good, or very little, will result.

In these cases, after a laxative, preferably saline (I like Startin's tonic with a good deal of sulphate of magnesium), I think it important to have the bowel washed out with an ordinary slight enema, and then a sufficient quantity, say a tablespoonful or so, of the following or a similar mixture thrown up and allowed, if possible, to remain (this is best accomplished naturally at night):

℞ Acidi borici, Zinci sulphocarbolat., ... āā ʒ ss.;
Listerine, Glycerin, ... āā ʒ ij;
Aquæ ..... ʒ iij–ʒ iv.

In both the cases alluded to I varied this injection with self-insufflations of various powders—sulphur well triturated, boric acid triturated with carbonate of bismuth, etc.—taking care to vary the preparation often, as I find that the mucous membrane resists or resents, as the skin does, absolute uniformity or monotony of a healing agent. The result of this treatment with the bougies was entirely satisfactory, and speedy and welcome cure was attained. A word as to the method of self-insufflation. This was easily managed by one of the gentlemen, an excellent practitioner, by the following means: A long rubber tube (drainage-tube) was attached to a thick glass tube, loaded, and introduced as far as necessary into the bowel, and then by a quick puff emptied. Some mild anticnesmatic lotions and salves were also used externally, being changed occasionally for the same reason as the powders. In this way recovery became absolute, and, as one declared, freed him from what was making life itself a burden.

3. *Eczema and Sycotic Conditions of the Upper Lip.*—These conditions, too, are ordinarily dismissed with a slight and almost contemptuous reference to irritant discharges from the nasal chambers. I think they merit at least a half dozen lines in those treatises which pretend to be exhaustive, as they are very common, very distressing, and most rebellious unless handled properly; and, in my opinion, the nose and its lining require as much attention as the lip. This interference may be either medical or surgical as the case may demand, but certainly the mere prescription of a salve or lotion does not cover the ground.

Having a very large auxiliary clinic attached to an eye and ear hospital, I am constantly meeting with strumous infants, children, and those of larger growth, with these forms of dermatitis; always improvement may be obtained by protective and soothing treatment externally, but to facilitate a cure and render it perfect, the nose must be the first object of treatment. In these cases I am inclined to think, as in some cases of eczema ani, that not alone the acrid liquid secretions, but the foul gases from the mucous membranes, act as decided irritant causes.

In all the foregoing recommendations I have purposely been as brief as possible. For instance, in the references made to anal, nose, and upper-lip troubles, many different therapeutical agents, both medical and surgical, may be used by different intelligent practitioners with equally good effect. However, I may perhaps add a closing word on the subject of scabies and its treatment as recommended.

I maintain, as before said, originality; also efficiency and convenience. I think, too, the means used might be recommended as prophylactic in circumstances where large bodies of men are gathered together, as in soldiers', lumberer's, and cow-boys' camps, in winter quarters, etc., for a long time.

I have never seen any dermatitic manifestations from sulphur used in this way with any degree of care. This is one of the most common complications or after-results of the "quick cures" of the itch. To be sure, my method is not so rapid as they are said to be, but is rather a nine-day than a three-day cure; but all other conditions are in its favor.

SEXUAL PRECOCITY.

By RICHARD DOUGLAS, M. D.,
NASHVILLE, TENN.

Abnormally early puberty is quite compatible with good health, says Herrick, in the "Reference Hand-book of the Medical Sciences."

To the contrary, it appears that sexual precocity with its disturbing and demoralizing tendencies is in itself a pronounced disease, repugnant to our finer natures, and appealing most strongly to our sympathies. It robs childhood of its innocence, and youth of its beauty and purity. The one so cursed to "wallow in the carnalities of the world" is at last left a withered victim of premature senility.

If parents could interpret aright the many hints in the budding character which suggest sexual precocity in their children, training and watchful care might do much to correct the affliction they have transmitted. Under favorable surroundings and in ordinary temperaments, childhood merges into puberty and safely into adolescence, unconscious and innocent of all save the purest of feeling. That such a quiescent period is now fast becoming the exception, the forward youth of to-day fully attest. Yet it is most unusual for us to meet with a case so exaggerated as the one

I append. I can find but few in subjects of such tender age in the literature on the matter.

D. is four years and three months old, weighs fifty-four pounds, is three feet ten inches and a half high; the circumference of the head, just above the ears, is nineteen inches. The features are rather large and coarse. The general muscular system is remarkably developed. The penis, scrotum, and testes are of the size of those of an ordinary adult, the penis measuring full three inches in the flaccid state; the prepuce rests half retracted over the glans. The pubes is covered with soft, silky brown hair. The abdomen is quite protuberant.

This child, with such unusual physical development, is mentally sluggish, obstinate, and self-willed. He enters with spirit, however, into the amusements of children. He does not appear to manifest any fondness for the opposite sex, and yet is addicted to that curse, masturbation, which seems to come by intuition with the dawn of puberty. He will take advantage of every opportunity to commit self-abuse. His erections are vigorous. The emission which is sometimes found on his linen is of thin mucus; no spermatozoa are present.

The history of this rather unusual case is somewhat unique. The boy, now something over four years old, was not in any way peculiar or unlike other children up to three years of age, at which time, after wading in a spring branch for several hours, he was seized with a violent chill, followed by extremely high temperature and active delirium. A physician was called, and under his care the boy was quite well again in four days.

Some few weeks after this his mother observed the change in his voice. The gradual development of the sexual organs followed.

It was first known that he masturbated some six months ago. His father died of acute tuberculosis.

I shall not attempt an explanation of this curious perversion. A probable solution of the case is that during the short but severe fever his brain sustained some positive organic lesion which has since acted as an irritant to the sexual nerve centers.

A CASE OF PRECOCIOUS MENSTRUATION.

By A. J. JAGOE, M. D.,
HERNANDO, MISS.

On August 14th a negro named Cobb called on me and stated that his daughter, not yet four years old, has been menstruating for over two years. She was born October, 1885, and in July, 1887, her mother noticed a discharge of mucus from the vagina. He took her to Dr. Westbrook, who prescribed, and in a few days the trouble was gone. Again came the discharge, and again the doctor "cured it," but the thing wouldn't stay cured, but kept returning, until my friend saw a periodicity in the attacks and cures, and informed its mother of the true state of the case. In a short time it became a regular menstrual discharge, normal as to time, quantity, and material. On my request the child was brought before our County Medical Society at its late meeting.

We found a well-grown negro child, very intelligent for her age, breasts fully developed, pubes wearing the adult garb, and the child actually menstruating. The parents are healthy, and forty-five and forty-three years old, respectively. The child is the *tenth* of their family, and there are two younger.

As none of us doctors here ever saw a case of the sort, and have read of but few, we send it for record.

September 16, 1889.

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"THE OPEN DOOR OF QUACKERY."

Under this title Dr. Eggleston, Dr. Flint, and Dr. Doremus, in the October number of the "North American Review," discuss the regulation of medical practice. So important a subject should be carefully studied, and whatever remedies are suggested should be practical. In the first place, it must be remembered that the National Government can not act in the matter. Dr. Eggleston seems to think it can, under what he calls the "general-welfare clause" of the Constitution. If that is so, then under the same clause it might regulate the kind of seeds to be planted by farmers. Dr. Eggleston's remark that Congress once made a State out of a part of one previously existing, without the consent of the latter, and in violation of the Constitution, does not seem relevant to the subject. The "general-welfare clause" can not be interpreted to mean that Congress shall regulate the practice of medicine in the several States. Possibly "to protect an American industry" the National Government might be persuaded to forbid the entrance of doctors from foreign lands, or to charge a light duty upon them, or regulate inter-State medical requirements; but it can not lawfully forbid every State to graduate doctors in such manner as it may choose, and so make a fool of itself in this matter if it wishes.

In the second place, any effort to regulate medical practice must be so directed as to appeal to the people. They must be made to see that it is best for every one to prevent certain men from obtaining licenses. Our Government is representative in the widest sense. The Government "of the people, by the people, for the people" may be said to be of the average, by and for the average. Good, bad, and indifferent alike are represented. The active forces are the small number of good and the possibly rather larger number of bad men in the country. The great majority belong to the "indifferent" class who do not think much, except in the lines laid down by the good or the bad, and who rarely *act* save under the lead of these.

When seeking to bring about a reform in such a matter as the practice of medicine, it is most important to see just what can be done, not alone what ought to be done. The legislative measures suggested must be constitutional and practical, which can be passed by the legislatures and do good when passed. In the first place, the measures must not be proposed in Congress. In the second, they must be of such a nature that the selfish interests of the majority of the State legislature be not antagonized. Thirdly, if possible, they should appeal to these same selfish interests; and last, but not least, they should be so framed as to accomplish something really raising the standard of practice.

The first point needs no more discussion. In regard to the second, it is possible that a bill might pass the New York Legislature forbidding the chartering of more medical colleges having the power to grant licenses to practice until the population of the State reached, say, twice its present number, or for a certain number of years. Such a measure might somewhat diminish quackery. Possibly, also, a State board of examiners might be appointed. The bill suggested by Dr. Flint, while good in many ways, would be hard to pass, since it provides for an "unsectarian" board. Now, the law ought not to recognize separate "schools" of medicine, but it does. Moreover, most of the people do. Dr. Flint's "unsectarian" board would mean to many a board composed of narrow sectarians whom they would designate as "allopaths." The fact stated by Dr. Flint that "there is but one science of medicine" would seem absurd to a large number of people. They think there are three—"allopathic," "homœopathic," and "eclectic." With the American love of "fair play" and the American "don't-care-a-damnativeness," the average legislator will see no reason why these three "schools" should not have a share in the examining board. The "County Democracy," "Tammany Hall," and "Irving Hall" are recognized as varieties of Democrats. Why are there not three kinds of doctors? Any way, the doctors don't count for much as voters, and it is hardly worth while for the ordinary politician to trouble himself about them; but if a bill is to be passed, he does not see why the "allopaths" should "have all the patronage." Moreover, a good deal of care will be taken by the homœopaths and eclectics and the various quacks that the legislator be clearly shown why the allopaths should not. They are "slow" and "narrow," these "old-school" men. Moreover, no more "monopolies" should be tolerated.

Suppose Dr. Flint's plan should pass the legislature, should we be better off? Of course, the plan would need more elaboration before being presented as a bill, for it is too vaguely worded, and leaves considerable doubt as to what is meant by several phrases; but it or any measure creating a board of examiners would help to sift out some of the worst quacks. Yet, an examining board would not cure the evil, for the reason that no examination can show a candidate's real knowledge or ability. Moreover, any such board, if not well paid, would not command the services of the best men, and, if well paid, would soon become the prey of politicians, medical and lay, who would rapidly destroy its efficiency. Still, a board would do something.

The most important thing, however, is to teach the people that their own interests demand good medical education. It takes long to do this, and it can only be done by again and again reiterating the idea. No law not supported by public opinion can be enforced. This opinion, on the whole, is right. To produce any real result the people must be shown again and again the folly of quackery until they begin to think about the matter. The moment public opinion is in favor of good doctors, it will cause laws to be passed which will check the present evils, and, moreover, will bring pressure to bear upon poor colleges, forcing them to improve.

We must not suggest violations of the Constitution. We must not hold up the idea of an examining board as a cure-all. Dr. Eggleston's statement of the countries in which national boards exist shows the absolute futility of such an idea, since we find Roumania, Guatemala, Syria, Turkey, and Egypt among them. While many good doctors may be found in these countries, it will hardly be maintained that the average equal our own, or that our worst are as low as theirs.

It is doubtful whether, on the whole, the public can not take care of its own interests in this matter without the help of special laws. As a rule, the public is pretty shrewd. Whether we wish to pass a law or not, by all means let us explain to the people our own position, and show them what we believe to be best. If we are to have any improvement, it will be by our own efforts. Let us remember, however, that we live in a practical age among a very practical people, and we must not begin by proposing measures which can only be adopted if we accept the liberal ideas implied by the New York assemblyman when he asked, "What is a little thing like the Constitution among friends?"

CORONILLA, A NEW CARDIAC REMEDY.

A recent number of the "Therapeutic Gazette" gives some interesting facts and deductions in regard to coronilla, lately brought forward as a drug having a special action on the heart.

The *Coronilla scorpioides*, from which the drug is obtained, is an annual plant widely distributed throughout southern France, of the family *Papilionaceæ*, suborder *Coronillæ*. From experiments on animals, Cardot has determined that coronilla arrests the heart in systole. He cites four cases in which its use produced considerable amelioration in various cardiac affections. Recently Schlagdenhauffen, Gley, Reeb, and Spillmann have called attention to the drug. A glucoside has been isolated, termed coronillin, of which the toxic dose for a man weighing a hundred and twenty pounds would be about three quarters of a grain. At the same time Schlagdenhauffen and Reeb maintain that as much as two or three grains of coronillin must be administered to produce any therapeutic effect, or from nine to twenty-two grains of the extract.

Coronilla is said to act especially on the muscular tissue of the heart, increasing its contractility. In seventeen cases of heart disease Spillmann employed it during the asystolic period. In eight of these the remedy gave satisfactory results, while in seven it proved entirely inoperative. A diuretic effect was frequently observed, the daily amount of urine increasing from seven ounces to from two to four quarts. The therapeutic effect of coronilla, administered for three or four days in succession, became apparent in twenty-four or thirty-six hours after the ingestion of the first dose. The drug acts but feebly on the frequency and rhythm of the cardiac pulsations, but it is said to produce an increase in the amplitude of the pulse, an augmentation of diuresis, diminution of œdema, and improvement in respiration. The good effects of coronilla seem to be of the most transient character. In a day after the cessation of its use the patient returns to his previous condition. Thus the

value of coronilla is highly problematical, one author maintaining that three quarters of a grain of coronillin are a toxic dose, and another recommending from three to five grains. Further experiments are essential to test coronilla satisfactorily.

MINOR PARAGRAPHS.

THE SUBCUTANEOUS USE OF ANTIPYRINE IN SCIATICA.

Dr. Osherovsky, in the "Proceedings of the Caucasian Medical Society" for 1888, reports upon the treatment of himself and three others, for sciatica, by the subcutaneous injection of a solution of antipyrine, with a small addition of hydrochloride of cocaine. He gave one injection daily of the solution, so that the patient received from six to eight grains of the former and an eighth of a grain of the latter. In his own case three such doses effected a cure. Of the other persons affected, one obtained relief only after three injections, but with two more recovery was accomplished. In another case there was double neuralgia of the thigh, for which he administered seven injections on the right and five on the left side. The remaining patient of his series, who had had left-sided sciatica for two years, obtained temporary relief only from the injections; it became necessary to supplement the treatment with a month's course of faradization, whereupon recovery was effected. Dr. Osherovsky prefers the subcutaneous use of antipyrine, thinking that only palliative effects follow its internal administration. He holds that a speedier result is thus secured, and by smaller and less frequent doses. He has found no unpleasant accessory results—such as nausea, giddiness, or excitement—from this method of treatment, according to his own experience or in the reported observations of others.

FAULTY TITLES TO ARTICLES.

It is a fault in those who write for the journals, medical as well as others, to adopt unmeaning headings to articles and paragraphs that have purpose and point. Dr. Billings has more than once shown how difficult it is for those who have indexing work to do to properly handle papers and articles which are indefinitely described by their heading. Nearly every medical man who has had research and collation to do, has found himself hampered by the apparently pointless head-lines of many writings. Of course, a pointless paper must have a meaningless title, but this sort does not commonly find its way into print. What assistance is there to the studious person who finds in the index of a periodical expressions like these, "An Interesting Case," or "A New Plan of Treatment," or "A Step in Advance," or "An Ethical Question," or a thousand others we have met with from time to time, but which we refrain from approaching too closely lest the teachings of this article be taken to have a personal bearing, which they assuredly have not?

THE MEDICAL SCHOOLS OF PHILADELPHIA.

The "Medical News" states that the colleges of that city are increasing their facilities greatly this year. The Polyclinic has a contract under way for the construction of a new college, hospital, and dispensary building, the corner-stone of which will be laid early in November. The University Medical Department has a new Maternity, with a capacity for fifteen confinements each month. This is the one completed wing of the hospital that will not be carried out, in the entirety of its plans, for a year or two. The Jefferson Medical College will soon add another building to the cluster located at Tenth and Sansom Streets; a portion of the new structure will be for hospital enlargement. A new autopsy building is now going up near the University Hospital for the use of that institution. It contains a theatre, modeled after that at the Johns Hopkins Hospital, for necroscopic demonstrations. These structures will be rather ornate in exterior and replete with every modern improvement within.

QUACK MEDICINES IN AUSTRIA.

According to the "Occidental Medical Times," the police of Vienna have seized the entire stock of "Warner's Safe Cure," held by the pharmacists of that city. This was done not so much because of the character of the compound as because of the charlatanic advertisements which accompanied the nostrum. The agents for its sale had complied with the Austrian law, which directs that the formula of its composition shall be made known in regard to every proprietary medicine before it can be put on sale in the pharmacies. The "Pharmaceutische Post" is quoted as saying that the fault really lay in the quackish pretensions that were published in relation to the compound. Very severe rulings and examples have recently been made against certain preparations on that account.

PHENACETIN IN WHOOPING-COUGH.

Not long ago we alluded to some favorable experience in the use of phenacetin in whooping-cough that had been recorded in a Munich periodical. From a recent issue of the "Archives of Pædiatrics" a confirmatory opinion, by Dr. George C. Irwin, of Sebetha, Kansas, may be cited, showing that the drug has proved beneficial in very young infants having pertussis. A child only three months old, with whooping-cough marked by severe hourly spasmodic attacks, got well under half-grain doses of phenacetin, dissolved in ten drops of glycerin. The relief was noticed from the onset of the administration, for on the first night after using it, a few times, at four-hour intervals the child obtained over six hours of good rest. In this case antipyrine, as well as other drugs, had been used without avail.

FALLING FROM A HEIGHT.

In reference to an annotation in the "Lancet" upon this subject, a medical man, formerly a sailor, states that in youth he fell from the topgallant yard of a vessel, a distance of at least 120 feet. Sensation was entirely lost during his transit through the air. It returned slightly on striking the water, sufficiently to enable the lad to strike out (being a good swimmer) and seize a life-buoy. The writer thinks death would have been painless had he fallen on some hard substance; but the assertion that persons die in the act of falling is, he thinks, evidently wrong.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending October 15, 1889:

DISEASES.	Week ending Oct. 8.		Week ending Oct. 15.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	69	11	77	13
Scarlet fever	33	6	40	3
Cerebro-spinal meningitis	0	0	1	0
Measles	18	1	12	1
Diphtheria	67	19	64	20

An Impostor.—Members of the profession in the city and State are warned against a plausible stranger, who professes to be a secretary of the "Association of Commercial Travelers,"

and desires to secure the services of a physician to attend members of the association. He shows a thorough familiarity with the "Medical Register," and gives unexceptionable references, on the strength of which he solicits a small advance for the purchase of blank forms. He has already been quite active in this city and may seek other victims.

The Chicago Medical Library Association held its first regular meeting on the 4th instant, and Dr. N. S. Davis was elected to its presidency. We wish the movement great success. Nothing short of a large collection of books in a fire-proof domicile will satisfy our ideal of what Chicago should possess.

Electricity in Extra-uterine Pregnancy.—Dr. A. H. Buckmaster read a paper, on October 11th, before the Kings County Medical Association, on the many methods of applying electricity to the ectopic fœtus. The subject is still under study by Dr. Buckmaster, and his results will be given to the association at a future meeting.

The American Academy of Medicine is endeavoring to make as complete a list as possible of the alumni of literary colleges, in the United States and Canada, who have received the degree of M. D. All recipients of both degrees, literary and medical, are requested to forward their names at once to Dr. R. J. Dunglison, Secretary, No. 814 North Sixteenth Street, Philadelphia.

The Medical Society of the State of New York.—The next annual meeting will be held in Albany, on the 4th, 5th, and 6th of February, 1890. The Business Committee consists of Dr. G. H. Fox, 18 East Thirty-first Street, New York; Dr. Henry Flood, of Elmira; and Dr. Herman Bendell, of Albany. Persons intending to read papers at the meeting should make application to some member of the committee before January 1st, stating the title of the paper. The time required for the reading of a paper should not exceed fifteen minutes.

The New York Obstetrical Society.—At the annual meeting, held on the 15th inst., officers for the ensuing year were elected as follows: President, Dr. J. E. Janvrin; vice-presidents, Dr. H. C. Coe and Dr. R. A. Murray; recording secretary, Dr. A. M. Jacobus; corresponding secretary, Dr. A. H. Buckmaster; treasurer, Dr. J. L. Morrill; pathologist, Dr. J. R. Nilsen.

Changes of Address.—Dr. Edward G. Janeway, to No. 36 West Fortieth Street; Dr. J. G. Hirons, to No. 36 West Thirty-third Street.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from September 29 to October 12, 1889:*

Poindexter, Jefferson D., First Lieutenant and Assistant Surgeon. Granted leave of absence for one month. S. O. 113, Headquarters Department of Dakota, September 30, 1889.

Adair, George W., Captain and Assistant Surgeon. Leave of absence for one month granted in S. O. 90, Headquarters Department of the Platte, September 25, 1889.

Pope, Benjamin F., Major and Surgeon. Relieved from duty at Fort Clark, Texas, and will report for duty to commanding officer, Whipple Barracks, Arizona Territory. Par. 11, S. O. 230, A. G. O., October 3, 1889.

Billings, John S., Major and Surgeon. Detailed as delegate to represent the Medical Department of the Army at the annual meeting of the American Public Health Association to be held at Brooklyn, N. Y., October 22, 1889. Par. 10, S. O. 230, A. G. O., October 3, 1889.

Tremaine, William S., Major and Surgeon. Relieved from temporary duty at Fort Leavenworth, Kansas, and will return to his home, Buffalo, N. Y. Par. 13, S. O. 230, A. G. O., October 3, 1889.

Kendall, William P., First Lieutenant and Assistant Surgeon. Granted leave of absence for one month. S. O. 93, Department of the Platte, October 2, 1889.

Steinmetz, William R., Captain and Assistant Surgeon. Ordered for examination for promotion. Par. 3, S. O. 236, A. G. O., October 10, 1889.

Carter, Edward C., Captain and Assistant Surgeon. Granted leave of absence for twenty days. Par. 6, S. O. 234, A. G. O., October 8, 1889.

Smith, A. K., Lieutenant Colonel and Surgeon. Leave of absence extended twenty-one days, on S. C. D. Par. 7, S. O. 234, A. G. O., October 8, 1889.

Munday, Benjamin, Captain and Assistant Surgeon. Granted four months' leave of absence. Par. 2, S. O. 233, A. G. O., October 7, 1889.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the two weeks ending October 12, 1889:*

Harmon, George E. H., Surgeon. Detached from the U. S. Steamer Constellation and ordered to the Naval Academy.

Lownes, C. H. T., Assistant Surgeon. Detached from the U. S. Steamer Constellation and ordered to the Naval Academy.

Winslow, George F., Surgeon. Ordered to the Marine Rendezvous, Boston.

Henry, Charles P., Assistant Surgeon. Ordered before the Retiring Board for examination.

Bright, G. A., Surgeon. Detached from temporary duty at the Naval Academy and placed on waiting orders.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the six weeks ending October 5, 1889:*

Fessenden, C. S. D., Surgeon. Granted leave of absence for thirty days. October 3, 1889.

Wyman, Walter, Surgeon. Granted leave of absence for thirty days. September 3 and 21, 1889.

Sawtelle, H. W., Surgeon. Granted leave of absence for seven days. September 26, 1889.

Austin, H. W., Surgeon. Granted leave of absence for thirty days. September 9, 1889.

Gassaway, J. M., Surgeon. When relieved at New Orleans, La., to rejoin station at Cairo, Ill. September 30, 1889.

Goldsborough, C. B., Surgeon. Leave of absence extended thirty days on surgeon's certificate of disability. September 16, 1889.

Armstrong, S. T., Passed Assistant Surgeon. Relieved from duty at New York; ordered to command of Service at Cleveland, O. September 17, 1889.

Ames, R. P. M., Passed Assistant Surgeon. Assigned to duty at New Orleans, La., upon expiration of leave of absence. September 30, 1889.

White, J. H., Passed Assistant Surgeon. Leave of absence extended thirty days on surgeon's certificate of disability. September 21, 1889.

Norman, Seaton, Assistant Surgeon. Granted leave of absence for thirty days, to take effect when relieved. October 4, 1889.

Pettus, W. J., Assistant Surgeon. Ordered to Portland, Me., for temporary duty. September 26, 1889. Granted leave of absence for twenty-six days, to take effect when relieved. October 3, 1889.

KINYOUN, J. J., Assistant Surgeon. Granted leave of absence for thirty days. September 21, 1889.

Society Meetings for the Coming Week:

MONDAY, *October 21st:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Medico-chirurgical Society of German Physicians; Hartford, Conn., City Medical Association; Chicago Medical Society.

TUESDAY, *October 22d:* New York Academy of Medicine (Section in Laryngology and Rhinology); New York Dermatological Society (private); Buffalo Obstetrical Society (private); Medical Society of the County of Putnam (quarterly), N. Y.

WEDNESDAY, *October 23d:* New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medical Society of the County of Albany; Philadelphia County Medical Society.

THURSDAY, *October 24th:* New York Academy of Medicine (Section in Obstetrics and Diseases of Women and Children); New York Orthopædic Society; Brooklyn Pathological Society; Roxbury, Mass., Society for Medical Improvement (private).

FRIDAY, *October 25th:* Yorkville Medical Association (private); New York Society of German Physicians; New York Clinical Society (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

SATURDAY, *October 26th:* New York Medical and Surgical Society (private).

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

Meeting of October 3, 1889.

The President, Dr. A. L. LOOMIS, in the Chair.

The Pathological Anatomy of Chorea.—Dr. C. L. DANA, in the course of an exhaustive paper on this subject, dealt especially with the pathological anatomy of the nervous centers in chorea. He said that the changes elsewhere, particularly those in the heart, had often been described, and there was a pretty definite agreement that the most uniform condition in patients dying of chorea or with chorea was fibrinous deposits on the valves of the heart, usually the mitral. Osler thought that this occurred in ninety per cent. of cases. He would not take up this particular point, but turn to the nervous side of the question and report a case in his own practice:

William G., single, Swiss, aged eighteen years, had come under his care December 15, 1888; family history unknown. Patient had always been weak and sickly as a child; had no remembrance of having had any of the ordinary children's diseases; gave no rheumatic, venereal, or alcoholic history. He had begun to have choreic movements twelve years ago; cause unknown. The movements had not been severe, and when at the age of twelve he had come to this country he had been able to work and be useful. The patient had suffered from so-called epileptic attacks at occasional intervals for many years. The attacks had at first occurred at night only, but of late had come on during the day also. They had begun with a shrill cry. The patient had to be examined physically in his bed, as he was unable to walk or help himself on account of the violence of the choreic movements. He was somewhat emaciated and anæmic, face dull, expression stupid, but answered questions intelligently, though his speech was slow and jerky, on account of the movements of his lips and tongue. Over the left parietal bone there was a hole of about the size of a half-dollar made by a trephining operation performed in San Francisco fourteen months before his admittance to the hospital. No history of any form of paralysis. No heart murmurs. Lungs and abdominal viscera normal. Examination of urine negative. The epileptoid attacks at this time were of great violence and frequency and hysteroid in character. Chloral hydrate and stimulant feeding were ordered. On December 20th, five days later, hysterical attacks were less numerous, occurring only at night; chorea jerkings less, so that the patient could feed himself. On December 28th, thirteen days after admission, the attacks had ceased altogether; the chorea was better, the patient sat up, read, and talked, and continued to improve until January 6, 1889, when pneumonia developed, and he died January 8, 1889. The autopsy showed rigor mortis well marked; the body was considerably emaciated; the left lung was beginning to exhibit pneumonic changes. The heart was normal; no vegetations on the valves. The liver and spleen were normal. The kidneys were small, the capsules adherent and thickened. The skull was brachycephalic in shape and extremely thick, measuring seven eighths of an inch on section through the occipital bone. The old trephine hole lay over the left inframarginal gyrus. The dura mater was very adherent; the pia mater was thickened and congested, but not markedly adherent to the cortex. The brain looked normal, except for a very superficial softening seen on the under surface of both temporal lobes. The cord was apparently normal. The brain, the cord, and pieces of the sciatic and musculo-spiral nerves and of the biceps muscle were saved for further examination. The brain, cord, and nerves were placed in Müller's fluid, which was frequently changed, and at the end of three months for the cord, bulb, and nerves, and five months for the brain, they were placed in alcohol. Sections through the motor convolutions, corpus striatum, optic thalamus, pons, bulb, and cord were made. They were then cut and stained, Weigert's stains being used. The examination of the convolutions and subcortical white matter showed a slight amount of leptomeningitis; the gray matter was considerably injected; the neuroglia cells were not excessively increased. Pyramidal cells mostly normal; an occasional cell might be found undergoing pigmentary degeneration.

The chief changes to be noticed were just beneath the cortex; here the white matter was in some sections honey-combed with little spaces, round, oval, or like long slits. These spaces were either empty or partly filled by blood-vessels. The walls of the blood-vessels were somewhat thickened, though no real arteritis was present. They had, however, been tensely distended, and exudates, including red blood-cells, had been poured out; this had distended and eroded the circumvascular spaces, forming large dilatations similar to those described by Dickenson. The process, though chronic, could not be looked upon as inflammatory, and it could only be explained by assuming a flabbiness and loss of tonus of the vessel-walls due to prolonged distension, allowing abnormal dilatation and filtration of the vessel contents. There was no hyperplasia of connective tissue and there were no amyloid bodies. At the base and tip of the temporal lobe, where the surface was softened, a severer grade of meningitis was present, and the superficial layers of the cortex showed evidences of disintegration; the ganglion could be seen, but the white matter beneath was more extensively honey-combed, and there was evident increase of neuroglia cells. The basal ganglia and internal capsule did not appear to the naked eye so much involved as the subcortical tissue. The middle portions did not harden well, and only the optic thalamus, the lower part of the internal capsule, and the anterior part of the cau-

date nucleus could be examined microscopically. These parts showed the same honey-combed appearance, though less marked than in sections higher up. There could also be seen the small arterioles which had formed varicose dilatations, which were full of blood. The internal capsule showed more serious disorganization; its fibers were split up by interlacing and dilated blood-vessels, whose walls were thin, degenerated, and ready to drop to pieces. Varicosities of the nerve fibers, such as had been described by Berkley, were found. The corpora quadrigemina were dotted and streaked with dilated capillaries, but showed no large circumvascular spaces. In the crura cerebri, at the level of the third nerve, there was a lesser degree of vascularity than at higher levels; the cells of the nucleus were normal, as also was the descending part of the fifth nerve. In the pons the nucleus and nerves of the fourth pair contained few cells, and some of these seemed to be degenerated. The cells of the motor nucleus of the fifth nerve were normal; their blood-vessels were numerous and dilated, and their walls thicker than those seen in the brain. In the upper medulla a neuro-fibroma of the size of a pea was seen just at the exit of the acoustic nerve on the left side, the fibers of the nerve passing around and through it. The only nerve nuclei in which signs of degeneration could be detected were those of the vagus, including the anterior nucleus and accessorius. The gray matter of the floor of the fourth ventricle was much honey-combed with cavities made by dilated arteries. In the pyramidal tracts there was apparent increase of connective tissue. The neuro-fibroma referred to had not destroyed any parts by pressure. The pia mater of the cord was thickened, somewhat adherent, and filled with distended vessels. In the lateral columns of the cord the vessels were most numerous, but there was none of the honey-combed appearance that was found in the brain and pons. The anterior and posterior roots showed no degenerated fibers. No degenerative or inflammatory changes were found in the sections of other nerves.

Summary.—In the brain, chronic leptomeningitis, non-adhesive, and therefore not severe. Diffuse and varicose dilatation of the small arteries, especially of the deeper subcortical matter and capsule. Degenerative changes in the arterial walls; no arteritis. Circumvascular lymph spaces greatly dilated. Cortical cells in most regions normal. The severest changes —vascular, interstitial, and degenerative—were in the lower surface of the temporal lobes, in the internal capsule and adjacent parts of the corpus striatum, especially the lenticular nucleus, and optic thalamus, the antero-internal part. Varicose nerve fibers. Cell degeneration in some of the cranial nerve nuclei. Slight connective-tissue increase in the pyramidal tracts. In the spinal cord, slight lepto-meningitis; congestion of the cord, especially in the lateral columns. Double central canal.

The speaker then reviewed the literature bearing upon his subject, and gave the results deduced from tabulated statistics of pathological findings collected from all available sources. In concluding his elaborate paper, he asked what inferences could be drawn from the pathology. There were at least two things which would determine chorea—the existence of an abnormal state of the blood and an intense cerebral hyperæmia in certain localities of the brain, and a neurotic history. Therefore should we not logically combine a humoral and a neuropathic theory in order to explain chorea? A neurotic child with a tendency to rheumatism or some allied self-intoxication received a fright or a fall. There supervened a vaso-motor paralysis of those motor tracts which in the child were so rapidly developing and so actively used, and therefore so sensitive to strains put upon them. The blood, if impoverished and rheumatically tainted, increased the irritation, and the vascular tonus was gradually lost and a permanent hyperæmia of the parts would take place. Chorea might be called, therefore, a kind of *Schreck* or traumatic neurosis occurring in children with impoverished or rheumatic blood. He thought, also, that it might be maintained that chorea had an anatomical basis too well marked to be any longer considered simply as a functional disease.

Dr. M. Allen Starr thought that the collated facts were most valuable. He had been rather inclined to favor the infection theory in chorea, though he must admit that there were many objections to it. Still, we could not afford to throw it aside without very careful examination. Its acceptance would coincide with what had been said by the author of the paper, because it was well known that a neurotic person in a condition of bad blood would be more susceptible to infection by germs if such really lay at the base of chorea. There were three well-authenticated cases in which the investigators had discovered the existence of micro-organisms, and he thought that every case should be examined for the purpose of obtaining additional evidence. There was no reason why the vascular lesions referred to should not have had micro-organisms as a first cause. Then it was a difficult thing to determine whether the cases in which death occurred and those in which the patients survived were exactly the same in their pathology.

Dr. Mary Putnam Jacobi said that two more fatal cases had been reported by an English physician, coinciding with the remark Dr. Dana had made as to the predominance of fatal cases in England. In one of these, in which the autopsy had been recorded in detail, the lesions of the brain consisted largely of a diffused pink color throughout the nerve tissue, but this did not seem to be associated with congestion or dilatation of the vessels. This particular color had been described by a recent writer, and it agreed with Dr. Dana's idea as to the existence of an abnormal condition of the blood as a factor. In Hanford's case lesions had been found in the cervical, dorsal, and lumbar cord, consisting of thrombi of small vessels, foci of hæmorrhage, and vascular dilatations. The speaker said she thought that among the other reasons which might be urged against the exclusively infectious origin of the disease was its frequent origin in mental emotion and shock. It seemed impossible that bacteria lay in wait for such cases. Dr. Dana's case seemed to have implied a congenital imperfection of nerve centers.

Dr. W. R. Birdsall said he thought that Dr. Dana had certainly added facts to the pathological anatomy of chorea. While, however, he was willing to admit the importance of findings, still the question as to the interpretation of such findings was what we all sought to solve. Were these findings the cause or were they the result of deranged action in nerve centers? Similar lesions were found following a variety of nerve changes—such as epilepsy and other convulsive disorders. The inference, then, was that the findings were the result rather than the cause. A preconvulsive stage had been described, in which it was said there existed a slight disturbance of the nasal mucous membrane. There were other cases which seemed to favor the infection theory. The ocular muscles had been made responsible for a brief period and recognized as a chorea-producing factor in some instances. The majority of cases occurred in childhood, when the voluntary movements were not so well organized and slight disturbances once started might readily be followed by gross changes after a long period.

The President thought that any physician with the large experience of general practice must have noticed the close relation between chorea and infective diseases. That there was a condition in certain subjects—a nervous, hereditary, or acquired condition—which predisposed them to easy unbalancing of the nervous system, seemed to him evident. This occurred very largely in families of considerable neurotic history. But, in ad-

dition to this, it was largely associated with some cardiac phenomena or occurred as a sequel to some infection. He thought that two thirds of the cases of chorea were connected with a rheumatic history. Rheumatic symptoms did not always develop before the chorea, but they did afterward. Whenever he came across a case of chorea he examined the heart, convinced that he should find some lesion or irregularity in that region. He should be loath to regard the pathological lesions just recorded as the cause of chorea. They were seen in so many other diseases differing very little from the pathological records, which we found at one time, of diseases classed as functional. Unless the changes were constant and fixed, there was hardly enough to establish a pathology.

Dr. DANA, in reply, said he had not touched upon the microbic theory. He had been inclined to favor it when first advanced, and had only failed to enlarge upon it in his paper because it was so very far from being sufficiently demonstrated to afford a basis for any definite statements. He regretted that the president had not told them in what classes of disease the identical pathological changes alluded to occurred. He thought the findings of Sydenham pretty uniform, while those cited by Dr. Jacobi were very much the same as already reported by Dickenson. Whether these changes were the cause of chorea depended upon what we understood by the term "cause." He did not suppose that the changes took place without some primary cause. He had not spoken of these pathological changes as the primary cause.

AMERICAN DERMATOLOGICAL ASSOCIATION.

Thirteenth Annual Meeting, held at Boston, on Tuesday, Wednesday, and Thursday, September 17, 18, and 19, 1889.

The President, Dr. I. E. GRAHAM, of Toronto, in the Chair.

The Prevention of Skin Diseases was the subject of the annual address by the PRESIDENT. The speaker made special reference to the form of prevention which the passing of sanitary laws made necessary. He instanced scabies as a disease in which much might be done to prevent contagion if proper and stringent laws were passed. He alluded to the fact that White, of Boston, in an address before the association several years ago, had urged the advisability of having the school-children examined at regular intervals in reference to this disease. A similar course might be followed with advantage in the case of children who were admitted to charitable institutions. Tinea tonsurans was mentioned as another disease whose spread might be much lessened were such examinations carefully carried out. The same truth held even more forcibly with reference to two other diseases—viz., syphilis and leprosy. The former disease numbered its innocent victims by thousands, and yet few well-directed attempts had been made to eradicate it. In those countries where laws had been enacted to such an end little had really been accomplished. Public sentiment had not been roused to the need of such action. Where attempts had been made to have periodical inspection and registration, the ends had been defeated by clandestine prostitution; and yet, if such registration were possible, we might reasonably suppose that the ravages of the disease would be lessened. At the present time it was unwise to advocate any legal measures, since the larger portion of the community was directly opposed to such a plan. The speaker would suggest two methods by which a partial control might be gained—viz., early diagnosis, and proper facilities for treating such patients in our large general hospitals. They should be received into special wards in hospitals rather than into special hospitals. They should be treated with the same consideration as all other patients, so that they might not hesitate to apply for admission. It was often said that the public money should not be used in this way, but it should be considered that in allowing these patients to remain at large there was a still greater danger. A third way of preventing syphilis was by the careful examination of all wet-nurses. In Moscow, where such a system was enforced, 17 per cent. of the applicants for registration exhibited suspicious signs, and 4 per cent. were undoubtedly affected with syphilis. The regular examination of soldiers and sailors, together with care in regard to inoculation by vaccination or in circumcision, was alluded to as of interest in this connection.

The reader questioned whether there were not grounds for alarm at the present time in reference to the spread of leprosy in this country. What means of protection, if any, should be taken against it? There was no question about the contagiousness of the disease, as proved by its rapid spread in the Hawaiian Islands, by the inoculation of persons previously healthy, and by the fact that a *Bacillus leprœ* had been discovered. The germs had been introduced with food, and possibly also by inhalation. Formerly hereditary transmission was considered the only method; but probably it was the predisposition which was inherited. Cleanliness seemed to be a preventive, but in the most favored nations there were certain individuals who became affected. Thus far our own country was not greatly crowded in population, but on the Pacific coast the Chinese were recently becoming very extensively invaded. It would appear that if one leper was allowed to live in a crowded district, the disease was found to be spreading in a very few years. In this country it might perhaps spread insidiously, and be widely scattered before we were aware of it. In India there were said to be a quarter of a million of cases, and in this country it was reported to have increased fivefold within the last ten years. There were two methods of prophylaxis against leprosy—viz., the prevention of new cases coming in, and the isolation and care of those already here. All immigrants should be examined, and those with leprosy sent back to their homes. Doubtful ones should be placed under observation for two or three years at least. The only successful method of controlling the disease was by the segregation of the lepers and their complete separation. That such a step was difficult was shown by the history of the laws in New Brunswick. It was almost impossible to have the patients enter the hospital. When we considered that the disease was now found in the Canadian provinces, in the Southern States and in Mexico, in California, and also in the heart of the country, there seemed to be a good opportunity for its wider spread among us.

In closing his remarks, the president suggested that it was advisable to have the meetings of the association in the large centers of population, so that rare cases of disease might more commonly be seen and shown. He suggested the desirability of limiting the discussion of a single meeting to one or two topics. Allusion was made to the fact that during the past year the first Congress of French dermatologists had met in Paris, and the first meeting of a similar German Congress had been held in Prague, and it was predicted that we might expect abundant fruit in future years as the result of the labors in these organizations.

Clinical Notes on Herpes Zoster.—Dr. F. B. GREENOUGH, of Boston, read a paper thus entitled. It comprised statistics drawn from a series of 235 cases of the disease occurring during the past sixteen years at the Boston Dispensary, the total number of patients with skin diseases treated during that time being 17,741. The ratio was therefore a little less than 1·5 per cent.; 45 per cent. had been males. The most frequent age had been from ten to fifteen, which was a surprise to the author. It had been found that the greater proportion of cases had oc-

carred in the spring months, with very little variation in the separate years. The author considered as well proved the intimate connection between the disease and some involvement of the nervous system, as shown by the distribution of the eruption and the occurrence of the neuralgic pains. It was an interesting fact that more pain was felt in proportion as the age of the patient increased. In 17 cases without pain the average age had been nineteen years; in 13 cases of those who suffered pain the average had been twenty-eight years; and in 19 cases where the pain had been mentioned as severe the average age had been forty-four years. In each division, however, there had been individual instances of wide variation from the average.

Another very interesting inquiry related to the question whether the sensitive fibers only of the nerve were affected, or the motor nerves as well. Generally the zoster accompanied the superficial branches, which had no motor fibers. But the author had seen two cases of marked facial paralysis accompanying zoster of the face or head. Both patients had recovered perfectly though slowly. In the second case the herpes had appeared about the left ear, accompanied with marked pain in the ear. It would seem that the direct nervous connection was sufficient to account for the facial paralysis. In one case where the lesions had appeared to pass beyond the median line of the back there had been found to be a spinal curvature. In some cases there had appeared to be a very slight overstepping of the median line over the sternum. Sometimes there had been a hæmorrhagic tendency, but such cases had not appeared to be more severe, although they might have caused a little more discomfort. The size or angry appearance of the vesicles made no difference in regard to the amount of cicatrix which would follow. There were certain cases where it was very difficult to distinguish between the progenital or the labial form of herpes and the true zoster. The reader did not think the eruption could be aborted or the disease shortened. Irritation should be avoided, and the vesicles should not be broken. A large diachylon plaster would sometimes be of benefit.

Dr. G. H. Fox, of New York, spoke of the ætiological value of violence in reference to the attacks of herpes. It had been his experience that in almost every case where the history was carefully obtained some injury could be discovered. The relationship was so intimate that he considered it one of cause and effect. In the way of treatment he had found nothing so good as the constant galvanic current. No remedies which he had given seemed to influence the disease, and he had found that many cases would come to a speedy termination without any treatment at all. Some years ago he had given *Rhus toxicodendron* in one case and the eruption had disappeared at once. In subsequent cases, however, the result had been far different. Two or three applications of the current might be sufficient to render the patient entirely comfortable until recovery took place.

Dr. A. R. Robinson, of New York, did not think the disease should be strictly classed as a neurosis. It seemed to him that it was an infectious disease, like pneumonia. It had a definite duration, and generally appeared but once in a lifetime. He did not believe that trauma would be a sufficient cause for it. The speaker had seen one case where both sides of the face were affected, occurring during the course of a croupous pneumonia.

Dr. J. Zeisler, of Chicago, asked in reference to the production of the disease by arsenic. He had lately seen a case of Hodgkin's disease which had been treated with arsenic, where, after the tumors had nearly disappeared, a crop of herpes vesicles had come out in the gluteal and femoral region. The speaker instanced one case where there had been perfect analgesia over one side of the face, and at the same time a prickling and burning sensation over the same portion of skin. Perhaps this would be a corroboration of the statement that sensitive fibers had different terminations in different points in the skin.

Dr. P. A. Morrow, of New York, asked if the hyperæsthesia and analgesia had been upon the same surface.

Dr. Zeisler replied that they had been upon the same area although it was impossible to say that they were at the same exact point.

Dr. Morrow remarked that the temperature sense and pain sense were generally lost at the same time. The observation seemed to him a very interesting one.

Dr. E. B. Bronson, of New York, said that to him there was an unsolved mystery about the ætiology of the affection. It seemed to occur with a regularity that was opposed to the idea of its infectious nature. There had been epidemics of the disease, and yet it did not seem to depend on the factors—such as season and temperature—which influenced other infectious diseases. The local character of the lesions also militated against the infectious origin. In diphtheria we could see how the poison reached the point where the effects were noticed, but in the case of zoster it was difficult to suppose that the germs could locate themselves in the nervous ganglia. The paralytic phenomena were not easily explained, especially in that form which affected the facial muscles; in the extremities the same result was more easily accounted for. The speaker had seen two of these cases, in one of which the different phenomena had been so closely connected in time that it had seemed as if the same cause had produced both of them. In one case he had thought there might have been an inflammation of the Gasserian ganglion, with extension of the inflammation through the plate of bone which separated it from the intumescentia gangliformis, but perhaps it was more reasonable to suppose that it was reflex in its origin. The speaker had used successfully a solution of gutta percha in chloroform, finally sweeping over the part a wisp of absorbent cotton, a few fibers of which would cling to the surface. It seemed to him that under this mode of treatment the process was sometimes arrested.

Dr. S. Sherwell, of Brooklyn, believed in the protective dressing, and thought that the continued current was capable of giving great relief. Some patients were of rheumatic tendency, and this should be looked out for.

Dr. W. A. Hardaway, of St. Louis, asked about the occurrence of chronic zoster, and related the history of a man of sixty years, who had exhibited an eruption of zoster on both sides of the neck. The speaker believed in galvanism, but was inclined to question whether the whole effect was due to electricity, or whether mental effect might not play some part. He instanced the case of a woman who had been given an application of the electrodes for the relief of a severe attack of supraorbital neuralgia. The result had been a happy one, and the patient had gone away absolutely without pain; he had discovered afterward that he had neglected to immerse the element. The speaker had found nothing so good for the local treatment as a protective dressing in the shape of collodion. He objected to the use of greasy ointments, which macerated the vesicles, so that the tops were rubbed off, and sores were more apt to follow.

Dr. L. D. Bulkley, of New York, remarked that the disease was seen in almost the same proportion in New York as in Boston, a trifle over one per cent., and remaining the same year after year. It seemed strange that there were so few cases where both sides were affected at the same time. He had seen zoster on the persons of those who had exhibited the scars of a previous attack. He did not believe the affection was a local manifestation of a general disease, but that it was reflex and of

traumatic origin. The reason why it so frequently appeared at the waist was because of the separation of the clothing in both men and women, and the consequent liability to the effects of cold. In one case of lymphoma of the neck there had come on an extensive zoster over the course of the nerves, passing through the growth. It had been a frequent experience with him that persons taking arsenic were affected with the disease. His treatment was to bandage the part as tightly as possible with a swathe on the inside of which a good amount of starch had been sprinkled, and have the whole sewed on. This was left on for a week, and gave great relief, without any other treatment.

Dr. H. G. Klotz, of New York, did not agree in the view that made the disease an infective process. Croupous pneumonia, which was an example of such diseases, was sometimes the result of trauma. In two cases of zoster that he had seen the lesions had become gangrenous. Both these patients had had syphilis, and in one of them the disease had been supposed to be a syphilitic ulcer.

Dr. Robinson did not mean to assert that an infectious process was necessary for the appearance of the eruption. He had seen a well-marked case of zoster where Pott's disease had been the starting-point of the irritation.

The President reported a fatal result in a case of zoster affecting one side of the face—the cheek and lower lid. On the fourth day the pain attacked the other side of the face, and on the fifth day the patient suddenly died. At the autopsy there was found a softened condition of certain parts of the brain. The Gasserian ganglion and a portion of the fifth nerve were found to be inflamed, and leptothrix threads, together with single bacteria, were found in some of the arterioles of the former structure.

Dr. Greenough said that he had no data in reference to the effect of the ingestion of arsenic in the formation of zoster. He considered the coexistence of pain and paralysis as due to the intimate anastomosis between the nerves, although there might be a certain amount of reflex action.

(*To be continued.*)

NEW YORK STATE MEDICAL ASSOCIATION.

Sixth Annual Meeting, held in New York, September 25, 26, and 27, 1889.

The President, Dr. W. T. Lusk, of New York, in the Chair.

The meeting being called to order and a number of business matters disposed of, the reading of papers was begun.

Inversion of the Uterus; Novel Treatment.—The writer, Dr. G. E. Fell, of Erie County, explained his method of irrigating with warm water, while employing manual pressure, for returning the inverted uterus, citing a case of partial inversion returned in five minutes. In answer to a question, he replied that the history of a previous labor in this case was that the forceps had been used and the uterus pulled bodily into the world, though of this he had known nothing until afterward.

The Latero-dorsal Posture in Gynæcological Irrigation.—Dr. Fell also read a paper on this subject. The author made use of what was practically Sims's posture, bringing the buttocks of the patient over the edge of the table or bed.

Pelvic Cellulitis in Women.—Dr. W. H. Robb, of Montgomery County, read a paper on this subject, in which he said that he had selected the term pelvic cellulitis because it conveyed more clearly the nature of the diseased tissue. The cellular tissue of the pelvis did not differ in anatomical structure from other cellular tissue. Much of the lower surface of the peritonæum came directly in contact with the cellular tissue of the pelvis. No inflammation of any magnitude could well exist in one without affecting the other. The medical profession was divided as to the location and importance of pelvic cellulitis. Some thought the connective tissue of the pelvis never suffered from uncomplicated inflammation. Dr. Gill Wylie had said that if one excluded the diseased glands, tubes, and ovaries, there would be no mysterious inflammations. The author considered that pelvic cellulitis existed as a separate and distinct disease, though the pathology differed in no way from inflammatory processes in the areolar tissue in other parts of the body. The duration of the disease varied much. In one patient it would pass through its stages rapidly, and in another the stage of effusion would last for months or years. The causes of pelvic cellulitis were not infrequently the absorption of septic material. After giving a *résumé* of the symptoms, course, and duration of the disease upon the basis of its usual subdivision into three stages, he went on to indicate the line of treatment which he recommended. In the acute, or first stage, he employed veratrum viride. This he found reduced the pulse, lowered the temperature, and, he believed, would abort many attacks, if given at once and with regularity. If the attacks were following either labor or abortion, he would curette the uterus, then carefully wash out the organ with a one-to-twenty solution of carbolic acid, and introduce iodoform. The treatment of the third stage should be directed to supporting and stimulating the patient. After suppuration occurred, the pus should be removed. If the patient was not suffering from its retention, it was well to wait till it depended to the most favorable point where it could be removed by the use of the knife. The cavity should then be washed out. It was sometimes necessary to follow up tortuous sinuses and make a counter-opening.

Dr. H. O. Marcy, of Boston, said he must take views opposite to those of the author of the paper. After reviewing the physiological function of the connective areolar tissue of the pelvis, he said we had now reached a point when inflammatory processes were pretty well demonstrated as being traceable to some form of micrococcus or bacteria. The tubes, uterus, ovaries, or anything else might be originally involved, the infection finding its way from any of these. The consensus of opinions by the best authorities was that these pelvic inflammations were due to some form of micrococcus. We curetted the uterus. Why? To remove this cause. We introduced iodoform. Why? To destroy this factor, which the author of the paper admitted was present. This was simply following along the lines of modern surgery, which endeavored to arrest the progress of infection that came from without. He thought we were simply feeling about for a name to a disease which we ought to know more about.

Dr. E. M. Moore, of Monroe County, said that he should like to advocate the use of the aspirator in this affection. It gave immediate relief. When we came to drainage we should be dealing with a small cavity instead of a large one. It was, in his opinion, vastly better to aspirate than to employ drainage. With reference to the pathology, Virchow had been disposed to confine it to this very connective tissue everywhere. That the morbid process could extend from operations on the cavity of the uterus had been the speaker's unpleasant experience.

Dr. E. D. Ferguson, of Rensselaer County, said the operation of aspiration was so simple and so satisfactory that it had a large field of usefulness, but when we came to pelvic surgery it was essential that we should know what we were doing. In other words, by an incision carefully made, layer by layer, it was possible to recognize when we came to parts in the dissection which should be placed on one side and protected. Whether the aspirator or knife was used, he did not think there would be any different effect on the course of the disease, provided

care was taken to keep the cavity free from septic influences. In Dr. Moore's case something had probably been added to the cavity.

Dr. J. Cronyn, of Erie County, referred to subcutaneous injections of morphine as a curative agent as compared with crude opium. Morphine had never in his experience been able to take the place of opium. He advocated its administration with quinine, and, when so used, found that both cinchonism and narcotism were avoided.

Dr. Robb, in reply, said that, so far as the aspirator was concerned, he had known it to be used where no pus existed, and its simple use not infrequently induced further inflammation. His own opinion would favor opening the abscess freely when it pointed in a suitable position. In regard to the use of veratrum, his experience showed better results than from any other remedy. Opium he often found could not be taken into the stomach, and it was to avoid this that morphine was used subcutaneously when a patient was suffering torture from abdominal pain.

Laparotomy for Ruptured Pyosalpinx; Error in Diagnosis; Recovery.—Dr. C. S. Wood, of New York County, reported this case. He thought we owed it to the profession at large as well as to ourselves to report errors. He condemned too reckless a performance of laparotomies, directing his strictures particularly against oophorectomy. Women were unsexed and left in a worse condition than before. Should not we as physicians raise our voices in protest against this great sacrifice of women's ovaries when the diseased condition could often be cured by therapeutic and hygienic treatment alone? The case he had to record was one in which an operation had been indicated and justifiable. Mrs. M., twenty-eight, parentage unknown, of previous good health, had suffered from colicky pains and more or less fever; pain had been intermittent. She had been sent away for a time to Saratoga and had been thereby benefited. On May 9th he was called to see her on account of slight fever. He found some local tenderness and tympanites which were attributed to gastric disturbance. On the following day the pain and tenderness had increased. The symptoms progressed until perityphlitic abscess, in course of formation, was diagnosticated. Routine treatment had been followed. On May 16th he was called in haste. The messenger reported the patient to be dying. On reaching the house, he found her in condition of collapse, bathed in perspiration and unable to lie down, and making constant efforts to vomit. The pulse was rapid and irregular. After quieting her he was told that she had awakened suddenly with nausea and vomiting. This had been followed by a severe chill. The pain was higher up in the bowels than it had been before. Induration was found to be lessened. Being satisfied that there was rupture of a perityphlitic abscess into the peritoneal cavity, and that laparotomy was her only salvation, the writer sent for Dr. Gill Wylie, who, with his brother, performed laparotomy the same day. No abscess was found; there was no tumor and no inflammation in this region; only diffused inflammation and old inflammatory processes evidenced by thickening. A pyosalpinx of the right side, which had ruptured, called for removal of the sac and ovary. Degenerative changes on the opposite side also indicated the same procedure, which was carried out, the patient making a good recovery in the course of four weeks. The speaker thought the case would fairly represent the difficulty frequently met with in accurately diagnosticating abdominal diseases. He had learned afterward that his patient some five years before had undergone an abortion, which might have accounted for the conditions found in the pelvis.

Dr. Edibohls said that the issue in the case hinged upon the diagnosis between pyosalpinx and perityphlitic abscess. The tumor of perityphlitic abscess could almost always be found midway on a line drawn from the anterior spine of the ilium to the umbilicus. These abscesses could rarely, if ever, be reached from the vagina until they were of large size. By passing the middle finger of the examining hand into the rectum and the index-finger into the vagina we could reach higher. He had often found a perityphlitic abscess six or seven days old developed enough to enable him to reach it, whereas a pyosalpinx could never be reached in that way.

Tubal Pregnancy.—The President read a paper on this subject. (See page 421.)

Dr. William Goodell, of Philadelphia, said that he was not in a position to discuss the dicta of Mr. Tait. As he understood the argument, the ovum was always fecundated in an outlying cavity, and it was through disease of the tubes that the ovum was retained. He did not know that he could entirely accept this. As to the frequency of extra-uterine gestation, it probably occurred much oftener than the profession were willing to accept. Dr. Formad, of Philadelphia, was one of the coroners of that city. He had nineteen specimens of cases of extra-uterine pregnancy. These he had obtained from subjects upon whom he had been called upon, by virtue of his office, to make post-mortem examinations where the women had died suddenly. Then add to these the cases supposed to be hæmatocele. He could add but little to the statement made by Dr. Lusk as to the pathology. He was disposed to accept the theory that these pregnancies were all tubal originally; they might become intra-ligamentous, and ventral through a second rupture. If an ovule could travel over to the other side, why could it not drop into the cavity of the abdomen? Still he was willing to accept Mr. Tait's opinion that they were tubal. In reference to the intra-ligamentous form, where, after a few weeks, an ovum burst into the broad ligaments between the two layers of the peritonæum, he described it as behaving like an intra-ligamentous cyst, stripping the peritonæum from its various surfaces of reflection. In that way extra-ligamentous gestation came about. It might get in between the layers of the mesocolon or mesorectum, in which case there were often fæcal fistulæ. In the removal of the intra-ligamentous cysts he had had fæcal fistulæ result in every case. As to the clinical history, there was usually suppression or irregularity of menstruation, sometimes menorrhagia, or again only a mere dribbling. This latter always led him to believe he had to deal with a case of extra-uterine gestation. The fact that no inflammation was present connected with these symptoms should lead one to suspect mischief. Then, of course, nausea might be present and milk appear in the breasts. There was in natural pregnancy frequent micturition; in extra-uterine pregnancy we were likely to find this still more marked. The main symptom, however, was a tumor on one side of the womb, which might be thereby displaced and which must be readily discovered unless the woman was abnormally fat. If we could discover an enlarged ovary, *a fortiori* we should be able to discover a rapidly growing tumor. He thought it was not necessary to make a diagnosis before rupture. The use of the aspirator should be laid aside. A good many years ago he had caused the loss of a woman's life by aspirating the sac, and, although the method had been warmly advocated by Barnes, still the percentage of deaths had been very large, considering the number of cases of operation. He remembered a number of cases in which the cyst had been aspirated and death had resulted.

On the question of electricity, he must differ with Dr. Lusk. If a physician felt confident that a patient had extra-uterine pregnancy, he ought to resort to the knife. Before the speaker had treated three cases of extra-uterine gestation he had believed in electricity. The question had then been in

his mind, what was the best form to use; but, when it came actually to the performance of the operation, he had said to himself, Suppose this fœtus was destroyed, what would be the result? Could we remove the adhesions or render the tube impervious? Could we prevent a pyosalpinx? He then showed some specimens from a case in which there had been adhesions to the pelvis and broad ligaments. On the other side the ovary and tube were so adherent that he had been obliged to remove them. He felt that in this case the physician would have been compelled to resort to the knife some months later. Electricity should be used where a patient objected to an operation, or where a physician did not feel himself sufficiently skilled to make the abdominal section. He was satisfied that electricity should not be used for its electrolytic action—that the parts should not be punctured by needles. Most of such cases had ended fatally. His feeling was that if he recognized the condition before rupture, or suspected it, he would operate. Certainly he would do so after rupture had taken place. In all the cases of operation he believed there had not been a single death, except where the patient was *in articulo mortis* at the time. As to what should be done after the child was viable, he had had only one case, which had resulted in death. He would be disposed, from the light of the literature on the subject, to leave the child until it was still more viable, and then operate in one of two ways. He would attempt to remove the whole sac, or else remove it after removing the child. If he found it impossible to remove the sac, he would sew it to the abdominal walls and put in a large drainage-tube. He thought the Porro operation the safest for the woman. The diagnosis was not always possible. He remembered a case that had occurred a long time ago. The first gentleman called had been Dr. H. Agnew, who had diagnosticated cellulitis, giving the usual treatment. The woman had had high temperature, local inflammation, metrorrhagia, etc. The speaker was called and made a diagnosis of pelvic peritonitis. But the patient got no better, the people became disgusted, and he was sent away. Shortly after, Dr. Parvin came to him and said: "Doctor, you made a great mistake; that is a case of natural pregnancy." But after a lapse of some weeks Dr. Parvin sent for him. They decided then that the case was one of retroversion of the gravid uterus. Then it flashed across his mind that they had a case of abdominal pregnancy and everything was clear. The head in this case had come down so low in the pelvis that they could feel the sutures in the cranium. The husband would not permit an operation. Both child and woman died. Dr. Parvin made the post-mortem, and this case had led him to write his book. The speaker concluded by citing a number of cases of extra-uterine gestation which had come under his own notice.

Dr. H. O. Marcy said he had come to listen rather than to speak, and was there to learn something upon the question under discussion. He had watched two cases from the beginning to the autopsy, and both had led him to believe they had been *per se* abdominal. For his part he would not use electricity. It belonged to the general practitioner.

Dr. J. E. Janvrin, of New York County, said that he indorsed the opinion that surgical treatment should be resorted to in cases of tubal pregnancy, and this was especially indicated when rupture had taken place. He regarded the colicky pains as having great import. When a woman was taken with these in connection with other suspicious symptoms, there was generally slight hæmorrhage external to the tube which he believed accounted for the pains.

The President said he had not mentioned puncture, but he hoped nobody would ever try it. He had used it once by mistake. He had done this at a clinic, telling the students that they were examining an interesting case of hæmatocele. After a few weeks a fœtus sloughed through the vagina. Luckily, the woman had recovered. Why should not laparotomy be done at once? He had intended this to be the inference from his paper. In case of suspected tubal pregnancy it was good practice, he believed, to perform a laparotomy. The operation was no more dangerous than that for the removal of a Falloppian tube. Galvanism could be used with a comparative degree of safety. The method of employing it was simple, and with it, before three months, we could destroy the fœtus, and as a rule it did not cause any trouble. Galvanism in this respect was an effective method of treatment, and he hoped that those not prepared to operate, as would be often the case in the country, and with no medical help available, would use galvanism. He did not think Dr. Janvrin was quite right in supposing there existed any direct association between the colicky pains and hæmorrhage and rupture; they were too frequently present in other conditions to be regarded as of special significance.

The Value of Laparotomy in Suppurative Peritonitis.—Dr. J. Cronyn, of Erie County, read a paper on this subject. Operative procedures in these cases, he said, had been much lauded within the last few years, and many cases had been reported where great success had resulted, and where it was reasonable to assume the issues would otherwise have been fatal. There were few natural proofs, however, in this relation, and he thought the case he had recorded would be interesting on that account. The child of a Mr. F., of Buffalo, while jumping a rope, in some way had injured the walls of the abdomen. There were no external evidences. The child complained of pain and suffered from tympanitic distension, vomiting, and purging. In thirty-six hours afterward peritonitis was evident. The child, seven years old, was not very strong, and the history of the family and of the parents was certainly scrofulous or tubercular. The child was very pale, and the appearances indicated involvement of the omentum and abdominal veins. Day after day the acute symptoms diminished and diarrhœa had ceased, but the immense distension was most troublesome, rendering breathing exceedingly difficult. On the tenth day there was evident fluctuation. The treatment had been by large poultices and opium. It had been with difficulty that the poultices were borne and applied, as the little one's legs were drawn up. On the twelfth day the propriety of opening the abdomen was suggested to the family as the only way to save the child's life. The writer candidly admitted that he had not urged this very strongly, as he thought the patient likely to die upon the table. On the morning of the fourteenth day he had been afraid the little patient would not live through the day. In the evening he was summoned, the message telling him the child was dying. On reaching the house he found to his surprise that nature had produced the surgical operation. The umbilicus had given way and a gallon of pus had been discharged. A bandage was applied, lactophosphate of calcium, bark, and so on, was ordered, and, to make a long story short, an excellent recovery was made, the patient enjoying better health than before the illness. Could there be plainer proof of the propriety of doing a laparotomy under such circumstances? Nature here had indicated what ought to be done by the surgeon's knife, and probably had done the work better.

Dr. Truax, of New York County, said that several cases of suppurative peritonitis had come under his observation in the Harlem Hospital. About six months ago a patient had been admitted to his ward. On examination, he had found the man had peritonitis, and was in a state of collapse. He was apparently a strong, vigorous young man, perhaps twenty years of age. He was too weak to give any history of his disease. Just at that time the visiting surgeon came to the hospital, and the speaker suggested laparotomy and washing out of the abdom-

nal cavity; this was done under thorough antisepsis, but the man never recovered from the shock. A few days after, a young woman had been admitted to the hospital with the same trouble and in the same condition; again the speaker advised laparotomy, and within an hour after her admission it was performed. Notwithstanding all possible care, she died. Some few weeks after, a man about thirty years of age was admitted suffering from peritonitis; he had been sick for several days and was in a state of collapse. Laparotomy was advised. The abdomen was opened and the cavity washed out and the man seemed to revive, and for a few hours hopes were entertained that he would recover; but the next day, about twenty-four hours after the operation, he grew very weak, and, in spite of stimulants, died. This had been the speaker's experience. He admitted that they were all unfavorable cases for operation. He believed that many of these patients could be saved if permission could be obtained to operate when they were strong enough to stand the shock. He had during the last few years had a great many cases of peritonitis, and was bound to confess that uniformly they had turned out unfavorably. Comparatively few of the patients had recovered. He looked upon peritonitis now (meaning general peritonitis) as almost certain death. He had made autopsies in many cases, and found the abdomen filled with pus and in as deplorable a condition as could be well imagined.

A member suggested that Dr. Cronyn's case seemed more like a supraperitoneal abscess.

The President said he thought it well settled that cases of supraperitoneal abscesses should be opened above Poupart's ligament. Circumscribed abscesses, which had been common when he had begun practice, were now hardly known. He had cut down through the abdominal walls, found the sac, stitched it to the sides of the wound, and stuffed the cavity with oakum. In these cases of circumscribed abscesses the prognosis was favorable if large incisions were made, the cavity being well washed out and free drainage secured. The washing out of the abdominal cavity in cases of general peritonitis had failed in his own practice, and he would like to know what had been the experience of others in this respect. Replying to a question as to what formed the intra-abdominal wall of these abscesses, he said he thought it was probably the matting together of the intestines.

Dr. T. H. Manley, of New York, said that he had never seen a patient recover whose peritonæum had been opened for general suppurative peritonitis. He had been consulted about one case. It had been decided not to let the patient die without giving him the benefit of so harmless an expedient. So he opened down in the direction of Poupart's ligament on the right side. Pus spurted out in large quantities, serous and grumous fluid, of which as much as a quart was removed. They had just commenced operations on the abdominal cavity when the child died on the table.

Dr. Cronyn said that the gentleman who had hinted that the case he had cited was perhaps only a supraperitoneal abscess must imagine that he (Dr. Cronyn) did not know anything about surgery. He very rarely allowed himself to be led into expressions of opinion until he had well weighed the value of his premises. He explained that there had been evident fluctuation on the twelfth day, and this fluctuation had not been confined to two or three or four inches, but had involved the entire abdomen. As to the propriety of opening the abdominal cavity for peritonitis, he merely thought he would give an instance where nature had opened it.

The Use of Dispensary and Hospital Material.—Dr. E. J. C. Minard, of Kings County, read a paper in which she upheld the utility of free dispensary and hospital material from a clinical standpoint. Nearly half our girls, she said, entered life in a crippled condition. She emphatically denounced the present methods of education, mental, physical, and domestic, as calculated to stultify girls and render vast numbers of them essentially useless at an age when every part of their organization should be ready to perform its allotted function. She spoke in terms of emphatic approval of the practice of oophorectomy in selected cases. When women got to a condition in which such a measure was indicated they were already unsexed. The disease was one of maturity, and the woman had the right to choose that which would give her perhaps peace and health.

The Microscope in Diagnosis.—Dr. G. E. Fell recounted his personal observations, which went to show that in cases of tuberculosis of the lungs, as against other lung affections presenting a train of similar clinical symptoms, an accurate distinction could be made. He also cited several cases bearing directly on this point.

(To be continued.)

Book Notices.

Phthisie Laryngée. Par le Dr. A. Gouguenheim, médecin de l'hôpital Lariboisière et de la clinique laryngologique, etc., et Paul Tissier, interne des hôpitaux de Paris. Avec 13 figures dans le texte et 5 planches hors texte dont 3 en chromolithographie. Paris: G. Masson, 1888. Pp. 11–339.

Dr. Gouguenheim has presented in this volume the most complete and thorough treatise on the subject ever written, and one to which a hearty welcome can be accorded when we remember that no complete and original work on tubercular laryngitis has been published since the classic treatise of Trousseau and Belloc. In the work before us the author has endeavored to bring forward all new questions connected with the disease, as to its pathological anatomy, its symptomatology, and its therapeutics, to criticise them fairly from the standpoint of his own experience, and to give a truthful picture of the actual condition of our present knowledge of it. He has given a fair exposition of the differences of opinion among various authorities upon certain new theories of the affection, desiring to make these theories as generally understood as possible and thus to gain for them the advantage of discussion and, if possible, of proof. Indeed, the main object of the treatise is to place these questions before the general pathologist and not to allow them to remain strictly within the province of the specialist.

Passing over the excellent chapters which precede that on treatment, we find that the author in every instance, having first given the method under his consideration, frankly appends to it the results of his personal experience with its use. Thus, we find that he attaches little importance to the local application of solutions of menthol; that he has used with success applications of solutions of lactic acid to the surface of laryngeal ulcers; that the submucous injections of lactic acid, advocated by some recent writers, he has found too severe for general use; that the use of the curette, valuable when applied to the extraction of necrosed cartilages, is not satisfactory in the scraping of laryngeal ulcers, and that the galvano-cautery, while of assistance in cases where papillomatous projections or polyp-like masses must be removed, and where avulsion of them might be followed by inoculation of the resulting wound, is otherwise not indicated. Applications of iodoform are highly praised, while iodol the author has found unsatisfactory. Salol he considers inferior to iodoform, and he thinks that boric acid, while bene-

ficial in cases where the ulceration is superficial, does not answer well where it is deep. The prognosis, unfortunately, still remains unfavorable, although by modern methods much may be done to postpone and relieve the distressing symptoms of the disease. The book is well illustrated, the colored lithographs being particularly good, while the press-work is so admirable as to merit attention.

Hand-book of the Diagnosis and Treatment of Diseases of the Throat, Nose, and Naso-pharynx. By CARL SEILER, M. D., Instructor in Laryngology and Lecturer on Diseases of the Upper Air-passages in the University of Pennsylvania, etc. Third Edition. Thoroughly revised and greatly enlarged. Illustrated with Two Lithographic Plates containing Ten Figures and One Hundred and One Wood Engravings. Philadelphia: Lea Brothers & Co., 1889. Pp. xii–13 to 373. [Price, $2.25.]

THE third edition of this excellent hand-book is a decided improvement. The views expressed by the writer are in the main those which have met with general acceptance, and the descriptions of the various methods and manipulations described are concise and clear. The book is well illustrated throughout, the best of the cuts, by the way, being those from drawings furnished by the author himself, several of which are valuable contributions to the old-time stock. Following the sections which deal with the examination of the upper air-passages, there are short chapters on the simpler and more common forms of the diseases of the upper air-passages.

On the Treatment of Cystic Goître. By T. MARK HOVELL, F. R. C. S. E. London: J. & A. Churchill, 1888. Pp. 5–26.

BEARING in mind the frequency of cystic goître, and the large number of deaths which have resulted from surgical efforts at curing it, Mr. Hovell has called attention to its treatment in a remarkably well written and useful thesis. He quotes the views of the best surgeons of the day upon the subject, and clearly proves that the best method of treatment is that recommended seventeen years ago by Sir Morell Mackenzie—namely, the evacuation of the cyst by means of a small cannula, injection with a solution of perchloride of iron, two drachms of the salt to the ounce of water, the retention of this solution within the cyst until inflammation of its walls has been established, and, finally, the wearing of the cannula until suppuration has ceased. This plan, he believes, possesses decided advantages, since it is simple and effective and far less dangerous than those in common use.

Congrès pour l'étude de la tuberculose chez l'homme et chez les animaux, 1er session—1888. Président: M. le Professeur CHAUVEAU (de l'institut). Comptes rendus et mémoires. Publiés sous la direction de M. le Dr. L. H. PETIT, secrétaire général. Paris: G. Masson, 1889. Pp. 760.

THE large membership in, and number of papers contributed to, the first congress for the study of tuberculosis in man and in animals sufficiently attest the widespread interest in all that concerns this malady. A review of even a modicum of the papers included in this volume is impossible, and certain general points only can be referred to. There was a consensus of opinion that the milk and flesh of tuberculous animals should not be used for food. In this connection Dr. Guinard called attention to the danger of drinking fresh blood at the abattoirs, referring to such a case in which a carcass was found, on dressing it, full of tubercles. Dr. Galtin made some experiments on the employment of fresh blood to clarify wines, that demonstrated that after five days any tubercle bacilli were destroyed. Local tuberculosis was considered in papers on arthritic, hepatic, and lupous tuberculosis, as well as tuberculosis of the thymus and salivary glands, the meninges, and the mucous membranes, considerable attention being paid to the subject of the introduction of the disease through the alimentary canal. Various methods of treatment were reported, the results, however, promising no nearer solution of this problem than heretofore.

The second congress will be held in Paris in July, 1890, and the following subjects are announced for consideration: 1. The identity of the tuberculosis of man and the tuberculosis of cattle, poultry, and other animals. 2. The bateriological and pathological associations of tuberculosis. 3. The confinement of tuberculous patients in hospitals. 4. Agents, not injurious to the organism, capable of destroying the bacillus of Koch, from the standpoint of the prophylaxis and treatment of human and animal tuberculosis.

A Surgical Hand-book; for the Use of Practitioners and Students. By FRANCIS M. CAIRD, M. B., F. R. C. S. (Ed.), and CHARLES W. CATHCART, M. B., F. R. C. S. (Eng. and Ed.), Assistant Surgeons, Royal Infirmary, Edinburgh. With very Numerous Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1889. Pp. xv–262. [Price, $2.50.]

THIS little work is devoted to a practical consideration of the treatment required in minor surgical cases as encountered in daily practice by the surgeon, and of that class of operative procedures demanded in emergencies. Subjects not strictly of a surgical character—such as massage, uralysis, post-mortem examinations, microscopy, etc.—receive also some attention, the minutiæ of practical knowledge being generously scattered throughout the whole book. Fractures and dislocations, with the appliances for their treatment, receive the most attention, and in such manner as to make clear the various methods described. The subject of bandaging is well handled, and is made more extensive in scope than in most treatises with which we are familiar, by including handkerchief dressings and various other improvised affairs not usually mentioned. To the best of our knowledge, it is the only surgical work containing a description of that most efficient, neat, and permanent of the bandages for the extremities, which is applied by making a post terior reverse in a figure-of-eight bandage whenever the latter does not adapt itself smoothly to the limb. The method of Kocher for the reduction of shoulder dislocations is a novelty in our surgical literature other than that of a periodical character, and is to be regarded as an important addition to the list of the other methods described in the work. The numerous explanatory cuts are, in most cases, really deserving of the adjective applied to them, and, though the print is finer than is consistent with absolute comfort in reading, it is clear and well done. The small size and flexible cover of the book make it very convenient for carrying in the pocket. In fine, the book is worthy of perusal, and we consider it one of the best of the works that represent the abridged type of medical literature.

A Text-book of Human Physiology, including Histology and Microscopical Anatomy; with Speicial Reference to the Requirements of Practical Medicine. By Dr. L. LANDOIS, Professor of Physiology and Director of the Physiological Institute, University of Greifswald. Third American, translated from the Sixth German Edition. With Additions by WILLIAM STIRLING, M. D., Sc. D., etc. With Six Hundred and Ninety-two Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1889. Pp. xxxi–33 to 974. [Price, $6.50.]

THE third edition of this excellent work appears in a single volume that will make it much more convenient to handle than

the former two volume edition, and this abridgment has not been at the expense of the matter of the book, for almost two hundred new illustrations have been added, and the work has been amplified in many portions, especially those on the physiology of the circulatory and nervous systems. Dr. Stirling has been a careful editor, and we recall no late investigations in physiology that he has failed to incorporate in the work. All that we said in praise of the former edition is applicable to this, the book fully deserving all the popularity that has been accorded it.

Synopsis of Human Anatomy, being a Complete Compend of Anatomy, including the Anatomy of the Viscera, and Numerous Tables. By James K. Young, M. D., Instructor in Orthopædic Surgery and Assistant Demonstrator of Surgery in the University of Pennsylvania, etc. Philadelphia: F. A. Davis, 1889. Pp. ix–3 to 393. [Price, $1.40.]

The title sufficiently indicates the character of this little manual. Every unnecessary word has been excluded, out of regard to the very limited time at the medical student's disposal, and the object of the work is to facilitate the acquisition of this difficult, though essential, subject. It is also good as a reference book for the practitioner, as it presents the facts about which he wishes to refresh his memory in the briefest manner consistent with clearness. It is based mainly on Gray, but other well-known anatomists are quoted. It is well got up and is a valuable book for the purposes indicated.

Essentials of Pathology and Morbid Anatomy. By C. E. Armand Semple, B. A., M. B. Cantab., L. S. A., M. R. C. P. Lond., etc. With Forty-six Illustrations. Philadelphia: W. B. Saunders, 1889. Pp. xvi–160.

This compend is intended as an introduction to the subject of pathology and morbid anatomy, and to refresh the memory after a more extensive study. For these purposes it is admirably adapted. It is written in a concise manner, and evidently much labor has been expended in condensation. But one criticism occurs to us. The author is very prone to the use of Latin derivatives where Anglo-Saxon would be simpler and therefore more desirable. The cuts are numerous and well executed, and the entire work is got up in a creditable manner.

A Manual of Instruction for giving Swedish Movement and Massage Treatment. By Professor Hartvig Nissen, Director of the Swedish Health Institute, Washington, D. C., etc. With Twenty-nine Original Wood Engravings. Philadelphia and London: F. A. Davis, 1889. Pp. vii–128. [Price, $1.]

This manual is valuable to the practitioner, as it contains a terse description of a subject but too little understood in this country. It is well written, but is rather too concise. A more extensive work would be better to teach one unaccustomed to the work the exact manner in which to make the movements —*i. e.*, one which dealt with the minutiæ, as well as the broad lines upon which this treatment is based. Still, it is sufficient to give a very clear idea of the value of the treatment and of its method of application. The author acknowledges that it will not cure all diseases, and among those of which he speaks as amenable to this treatment there are very few to which we can take exception. Still, we find it difficult to believe that organic heart disease or paralysis due to pressure of a blood-clot upon the brain can be cured by any such treatment. A certain degree of benefit may be obtained, but we are not yet ready to accept statements of greater results. The book is got up very creditably.

BOOKS AND PAMPHLETS RECEIVED.

Cyclopædia of the Diseases of Children, Medical and Surgical. The Articles written especially for the Work by American, British, and Canadian Authors. Edited by John M. Keating, M. D. Vol. II. Illustrated. Philadelphia: J. B. Lippincott Company, 1889. Pp. xii–1066. [Price, $5.]

An Introduction to Pathology and Morbid Anatomy. By T. Henry Green, M. D., Physician to Charing Cross Hospital and to the Hospital for Consumption and Diseases of the Chest, Brompton, etc. Sixth American from the Seventh English Edition, revised and enlarged by Stanley Boyd, M. B., B. S. Lond., F. R. C. S. Eng., Senior Assistant Surgeon to Charing Cross Hospital, etc. Illustrated by One Hundred and Sixty-seven Fine Engravings. Philadelphia: Lea Brothers & Co., 1889. Pp. xx–17 to 539. [Price, $2.75.]

The Story of the Bacteria and their Relations to Health and Disease. By T. Mitchell Prudden, M. D. New York and London: G. P. Putnam's Sons, 1889. Pp. 143. [Price, 75 cents.]

A Treatise on the Science and Practice of Midwifery. By W. S. Playfair, M. D., LL. D., F. R. C. P., Physician-Accoucheur to H. I. and R. H. the Duchess of Edinburgh; Professor of Obstetric Medicine in King's College, etc. Fifth American from the Seventh English Edition. With Notes and Additions by Robert P. Harris, M. D. With Five Plates and Two Hundred and Seven Illustrations. Philadelphia: Lea Brothers & Co., 1889. Pp. xxv–33 to 671. [Price, $4.]

Diseases of the Eye. A Practical Treatise for Students of Ophthalmology. By George A. Berry, M. B., F. R. C. S. Ed., Ophthalmic Surgeon, Edinburgh Royal Infirmary, etc. With Colored Illustrations from Original Drawings. Philadelphia: Lea Brothers & Co., 1889. Pp. xvii–670. [Price, $7.50.]

A Text-book of Physiology. By M. Foster, M. A., M. D., LL. D., F. R. S., Professor of Physiology in the University of Cambridge, etc. With Illustrations. Fifth Edition, largely revised. Part II, comprising Book II. The Tissues of Chemical Action, with their Respective Mechanisms. Nutrition. London and New York: Macmillan & Co., 1889. Pp. xxii–355 to 846. [Price, $2.60.]

Hygiene and Public Health. By Louis C. Parkes, M. D., D. S. H. Lond. Univ., Fellow of the Sanitary Intsitute and Member of the Board of Examiners, etc. With Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1889. Pp. xvi–471. [Price, $2.50.]

La uretrotomía interna en la Isla de Cuba es tan inocente como la dilatación progressiva. Por el Dr. Ignacio G. Plasencia, Médico del hospital civil, etc. Habana: Imprenta "La Antille" de Cacho-Negrete, 1888.

The Climate of Southern California in its Relation to Renal Diseases. By P. C. Remondino, M. D., San Diego, Cal. [Reprinted from the "Southern California Practitioner."]

Intubation in Cases of Foreign Bodies in the Air-passages, with Remarks concerning Feeding after Intubation. By S. J. Meltzer, M. D., New York. [Reprinted from the "Medical Record."]

Reformation in the Practice of Medicine by the Dosimetric Method of Practice. By J. E. Mac Neill, M. D. [Reprinted from the "Dosimetric Medical Review."]

Résumé of the Experience of Seventeen Years in the Operation of Dilating Urethrotomy. By Fessenden N. Otis, M. D., etc. [Reprinted from the "Medical Record."]

Cases of Ocular Paralysis. By Alvin A. Hubbell, M. D., etc., Buffalo, N. Y. [Reprinted from the "Buffalo Medical and Surgical Journal."]

Urinary Calculus and Lithotomy. By Thomas W. Kay, M. D., Scranton, Pa. [Reprinted from the "Maryland Medical Journal."]

Clinical Observations on Some of the Effects of Direct and Indirect Traumatisms of the Brain. By R. Harvey Reed, M. D., Mansfield, Ohio. [Reprinted from the "Times and Register."]

First Annual Report of the New Amsterdam Eye and Ear Hospital. For the Year ending May 14, 1889.

Transactions of the Texas State Medical Association. Twenty-first Annual Session, held at San Antonio, Texas, April 23, 24, 25, and 26, 1889.

Transactions of the Louisiana State Medical Society at its Eleventh Annual Session, held at New Orleans, La., April 9, 10, and 11, 1889.

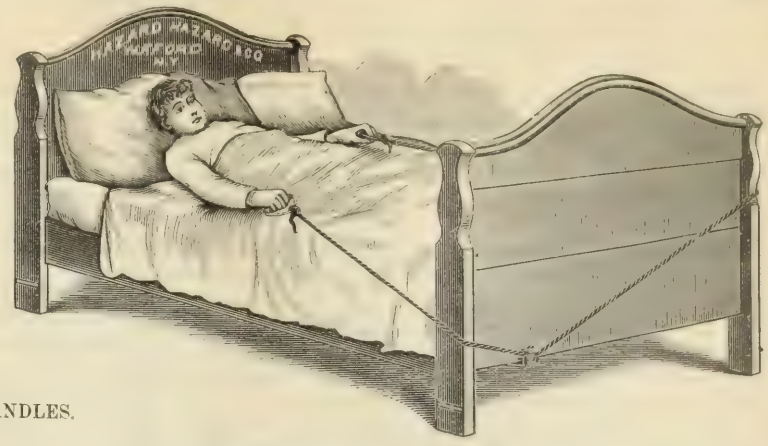
Practical Notes on Urinary Analysis. By William B. Canfield, A. M., M. D. [Reprinted from the "Maryland Medical Journal."]

El arsenico como profiláctico del tifo. Por el Doctor Samuel Morales Pereira, Mexico.

New Inventions, etc.

DE BAUN'S OBSTETRICAL ROPES AND HANDLES.

By Edwin De Baun, M. D.,
PASSAIC, N. J.



The patient lying on her back using the handles.

It is a fact that, with but very few exceptions, during the second stage of labor, women require something to pull on; it may be the physician's or assistant's hands, a sheet fastened to the bed, or some other contrivance, all of which have proved unsatisfactory to me; and therefore I have devised the use of the *ropes* and *handles*, the mechanism of which the accompanying cuts will in part explain.



The apparatus disconnected.

I have used these ropes and handles in many cases of confinement, and they have given great satisfaction to both patients and myself. Although the use of them does not hasten labor, yet they give such ease to the patient that one is fully justified in adopting them. Since this apparatus has gained publicity, many of my patients request that I bring it with me.

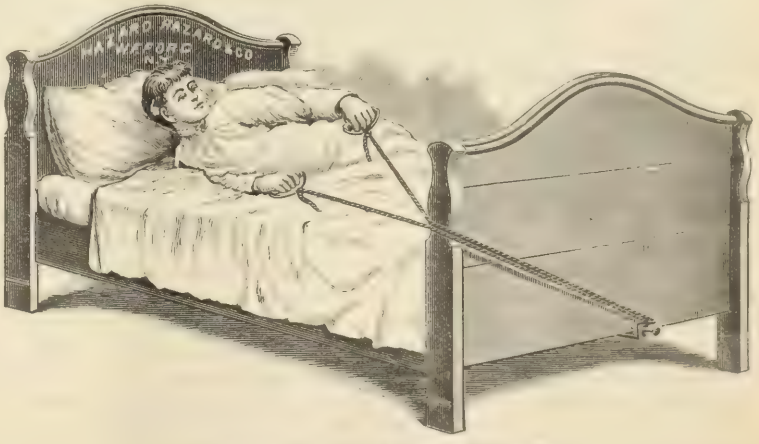
The rope is of one piece, and runs through the two holes in the end of the clamp in such a manner that as soon as tension is made the rope fastens itself in the clamp and can not be pulled either way. By means of the two loops in each handle, the ropes can be shortened or lengthened to suit the patient.

The clamp is attached to the foot-board of the bed at the most convenient side, then the rope is slipped through the holes in the clamp so as to bring the shorter rope to the side of the bed on which the patient lies. The other end of the rope is then thrown around the opposite side of the bed. Now the handles are adjusted to the proper length for the patient, and the instrument is ready for use, this adjustment requiring but a moment.

The special advantages alleged for this instrument are: The ropes being so fastened to the bed, the patient can lie on her back or either side, or she may change to any position on the bed and still grasp both the handles. She can pull much more evenly than by taking an assistant's hands, and is not so liable to strain herself as she otherwise might be. The handles being smooth and easily grasped, she can hold them for a much longer time without fatigue to herself or an assistant, Then they allow the physician to give what manual aid he may deem necessary during the pains, especially at the close of the second stage, without being hampered by the patient's movements in her often wild desire to grasp something. The handles, being on each side of the patient, do not in any way embarrass the progress of labor, and fewer assistants are necessary at the bedside. All patients using them, especially if the progress of labor is of long duration, are less fatigued and notably in a much more cheerful frame of mind. Taking up very little room, they are very light, and are easily and rapidly adjusted to any bed.

I do not affirm that these ropes and handles hasten labor in any way, nor do I allege for them anything other than the comfort and convenience that they afford both the patient and the physician. Of the sixty-four cases in which I have used these handles I can not recall one instance in which any trouble could be attributed to the use of the same. Nor have I heard of any patient feeling lame or bruised. Of course the disadvantages of the old plan are obvious, although it has been practiced for a long time, yet I think the points in favor of this apparatus may be accepted. But, should only a few adopt my plan, I shall feel fully repaid for my exertions.

Mr. W. F. Ford, of Hazard, Hazard, & Co., New York, has comprehensively and faithfully carried out my ideas.



The patient lying on her side using the handles.

Miscellany.

The New York Academy of Medicine.—At the next meeting of the Section in Ophthalmology and Otology, on Monday evening, the 21st inst., Dr. H. Knapp will present a case of cataract extraction; Dr. O. D. Pomeroy, one of microtesia; and Dr. J. E. Weeks, one of coloboma of the chorioid; and Dr. Knapp will demonstrate the use of Schweiger's perimeter.

At the next meeting of the Section in Laryngology and Rhinology, on Tuesday evening, the 22d inst., Dr. W. K. Simpson will present a case of a tooth in a bronchus; and Dr. C. H. Knight, one of a tooth-plate in the laryngo-pharynx for sixteen days; and Dr. A. G. Gerster, Dr. R. P. Lincoln, Dr. S. D. Powell, Dr. D. B. Delavan, Dr. O. B. Douglas, Dr. Henry Schwerig, and others will take part in a discussion on "Foreign Bodies in the Air-passages, and their Treatment."

At the next meeting of the Section in Obstetrics and Gynæcology, on Thursday evening, the 24th inst., Dr. R. A. Murray will read a paper on "The Management of Abortion"; Dr. A. P. Dudley will report a case of carcinoma of the uterus and ovary; and Dr. H. C. Coe will read a paper on "A Successful Case of Laparotomy with Supra-vaginal Amputation of the Uterus for Rupture."

Mortality in Cities in the United States.—The following table represents the mortality in the cities named, as reported to Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, and published in the abstract of sanitary reports received by him during the week ending October 11th:

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM— Cholera.	Yellow fever.	Small-pox.	Varioloid.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y. ...	Oct. 5.	1,583,873	605	..	..	..	..	..	..	14	5	13	2	6
Chicago, Ill.....	Oct. 5.	1,100,000	356	..	..	..	..	..	..	9	1	26	.	3
Brooklyn, N. Y	Oct. 5.	343,602	296	..	..	..	..	..	..	4	..	20	..	4
Baltimore, Md..	Oct. 5.	500,343	131	..	..	..	..	..	..	4	1	2	..	...
St. Louis, Mo	Oct. 5.	450,000	135	..	..	..	..	..	..	8	3	9	..	....
San Francisco, Cal...	Sept. 27.	330,000	125	.	..	..	..	..	..	3	..	5	..	...
Cincinnati, Ohio.....	Oct. 5.	325,000	102	..	..	..	..	..	..	1	..	19	..	....
New Orleans, La. ...	Sept. 28.	254,000	102	..	..	..	..	..	..	2	..	3	..	....
Washington, D. C ...	Sept. 28.	250,000	.....	..	..	..	..	..	..	6	..	7	..	1
Washington, D. C ...	Oct. 5.	250,306	..	..	..	..	..	..	..	6	..	6	..	....
Detroit, Mich.....	Sept. 28.	250,000	76	..	..	..	..	..	..	2	..	4	..	...
Cleveland, Ohio	Sept. 7.	235,000	95	..	..	..	..	..	..	3	1	6	..	3
Cleveland, Ohio	Sept. 14.	235,000	112	..	..	..	..	..	..	3	..	5	1	...
Pittsburgh, Pa	Sept. 30.	230,000	103	..	..	..	..	..	..	8	2	6	..	...
Pittsburgh, Pa.....	Oct. 5.	230,000	84	..	..	..	..	..	..	6	3	8	..	....
Louisville, Ky	Oct. 5.	227,000	49	..	..	..	..	..	..	4	..	..	..	....
Minneapolis, Minn...	Oct. 5.	200,000	48	..	..	..	..	..	..	5	..	8	..	....
Kansas City, Mo.....	Oct. 5.	180,000	30	..	..	..	..	..	..	5	..	1	..	...
Denver, Col.....	Oct. 4.	135,000	77	..	..	..	..	..	..	20	1	1	..	....
Rochester, N. Y.....	Sept. 28.	130,000	29	..	..	..	..	..	1	..	..	1	..	....
Providence, R. I.....	Oct. 5.	127,000	38	..	..	..	..	..	..	2	..	1	..	....
Indianapolis, Ind....	Oct. 4.	124,450	26	..	..	..	..	..	..	1	..	5	..	....
Richmond, Va.....	Oct. 5.	100,000	35	..	..	..	..	..	..	1	..	..	..	....
Toledo, Ohio	Oct. 4.	89,000	29	..	..	..	..	..	..	..	..	4	..	....
Fall River, Mass.....	Oct. 5.	69,000	47	..	..	..	..	..	..	4	..	..	..	1
Nashville, Tenn.....	Oct. 5.	65,153	17	..	..	..	..	..	..	2	..	1	..	1
Charleston, S. C.....	Oct. 5.	60,145	36	..	..	..	..	..	..	1	..	..	..	....
Lynn, Mass.....	Oct. 5.	50,000	13	..	..	..	..	..	..	..	..	..	..	....
Manchester, N. H	Sept. 28.	42,000	19	..	..	..	..	..	..	1	..	2	..	....
Portland, Me	Oct. 5.	42,000	14	..	..	..	..	..	..	1	..	1	..	...
Galveston, Texas ...	Sept. 27.	40,000	10	..	..	..	..	..	..	..	..	..	..	....
Binghamton, N. Y...	Oct. 6.	30,000	11	..	..	..	..	..	..	1	..	..	..	....
Auburn, N. Y.....	Oct. 5.	26,000	7	..	..	..	..	..	..	..	..	..	..	1
Haverhill, Mass.....	Oct. 5.	25,000	8	..	..	..	..	..	..	..	..	..	..	....
Newport, R. I.....	Oct. 3.	22,000	2	..	..	..	..	..	..	..	..	..	..	....
Newton, Mass..	Sept. 14.	21,553	6	..	..	..	..	..	..	..	..	1	..	....
Newton, Mass.....	Sept. 21.	21,553	6	..	..	..	..	..	..	1	..	..	..	...
Newton, Mass.....	Oct. 5.	21,553	4	..	..	..	..	..	..	..	..	2	..	....
Rock Island, Ill.....	Sept. 29.	16,000	4	..	..	..	..	..	..	..	..	..	..	....
Rock Island, Ill.....	Oct. 6.	16,000	8	..	..	..	..	..	..	..	..	5	..	....
Keokuk, I wa.....	Sept. 28.	16,000	3	..	..	..	..	..	..	..	..	..	..	....
Keokuk, Iowa.....	Oct. 5.	16,000	1	..	..	..	..	..	..	..	..	..	..	....

Sulphur as a Disinfectant.—"In disinfection by burning sulphur, Dr. Squibb recommends the evaporation of water equal to four times the amount of sulphur burned. To render the disinfection effective, it is necessary that sufficient moisture be present in the atmosphere with which the sulphurous oxide may unite. The water may be evaporated in a shallow dish, heated to boiling. The sulphur, placed in a smaller dish set in the water bath, is moistened with alcohol and ignited. Walls covered with kalsomine or whitewash should be dampened with a brush before the sulphur is burned."—*Medical and Surgical Reporter.*

THERAPEUTICAL NOTES.

Ichthyol in Chronic Nephritis.—According to the "Gazette hebdomadaire de médecine et de chirurgie," M. Blittersdorf has employed ichthyol successfully in daily doses of 15·432 grains of sodium sulphichthyolate in the case of a young girl affected with chronic nephritis for eight months. She had ascites, facial œdema, albuminuria, and amenorrhœa. This remedy provoked an abundant diuresis, caused a reduction of the albuminuria, and gave such relief that the patient could return to her vocation.

Picrotoxin as an Antidote to Morphine.—We find in a recent number of the "Lancet" that Professor Bokai, of Klausenberg, considers picrotoxin to be the best antidote to morphine. Paralysis of the respiratory centers is the cause of death in cases of poisoning by morphine, and as picrotoxin administered in small doses tends to increase the action of the respiratory centers, thereby hindering the paralysis, it is evident that picrotoxin will probably prove useful in such cases. Moreover, picrotoxin counteracts the effect of the morphine by stimulating the vaso-constrictor center of the medulla oblongata.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

ON GUNSHOT WOUNDS OF THE ABDOMEN, WITH ESPECIAL REFERENCE TO WOUNDS OF THE INTESTINES.*

BY LEWIS A. STIMSON, M. D.,
SURGEON TO THE NEW YORK, CHAMBERS STREET, AND BELLEVUE HOSPITALS; PROFESSOR OF SURGERY IN THE UNIVERSITY OF THE CITY OF NEW YORK.

UNTIL within a period relatively short a discussion of the subject of gunshot wounds in a society of surgeons in civil life would have had an interest almost exclusively academical, and, apart from theoretical considerations and analogy, would have been based in great part upon experience gained at the edge of the battle-field and in the military hospital. But the times have changed, and now, to paraphrase a well-known quotation, Peace hath her military surgery no less renowned than war; and in some varieties of gunshot wounds, such as those of the trunk and head, the office of the military surgeon has diminished, while that of his brother in civil life shows the budding promise of an important development. The reason is not far to seek. On the one side, military fire-arms now discharge their bullets with such velocity that the wounds they inflict upon the viscera are very severe and often beyond hope; while, on the other hand, the possession of parlor rifles and of pistols of small and medium caliber in all classes of the community has become very common, and the injuries inflicted by such, either accidentally or with hostile intent, have correspondingly multiplied. As an indication of this frequency of occurrence of such injuries, I may say that I can recall, without search of the records, twenty cases of serious bullet wounds personally treated by me during the twelve months last past; of these, seven were accidental, three were inflicted with suicidal, and ten with murderous intent. So long, therefore, as pistols are openly sold at prices that place them within the reach of almost every half-grown or adult member of the community, so long as love, anger and despair, greed and want, are strong motives of action, so long as youth is heedless, and so long as the idiot who thinks it is not loaded goes free in the midst of us—so long will gunshot wounds demand our care and attention and deserve our thoughtful study.

All varieties of these injuries have shared in the benefits conferred by modern improvements in the care of wounds and in the stimulus to effort created thereby, but, while in wounds of the extremities the gain has been in the preservation of limbs that would otherwise have been lost, in gunshot wounds of the abdomen the interest is infinitely greater, for the issue is of life or death, and it is beyond dispute that many lives have been already saved by operation during the last five years which would certainly have been lost under the methods of treatment which had previously prevailed. In a collection made by Dr. W. B. Coley, of 124 published and unpublished cases treated by laparotomy, which is the largest thus far made, and which has been in part published,* there are 37 recoveries, in many of which the nature of the injuries was such as to furnish ample ground for the belief that, had the operation not been done, the patients would have succumbed. It has, therefore, been fully established that formal laparotomy undertaken to discover and repair gunshot wounds of the intestines may save lives that are in imminent peril; and that, consequently, under certain circumstances, it is a proper and justifiable operation. But from this to the position that in every gunshot wound of the abdomen that is probably perforating, or even in every one that is certainly perforating, a laparotomy should be immediately done, is a long step. It is not enough to have shown that some patients have survived laparotomy; it is not enough to have shown that those who have died without opera ion could have been saved only by one; it is not enough to have shown that laparotomy for other morbid conditions is daily done with a large measure of success and safety. It must also be shown that it saves a larger proportion of wounded patients than other methods save, and, even if this is done, it must still be ascertained whether we can not discriminate between the different injuries, and recognize those in which it is proper to operate and those in which it is wiser to abstain. Experience alone can supply the materials for an answer to these questions; for the latter we must study individual cases; for the former we must have integral statistics comprising a sufficient number of cases. Lists made up of reported cases contain, as is well known, an undue proportion of successful ones, and I have therefore sought to obtain a list of all the cases that have been treated by laparotomy in the hospitals of New York city. In default of a similar list drawn from a larger area, this will best serve to determine the percentage of success for comparison with the results of other methods. In addition, I shall report three new cases, one of which ended in recovery; and shall further ask your attention to a consideration in some detail of various matters connected with the diagnosis, prognosis, and treatment.

The three new cases are as follows:

CASE I.—C. Z., aged twenty-seven, unmarried, a German, shot himself with suicidal intent, at 3 A. M., on December 6, 1888, with a pistol of ·32 caliber. On admission to the Chambers Street Hospital he presented but slight evidences of shock; his temperature was normal, pulse good, and respirations regular but shallow. He complained of severe pain in the abdomen when moved or touched. There was a small blackened wound midway between the umbilicus and the ensiform process, half an inch to the left of the median line.

I saw him at 3.15 P. M. He had vomited once, and had voided a large quantity of very bloody urine. He was very pale, his surface cool, pulse small and quick. His manner was apathetic, he answered questions shortly and unwillingly, and made no complaint of pain except when the abdomen was pressed upon. The abdomen was not distended; it was resonant anteriorly and dull in the flanks; liver dullness normal.

Ether was administered, and the abdomen opened in the median line from the ensiform process to the umbilicus, giving

* Read before the New York Academy of Medicine, October 17, 1889.

* Dr. W. B. Coley, "Boston Med. and Surg. Journal," Oct. 18, 1888.

issue to a considerable quantity of bloody serum and a few small blood clots. On the anterior aspect of the stomach, three inches from the pylorus, a circular perforation was found, and was at once closed with a row of silk Lembert sutures.

On raising the omentum and transverse colon, two perforations, three fourths of an inch in diameter and half an inch apart, were found at the upper end of the jejunum, and were closed with a double row of Lembert sutures, the fold being longitudinal. Just above and to the left of the junction of the duodenum and jejunum was a large ragged wound in the parietal peritonæum, through which blood flowed freely, evidently from a wound of the pancreas; it was closed, and the bleeding checked by deep sutures. In the mesocolon, two inches above the lower end of the duodenum, was a perforation, the bleeding from which was checked by a suture at its lower angle. Finally, a circular perforation of the posterior wall of the stomach was closed with a double row of sutures. A large quantity of liquid and clotted blood was removed from the abdominal cavity.

The ball had evidently first traversed the stomach, then the mesocolon and jejunum, and had then entered the posterior abdominal wall, wounding the pancreas, and undoubtedly the kidney also, as shown by the blood in the urine.

The extent of the injuries and the patient's condition contraindicated further interference. The wound was closed, and he died half an hour afterward. At the autopsy the ball was found to have traversed the left kidney and to have lodged under the skin behind it. No other wounds of the intestine were found.

Case II.—James D., aged thirty-seven, was brought by the ambulance to Chambers Street Hospital at 1.15 A. M. on March 16, 1889. He had been shot a few minutes previously while kneeling upon the ground, his assailant standing over him. The weapon was a pistol of ·38 caliber. Condition good; no general pain; marked tenderness above right inguinal region; respiration, 20; pulse, 70; temperature, 98° F. There were two bullet-wounds—one about three inches and a half above the free margin of the ribs and an inch and a half to the left of the median line, the other two inches below the border of the ribs and two inches and a half to the right of the median line. At 4 A. M. he passed six ounces of clear urine.

As I was absent from the city, Dr. Charles H. Wilkin, assistant surgeon of the hospital, was summoned, and he operated at 8 A. M., seven hours after the receipt of the injury.

The wound in the chest was probed and found to pass downward and outward without perforating. In the abdominal wound the probe passed downward in the wall for a distance of three inches, and then entered the abdominal cavity. Median incision six inches long between the pubes and umbilicus, giving issue to considerable bloody serum, containing flakes of lymph and some fæces. Six perforations were found at three points in the small intestine—the first pair eighteen inches below the duodenum, the second pair two feet lower down, the third at the lower end of the ileum. The bullet was imbedded in the mesentery, near the cæcum. Each wound was closed with a single row of Lembert sutures; two bleeding points in the omentum were ligated. The cavity was flushed with hot water, and the abdominal incision closed. The patient did well for twenty-four hours, but when I saw him on the following day septicæmia was evidently present. He died at 7.30 A. M. on March 18th, forty-eight hours after the operation. The autopsy showed general peritonitis and congestion of the left lung.

In connection with this case it is proper to state that the operation was performed rapidly and skillfully, that the operator had had a large experience in abdominal surgery, and that all antiseptic precautions were rigidly observed. A supply of silk and sponges specially prepared for use in laparotomies is kept in the hospital, the instruments are always boiled before an operation, and the assistants are skillful and keenly alive to the possibilities of accidental infection and to the need of constant care and watchfulness. It is to be remembered that fæces had escaped into the peritoneal cavity, and that peritonitis had already set in before the operation was undertaken.

Case III.—D. D., aged twenty-eight, a rather fleshy woman, was brought to the Chambers Street Hospital in a cab at 9.15 P. M., April 19, 1889. Six hours previously a man had pressed against her abdomen the muzzle of a Flobert pistol, caliber ·22, thought to be unloaded, and discharged it. She had subsequently vomited whenever she had taken anything into the stomach, and complained of much distress in the epigastric region. The ball had passed through a wrapper and chemise without causing any recognizable loss of substance in them, and had entered the abdominal wall two inches and a half to the left of the median line and an inch and a half below the umbilicus, producing a blackened wound a quarter of an inch in diameter with depressed edges.

The patient had walked into the hospital and showed but little shock; her manner was quiet, she talked freely and naturally, and complained only of pain in the pit of the stomach, which she attributed to indigestion, and was confident would be relieved by a plaster. Her body was covered with a fading syphilitic eruption. The abdominal wall was rounded, thickly coated with fat, and its muscles contracted sharply when it was pressed; in other respects its examination was negative.

The operation was begun under ether at 12.15 midnight, nine hours after the receipt of the wound. The course of the bullet was traced by means of a longitudinal incision three inches and a half long, having the wound at its center; it passed backward through two inches of fat and ended in a small slit in the peritonæum, through which blood escaped quite freely from the abdominal cavity.

A second incision, ultimately seven inches long and extending downward from a point three inches above the umbilicus, was next made in the median line, and the omentum, which was firmly adherent to the left ovary and tube, was pushed to the left; the small intestine was contracted and of a dull-red color; a ragged opening three eighths of an inch in diameter, with everted mucous membrane, was found on the surface opposite the mesenteric attachment, and closed with a single row of three Lembert sutures of fine iron-dyed silk; an inch and a half from it, longitudinally, was a second smaller opening, which was closed with a single Lembert suture. The sigmoid flexure, lying in close proximity to the wounded loop of small intestine, showed two wounds immediately opposite each other which the probe showed to be perforating; one, small and round, was at the base of an appendix epiploica in the outer longitudinal band of muscular fibers; the other, larger and ragged, was in the side of an appendix attached to the inner longitudinal muscular bundle; each was closed with a single suture. A wounded artery in the mesentery, midway between its visceral and parietal attachments, which bled profusely, was secured with a catgut ligature. Clotted and liquid blood, estimated at about one quart in amount, was removed, and the peritoneal cavity cleaned with warm sponges. The cavity was not washed. The entire length of the small intestine, which had been turned out of the abdomen and protected with hot towels, was then gone over rapidly in search of other wounds, and, none having been found, returned into the abdomen. It was noted that during the operation they had become distended

to more than double the size they had when first exposed. The omentum had been perforated by the ball, but was not bleeding; its attachment to the internal genitals made the examination and cleansing of the cavity quite difficult. The bullet was not found.

The abdominal wound was then closed by means of stout silk sutures, embracing the entire thickness of the wall except the peritonæum, which latter was closed with several successive continuous sutures of catgut. The tension of the abdominal wall was so great that the peritonæum could not be closed with a single suture, and the method employed was as follows: Silk ligature was passed about two inches below the upper angle of the wound, and drawn tightly enough to permit the peritoneal opening above it to be closed, and two permanent silk sutures to be placed in the interval above it; a second temporary silk suture was then placed a little lower down, the first one relaxed, and the second section of the wound closed in the same manner as the first; and this was repeated until the entire wound was closed except at the lower angle, where a rubber drainage-tube was introduced to Douglas's pouch. Between the sutures three short drainage-tubes were placed to drain the parietal wound.

The incision made to explore the track of the bullet through the wall was closed with silk sutures and drained. The dressing was of iodoform and creoline gauze, absorbent cotton, and a body bandage.

During the first thirty-six hours the patient received no food or drink except water, a teaspoonful at a time, and was kept slightly under the influence of morphine. On the third day (April 22d) the drainage-tube was withdrawn from the abdominal cavity; on the fifth day her menstrual flow appeared and a diarrhœa began, which lasted, with intermissions, until May 2d. On April 27th most of the sutures were removed, and when the wound was again inspected, two days later, the remaining ones were found to have cut out and the sides of the wound to be gaping; it was lightly packed with iodoform gauze, and the edges approximated with strips of adhesive plaster. On May 3d the regular administration of the protiodide of mercury was begun with the object of preventing any harmful influence of the syphilitic virus upon the healing of the wound. On June 6th the wound was entirely healed, and the patient was allowed to leave the bed; and on June 30th she was discharged cured.

A feature of special interest in this case is that, although the bullet was small (caliber ·22), it had produced a wound of the small intestine three eighths of an inch in diameter, evidently by entering the gut obliquely, and had so wounded a mesenteric artery as to endanger the patient's life by hæmorrhage. I would also call attention to the absence of shock and of all marked symptoms of grave injury. The case was clearly one in which, according to the views held by a number of prominent surgeons, an expectant attitude should have been taken, to await the possible development of grave symptoms, a course which, in my judgment, would have ended fatally by hæmorrhage or by septicæmia. The preliminary exploration of the track of the bullet showed perforation of the cavity and the existence of an important hæmorrhage, and thus, I think, made the subsequent proceeding imperative.

The operation of freely opening the abdominal cavity to search for and repair gunshot wounds of the intestines is not a new one; it does not even belong solely to the period of antiseptic surgery, but it was performed, and successfully performed, more than fifty years ago. The principles which lie at its foundation have, of course, been apparent since such wounds were first inflicted; no demonstration was needed to show the desirability of closing the wound in the intestine or the advantage of a free opening in the abdominal wall if sutures were to be applied or if the wound was to be sought, but the fear of making such an opening or of operating upon the intestines was so great, and indeed so well founded as surgery was then done, that surgeons, with but few exceptions, almost down to the present time, practiced and taught abstention, except when the wounded loop of intestine protruded through the opening in the abdominal wall or lay in plain sight beneath it. Under such circumstances they sutured the intestine and returned it, or they promoted the escape of fæces from within the cavity and sought safety in the establishment of a fæcal fistula. Occasionally the possibility of advantage in a more active intervention was more or less hesitatingly suggested, and Baudens, in a work published in 1836,* reported a case operated upon in 1831, which is not only the first instance of the operation we are considering, but which was also said by the editor of the "Medical and Surgical History of the War of the Rebellion" to be, in 1877, "perhaps the only instance of completely successful enterorrhaphy for shot-wound on record." After having recognized a wound of the transverse colon by introducing his finger, he enlarged the abdominal wound, drew the bowel toward it, and told the patient to cough; this was immediately followed by the protrusion of the wounded bowel and by the escape of intestinal gas from the abdominal cavity. He closed the wound with three Lembert sutures, cut their ends short, and returned the intestine. The subsequent course of the case did not differ from that of an ordinary wound of the abdominal wall, and the patient recovered.

He had previously treated a similar case by drawing out the intestine through the abdominal wound and suturing it; the patient died on the third day, and the autopsy showed that a fæcal extravasation had taken place from an undetected wound in the cæcum. It seems not unlikely that this experience led him to make the free opening in the next case and to the expression of opinion (p. 324): "I do not fear to place the knife in the perforation made by the projectile in the wall of the abdomen, in order to enlarge it, to pursue into that cavity the examination of the course it has taken, and to apply to the intestinal lesions a prompt and effective remedy."

It will be instructive and clarifying briefly to trace the course of opinion upon this subject during the current century, and then to examine the new material that more recent experience has brought to bear upon the questions involved.

It is to be remembered that the earlier experience is drawn almost wholly from military surgery, and that the bullets were much larger and discharged with a much lower initial velocity than at the present time. The wound of the abdominal wall appears usually to have been large enough at least to permit the introduction of the finger and often to permit spontaneous protrusion of a wounded loop of intestine. In 1799 Larrey passed a ligature through such

* Baudens, "Clinique des plaies d'armes à feu," 1836, p. 336.

a protruded loop of the ileum which had been divided by a musket-ball, returned it to the abdominal cavity, and fixed it by means of the ligature in the parietal opening, so that the contents of the bowel could freely escape. The patient recovered, and without a permanent fæcal fistula. This appears to be the maximum of surgical interference approved at that time and for many years subsequently. The possibility of successfully suturing an incised (not a gunshot) wound of the intestine had been known for over two hundred years, and perhaps very much longer,* and in the decade between 1820 and 1830 the experiments of Lembert and of Jobert not only brought the subject of enterorrhaphy very prominently to the attention of the profession, but also gave us methods of closing wounds or reuniting divided ends which are still accepted as the best, with only such modifications and additions as the use of absorbable sutures has entailed. Aided by these acquisitions, Baudens treated his two cases as has been described, and favored the preliminary enlargement of the parietal wound. His example was followed in 1848 by Nélaton,† and in 1849 by Pirogoff‡; the former overlooked one perforation and lost his patient; the latter lost sight of his patient on the fourth day. It does not appear in the accounts that either enlarged the parietal wound, and both quote their cases to support the opinion that it was advisable to resort to enterorrhaphy and not to abstain entirely from operative interference. Pirogoff says: "I regret that in the cases that came under my observation [in the war in the Caucasus] I employed the suture only once, and then in a sort of desperation. I gave up the other wounded as lost; as enterorrhaphy required time and many wounded were awaiting my assistance, I did not use the suture. But just this desperate case proved that much is to be expected from operative interference." Lohmeyer, writing after the Danish War, said that probing of the abdominal wound was indicated only when peritonitis had been set up by the escape of the contents of the intestine from a concealed wound in it and threatened to become fatal, and that then he would follow the example of Baudens and suture the bowel rather than try for a fæcal fistula. Legouest, after the Crimean War, expressed similar views, and Demme, after the Italian War of 1859, referred to the treatment only to say that most authors condemned it, and that, in his opinion, it would prove impracticable in the large majority of cases because of the uncertainty of diagnosis. In the War of the Rebellion enterorrhaphy was done in three cases for shot wound of the small intestine by Bentley, Judson, and Gill. In all these cases the wounded gut protruded, and all terminated fatally. Kinloch operated in 1863 in a case of fæcal fistula following a gunshot wound received nearly eight months previously. He laid open the peritoneal cavity, excised half an inch of the upper and two inches of the lower portion of the bowel, brought the cut edges into direct apposition with silver sutures, and effected a partial apposition of the serous surfaces by a few Lembert sutures. The patient recovered, but union failed, and a small fæcal fistula persisted.* At the close of the war the late Dr. Hamilton† wrote: "Be assured the patient will have a better chance for life if we let him entirely alone; and it surprises me that any good surgeon would think otherwise." In 1867, after the Austro-Prussian War, Neudörfer says: "What, then, shall the physician do with a gunshot wound of the bowel? Nothing at all."* In the edition of his "Surgery" printed in 1872 the late Dr. Gross, who, thirty years previously, had written strongly and with great authority in favor of enterorrhaphy in incised wounds of the intestine, repeats his approval of it, but adds (vol. ii, p. 667): "These remarks are more especially applicable to incised wounds. In gunshot wounds no benefit, it seems to me, would be likely to accrue from such a course of treatment [*i. e.*, to enlarge the abdominal orifice, to seek for the wounded tube, and to sew up the cut], as the bowel is generally pierced in a number of places, and the case, on this account, must, therefore, generally be fatal."

In the same year, after the Franco-German War, Beck argued in favor of a bolder interference, but Erichsen‡ rejects all operative measures unless the wounded loop protrudes; and if fæces actually escape into the abdominal cavity, he only removes the sutures from the parietal wound and gently separates its edge to afford an outlet. Finally, in 1877, the editor of the "Medical and Surgical History of the War of the Rebellion," after an elaborate review of the subject, says (p. 128): "Reflection . . . leads unavoidably, in the writer's opinion, to a conviction of the propriety of incising the abdominal wall when necessary, in order to expose and sew up the wounded gut concealed within the cavity, whether divided by a cutting instrument or by a shot. The obstacles to success are obvious; but it is a mortal peril which demands an extreme remedy." He adds, in a note, that "over one hundred instances [of enterorrhaphy for incised and gunshot wounds] have already been adduced, with such a large percentage of recoveries that, with every allowance for the suppression of unfortunate results, the evidence is very encouraging"; and he further supports his opinion (note on p. 126) by quoting similar ones contained in letters sent him by Dr. J. S. Billings, Dr. Hunter McGuire, and Dr. N. S. Lincoln. Thus Dr. Billings writes: "When there is reason to suspect intestinal injury, it appears to me to be proper to enlarge the opening, if necessary, to ascertain the nature and amount of injury, . . . to employ sutures or ligatures where needed, and to cut these short and return the injured viscera." Professor McGuire says: "If the shock, thermometer, etc., indicate wound of the bowel, cut down and sew it up." And Professor Lincoln: "In shot wounds of the intestine, unattended by protrusion, unless the perforation may be in

* See "Med. and Surg. Hist. of the War of the Rebellion," Part Second, surgical vol., p. 63, note 2, and p. 123, note 5.

† Nélaton, "Path. ext.," vol. iv, p. 153.

‡ Pirogoff, quoted in "Med. and Surg. Hist. War of Rebel.," Part Second, surgical vol., pp. 125 and 127.

* These cases, and most of the historical and bibliographical facts here mentioned, have been drawn from the extremely interesting and valuable chapter upon this subject in the "Med. and Surg. History of the War of the Rebellion," Part Second, surgical volume.

† "Treatise on Mil. Surg. and Hyg.," p. 354; "Med. and Surg. Hist.," p. 73, note.

‡ Erichsen, "Surgery," vol. i, p. 553.

the iliac region, with a reasonable likelihood of implicating the part of the large intestine uncovered by peritonæum, and therefore avoiding the risk of intraperitoneal extravasation, it is the safest course to enlarge the track of the ball and to close the intestinal wound by suture."

These opinions mark the beginning of the change, and doubtless were in some degree inspired by growing confidence in antiseptic surgery. It is noticeable in all that had preceded that the discussion always began with the assumption that a positive diagnosis of wound of the intestine, and often of fæcal extravasation into the peritoneal cavity, existed, and the supporters of active interference had gained, even in that class of cases, so few adherents that the instances could almost be counted upon the fingers, and Baudens's enlargement of the parietal wound still remained unique. Of the cases which form so large a proportion of those now encountered in civil practice—cases in which there is at first no evidence of intestinal wound, and in which even the fact of perforation of the abdominal wall is in doubt—there is no mention in the discussions. Apparently it was the universal practice to give opium and await the result. The few cases in which enterorrhaphy had been done were of such a character that it is hard to see now how it could have been avoided; the wounded intestine lay in plain sight at the bottom of a large parietal opening, or was protruded through it. If anything was to be done, what else could it have been? So far as can be judged from reported histories, the line of treatment habitually followed was to administer opium, for the purpose of relieving pain and checking peristalsis, to apply ice to the abdomen, or sometimes to blister the surface to control inflammation, to keep the parietal wound open, and to "maintain the utmost cleanliness," by which attractive phrase was meant the removal from the surface of such fæcal and inflammatory discharges as escaped from the interior of the abdomen.

Of the results of this treatment we can form, notwithstanding the vast number of cases reported, only a general idea, because the records probably fail to include a considerable number of fatal cases abandoned upon the field of battle without having received professional care. The Surgeon-General of the United States (*loc. cit.*, p. 202) reports 3,429 cases of penetrating shot-wounds of the abdomen, with visceral injuries, in which the result is known; of these, 421 recovered (12+ per cent.). In addition, there are 19 cases, with 12 recoveries, of penetration without known injury to the viscera. Colonel Otis says (p. 204): "The comparatively small category of cases of recovery after indubitable shot-penetration of the abdomen may be arranged in three divisions. The first and largest group would include the cases of perforation of the large intestine in parts uncovered by peritonæum, followed by recovery with or without abnormal anus. The second, a group so small that the absolutely authenticated examples can be counted on the fingers, comprises the instances of wounds of the solid or membranous viscera, with extravasation of their contents within the peritoneal cavity. In the third division would be placed the cases of recovery after undoubted penetration or perforation of the peritoneal cavity without visceral injury, or, as it would be safer to say, with very slight visceral injury. On rigorous examination, these also would probably be found few in number." A review of the records of the cases described as recoveries after wound of the large intestine (Cases 235 to 293 and 295 to 299), which must have been included by Colonel Otis in the first of his three divisions, shows little or no reason in any of them for supposing that the intestine was wounded only at a point where it was uncovered by peritonæum, and in a large number of them there seems to be as much reason for supposing that the small intestine was wounded as that the large one was. Thus, in all the cases except five (295 to 299, in which the ball was voided at stool) the ball traversed the abdominal cavity, making its entrance or exit, or both, through the parietal peritonæum, and in a large number of them the wound of entrance or exit was within a few inches of the umbilicus. There is, in my judgment, nothing in them to justify the opinion indicated by his classification that wounds of the large intestine are so much less fatal than those of the small intestine; and, assuming his opinion to be correct, there is nothing in the position of the parietal wounds to enable a surgeon in any similar case to recognize which part of the intestine was wounded. I desire particularly to emphasize this fact, because Colonel Otis's opinion appears to be responsible for the frequently repeated statement that wounds of the small intestine are necessarily fatal, while those of the large intestine are much less dangerous, and the frequent repetition creates the impression that the opinion has been independently formed by many, or that it has a solid and unquestionable foundation. Taking the figures as they are given, they indicate a mortality of gunshot wounds in military practice of about 87 per cent.—say seven patients in every eight—and this, though somewhat larger, is still in substantial accord with the less complete unofficial statistics of individual experience in other wars grouped by Colonel Otis in another table (*loc. cit.*, p. 203): 1,146 cases, with 861 deaths (75 per cent.).

But we are considering the question to-day from the standpoint of civil practice, and we know that the circumstances of those wounded in battle differ greatly in some important respects from those of the wounded received into our civil hospitals. I have therefore collected from the case-books of several of the hospitals of New York the cases treated in them during the ten or fifteen years preceding 1885—a period during which the so-called "do-nothing" plan was habitually followed. The list is as follows:

HOSPITAL.	Cases.	Deaths.	Recoveries.
Chambers Street, 1876–1884	13	11	2
New York, 1884	4	2	2
Bellevue, 1870–1884	8	2	6
Roosevelt, 1872–1885	6	2	4
St. Vincent, 1880–1885	5	3	2
Presbyterian	1	..	1
Total	37	20	17

The question at once arises, In how many of the cases tabulated as recoveries was the wound actually perforating? and it must be admitted that the question can not be categorically answered. But I have included only those

cases in which the recorded symptoms—pain, vomiting, shock, abdominal distension, and tenderness—were such as would be held to-day by the supporters of active interference to justify an explorative laparotomy, and I think much weight should be given to the deliberate diagnosis of the attending surgeon. In some the diagnosis is absolutely beyond question, as, for example, in one of the Roosevelt Hospital cases in which Dr. Sands vainly sought, by a long incision of the skin, to trace the course of the bullet; two days later fæces escaped through the right inguinal canal, and, after this flow had lasted for some time, recovery followed. Corroborating evidence of the correctness of the diagnosis is, I think, to be found in the fact that, although in the last five years twenty-nine laparotomies have been done in this city for pistol-shot wounds of the abdomen, I have found no record and have not heard of any case in which the operation was undertaken and the wound found not to be penetrating. It seems highly improbable that, in about ten years preceding 1885, there should have been ten or fifteen cases in which an erroneous diagnosis of penetration was made, and that in the five following years there should have been no such mistake. On the other hand, I do not believe that the above thirty-seven cases include all that have occurred here within the period covered by the records, or that the rate of mortality of this table is as high as it would be if the record were complete; but, even if it were increased by the addition to the list of an equal number of fatal cases, its smallness would still, I think, be a surprise to all. Some of our hospital records are well known not to be complete, and a large proportion of the cases that escape recording are those in which death follows promptly after admission to the hospital. The foregoing table, therefore, is offered mainly to show that recovery after a perforating shot-wound of the abdomen, with probable injury of the small intestine, under non-operative treatment, is by no means so great an exception as it is generally alleged to be.

The great majority of these cases are of date subsequent to the publication of the opinions in favor of laparotomy quoted above. In all of them the treatment consisted almost solely in the administration of opium, and in many the parietal wound was washed with some antiseptic solution and then covered with carbolic or iodoform gauze. Surgeons possessed, practically, all the knowledge of the pathology of abdominal shot-wounds, of the various processes by which death is caused or repair effected, and of the methods of operation upon the intestine which they now have. They knew what was necessary or desirable to be done to increase the chances of recovery, but their hands were stayed by the fear that to do what was necessary or desirable was even more dangerous than to leave it undone. The fear had heretofore been well founded, and operations in which the peritoneal cavity was freely opened deservedly ranked among the most serious. But with generalization of the antiseptic method came increased security and confidence, and came also a revision of former notions of what was practicable and permissible, and a great increase in the range of operations. The opening of the peritoneal cavity for the relief of disease was done not only with greatly increased frequency, but also with great success, and it became only a question of time and opportunity when it should be extended to gunshot injuries. The first operation under the new conditions and new ideas was done by Dr. Sévastopoulo, of Constantinople, in October, 1880, but, as it was not published until 1887,* it remained without effect upon the opinions and practice of the profession. It was a repetition, and the first repetition if the cases of Nélaton and Pirogoff are excluded, under the protection of antiseptics, of Baudens's operation in 1831.

He was called an hour after the accident to a muscular young man who had been struck at a point midway between the umbilicus and the anterior inferior spine of the right ilium by a small pistol-ball which was thought to have been altered in shape by glancing from a neighboring stone. The wound was nearly an inch long and at once gave issue to a yellowish liquid and blood; pressure forced out clots and gas having an intestinal odor. Although unprovided with instruments or an anæsthetic, the surgeon immediately enlarged the wound to a length of six inches with a stout pair of scissors; about a quart of clotted and liquid blood escaped, followed by the loops of intestine soiled with fæces. On the convexity of one loop was a wound so large and irregular that he thought it best to resect the part and reunite the ends by invagination (Jobert's method), fastening them together by Lembert sutures. The hæmorrhage which came from the divided epigastric artery was arrested, the abdomen washed out with a hot carbolic solution, and the abdominal wound closed with silk sutures, which were removed on the eighth day. When seen a year later the patient was again following his calling of wrestler.

The case was similar to those that had formed the basis of the discussions of the preceding half century in this respect—that the existence of a wound of the intestine was certain, and of an extravasation of fæces probable. It was novel in its free incision and in the use of a carbolic solution to cleanse the cavity.

In the following year, 1881, November 1st, Dr. R. A. Kinloch,† of Charleston, S. C., operated upon an adult negro who had been shot eleven hours previously with a pistol of ·32 caliber; there was little shock, considerable abdominal tenderness, and pain in the sacral region. The finger introduced through the anus detected a perforation on the posterior wall of the rectum. He opened the abdomen by a median incision between the umbilicus and pubes, closed three perforations of the small intestine with Lembert sutures, and, as he was unable to find the wound in the rectum, he inserted a drainage-tube and closed the abdominal incision about it. The patient died ten hours later, and at the autopsy it was found that a wound of the small intestine had also been overlooked, as well as the one in the rectum.

This was the first case in which the operation was distinctly exploratory—that is, in which the abdomen was freely opened to discover and repair a suspected wound of the intestine; for if the wound previously recognized in the rectum had been the only one intended to be treated, it would hardly have been approached through the anterior abdominal wall. To Dr. Kinloch belongs all the credit that attaches to such priority. Moreover, the idea was not a new

* Sévastopoulo, "Bull. de la soc. de chir.," 1887, p. 274.

† Kinloch, "North Car. Med. Journal," July, 1882, p. 1.

one to him, and the operation was not done simply because others had suggested it. I have above referred to the operation he did in 1863 for the closing of a preternatural anus created by a gunshot wound; in reporting that case, he spoke against "the almost universal practice of abandoning intestinal lesions to nature rather than risk opening the peritoneal cavity." Fourteen years previously * he had formulated the principle which he applied to this case, and he deserves not only the credit which goes with priority in practice, but also the much greater one which attaches to originality in conception. But—his patient died; and the stamp of success, *iste stultorum magister*, is as necessary to the recognition of the merit of an idea as to that of an individual. The case passed unnoticed, and this, too, notwithstanding the fact that, in a paper read before the New York Academy of Medicine in October, 1881, and published in the "British Medical Journal" in the following December, the late Dr. Marion Sims had spoken strongly in favor of the practice.†

Two years later (September 30, 1883) came the well-known successful case of Kocher. It was published in December, 1883, and an abstract of the case appeared in the "British Medical Journal," July 12, 1884, p. 78, and was copied in the "Am. Journal of the Medical Sciences" in October, 1884, p. 574, and this was followed the next month by Dr. Bull's successful case which was reported to the New York Surgical Society, January, 1885, and has done so much to spread the practice. How great that spread has been is shown by the statistics collected by Dr. W. B. Coley, above quoted. They contain 124 operations, divided as follows according to years: Previous to 1881, 3; 1881–'84, 4; 1885, 9; 1886, 22; 1887, 35; 1888, 32; 1889, 19. One hundred and three of the 124 operations were done in the United States. The mortality is 70 per cent.

The untrustworthiness, in respect of the percentage of mortality, of statistics made up largely of published cases is well known, and is strikingly shown by Dr. Coley's experience and by the results of my own search of the records of New York city. Dr. Coley's first collection, published in October, 1888, contained seventy-four cases with a mortality of about 60 per cent.; his further search has raised the mortality to about 70 per cent., although very few new cases of later date than his publication have been added. His published list contains nine published New York city cases, with three recoveries and six deaths. Only three additional operations—two deaths, one recovery—have since been done here. They are those reported this evening, and yet I have been able to increase the list by unpublished cases from hospital records to a total of twenty-nine cases, with twenty-five deaths and four recoveries, a mortality of 86·2 per cent.

The details are as follows:

Cases treated by Laparotomy in New York City.

HOSPITAL.	Cases.	Deaths.	Recoveries.
Chambers Street	12	9	3
New York	1	1	..
Presbyterian	1	1	..
Bellevue	4	4	..
St. Luke's	1	1	..
Ninety-ninth Street	2	2	..
German	2	1	1
Roosevelt	3	3	..
St. Vincent	2	2	..
Dr. Jersey	1	1	..
Total	29	25	4

These I believe to be the integral statistics of this operation in the city of New York; certainly no successful cases are likely to have been overlooked. The only statistics of non-operative treatment with which I can compare them are those given above, the record of the War of the Rebellion with a mortality of about 87 per cent., and the cases which I collected from hospital records in this city. I have given my reasons for doubting the completeness of the latter list, and therefore I will select from it for comparison the records of a single hospital which I believe to be nearly, if not absolutely, exact in both classes of cases—those, namely, of the New York Hospital and its branch, the Chambers Street Hospital. The records cover the period from the latter part of 1876 to June, 1889. The cases at Chambers Street were under the care of Dr. Bull (1876–'87), myself (1888–'89), and Dr. Wilkin, assistant surgeon (1886–'89); those at the New York were under the care of Dr. Markoe, Dr. Sands, Dr. Weir, and Dr. Bull.

Cases treated without Operation, 1876–1884.

HOSPITAL.	Cases.	Deaths.	Recoveries.
Chambers Street	13	11	2 (Bull.)
New York	4	2	2 (Sands, Markoe.)
Total	17	13	4

Mortality, 76·47 per cent.

Cases treated by Laparotomy, 1884–1889.

HOSPITAL.	Cases.	Deaths.	Recoveries.
Chambers Street	12	9	3 (Bull, 2; Stimson, 1.)
New York	1	1 (Bull.)	..
Total	13	10	3

Mortality, 76·92 per cent.

(*To be continued.*)

The Health of Connecticut.—According to the State Board of Health's "Monthly Bulletin," the total number of deaths reported from 167 towns during the month of September was 1,040, including 3 from scarlet fever, 14 from cerebro-spinal meningitis, 54 from diphtheria and croup, 3 from whooping-cough, 44 from typhoid fever, 16 from malarial fever, and 12 from typho-malarial fever. There were also 116 deaths from consumption, 37 from pneumonia, and 23 from bronchitis.

* His case was reported in "Am. Jour. of the Med. Sci.," July, 1867.

† On February 9, 1882, Fitzgerald ("Austral. Med. Jour.," v, 1883, 33), and on February 26, 1883, Lloyd ("Brit. Med.-Jour.," 1883, i, p. 560), operated unsuccessfully; but neither case belongs fairly in the category of those we are considering. In Fitzgerald's the wound in the side was large and lacerated and caused by a charge of bird-shot; it was enlarged upward and downward, and ten inches of small intestine resected. The patient survived five days. In Lloyd's the operation was not done until three days after the injury, and, strictly speaking, was only to establish drainage in a case of suppurative peritonitis, although a wounded loop of intestine was drawn up and fastened in the abdominal incision.

THE TREATMENT OF DISEASED TONSILS WHEN UNATTENDED WITH HYPERTROPHY.*

By JOHN O. ROE, M. D.,
ROCHESTER, N. Y.

It is my purpose in this short paper to call attention to some chronic diseased conditions of the tonsils not characterized by hypertrophy. Such diseased conditions have frequently proved, in my experience, to be of marked clinical importance and to demand appropriate and thorough treatment.

The group of glands between the pillars of the fauces which constitute the faucial tonsils is, as has been stated by Dr. Bosworth,† so small in size when in their normal condition as to be scarcely perceptible on ordinary inspection. The condition of moderate prominence of the tonsil that is commonly seen is not a normal condition, although the tonsils may not be so much diseased as to give rise to any particular disturbance. It is a fact, however, that the tonsils may be and very often are so extensively diseased as to give rise to well-pronounced and often serious local and general disturbances, while at the same time they retain or may be reduced to about the same size as in health, and it is to this condition that the writer wishes to direct particular attention.

This condition of the tonsils has not only not received the attention it demands, but is not even mentioned by the majority of writers on tonsillary diseases, although it has not remained entirely unrecognized.

In conjunction with "Chronic Follicular Tonsillitis," Dr. Cohen‡ recognizes the fact that the tonsils may be quite extensively diseased without being in a condition of hypertrophy, and Dr. Harrison Allen# has reported five cases of tonsillary disease producing well-marked and persistent symptoms in which the tonsils were small and so hidden behind projecting faucial pillars as to remain unnoticed.

A similar condition has been alluded to by Mr. Lennox Browne‖ in his brief description of "Chronic Lacunar Tonsillitis," and a case is reported by him similar to those reported by Dr. Allen. Dr. Maxwell,△ of Jacksonville, Fla., has practically recognized certain conditions of the tonsils that form the subject of this paper, but the title of his paper, "Ablation of Tonsils when Smaller than Natural," is misleading, for the reason that it presupposes or implies that tonsils are normally prominent and well-pronounced bodies.

Wagner,◊ in describing chronic catarrh of the lacunæ in conjunction with atrophy of the tonsils, says: "The cyst-like dilatations of the lacunæ (like comedones) have a clinical importance from the fact that their contents act irritatingly on the contiguous parts, either mechanically or chemically. In this way are produced, and usually repeatedly, the various kinds of tonsillitis, and especially intratonsillar and peritonsillar abscess."

It is interesting to note that for these conditions, which are capable of producing so much mischief, Wagner recommends no treatment whatever, for the reason, he says, that they are seldom detected during life. It is a traditional and a very generally accepted idea that only hypertrophied tonsils require treatment, but the fallacy of this idea will be apparent by a careful consideration of these obscure abnormal conditions of the tonsils, which so often escape observation.

The primary and most common form of disease of the tonsils is hypertrophy. In children it is rare that we find any other than the hypertrophied form of tonsillary disease; but in adults other diseased conditions of the tonsils are of frequent occurrence. It is a recognized fact that hypertrophied tonsils in children become smaller when adolescence is reached; and it is also the common belief that the subsidence of these tonsils indicates a return, not only to their normal size, but to a normal condition. But a careful examination will readily show this belief to be a fallacy; and it is not infrequently the case that these small tonsils will give quite as much annoyance to the patient as he experienced from the tonsils in their enlarged condition. It is almost invariably the case that these small but diseased tonsils in adults follow as a sequel the hypertrophic tonsils of children, and exemplify the importance of removing from the throats of children all tonsils attended by any considerable degree of hypertrophy. All chronic diseased tonsils in adults almost invariably follow a condition of hypertrophy in childhood or youth; but in exceptional cases hypertrophy may not precede the diseased conditions under consideration.

The two forms of chronic diseased tonsils which remain after the subsidence of hypertrophy, or which may exist independent of hypertrophy, are—

1. A chronic disease of the crypts and lacunæ of the tonsil.

2. A fibroid degeneration of the stroma of the tonsil or a cicatricial formation at the base of the tonsil.

The first condition is the result of chronic follicular inflammation of the tonsil, and is almost invariably associated with chronic follicular pharyngitis. The most common form of this is attended by the destructive degeneration of hypertrophied tonsils in children, and is distinctly a diseased condition of the follicles of the tonsils. This slow but progressive destruction of the follicles of the tonsils is the exciting cause of the frequent attacks of suppurative inflammation, which often attends this condition, and which is easily induced by slight exposures or deranged condition of the system. These degenerate tonsils often have the appearance of being hypertrophied when the crypts and lacunæ are filled with the *débris* of the degeneration, which frequently has a very offensive odor and causes the person to have a very bad-smelling breath.

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* Read before the American Laryngological Association at its eleventh annual congress.

† "The Function of the Tonsils, with some Practical Suggestions in Regard to their Diseases," Congrès périodique international des sciences médicales, Copenhague, "Compte-Rendu," vol. iv, p. 54.

‡ "Diseases of the Throat and Nasal Passages," 2d edition, p. 222.

"The Tonsils and Follicular Irritation," "Medical News," Philadelphia, vol. xli, p. 31.

‖ "The Throat and its Diseases," London, 1887, 2d edition, p. 335.

△ "The Medical and Surgical Reporter," Philadelphia, 1889, vol. lx, p. 196.

◊ Von Ziemssen's "Cyclopædia of the Practice of Medicine," American edition, vol. vi, p. 971.

It is not uncommon to find the surface of diseased tonsils studded with white spots which mark the openings of the lacunæ. These white spots are caused by the material discharged from the crypts and lacunæ of the tonsils and is the chronic inflammatory exudate resulting from the disease of the tonsil. On squeezing this out, it will be found to be of a soft, cheesy consistence, to resemble very much the contents of comedones, and to have an offensive odor, which may be more fully brought out by crushing it. It is usually the case that much deposit of this material is associated with more or less hypertrophy of the stroma of the tonsil, for when the stroma and follicles have undergone further degeneration, this substance is poured out in a fluid form.

The second condition is also the result of the follicular disease, except that, simultaneously with the degeneration of the lymph follicles, there is a deposit of fibrous material in the stroma. The cicatricial formation at the base of the tonsils is the result of the frequent attacks of suppuration around the base of the tonsils which is induced by the follicular disease.

The reason for these conditions being so frequently overlooked is that they usually give rise to little or no discomfort to the patient which he refers to the tonsils themselves; because the disturbances to which they do give rise are usually located in other parts, and are of a reflex character. Another reason for their being so readily overlooked is that, on examining the throat, the diseased condition of the tonsil generally looked for is hypertrophy. This being absent, the real disease of the tonsil remains unsuspected.

The chronic disease of the interior of the tonsil, even when it is attended with considerable discharge, is frequently undetected for the reason that the discharge is so readily cleared away by swallowing or drinking. In other cases the tonsil may be partially or completely hidden behind large and projecting faucial pillars. In the latter case the free exit of the tonsillar discharge may be prevented by the overlapping pillars, thereby causing a distension and dilatation of the crypts and a bulging of the pillars over the tonsils.

In these cases the anterior pillars should be drawn forward with a blunt hook. For this purpose an aneurysm needle or a plain palate retractor is very conveniently adopted. The act of gagging also assists materially in the examination by throwing the tonsils inward and forward, thus exposing them completely to view.

In all cases of obscure disease of the throat the tonsils should be carefully examined. The enlarged crypts and lacunæ may be explored with a probe for enlarged pouches which are so often filled with muco-purulent discharge; and this discharge can be readily demonstrated by simply squeezing it out with the finger. The formation in the tonsil and around its base of cicatricial tissue, which is very often the exciting cause of throat irritation, can also be readily detected with the probe and finger, and can usually be suspected by simply a careful inspection.

The local irritation produced by the diseased condition above described is manifested in a variety of disturbances about the throat and head. The association of this diseased condition with follicular inflammation of the pharynx renders a removal of the abnormal condition of the tonsils a necessity, before the latter can be cured. Also, disease of the faucial tonsils is frequently the exciting cause of diseased conditions of the other so-called tonsils—the lingual and the pharyngeal tonsils.

It is also frequently manifested in irritation of the larynx and hoarseness; and it is not infrequent that cicatricial formations in and about the tonsils will produce neuralgia of the face, neck, and more or less frequent or persistent neuralgic affections of the ear.

The necessity of treatment of these diseases is therefore evident, not only from the existence of the disease itself, but from the liability of its becoming aggravated by the slightest causes, and also from the accompanying disturbances which it almost invariably produces. The method of treatment in these cases is always local, except in those conditions of the tonsil that depend upon specific disease, or those conditions of chronic inflammation of the circumcellular tissue of the tonsil that accompany rheumatic conditions.

Local applications of medicinal substances in these conditions of the tonsils are practically useless. The application of caustics, such as the Vienna or London paste, may be used in the first form of the disease described, in which the tonsil itself is soft and flabby. In the case of the fibrous or cicatricial formations, the efficacy of the paste is not so great, as the tissue is not readily destroyed by it. The galvanic cautery, which is sometimes employed for the removal of hypertrophied tonsils, may also be employed in these cases. It is, however, far more efficacious in the treatment of disease of the lacunæ and crypts, for the reason that the application of the galvanic cautery tends further to increase the formation of cicatricial tissue.

The treatment *par excellence* in all cases is that of ablation with the knife. In the case of diseased crypts, they may be laid open with a bistoury, and the interior of the crypt thoroughly cauterized with chromic acid or a solid stick of nitrate of silver, or the silver fused on a platinum probe, as proposed by Dr. Cohen. The best plan, however, in these cases is, according to my experience, that of excision. In such case, however, the amygdalotome can not be employed. The method of removing these tonsils is simply to grasp the tonsil with a double tenaculum, draw it forward from its bed, and remove a portion at a time. It is rarely advisable to attempt to remove the whole mass at one cut, for these tonsils are so often attached to the pillars of the fauces that wounding the pillars is liable to take place if care is not exercised. The plan which I adopt in these cases is, first, to anæsthetize the parts as thoroughly as possible with cocaine. This has a double advantage, in that it not only renders the operation less painful, but decreases the liability to hæmorrhage. Then with a double tenaculum and a curved blunt-pointed tonsil-knife to remove small portions of the tonsil until all the diseased mass is thoroughly extirpated, usually leaving a deep excavation between the pillars of the fauces. In the case of a cicatricial formation, it should be removed as thoroughly as practicable. In some cases of chronic disease of the crypts of the tonsils it is advisable to remove the outer portion of the tonsil com-

pletely, thus exposing the interior of the crypt, which can be cauterized thoroughly.

In all cases, however, the complete extirpation of the gland when possible is far preferable to any other form of treatment, as nothing but a surface of healthy tissue is left, which heals quickly and permanently. In no instance has the writer observed any troublesome hæmorrhage in these operations. This is doubtless due to the fact that in these cases the nutrient vessels going to the tonsils are small or are not so distended as they are when the tonsils are in a condition of hypertrophy.

A large number of cases illustrating the foregoing observations could be cited, but, as the recital of cases is tedious, I will simply state that in every instance excision of these small but diseased tonsils has resulted in a complete cure of the tonsillary disease, and entire relief from all the attendant symptoms of local disturbance and reflected irritation.

POISONING BY ILLUMINATING GAS.

HISTORY OF A CASE.

RAPID RECOVERY. A RATIONAL TREATMENT.

By WILLIAM C. KLOMAN, M. D.,
BALTIMORE.

Modern illuminating gas, the so-called "water gas," is a much more dangerous poison to the human system than the original gas made from coal. Booth ("Encyclopædia of Chemistry") states that illuminating gas made from coal consists, on an average, of light carbureted hydrogen, 57·7; carbonic oxide, 7·7; hydrogen, 21·2, etc., while the modern gas, on the authority of Professor P. B. Wilson, inspector of gas, etc., contains from 20 to 30 per cent. of carbonic oxide, showing an increase of from 300 to 400 per cent. Now, there is every reason to believe that the carbonic oxide is the actual poisonous constituent of illuminating gas.

The practical difference in the poisonous qualities of the two kinds of illuminating gases is best illustrated by the tables of mortality of our Board of Health, which state that prior to January 1, 1881, when the original gas was made from coal, there was but one death from poisoning by this gas during the previous fifty years, while since that period, to October 1, 1889, there have been recorded fifty-one deaths from poisoning by illuminating gas.

The actual nature of poisoning by carbonic oxide is yet a mooted question. Some authorities, such as Claude Bernard, Hoppe-Seyler, and others, believe the symptoms are entirely due to merely a deprivation of oxygen; others, such as Klebs, believe that carbonic oxide has narcotic properties acting on the central nervous system, independent of its power of robbing the blood of oxygen. At any rate, it is established that carbonic oxide has the power of decomposing the oxyhæmoglobin and forming a new compound with the hæmoglobin, combining in the same volumetric proportions and forming a new compound which is crystallizable and which can be separated from the blood. This new compound is more stable than oxyhæmoglobin, and is not decomposed by the presence of oxygen. In fact, to the extent of its presence in the blood, it seems to render the absorption of oxygen impossible, and if the entire quantity of oxyhæmoglobin of the blood is replaced by it, life is no longer possible.

Having recently treated a case of poisoning by this gas, and having successfully treated it by a remedy not heretofore mentioned in connection with the treatment, I have thought it best to introduce the history of the case with the foregoing short *résumé* of the nature of illuminating gas and its effects upon the system.

On September 4, 1889, I was called at 6.30 A. M. to see Diana, a colored girl aged seventeen years, a domestic in the family of Mr. S. She had recently come to the city from Virginia, and was not familiar with the use of gas. She was shown how to turn off the stop-cock and extinguish the flame. She went to bed at about 10 P. M., and was found insensible in her bed at 5 A. M., or soon after. The room-door and window were both closed and the atmosphere filled with the smell of escaping gas. The stop-cock was found partially turned off. Before my arrival she was moved to the adjoining bath-room, where the window was open. I found her lying upon the floor; her limbs were cold and relaxed; I could feel no pulse at the wrist; there was no sign of life except respiration, which was shallow and stertorous. The eyes were partly open, staring and fixed; the conjunctivæ were intensely congested; the pupils moderately dilated and insensible to light; the eyes were also insensible to touch. She was in a profound coma. I at once dissolved one of Sharp & Dohme's hypodermic tablets of nitroglycerin, one fiftieth of a grain, in my hypodermic syringe, and injected the solution into the upper arm. Her body was directed to be covered with blankets. In about two minutes I could feel pulsation at the wrist, and in five minutes her pulse was full and strong. *Pari passu*, the respiratory movement deepened and her limbs began to grow warm. In about fifteen minutes, while yet unconscious, she showed signs of vomiting; I turned her on her side, and she vomited some mucus and partly digested food containing some pieces of tomato. Soon after this she became partly conscious, and, reaction being thoroughly established, I wrote a prescription for æther. sulph., ℥ ss.; elix. ammon. valer., ℥ jss., and directed that during my absence a teaspoonful diluted with water be administered every second hour. I returned to see her in about three hours, when, to my surprise, Diana walked into the parlor. She told me she was all right except for a slight headache. She also said that she had been constipated for several days, for which I ordered her a purgative. Beyond this she had no medication. Her headache continued for two or three days, but did not interfere with the performance of her duties.

A noteworthy point in this history is the length of time during which the patient was exposed to the inhalation of the gas—a period of not less than seven hours. I was doubtful of this until her recovery, when I questioned her, but found that she recollected nothing from the time she went to bed until she regained consciousness in the morning. It is not possible for me to state how much percentage of gas was in the atmosphere she breathed during the night, for the stop-cock was entirely turned off at once and the door and window of the room were opened before I came. In this connection, however, we must remember that there is a great difference in the susceptibility of different persons to its poisonous influence. Yet, whatever the amount of gas respired, it was evidently enough to render her deeply comatose and very nearly deprive her of life.

I have never heard or read of nitroglycerin being administered for poisoning by illuminating gas, and was moved to do so by the condition of the patient, which presented a profound depression of all the vital functions. I certainly expected to see her powers rally under the influence of this powerful stimulant, yet thought that several days would elapse before her system would throw off the effects of the poison sufficiently to enable her to be convalescent and return to her duties.

I have no explanation to give of the action of the remedy beyond its stimulant qualities, in which I have reason to have the utmost confidence. I regard it as the most powerful stimulant known. In the case under consideration hours would in all probability have elapsed before her system would have rallied under ordinary treatment, if she had rallied at all, since she was entirely unconscious and could not swallow.

I have found nitroglycerin to be an invaluable remedy in all conditions approximating the one found in this case; in traumatic and surgical shock, in the dyspnœa of asthma, and whenever there is great depression of the vital powers it will prove a prompt and reliable stand-by.

I constantly carry the remedy in my hypodermic case in the form of Sharp & Dohme's tablets, which I find to be more soluble than those of any other make which I have tried.

1519 John Street.

A CASE OF EMPYEMA.*

By H. B. SWARTWOUT, M. D.,
PORT JERVIS, N. Y.

Joseph M., aged twenty, small in stature, was treated through the month of March, 1889, for pneumonia. His disease pursuing an unfavorable course, he changed to another physician, who attended him for about a week. He then fell victim to a so-called "Christian scientist," who prayed over him faithfully for some eight weeks, or until June 7th, when I was called to see him. I found him sitting up in bed, cyanosed, with a pulse 130 and feeble, breathing sixty times a minute, and afraid to lie down for fear of suffocation. On removing the shirt, the cause that was producing this alarming condition was fully pictured. The left side was enlarged and extensively œdematous, and in each intercostal space in the axillary line distinct fluctuation was present. The patient was greatly emaciated, and during the preceding four weeks had remained in bed, lying constantly on the left side. He was unable to get up even to attend to the calls of nature.

I introduced a large trocar and cannula in the eighth intercostal space and drew off some three quarts or more of pus; the patient standing that well, the cannula was withdrawn and a curved bistoury inserted, making a free opening, removing a still greater quantity, making in all five quarts. I inserted a rubber drainage-tube and applied oakum dressing. The patient's condition was immediately improved, the cyanosis disappeared, and the respiration dropped to 35 and the pulse to 100.

There were no antiseptics used for the first four days after the operation; then, on account of the high fever and the septic condition of the wound, the cavity was thoroughly irrigated with a one-per-cent. carbolic-acid solution. The effect of the antiseptic washing, which was repeated every afternoon, was seen immediately. The bad-smelling wound soon assumed an aseptic condition, the temperature fell almost at once and within a week was normal, and has thus remained. The internal treatment was with brandy, quinine, and Phillips's emulsion of cod-liver oil. The use of brandy was discontinued after the first week.

In a week after the operation the patient was able to sit up, in two weeks went out of doors, and on the sixteenth day took a drive of a mile—in fact, his recovery from the date of the removal of the pus was one continuous steady improvement. On June 25th, eighteen days after the operation, the patient complained of passing water too frequently and of a small amount at a time. He had no other unfavorable symptom. I secured a specimen of the urine, and on examination found it pale, dirty yellow, of a specific gravity of 1·020, with albumin in slight amount, of a sickish sweet smell, and emitting on heating a decided carbolic odor. The microscope showed granular renal epithelium, minute oil-globules, and granular and hyaline casts, the latter not being perfectly clear, but interspersed with broken-down granular epithelium. Thinking possibly that this condition of the kidneys was brought about or aggravated by slow carbolic-acid poisoning, I discontinued the acid washings and substituted warm water. Within the next two weeks the kidneys gradually improved without any medication, so that there was no albumin, and, with the exception of an occasional cast, the urine seemed normal in every respect. Hence a still further reason for thinking that this condition of the kidneys was the result of slow carbolic-acid poisoning.

July 5th.—Twenty-eight days after operating. For a few days previous to this date the lung expanded rapidly and filled nearly the entire cavity. The only portion remaining vacant was a cavity about three inches in diameter on the anterior side of the chest, extending upward from the opening toward the nipple and bordering on the heart. The diaphragm also ascended and pressed against the tube, so that the tube was with difficulty kept in place, making irrigation next to impossible. This was the last time irrigation was practiced. The tube was gradually removed and the opening allowed to close.

The cavity on the anterior portion was mapped out by the amphoric sound, which was very distinct, and by tympanites on percussion, and was either in the lung substance or circumscribed pneumothorax with a perforation of the lung entering it. My opinion is that it was the latter. At present the amphoric respiration is heard only with the patient in the recumbent posture, a modified vesicular respiration being now discernible over the same portion when the patient is sitting up.

The pulse varies from 80 beats to the minute to 130. I hardly know how to account for this wide difference. In apparently the same condition this difference is noticed, and at times when he appears at his best the pulse is 130. His general condition, while not the best, was not sufficiently weak to cause this variation. It seems to me that the pneumothorax bordering on the heart in some way affects its action, as possibly the cavity does not at all times have the same atmospheric pressure.

Other Points of Interest in the Case.—The long standing and extreme gravity of the case when first seen, with favorable recovery. Never hesitate to remove the pus, no matter how alarming the condition. The point of opening is quite important. Had the rule been followed in this case and the opening made in the sixth or seventh interspace instead of the eighth, it would not have been so difficult to irrigate toward the last.

* Read before the Fifth District Branch of the New York State Medical Association at its seventh special meeting, Port Jervis, August 27, 1889.

Washing out the pleural cavity is a very simple procedure, yet in this subject attacks of spasmodic coughing at times made the outlook quite serious, and the loose false membrane materially interfered. On washing out this patient with carbolic acid solution, the acid was immediately tasted by him in the expired air and in the mucus raised from the lung. This is not always the case, and may have some bearing on his susceptibility to poisoning. The numerous changes which the chest undergoes, and the amount of the inflammatory exudate, make a physical diagnosis very unsatisfactory. It is difficult to tell exactly what progress the case is making, and just when to discontinue irrigation and to close the opening.

This case illustrates the general rule, where the walls of the cavity are rigid and the lung bound down by fibrous bands and old adhesion; at the third or fourth week they undergo fatty granular degeneration and disappear, allowing the lung to expand and fill the cavity.

In regard to "Christian scientists." Their ways and modes of deception are no doubt familiar to you all and need not be related here. Yet to see how such views are accepted by intelligent people is beyond comprehension. In a case of this kind, or in any case for that matter, it ought to be considered criminal for them to interfere, and it seems the duty of the medical profession, and especially of the State societies, to see that laws are enacted that would exterminate them as a class from inflicting their nonsense upon the human race.

CHRONIC ULCERS OF THE LEG.

By A. F. E. KROG, M. D.

If there be any part of the human body that seems to have any more inclination or a greater predisposition to any form of chronic ulceration than another it is undoubtedly the leg. In consequence of its anatomical relation, being farthest distant from the heart, its circulation of blood is slower and less forcible. The weight and quantity of venous blood to be propelled and returned to the heart are in themselves quite an impediment to be overcome; the erect and vertical posture, the activity of muscles in walking, and the close adherence of the skin to the tibia, add to its retardation. Consequently, all the conditions for a venous hyperæmia of the leg are given. Slight causes result in swelling and œdema, and more especially in a varicose condition of the vessels. Thus it is not difficult to understand that such slight accidents or injuries as the opening of an eczematous pustule or furuncle, or the scratching and rubbing of the itching surface of the eczematous or hyperæmic and œdematous skin, should result in a chronic ulcer of the leg. Very frequently it is caused by spontaneous inflammation of a varicose vein, a phlebitis in consequence of a thrombus, maceration of the skin as the result of perspiration, or irritations due to improper stockings, boots, shoes, or garters.

Whatever the causes, we shall find that the epidermis forms a crust and the surrounding tissue is tense. Taking off this necrotic tissue, we find underneath a circumscribed deficiency—the ulcer. Its form may be either round or elliptic, but almost always it becomes irregularly circular. Its borders are generally devoid of all reaction and sensation, but sometimes very hyperæsthetic; they are flat or undermined, deep, rounded, as if rolled upon themselves. The callosity is specially peculiar to the chronic ulcer of the leg. The floor of the ulcer is filled with its necrotic contents, with a smeary mass of a white, yellow, or dirty-gray appearance, sometimes with fungous granulations, which have a tendency to bleed easily. The secretion is confined to very little pus. The surroundings of the ulcer are, as a rule, hard, callous, indurated, and œdematous; the immediate vicinity is red, varicose, and at times pigmented. The chronic ulcer of the leg has no tendency to heal of itself, but, on the contrary, has a tendency to spread irregularly. It may be of the size of a silver dollar or a hand, or even take in the entire circumference of the leg. The skin, the underlying muscles, and the periosteum are changed into a thick and hard mass. New bone is formed; periostitis and ossification between the tibia and fibula take place; thickening and ossification of the capsules of the ankles, and hence ankylosis. Furthermore, hypertrophy of the papillæ takes place, the skin becomes œdematous, the epidermis horny, hard, dry, and devoid of all natural secretions, and consequently the leg takes on the appearance of "elephantiasis."

The continuance of such ulcer not alone gives rise to erysipelas, lymphangeitis, or septic poisoning, but also acts detrimentally by giving rise to hectic fevers, amyloid degeneration, marasmus, and carcinoma (Broca, Meissner, H. Fischer, Eulenburg). It is for these reasons that all the care possible should be bestowed upon them, in order to effect a prompt and speedy cure.

In the treatment of these ulcers it is pre-eminently necessary to obviate and relieve the lower extremity of its venous congestion; therefore the leg is to be placed in a horizontal or, better, in an elevated position, to allow of perfect freedom and better return of its circulation; this latter can also be assisted by means of bandages, preferably elastic. The callosity is removed with warm and moist applications, or baths containing soda, in order to obtain a healthy appearance of the ulcer. The wound itself is dressed with iodoform, absorbent cotton, and an elastic bandage. If the ulcer has no tendency to heal, I have applied—after cleansing—tincture of iodine with very good result, also chloride of zinc 1 : 1, and nitrate of silver.

Fowler, of Brooklyn ("Medical Record," July 2, 1887), recommends a solution of hydrarg. biniod., 1 to 4,000, for disinfection, and a paste of zinc. oxid. and hot water in order to remove the callosity. Antonio Grossich ("Gazzetta med. italiana lombard.," No. 44) recommends an application of a ten-per-cent. solution of acid. phosphor. as having an excellent effect toward healing these ulcers.

In case, though, the callosity is so great that the acids or other applications applied would have no effect or might produce destruction of the neighboring parts, it will be found necessary to cut the margins of the ulcer by means of knife or scissors, and then to destroy the granulations with the thermo-cautery or curette. The resulting wound is dressed as has already been mentioned.

Through whatever means we may have succeeded in bringing about a clean wound with healthy granulations, our next object must be to produce a covering, for the skin has as little tendency as possible toward cicatrization. To this end transplantation is best resorted to.

Jacques Reverdin was the first to attempt this, in 1869, at the Hôpital Necker in Paris. The skin to be used for the purpose can be taken either from the same individual or another, or from an amputated extremity, even six hours after it has been severed from the body. By means of Cooper's scissors minute pieces of skin are cut off, containing nothing but the rete Malpighii and papillæ. The success depends entirely on taking no subcutaneous tissue and on the avoidance of bleeding. These particles are then placed upon the ulcer. The plastic lymph and secretion are sufficient to "fix" and keep them in position. The whole is then dressed as mentioned above. These little islands of skin form the center of new skin formation; thus hundreds may be implanted. The cicatrix thus formed is smooth, strong, and permanent. By means of this method contractions are warded off, which otherwise would hinder and impede the functions of the leg.

Amputation of the diseased limb, as the *ultimum refugium*, will be necessary in case of long continuous discharge, marasmus, immobility, pain, nephritis, amyloid degeneration, and the like.

Correspondence.

LETTER FROM LONDON.

The Medical Session.—The British Medical Association.—The New Lunacy Act.—Work at the Medical Societies.

London, *October 12, 1889.*

The commencement of another medical session has come and gone with its usual accompaniment of introductory addresses and annual dinners of old students. The latter form of entertainment is very naturally highly popular, but I can not say as much for the former. The addresses themselves seem to have been singularly unproductive, and I look forward to the, I hope not far distant, time when they as well as systematic lectures will be swept away with the advance of civilization. One of the lecturers, Mr. Godlee, at University College did not hesitate to say that he thought they might be given up with advantage, and one circumstance which will, I think, materially contribute to bring about this result is the increasing tendency of students to begin work in the summer. It is a practice which has been openly encouraged by the school authorities only within the last year or two, and it seems by no means impossible that in another ten years May will have taken the place of October as the birthtime of the medical student. It is too early yet to have official information as to the entries this year, but I have heard privately that at St. Bartholomew's, Guy's, St. George's, and Charing Cross the numbers are considered very good; of the other schools at present I know nothing.

There has been singularly little doing in the world of medical politics. August and September are always very slack months; the leaders are away and the small fry are too busy in their absence trying to pick up the crumbs they may have left behind. The annual meeting of the British Medical Association generally supplies some material for gossip. This year the meeting took place at Leeds, when it was expected that something of the nature of a row would take place, as it was known that a memorial objecting to the conduct of the "British Medical Journal" in one respect had been signed by about a thousand prominent members in London. The Council of the association treated the memorialists with a very high hand, and when the subject was brought up at the general meeting in the report of the Council none of the party in opposition were present to fight their cause, the result being an almost unanimous vote in support of the action taken by the Council. The memorialists are now, according to their own statement, bound to secede from the association, but I have not heard yet that they have done so. This little disturbance has had one unfortunate effect, viz.: it has prevented the next meeting from being held in London, as was at one time contemplated, and up to the present time no decision has been arrived at as to where next year's meeting shall be held.

The Lunacy Laws have received important modifications in the Act passed last session, which will come into force next May. The most important of the changes is perhaps the requiring that in the case of a private, *i. e.*, a non-pauper, lunatic, the order for his reception must be signed by a magistrate, such magistrate being specially appointed for the district, so that it will not do to rush off for the nearest magistrate, but the particular officer appointed must be found and his sanction obtained. There is no proposal, however, as was, I believe, at one time contemplated, that he should see the patient. In case of emergency the patient may be placed under control on one medical certificate as heretofore, but the detention order must be obtained from the magistrate subsequently. A most inconvenient proviso has been added giving the patient the right of insisting upon being seen by some other magistrate or judge after his admission. A report must be made by the asylum superintendent within a month of the patient's admission, and the reception order only remains in force for a year, but at the end of that time may be renewed for two years and after that for three years, and subsequently it must be renewed every five years, and as each time for renewing the certificate comes round the superintendent of the asylum must make out a special report as to the mental and bodily condition of the patient and send it in to the Commissioners, so that the amount of additional work placed on the superintendent of a large asylum will be very great. Another novelty is that a person may voluntarily enter a lunatic asylum as a boarder, and may leave the asylum at any time by giving twenty-four hours' notice. Henceforth, therefore, it will not be necessary for the enterprising young men who represent a certain class of periodical literature to feign madness to get within the sacred precincts of an asylum, so as to be able subsequently to describe to a gullible public the imaginary horrors they have become acquainted with.

The work of our chief societies will be somewhat delayed this session, for the new premises of the Medico-chirurgical Society are very far from ready, while the old ones have been given up, so that at present the four leading societies are without a meeting room. The Ophthalmological Society will get to work next week under the guidance of a new president, Dr. Hughlings Jackson, who is the first physician to hold the office, but he has been closely identified with the society since its foundation, nine years ago, and it was therefore only natural that he should be invited to become its chief officer.

"Typhoid fever," says the "Medical and Surgical Reporter, "is epidemic at Aurora, W. Va., and it is said the country for miles around is infected. It is said that there is scarcely a family without one or more of its members prostrated with the disease, and in some localities there are scarcely enough well persons to nurse the sick."

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
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NEW YORK, SATURDAY, OCTOBER 26, 1889.

THE PREVENTION OF RABIES BY PASTEUR'S TREATMENT

In order to secure a discussion on the advantage of recommending persons bitten by rabid animals to submit to Pasteur's inoculations of rabietic virus, the chairman of the Section in Medicine, at the recent meeting of the British Medical Association, requested M. Pasteur to designate some one to present his views. Dr. A. Ruffer, being selected, read a paper on the subject in which he reviewed the genesis of Pasteur's discovery, referring to the existence of twenty antirabietic institutes in various parts of the world as attesting their value. Dr. Ruffer believed that the virus was probably a micro-organism, propagated by inoculation, easily destroyed by sunlight, heat, or drying—a temperature of 50° to 60° C. for an hour, of 45° C. for twenty-four hours, or of 62° C. for four minutes, completely destroying its virulent properties, while low temperatures (30° C.) did not affect it. Inoculations of virus from the central nervous system of an animal dead of rabies, under the dura mater of an animal, was the only absolutely certain means of reproducing it, though it had been produced by inoculations of blood, of urine, of the liver, of the kidneys, of the spleen, and of the salivary glands. The recorded incubation period in man varied from thirteen days to eighteen months after the inoculation, the average being within two months.

After injecting an emulsion of the medulla oblongata of rabid animals under the dura mater of rabbits, symptoms of rabies appear in from nine to fifteen days. Successive inoculations from one rabbit to another reduce the incubation period to six or seven days, the animal invariably dying of rabies on the tenth day. If the spinal cord of a rabbit that has died of rabies is suspended in a sterilized bottle, the air of which is dried by a piece of caustic potash in the bottom, and the bottle is kept at a temperature of 25° C., inoculations of a healthy rabbit with an emulsion of the cord after one day's drying will cause rabies, but the animal dies one or two days later than when fresh virus is employed. Each day that the cord is kept in the sterilized bottle decreases its virulence; careful and extensive experiments by Dr. G. B. Uffreduzzi show that eleven days' drying postpones death until from the twentieth to the twenty-fifth day, and after twelve days' drying the cord is harmless.

Dr. Ruffer calls attention to the fact that injections of the emulsion of the spinal cord of rabid animals introduce not only the micro-organism of rabies, but the ptomaine produced by it. If an emulsion of the spinal cord of a rabid rabbit, after fourteen and thirteen days' drying, is injected under a man's skin, there is probably introduced a large quantity of ptomaine in proportion to the small number of micro-organisms. If on the second day an inoculation is made of an emulsion of a cord dried for thirteen days, and on the third day one of an emulsion of a cord dried for twelve days, each succeeding day a cord dried for a shorter period being inoculated, there will be introduced on successive days a decreasing amount of ptomaine and an increasing number of micro-organisms. This is the method adopted by Pasteur in treating men bitten by rabid animals, except that in bites on the face, on account of their greater severity, an intenser form of inoculation is employed—on the first day matter from cords dried for fourteen, thirteen, twelve, and eleven days is injected; on the second day, from cords dried for ten, nine, eight, and seven days; on the third day, from a cord dried for six days; on the fourth and fifth days, from a cord dried for five days; on the sixth, from a cord dried for four days; on the seventh, from a cord dried for three days; and on the succeeding days, matter from cords dried for longer periods is again employed. Each injection consists of about half a cubic centimetre of spinal cord crushed in two cubic centimetres of sterilized beef-tea. The cord is tested for the bacteria of putrefaction by placing a piece in sterilized beef-broth for twenty-four hours, at a temperature of 38° C. No bad results follow the injection of this fluid under the skin of healthy men.

The author believes that the mortality from bites of rabid animals is probably placed too high by the statistics (twenty to fifty per cent.), the cases of many who recover without treatment not being included; fifteen per cent. is a fair average. In wolf bites, however, the mortality varies from sixty to sixty-four per cent. At the Pasteur Institute careful inquiries are made as to whether the animal was rabid or not; whenever it is possible, the animal's head is obtained and inoculations are made from an emulsion of the brain. Where this is not possible, a certificate from a veterinary surgeon that has seen the animal is obtained, and inquiries are made as to whether other persons were bitten or not. The patients are divided into three classes: those known to have been bitten by rabid animals, as demonstrated by inoculation experiments; those bitten by animals certified as rabid by a veterinary surgeon; and those bitten by animals suspected to be rabid. If these statistics are compared with those obtained by preventive inoculation, a telling argument will be found in favor of the latter.

Bujwid, at Warsaw, inoculated 370 persons bitten by animals undoubtedly rabid, and not a death occurred in the series. Up to July 29th of this year he had inoculated 146 bitten persons, and only one death from rabies had occurred among them. At St. Petersburg 484 persons bitten by rabid animals were inoculated from July, 1886, to September, 1888, and the mortality from the disease was only 2·68 per cent. At Odessa, in 1888, in 364 persons inoculated the mortality was only 0·64 per cent. At Moscow, in 1888, in 431 inoculated persons the mortality was only 3·46 per cent. At Turin the mortality was 1·88 per cent. in 531 inoculated persons. At Lisbon the mortality was 0·59 per cent. in 355 persons. At Palermo 343 persons were inoculated, with a mortality of 1·37 per cent. At Naples 347 persons were inoculated, with a mortality of 1·72

per cent. At Constantinople no deaths occurred among 34 inoculated persons. At Havana the mortality was 0·60 per cent. in 170 inoculated persons. During the past year the mortality in M. Pasteur's Institute was 1·16 per cent. As the inoculations have never caused death, it seems but justice to a person bitten by a rabid animal that the attending physician should employ, or recommend the employment of, Pasteur's system of inoculation. This opinion was expressed by those participating in the discussion.

THE CLIMATOLOGY OF CANCER.

The "Lancet" for September 14th contains an article on "The Infrequency of Cancer among Females in the English Lake District," by Mr. Alfred Haviland. The article is supplementary to some remarks published last year by the same author, and is an important addition to the literature of medical climatology. Mr. Haviland has been engaged upon investigations into the geographical distribution of disease for a number of years. The conclusions he first drew were that those low-lying districts which were traversed by, or contiguous to, fully formed rivers that periodically flooded the country through which they flowed were characterized by the highest mortality from cancer. On the other hand, those districts which showed the lowest mortality had a high average level with free access of the prevailing wind, and were situated on or near the water-partings, where rivers derived their sources and where the rock base under them consisted of the older geological formations.

Subsequent investigation showed remarkable exceptions to the foregoing conclusions. It was found that in certain frequently flooded river valleys death from cancer in women was comparatively rare. The author found in these locations, coincident with low mortality, that limestone or chalk formed the rock base of the surface soil. Underlying the gravel and alluvium of the high-mortality riparial districts there were the different varieties of clay, all retentive strata, calculated to intensify the evils of floods and their sequels—dead vegetation and vegetable decomposition—and resulting in the formation of numerous gases and acids. This not only rendered the soil sour, but injuriously affected the atmosphere above it, and therefore the local climate where floods occurred. Grasses and other vegetation covering the soil overlying chalk or limestone, even when covered to a considerable depth by sand and gravel, remained sweet. The vegetable acids, the result of decomposition, were neutralized by the chalk.

The author's deductions were that the physiological configuration and the geological structure of a district greatly influenced the local climate, and that the chemical properties of the soil were answerable for a larger percentage of the mortality from cancer than had been generally supposed. In the English lake districts conditions of soil and local climate had been found to exist least conducive to the growth of cancer, and most favorable to the lowest mortality from the disease. Mr. Haviland found that the distribution of phthisis throughout Great Britain was decidedly the reverse of that of cancer. The highest mortality districts in one map were, as a rule, represented by low mortality in the other, and where low mortalities from these two causes of death were coincident the districts were found to be the most salubrious, as indicated by their death-rates from "all causes."

MINOR PARAGRAPHS.

THE ANTISEPTIC METHOD AMONG THE ANCIENTS.

According to the "Wiener klinische Wochenschrift," Dr. A. Anagnostakis, of Athens, has recently published a brochure on this subject that is a valuable contribution to the history of surgery. He furnishes indisputable proof that antisepsis was, for more than two thousand years, the common practice of surgeons. It was practiced with all the forms and rigor of a perfected method, and Hippocrates was its originator. The work is divided into several sections, containing the Hippocratic precepts that have full force to-day: 1. Cleanliness in treating wounds is a precept that Hippocrates can not often enough repeat; again and again he emphasizes the necessity of the cleanliness of dressings, of the hands, etc. The ancient surgeons employed warm sterilized water (boiled rain-water) for dressing wounds. 2. The antisepsis of the ancients was founded on theoretical principles. Hippocrates taught that suppuration came from putrefaction. For example, he said: "A wound must be made clean and dry, so that it does not remain moist too long, or it will swell and become spongy; this, it is to be feared, causes putrefaction." "In a word, where the moist wound surface threatens to putrefy, suppuration is prevented by drying substances." Among the surgical appliances of the ancients were the exsiccative substances; all drying media were those that had long been used in embalming cadavers and preserving breadstuffs. 3. Alcohol, in the form of wine, was given for its direct effect in catarrhs. Sea salt in solution and powder was esteemed an excellent local remedy for the bite of a mad dog. Fine powdered salt was strewn on a serious wound during an operation. For the ligature of vessels, aseptic prepared silk and fine catgut were employed. Wounds were covered with poplar-tar. As we use corrosive sublimate to-day, so the ancients employed sulphate of copper; the copper compounds were almost exclusively employed in the treatment of wounds. 4. The antiseptic treatment of wounds by the ancients had the explicit aim of preventing putrefaction by hindering suppuration. To stop hæmorrhage, the wound was covered with warm wine or salt solution, and then cleansed with linen; the surface was then treated with a copper solution or a preparation of tar, and the wound finally closed with sutures. Over the surface antiseptic substances (copper compounds, rosin, etc.) were sprinkled; then a tar plaster or a compress saturated with wine or asphalt was applied. The vicinity was made air-proof by spreading cerate over it; finally, a compress wet with wine was applied, and thus a clean dressing was secured.

CONGENITAL SEXUAL PERVERSION CURED BY HYPNOTISM.

Professor von Krafft-Ebing has recently added another to his important studies in hypnotism. The article is published in the "Internationales Centralblatt für die Physiologie und Pathologie der Harn- und Sexual-Organe," and we find an abstract of it in the "Deutsche Medizinal-Zeitung." A young man of thirty-four years, a doctor of philosophy, of unusually high education, with a special love for the fine arts, and physically the peer of any man, made application to von Krafft-Ebing for treatment by hypnotic suggestion. He hoped in this way to be

relieved of a perverted sexual impulse toward his own sex. Women had no attraction for him, and, although he was engaged to be married, he feared he should never be potent in his connubial relations. There was some hereditary taint in his family. While, however, erections were easily excited by the presence of members of his own sex, he never had the desire to have carnal relations with them. It was an impulse only, but without the imperative idea of acting upon it. He was hypnotized according to the Bernheim method and repeated the following suggestion after the operator: "I feel that from now on I am sexually indifferent to men, that men are to me sexually no more than women." Five days later he reappeared, joyously stating that he had been freed from his disorder and felt a new desire for life. For a week following he was hypnotized daily, and made to repeat the same formula. He was then pronounced well. No attempt was made to inculcate the normal desire for the opposite sex into his mind. Doubtless the professor thought he would be better off without it.

A DEALER IN FRAUDULENT DIPLOMAS.

The arrest of "Dr." Henry Freeland, the alleged head of seven bogus medical colleges, took place in Maine on the 2d inst. He is to be tried at Portsmouth, N. H. It is not known how long this diploma-mill had been working before its exposure was published in one of the Boston papers, but one of the fraudulent diplomas is known to have been issued early in 1888. The buyers of diplomas were charged from fifty to three hundred dollars. It is a partial compensation to note that these frauds are brought to book more speedily than was formerly the case; but even now the punishment that will be visited upon this dealer in diplomas—if he is punished—will be only that for an illegal use of the mail, rather than for a crime against his dupes or the public at large. In other words, the General Government must be invited to intervene and prosecute the accused for an act which is not, or might not be, essential to the carrying on of an extensive business in fraudulent credentials. The truth is that comparatively few States have any laws that are competent to the punishment of this kind of iniquity; and this shrewd indirection about the "illegal use of the mail" is a decidedly fortunate circumstance for some of them.

VIRCHOW AND THE DARWINIAN THEORY.

According to the Vienna correspondent of the "British Medical Journal," in Professor Virchow's presidential address at the recent meeting of the Anthropological Congress, the Darwinian theory was referred to, and he said that the intermediate link that should bring man and the ape into connection—the proper "prosanthropos"—had been sought for in vain. It was impossible even to determine the descent of single races from others; and it could be asserted that among the ancient races there was none that stood in any nearer relationship to the ape than ourselves. There was no tribe of people in the world that we were unacquainted with; and not one of the known tribes could justly be considered ape-like, appearances common to apes —such as prominences of the skull—being insufficient evidence of relationship. There was evidence that in the course of 5,000 years no remarkable changes of type had taken place. This adds to the evidence of the impassability of the chasm between the highest type of anthropoid ape and the lowest type of man.

A MEDICAL CANDIDATE FOR OFFICE.

We are glad to learn that Dr. Paul H. Kretzschmar, of Brooklyn, has been nominated by one of the political parties for the office of supervisor at large for the County of Kings. It is too seldom that members of the medical profession are willing to accept that particular duty of citizenship that is involved in the tenure of public office. Dr. Kretzschmar has already served on the Brooklyn Civil Service Commission.

A DEATH BY HYDROPHOBIA.

At Astoria, Long Island, the second death by hydrophobia, after the lapse of a generation, has recently been reported. The victim was bitten by a random, ownerless Spitz dog, five months ago. The cur was killed, but whether it was rabid or not at the time of the biting is not known. The patient's symptoms had once or twice pointed toward an infection by rabies, but they were dispelled by treatment and other agencies until about a week ago, when the marked indications of hydrophobia became unmistakable and advanced, during a period of four days, until death by asthenia occurred.

PROFESSOR STRUTHERS, OF ABERDEEN.

The professorship of anatomy at Aberdeen University is vacant by reason of the resignation of Professor John Struthers. Dr. Struthers had been at Aberdeen since 1863, but had been a teacher of anatomy at the Edinburgh University from the time of his graduation, in 1845; so that forty-four years has been the tenure of his instructorship in the two great schools. In 1866 he published an excellent history of the Edinburgh Anatomical School.

ANTIPYRINE IN UTERINE CANCER.

A letter to the "Lancet" calls attention to the use of antipyrine in cancer of the cervix uteri. Severe lancinating pains, worse at night, occurring in an advanced stage of this disease, disturbed sleep, intense fœtor of the discharge, and many other discomforts rendered the case particularly harrowing. Ten grains of antipyrine subdued the pain at once, though the beneficial effect of the drug was of short duration. This treatment was repeated as often as necessary, without the occurrence of any unpleasant symptoms attributable to antipyrine.

THE NECROSCOPISTS IN THE BISHOP CASE.

The board of trustees of the Society of Medical Jurisprudence and State Medicine has taken action that has resulted in the passage of a resolution by the society expressive of sympathy with the medical men under indictment for the part taken by them in the post-mortem examination of the late Mr. Bishop. We are sure that they have the sympathy of the entire profession also. Their action was at most only a technical offense, and the trouble that has already come upon them in consequence of it undoubtedly constitutes as much punishment as any fair-minded citizen would wish to see inflicted on them. We think, therefore, that their further prosecution might be stopped without any disadvantage to the public welfare.

THE PHYSICIANS' MUTUAL AID ASSOCIATION.

A fresh manifestation of the growing appreciation on the part of the local profession of the usefulness of the New York Physicians' Mutual Aid Association is afforded by the fact that its members are now so numerous as to have recently warranted the board of trustees in voting to pay six hundred dollars, instead of five hundred and fifty, to the beneficiaries of deceased members. A decided additional increase of its membership is to be expected.

THE LATE DR. PHILIPPE RICORD.

The death of M. Ricord, at the age of ninety, is announced as having taken place on Tuesday of this week. As all the world knows, he was for many years the most noted of venereal specialists, and our knowledge of venereal diseases is largely the outgrowth of his investigations. In spite of his great age, he was, almost to the last, seen and heard from in Parisian medical circles. He was born in Baltimore, of French parents.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending October 22, 1889:

DISEASES.	Week ending Oct. 15.		Week ending Oct. 22.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	77	13	58	13
Scarlet fever	40	3	32	4
Cerebro-spinal meningitis	1	0	0	0
Measles	12	1	27	1
Diphtheria	64	20	79	26

The New York Polyclinic.—Dr. Carl Koller, formerly of Vienna, to whom we owe our knowledge of the anæsthetic power of cocaine, has been appointed instructor in ophthalmology at the Polyclinic.

The Medical Society of the State of New York.—Last week we published the address of the chairman of the business committee. Experience shows that many of the members choose to address the president. That they may be able to do so, we will state that the address of the president, Dr. Daniel Lewis, is No. 62 Park Avenue, New York.

The Philadelphia Polyclinic and College for Graduates in Medicine.—The board of trustees have recognized the distinguished services rendered the institution, as former professors, by the following four eminent physicians: Richard J. Levis, M. D., who has been elected emeritus professor of surgery; J. Solis-Cohen, M. D., who has been elected emeritus professor of diseases of the throat and chest; Charles H. Burnett, M. D., who has been elected emeritus professor of otology; and Charles B. Nancrede, M. D., who was recently called to the chair of surgery at the University of Michigan, has been elected emeritus professor of general and orthopædic surgery. An additional chair of orthopædic surgery has been created, and Dr. Thomas G. Morton has been elected professor. A new department of dentistry has been created and the faculty has been authorized to place a competent person in charge until the next meeting of the trustees. A new department of experimental therapeutics and physiology has been created, and Thomas J. Mays, M. D., has been elected professor. The chair of clinical surgery has been filled by the election of Thomas S. K. Morton, M. D. C. L. Bower, M. D., has been elected adjunct professor of clinical and operative surgery, and J. Abbott Cantrell, M. D., adjunct professor of diseases of the skin. The chair of pathology is left vacant until the next meeting. The report of the building committee states that contracts have been signed for preliminary work to the amount of $23,150. About $30,000 will be required to finish the building, and it has been decided to push the work to completion as fast as donations for the purpose can be obtained. The overcrowded condition of the present building makes it necessary to use every exertion to move into the new building early in the spring, even if it is unfinished.

The late Dr. Alexander B. Mott.—At a meeting of the New York County Medical Association, held October 21, 1889, the following minute was unanimously adopted:

"In the death of Alexander B. Mott the well-maintained heritage of a name illustrious in the annals of surgery is transmitted to posterity with added memories of good work faithfully done. Self-reliant, ingenious in device, and exceptionally skillful in execution, his career exemplified the best attainment of his chosen art, and his departure leaves a vacancy long to be deplored. Sharing the grief of the whole profession which he adorned, this association desires to record its special regret for the loss of a valued member and its sympathy with those who mourn, not alone for the distinguished surgeon, but for the beloved relative or dear friend."

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from October 13 to October 19, 1889:*

Bradley, Alfred E., First Lieutenant and Assistant Surgeon. Relieved from duty at David's Island, New York Harbor, and ordered to Fort Omaha, Neb. Par. 2, S. O. 241, A. G. O., October 16, 1889.

Everts, Edward, Captain and Assistant Surgeon. Relieved from duty at Fort Apache, Arizona, and ordered to David's Island, New York Harbor. Par. 2, S. O. 241, A. G. O., October 16, 1889.

Brechemin, Louis, Captain and Assistant Surgeon. Relieved from duty at Fort Laramie, Wyoming Territory, and ordered to Fort Apache, Arizona Territory. Par. 2, S. O. 241, A. G. O., October 16, 1889.

Harris, H. S. T., First Lieutenant and Assistant Surgeon. Relieved from duty at San Antonio, Texas, and ordered to Fort Keogh, Montana. Par. 2, S. O. 241, A. G. O., October 16 1889.

O'Reilly, Robert M., Major and Surgeon. Granted leave of absence for six months, with permission to leave the United States. Par. 3, S. O. 241, A. G. O., October 16, 1889.

Heger, Anthony, Lieutenant-Colonel and Surgeon. Relieved from duty in Division of the Atlantic and ordered for duty as Attending Surgeon, Washington, D. C. Par. 2, S. O. 241, A. G. O., October 16, 1889.

Loring, L. Y., Major and Surgeon. Sick leave extended two months on surgeon's certificate of disability. Par. 16, S. O. 241, A. G. O., October 16, 1889.

Adair, George W., Captain and Assistant Surgeon. Leave of absence extended for fifteen days. Par. 15, S. O. 238, A. G. O., October 12, 1889.

Brechemin, Louis, Captain and Assistant Surgeon. Granted leave of absence for one month. Par. 1, S. O. 98, Headquarters Department of the Platte, October 12, 1889.

Havard, Valery, Captain and Assistant Surgeon. Leave of absence extended one month. Par. 3, S. O. 240, A. G. O., October 15, 1889.

Gibson, Joseph R., Surgeon. Relieved from duty at Fort Sheridan, Ill, and ordered to Governor's Island, New York Harbor. Par. 10, S. O. 242, A. G. O., October 17, 1889.

Maus, Louis M., Assistant Surgeon. Relieved from duty at Fort Porter, N. Y., and ordered to Fort Stanton, New Mexico. Par. 10, S. O. 242, A. G. O., October 17, 1889.

Gardner, Edwin F., Assistant Surgeon. Relieved from duty at Fort Lewis, Colorado, and ordered to Fort Porter, N. Y. Par. 10, S. O. 242, A. G. O., October 17, 1889.

Ewen, Clarence, Surgeon. Relieved from duty at Madison Barracks, N. Y., and ordered to Willet's Point, N. Y. Par. 10, S. O. 242, A. G. O., October 17, 1889.

Gerard, Alfred C., Surgeon. Relieved from duty at Boise Barracks, Idaho, and ordered to Fort Niagara, N. Y. Par. 10, S. O. 242, A. G. O., October 17, 1889.

Hall, John D., Assistant Surgeon. Relieved from duty at Fort Niagara, N. Y., and ordered to Madison Barracks, N. Y. Par. 10, S. O. 242, A. G. O., October 17, 1889.

Taylor, Marcus E., Assistant Surgeon. Relieved from duty at Fort Stanton, New Mexico, and ordered to Boise Barracks, Idaho. Par. 10, S. O. 242, A. G. O., October 17, 1889.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending October 19, 1889:*

Bertolette, D. W., Surgeon. Detached from the Franklin and ordered to duty at Naval Hospital, Philadelphia.

Rush, N. H., Passed Assistant Surgeon. Detached from Naval Hospital, Philadelphia, and ordered to the Saratoga.

Hibbett, C. T., Passed Assistant Surgeon. Ordered to the Franklin.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the six weeks ending October 19, 1889:*

Vansant, John, Surgeon. Granted leave of absence for fifteen days. October 16, 1889.

Goldsborough, C. B., Surgeon. Leave of absence extended thirty days on surgeon's certificate of disability. October 18, 1889.

Perry, T. B., Assistant Surgeon. Ordered to temporary duty at San Francisco, Cal. October 15, 1889.

Vaughan, G. T., Assistant Surgeon. When relieved, to proceed to Evansville, Ind., for temporary duty. October 9, 1889.

Society Meetings for the Coming Week:

Monday, *October 28th:* Medical Society of the County of New York; Boston Society for Medical Improvement; Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement; Baltimore Medical Association.

Tuesday, *October 29th:* Medical Societies of the Counties of Queens (semi-annual—Garden City) and Rockland (semi-annual), N. Y.; Boston Society of Medical Sciences (private).

Wednesday, *October 30th:* Auburn, N. Y., City Medical Association; Berkshire, Mass., District Medical Society (Pittsfield); Middlesex, Mass., North District Medical Society (Lowell); Gloucester, N. J., County Medical Society (quarterly).

Thursday, *October 31st:* Cumberland, Me., County Medical Society (Portland); Massachusetts Medical Benevolent Society (annual).

Friday, *November 1st:* Practitioners' Society of New York (private); Baltimore Clinical Society.

Saturday, *November 2d:* Clinical Society of the New York Post-graduate Medical School and Hospital; Manhattan Medical and Surgical Society (private); Miller's River, Mass., Medical Society.

Listerine.—"Offensive odor of the breath, due to bad teeth or other causes, may be overcome, or at the least greatly abated," says the "Sanitarian," "by the habitual use of listerine. Add a teaspoonful to a tumblerful of water for a mouth-wash and gargle, and if a little is swallowed, so much the better. Indeed, a bad breath is not infrequently caused by the gaseous eructations of indigestion, and for this also listerine is an excellent remedy, in doses of twenty to thirty drops in a little water."

Proceedings of Societies.

NEW YORK STATE MEDICAL ASSOCIATION.

Sixth Annual Meeting, held in New York, September 25, 26, and 27, 1889.

The President, Dr. W. T. Lusk, of New York, in the Chair.

(*Continued from page 444.*)

The Treatment of Hernia.—Dr. J. D. Bryant, of New York, read a paper which formed the basis for a discussion on this subject. He reviewed briefly the surgical history of hernia from the fourteenth century to the present day, describing the various forms of trusses from time to time in vogue. At the present day he said medical men were, for the most part, ignorant alike of the truss armamentarium and how to fit a truss, and this necessitated patients being sent to the instrument-makers for that purpose. Though cures from the use of trusses did undoubtedly result, unfortunately the number was small. It had been his custom to recommend these appliances, and at this time patients of his were still using trusses by his advice which they had already worn for a long time. They came to him for permission to lay them aside, with the statement that "it never came down now," but he recommended the continuance of the truss as an element of safety. In cases of reducible inguinal herniæ children might expect a cure. He usually advised his hernia patients to provide themselves with three forms of truss—one for comfort, strong and durable, to be worn during the day; another specially adapted for use in the bath; and one for ease and security during the hours of rest. The advantages of this advice were obvious, and it was equally obvious that care should be taken to assume the recumbent position when the interchange was made. How cures were accomplished by the use of the truss was still a matter of conjecture. It had been urged that the result was brought about by the irritation establishing adhesive inflammation between the surfaces of the sac, or by keeping the intestine for a long period in the normal position, or that both these were active factors. In his judgment, cures were rare where each of these influences played an important part. It was not his view that adhesive processes were often caused by truss appliances, but rather that the result was due to contracture of the stricture dependent upon the normal resiliency of the parts. If the obliteration were due to inflammatory adhesion, there would be local symptoms pointing to this change as a means of cure. His experience had led him to the following conclusions: 1. That no form of mechanical appliance yet constructed could be relied upon to effect the cure of simple reducible inguinal hernia. 2. That the cure of hernia could not be effected with certainty by any mechanical means. 3. That these mechanical appliances would in many cases afford relief and enable the wearer to pursue ordinary vocations. 4. That the so-called cures were dependent upon the restriction of the abdominal contents, with subsequent contraction due to resiliency of the part and not to the inflammation of serous surfaces. 5. A hard, slightly convex pad, with steel spring attachments, was the best appliance. As to the method of treatment by injection, there were many around him who had tried the procedure thoroughly, and it was for them to state their conclusions. For his own part he had no experience in this direction. He then went on to describe the details of radical cure by means of the open method, giving the approximate results of nineteen of his own cases so treated, and then described, by means of diagrams, his recent modification of the open method. After freeing the hernial sac and ligating its neck, he then quilted the sac between the pillars of the ring, thus affording an animal mem-

brane to give additional strength to the parts. He had operated three times by this method, and the results were, so far, such as would encourage him to further adopt it. He considered the open method the most simple and rational yet devised for the radical cure of hernia. The additional time required was time well employed, because the cure effected promised greater immunity from relapse. The interweaving of the sac with the pillars of the ring might be followed by either the open or closed method, and offered at least equal, and, from his point of view, even greater security than other processes. In cases of strangulated hernia he believed that moderate and well-directed taxis would suffice to return the intestine under ordinary circumstances, but, when this had been conscientiously tried without success, operation should be resorted to at once. If properly conducted, the attempt should not last over a quarter of an hour; if improperly conducted, this was too long. He did not wish to disparage the use, but the abuse of taxis. Surgeons, when called upon to operate for strangulated hernia, should consider it a part of their duty to make the operation for radical cure an addendum to that of the kelotomy. In conclusion, he detailed the various forms of intestinal gangrene likely to come under the surgeon's notice when performing herniotomy, laying down as general principles that: 1. If gangrene of the intestine had already taken place, and the patient's condition were such as to warrant the procedure, the intestine should be repaired and returned to the cavity. 2. If the gangrene involved the upper two thirds of the intestine, then, though the result might be doubtful, repair and return should be practiced. 3. When gangrene existed and the patient's condition contra-indicated interference, a temporary artificial anus should be made. 4. It was better to form an artificial anus, when the necessary surgical assistance was not at hand, for the more formidable operation. 5. Division of the sac was not always called for, and was often unwise when the formation of an artificial anus was anticipated.

Dr. MILLIGAN described the mechanical construction, technique of application, and respective merits of the various forms of truss appliances which experience had demonstrated to be most effective in the treatment of hernia patients at the New York Hospital for the Ruptured and Crippled.

Dr. R. PARK said that he gathered, from what had been said, that the final cure of hernia was a very rare occurrence, and he began to believe that this was the case. Still, he believed thoroughly in the endeavor to effect a cure by radical operation. He thought that even though this effort failed, the patient was in a far better condition than before the attempt. In a certain percentage of cases a radical cure was certainly achieved. He thought the Czerny operation met all the requirements. It could readily be combined with kelotomy in cases of strangulation, and with a minimum of risk to the patient. He certainly preferred the open method. In the closed method the cicatrix was necessarily so much wider, and if this cicatricial tissue was going to stretch, a large one would be a disadvantage. He approved of the suggestion of Dr. Bryant, and should proceed to make use of the plan. By interweaving the sac, as had been described, the inguinal canal was practically closed by animal membrane, which, better than anything else, should act as an additional protection and at a point where it was most needed. He had operated sixty times for radical cure, but had not been able to watch all his cases. In only three of these, however, had any evidence of relapse come under his notice.

Dr. W. T. BULL related the result of his experience with seventy-two cases, and gave his reasons for preferring the closed method.

Dr. DETMOLD said that, though the fact was not exactly pertinent to the subject of discussion, he thought it would be interesting to mention the fact that life insurance companies required all those who were suffering or had at any time suffered from hernia to wear a truss. He thought, too, he might venture to give them a little history of a circumstance which happened over fifty-two years ago. A young woman had come to his office and asked him whether hernia could be operated upon. He had said "Yes," but had not paid much attention to the question. The woman had, however, persisted in her importunity that he should operate, saying that if he did not she should commit suicide. Upon making further inquiries into the case, he had learned that she had recently been married, and that when her husband came to survey his new territory and found evidence of a prominence not laid down in his chart, he had ascribed it to syphilis, and had put on his trousers and left the house. The speaker sent for the man and expostulated with him to no purpose, and so consented to operate. At that time there were no libraries, no journals, and he did not know whether anybody had ever done the operation. The leading medical men around him refused their aid, so with what assistance he could command he went to work. The case was one of simple femoral hernia. He made an incision large enough to enable him to tie the sac, and when he had done this he laid the crural canal bare and filled it thoroughly with lint, and kept this up for several weeks. So far as he knew, the recovery was complete. The husband, hearing what the woman had undergone, came and nursed her, and they "lived happily ever after."

Lantern Views of Bacteria.—Dr. E. K. DUNHAM entertained the members of the association at the evening session of the second day's proceedings by a most interesting account of the details of germ culture in the laboratory. His lecture was effectively illustrated by means of lantern views.

The Cure of Hæmorrhoids by Excision and Closure with the Buried Animal Suture.—In his paper on this subject Dr. H. O. MARCY, of Boston, said that the recent discussion of the surgical treatment of hæmorrhoids, published in the "New York Medical Journal," evoked by a late paper of Mr. Whitehead's, of Manchester, England, had been both timely and interesting. The medication of wounds, and treatment based upon aseptic measures, marked the present as an era of surgical evolution, to which surgery of the rectum should be no exception. Few of the minor surgical diseases caused so much suffering and gave to the general practitioner such constant repetition of complaints as those of the rectum, and, in return for services rendered, no class of patients were more appreciative and grateful. The teachings of the text-books, with few exceptions, offered very little improvement upon the methods of the past in the treatment of the diseases of the rectum. The advocates of the ligature perhaps equaled those who claimed superior advantages to be derived from the use of the clamp and the cautery. Although a practical cure was often obtained from the use of either, he could not but believe that both were surgically defective and should be relegated to history. While it might be conceded that the general practitioner was in a large majority of cases familiar with the pathological conditions pertaining to the hæmorrhoidal diseases, still it might be well to be reminded that the blood was carried with the arterial impulse directly to the part through short branching vessels, and in turn received from the capillaries into an extraordinary network of veins, which emptied through the inferior mesenteric into the portal system. These veins were entirely without valves. Boerhaave and Morgagni had pointed out these anatomical peculiarities, and remarked upon the horizontal position in the lower animals, which thereby took off the superincumbent weight of the blood column. They adduced this as a reason why quadrupeds were not subject to diseases of this nature. He took pleasure in calling attention to a most interesting and

learned article on this subject by Dr. Bodenhamer ("N. Y. Med. Jour.," Jan. 12, 1889, p. 39). It seemed, however, a just criticism that the weight of the venous column alone acted only in a very subordinate degree as a predisposing cause, although manifestly an important factor after the blood-current becomes gradually retarded in the oftentimes enormously dilated hæmorrhoidal veins.

Were the cause to be found in this peculiar distribution of the portal circulation, the upright position of man would make this condition the rule instead of the exception, and it would be extraordinary to find the varicosities limited to the hæmorrhoidal plexuses and lying almost entirely external to the sphincter muscle. Oftentimes, however, after the pathological conditions became well established, the current through the ectasic vessels was so greatly retarded by the weight of the blood-column in the erect position that most patients learned to seek relief by change of posture. Anatomists emphasized the fact that in the normal condition many of the hæmorrhoidal veins were of comparatively large size. In relation to the surrounding pelvic organs these veins occupied a dependent position, and their only support was derived from a loose network of connective tissue. It would be apparent, then, that the anatomy of these thin-walled vessels, their relation to the surrounding parts, and their physiological function, furnished, as it were, a predisposing cause of disease. To this, however, probably might be added a certain condition of weak circulation so often found in persons with thin-walled veins of the lower extremities. It had long been recognized that the varicosities of the hæmorrhoidal vessels, which were probably wanting in the lower animals and were comparatively rare in the savage races, became a more and more constant factor in the sedentary occupations of modern civilization. A great variety of pelvic diseases in the female and the genito-urinary diseases in the male, complicated with constriction, were active causes of rectal disease. The rectum might be regarded as a convenient cess-pool for the reception of the waste and *débris* of the alimentary canal, which poured into it in a more or less fluid state. The curves of the lower bowel, from the sigmoid flexure downward, were an evident design, in part at least, to vary the support of the weight of the column and admirably adapted to equalize the pressure. When the rectal contents remained sufficiently soft to produce equable pressure, the circulation was comparatively little disturbed, and defecation was accomplished with very little muscular strain. If, however, there should be retention of the contents, with absorption of the fluid portion going on until the molding process became difficult, the reverse would be true. The overloaded rectum produced pressure upon the venous return current, causing a train of reflex nervous symptoms, and the hyperæsthetic state followed. Although the pathological condition above described produced by far the larger part of the suffering ascribed to so-called "piles," we must not forget that there were other diseased conditions which might be confounded therewith. Small fleshy masses about the folds of the anus, sometimes called condylomata, were very easy to distinguish. These had nothing to do with the hæmorrhoidal veins or mucous membrane, and might be the result of friction or erosion arising from a variety of causes. The so-called villous tumor of the rectum was, however, of sufficient frequency to be taken into consideration. It was not unlike the villous growths of the bladder or other mucous surfaces. Its extra vascularity only revealed its presence because of the hæmorrhage, and was apt to be diagnosticated as a bleeding pile. The soft mucous polypus of the rectum was an adenomatous structure of close relationship to the villous growth, and was sufficiently often the cause of suffering to be borne in mind.

Mr. Whitehead, of Manchester, had emphasized the pathological conditions upon which the author had touched, and insisted that the extraordinary dilatation which the veins often underwent could only be learned by dissection upon the living subject. The author's own attention had been called to the condition many years ago when he found how very commonly the veins of the rectum became enormously dilated in a female who had suffered laceration of the perinæum. It was probable that the changes incident upon retention of the rectal contents and other causes acted to bring about dilatation of the vessels rather than the superincumbent weight of the portal column of blood. When the venous plexus of hæmorrhoidal vessels had become pronouncedly varicosed, they had as a covering the lax submucous tissue of the rectum close to the anus, and when put on tension were protruded as a ring of transverse rugæ around the anal aperture. Certain of the rugæ were developed into rounded protuberances, and sometimes even into fungoid tumors of considerable size. The veins sometimes ruptured into the connective tissue and changes followed which resulted in tumors of various sizes, color, and density, called "external piles." The strain in defecation or gentle pressure by the finger from above downward would frequently cause soft, fleshy, exquisitely sensitive grape-like masses to protrude—"internal piles." The mucous membrane covering these would frequently be found congested and abraded so that more or less continuous hæmorrhage ensued.

The method for the cure of hæmorrhoids by the use of the ligature applied with slight modifications of detail had been considered the safest, surest, and most manageable procedure. The projecting tumors, having been well drawn down, were usually transfixed with a curved needle, armed with a double ligature; this being tied firmly, a portion of the constricted mass was excised. In this way all the hæmorrhoidal tumors were ligated and the mass was then returned within the sphincter. This was the favorite operation of the late Dr. Van Buren and his followers, and had at present in Mr. Allingham, the famous English surgeon, its most distinguished advocate. The use of the ligature, applied to cause necrosis of tissue and then allowed to remain in the wound, was open to the same general objections which had caused its abandonment. When applied in this manner to the constriction of the large vessels, sloughing necessarily supervened, which meant an infected wound, exposing the patient to the same dangers, although, perhaps, of less degree, as infection in any other part of the body.

That this was not hypothetical criticism the writer thought there was abundant proof. The stoutest advocates of the ligature admitted that abscesses, general septic poisoning, and other dangers, as secondary hæmorrhage, were not wanting in the experience of the most careful and practical surgeons. The use of the clamp and cautery came into vogue and had been specially popularized by the distinguished surgeon, Mr. H. Smith, of London. This procedure the author had early adopted in his own work. It had advantages over the ligature in that the primary wound was aseptic. Then, by the time the slough was ready for separation, the subjacent tissues would be fairly well protected by the abundant proliferation of granulation tissue. In his own experience, the suffering caused by the burning was objectionable, while all wounds caused by burning were invariably slow of repair. He was of the opinion that the results obtained from the use of the cautery were generally of a more satisfactory character than from the ligature. Secondary hæmorrhages were reported to have occurred, and it was claimed that contraction was not uncommon after cauterization. It might be accepted as a fact that the use of the cautery, except in certain conditions in uterine cancer, had been relegated to the past. Even here it found fewer advocates than formerly. Certainly bleeding was to be controlled without its use, and it

might be questioned whether deep burning was safer than deep cutting in any disease. Then various crushing instruments had been devised, to be used, however, with or without the ligature, for the purpose of producing more rapid necrosis of the tissue involved. The advantage alleged for the operation of crushing was an avoidance of hæmorrhage, but, on the other hand, some operators reported that hæmorrhage had followed crushing. Theoretically this method seemed to offer little, if any, advantage over the ligature, therefore he had discarded it without trial. There remained something to be said of the cure of hæmorrhoids by the chemical action of certain medicaments injected into the parts. Few of the modern methods had received more speedy attention than this, the so-called "carbolic-acid treatment of piles." It had much to warrant its acceptance. Carbolic acid of itself was at that time believed to be the chief of antiseptics, rapidly coagulating the blood and the albuminoids. It had been variously combined with morphine, cocaine, etc., and little pain had followed its use, and patients and physicians had been alike enthusiastic. At present, however, it appeared that the consensus of surgical opinion was that the result was in a large degree disappointing. When a considerable proportion of acid was used, causing necrosis of tissue, no matter how carefully injected, the tissues not infrequently which it was desirable to remove failed to be acted on, while those which should have been retained were destroyed by sloughing. The explanation was that the fluid introduced into the loose margin of the connective tissue escaped to the extraneous parts. When weaker proportions were used, even after many repetitions of the injections, the hæmorrhoidal vessels remained comparatively unchanged. The method of cure by injection was also sometimes objectionable and even dangerous. The writer had seen a young and healthy man made seriously ill, with considerable fever and general septic poisoning supervening upon the injection of hæmorrhoids at the hands of one of our most capable men. The connective tissue around the anus remained for some days œdematous, reddened, and painful. There now remained for discussion the operation of Mr. Whitehead, of cure by excision. This the author of the paper did not hesitate to accept as a step in advance of all surgical procedures previously discussed. It had been demonstrated that the vessels were frequently so deformed as to fail entirely in the original purpose for which they were designed, and the end sought to be obtained by all previous methods had been their destruction and removal. The real objection to destruction had been the fear of hæmorrhage, and, as a means to obviate this, the ligature and clamp and the cautery were devised. Mr. Whitehead had clearly shown that his method of dissection was safe, that the hæmorrhage was not excessive, and that a rapid cure resulted. The method was certainly scientific. By a clean dissection the parts which it was desirable to eliminate were removed. The free edges of the divided tissues were then stitched together, primary union generally resulting. Mr. Whitehead's method was best given in his own words:

"By the use of scissors and dissecting forceps the mucous membrane is divided at its junction with the skin around the entire circumference of the bowel, every irregularity of the skin being carefully followed. The vessels are then exposed by a rapid dissection of the mucous membrane, and the attached hæmorrhoids, thus separated from the submucous bed on which they rest, are pulled bodily down. Each individual point is brought below the margin of the skin. The mucous membrane below the hæmorrhoids is now divided transversely in successive stages, and the free margin and the severed margin above are stitched, as soon as divided, to the free margin of the skin below by a suitable number of sutures. The complete ring of pile-bearing mucous membrane is thus removed." Mr. Whitehead very wisely emphasized thoroughly paralyzing the sphincters by digital stretching. The bleeding vessels, which were small and easily seized, were immediately twisted upon division. The sutures were interrupted and of braided silk. Mr. Whitehead's operation had been, of course, variously criticised, but, as that gentleman could refer to a record of some three hundred cases in which the operation had been, "to the best of his knowledge and belief," a perfect and permanent cure, there was enough upon which to base a conclusion. Some ten years ago Dr. Marcy said he had operated in two cases of prolapse of the rectum by first, before resection, entirely encircling the prolapsed part upon a row of continuous double sutures. From the excellent result following these operations he had been led to apply the same method to the base of a ring of hæmorrhoidal vessels before resection. For some years this method of suturing had entirely superseded all others in his practice, and had been repeatedly demonstrated to members of the profession. He now offered his method for consideration on account of its great safety and excellent result, as presenting advantages in the treatment of a troublesome affection. Care should be taken previous to the operation to have the large intestines thoroughly emptied, usually by an active cathartic, supplemented by a copious injection given a few hours before the operation. The patient was to be placed in the lithotomy position, the limbs suitably supported, and the parts to be thoroughly cleansed by a sublimate solution as usual. The digital dilatation of the sphincter was carefully made until the muscle was paralyzed. The rectum was then washed with sublimate solution, care being taken that none of it was allowed to remain. A pledget of wool, into which iodoform was to be freely dusted, was passed into the rectum, and the subsequent stages of the operation were carried out under irrigation with sublimate solution. Along the line of the junction of the mucous membrane with the skin, either with a knife or scissors, division was made from a central line, posteriorly, from below upward on both sides to the median line above. With a little care this division could be made without injury to the plexus of vessels. The loose connective-tissue fascia was usually separated by the finger or a blunt instrument, cutting any connective-tissue bands which might appear. The mucous membrane above the plexus should be then divided transversely in a somewhat similar manner. The deformed hæmorrhoidal plexus was then separated from its surroundings except at its base. The needle, with eye at point, threaded with tendon, was carried posteriorly behind the mass, unthreaded, and rethreaded with the opposite end and withdrawn, the stitch resembling that taken by the shoemaker, drawing the waxed end of his thread in opposite directions through the hole made with the awl. In this way the entire base was encircled by a line of deep double continuous sutures. This was the stitch the author had for many years used in the coaptation of deep parts by the buried suture—as, for example, in rupture of the perinæum and constricting pedicles of abdominal tumors. In this way it was impossible for any tissue to escape. The stitches were not to be drawn too tight, since they were intended merely to control hæmorrhage and not to produce necrosis of the parts they inclosed. Then with scissors the hæmorrhoidal plexus, just above the line of sutures, was to be dissected away; the mucous membrane to be then stitched by continuous suture to the line of division, either with an over-and-over stitch or with a running blind stitch taken from side to side from within outward. The paper concluded with a description of the usual dressings and after-treatment. If the operation was properly done, it was generally followed by primary union. The patient was remarkably free from pain, and the process went on without trouble. The patient need not keep his bed. The bowels should be moved the third or

fourth day. By the method above described the author constricted the blood-vessels before division, insuring a much more accurate readjustment and closure of the parts, while the buried animal sutures manifestly presented advantages over interrupted silk sutures, which latter must be thrown off by suppuration.

The author then exhibited specimens of prepared animal tendons which he advocated as in every way to be preferred in all cases where deep or buried sutures were indicated. He had given *carte-blanche* to a friend in Australia for kangaroo tendon

Extraction of Cataract without Iridectomy.—Dr. Charles Stedman Bull, of New York, read a paper with this title (to be published).

(To be concluded.)

AMERICAN DERMATOLOGICAL ASSOCIATION.

Thirteenth Annual Meeting, held at Boston, on Tuesday, Wednesday, and Thursday, September 17, 18, and 19, 1889.

The President, Dr. I. E. Graham, of Toronto, in the Chair.

(Continued from page 441.)

Microscopical Studies of Malignant Tumors of the Skin.—Dr. C. Heitzman, of New York, read a paper on this subject. The pathology of the skin was intelligible only upon the recognition of the fact that the basis substance of the fibrous connective tissue of the derma was living and capable of proliferation in the same manner in which the protoplasm of this tissue, the so-called "cells," were viable. The reader had first announced this fact in 1873, and since 1880 Stricker, of Vienna, had adopted the same view. In inflammation of the derma there was first noticed an increase in the amount of living tissue in the interstices, and at the same time the basis substance bordering such an inflammatory area returned to its protoplasmic condition, and split up into inflammatory corpuscles, just as the protoplasm between the bundles of connective tissue did. From this inflammatory structure bundles of fibrous tissue might again form, giving us the hyperplasia of Virchow. A breaking asunder of the inflammatory corpuscles led to the formation of pus corpuscles, the sum total of which we termed an abscess.

In the formation of tumors the tissue of the derma invariably returned into its protoplasmic or embryonal condition with the production of new-formed medullary or indifferent corpuscles, and either a tissue kindred to the normal tissue originated from it—as in myxoma, fibroma, etc.—or it remained in an embryonal condition—as in sarcoma, which the author preferred to call myeloma. In cancer a new formation of epithelium took place, with a new formation of myxomatous or fibrous connective tissue. The author would divide all myelomatous—*i. e.*, sarcomatous—tumors into two main divisions: the globo-myeloma, corresponding to the round-cell sarcoma, and the spindle-myeloma, or spindle-cell sarcoma. All other varieties he would consider embraced by these. Globo-myeloma was made up exclusively or prevailingly of globular corpuscles of different sizes; sometimes the smallest was not larger than a lymph-corpuscle, and in that case we had the lympho-sarcoma, which the author thought identical with the outgrowths of the mycosis fungoidea of Kaposi. There were two main sources for these cells—viz., the protoplasm between the bundles, and the basis substance of the bundles themselves. First were observed globular bodies between the bundles; these had unquestionably sprung from the protoplasm by an augmentation of its living matter or by a proliferation of its cells. The newly formed elements were first small, homogeneous, and highly refractive, representing, therefore, solid lumps of living matter. These increased in size and became vacuolated, and a solid or reticulated nucleus appeared in the center of each corpuscle. At the same time there was a transmutation of bundles of fibrous tissue into either reticulated masses of protoplasm or single pieces, being separated from one another by a little cement substance. Later on these square pieces were further split up into myeloid corpuscles.

When the lymphoma appeared in the derma there was a gradual thinning of the epithelial covering and loss of the hairs, with final disappearance of all epithelial structures. According to the idea of the author, the epithelia were transformed into giant cells, which in turn split up into myeloma corpuscles. In the case of the spindle-myeloma the same course held true as with the formation of the globo-myeloma. In the case of carcinoma the normal epithelium was not transformed directly into cancer cells; there was a stage of indifferent corpuscles of protoplasm, the production of multinuclear masses, which split up into cancer epithelia by the appearance of a new cement substance.

What Waldeyer considered an inflammatory new formation in the surrounding connective tissue was considered by the author to be only the preliminary stage of cancer. The medullary corpuscles which had been formed were transformed into cancer cells. In the epidermal cancer this change was seen along the border of the epithelial pegs. Here the indifferent corpuscles changed into multinuclear bodies in which boundaries of cement substance appeared. In this case, too, the medullary corpuscles within the connective tissue arose from the basis substance as well as from the cells. That the connective tissue participated in the growth of the cancerous tumor, and that its so-called small-cell infiltration was a mere preliminary stage of cancer, was clinically of the utmost importance. Whenever a cancer was removed with the knife, and we found at the cut surface of the extirpated mass small shining medullary corpuscles, we could positively foretell a recurrence, however small the number of such corpuscles found in the fibrous connective tissue of the derma or in the myxomatous network of the fat globules of the subcutaneous tissue.

Dr. Robinson did not wish to express positive opinions in regard to the views advanced by the author of the paper until he had studied the matter thoroughly. He would agree entirely with Dr. Heitzman in regard to the histology and growth of connective tissue. He would not, however, classify sarcomata with tumors proper, but considered them the manifestation of an infectious process. They were the result of a dermatitis, and were not a new growth. In the case of an epithelioma we had to do with a specialized structure, and it seemed to him that it would be at least very difficult to prove that epithelial tissue could spring from an ordinary connective tissue. The necessity of the previously existing epitheliomatous tissue was shown by the character of the secondary tumors and the hereditary tendencies of the disease. If epithelial tissue could arise from the embryonal tissue coming from connective tissue, it might be expected that sometimes epitheliomatous growths would form in tissues which were more or less embryonal naturally, such as the lymph glands.

Dr. Heitzman remarked that he had just such a specimen.

Dr. Robinson thought that no one else had ever seen such a case. As regarded the change from epithelial structures into indifferent corpuscles and then into cancer cells, in his experience he had never seen such a case. He would summarize his position as follows: That an irritation, if not too severe, in which case it would be destructive, might produce a formative growth; that sarcomatous formation might take place from connective tissue without requiring the presence of elements from fœtal life; that in the case of the epitheliomata there must be the presence of a previously existing epithelium; that

epithelial elements could not change into medullary corpuscles and then into elements; and no more could connective-tissue elements pass into epithelium.

Dr. HEITZMAN said he was ready to admit that when the myeloma was just starting in the dermal tissues it was impossible to distinguish it from simple inflammatory action. We must depend upon clinical observation, since the origin was identical in the two cases.

Dr. ROBINSON, referring to his belief in the infectious nature of the sarcomata, mentioned Dr. Sherwell's case of round-cell sarcoma of the skin. It had been noticed that some of the tumors disappeared while new ones arose. If they were a new growth they ought to continue to grow indefinitely. It was known that in cases of mycosis fungoidea the tumors would come and go constantly.

Dr. SHERWELL mentioned a quite similar case observed in Burlington, Vt., where many of the tumors had disappeared under treatment, their place being taken by a distinct depression in the skin.

The Diagnosis of Leprosy, especially the Division of the Anæsthetic Form from Syringomyelia.—Dr. P. A. MORROW, of New York, read a paper with this title. Little was said in the text-books about the diagnosis of this disease, perhaps because few writers had been personally familiar with it. In the later stages the diagnosis was not difficult, but in its inception it was often doubtful. In the examination of the suspects at Honolulu a large number were remanded for further developments, and it should be borne in mind that this was not owing to any lack of skill on the part of the physicians. Many of the initial symptoms were quite indeterminate, and might be referred either to leprosy or to other diseases. The affection was most likely to be confounded with erythematous diseases, with lupus, and with certain affections of the nervous system, while many parasitic diseases had lesions similar to those met with in this disease. Two main forms of leprosy were recognized—the tubercular and the anæsthetic. In one there was a determination of the process to the integumentary tissues and in the other to the nervous system. In tubercular leprosy the prodromal symptoms had little value, and the same might be present in syphilis and other diseases. In this form the presence or absence of anæsthesia was of no diagnostic value whatever. The eruption was not at all pathognomonic. The macules which first appeared were round, oval, or irregular, of a bright or sometimes dark-red color, fading on pressure. As a rule, they were not infiltrated, and might disappear without a trace, or they might leave a yellowish spot. Sometimes they might present a picture similar to that of erythema multiforme. After a time these macules became persistent, and then there was a tendency to the formation of tubercles; but the latter might develop in isolated spots, quite apart from the large erythematous areas. In its origin the disease resembled syphilis in the long period of incubation and the successive crops of the eruption. The syphilitic roseola corresponded to the leprous erythema; the mucous membranes were affected in each, although the throat was not affected in leprosy. There was more infiltration of the skin, especially in the face, in leprosy, and leontiasis was more often seen, as well as the breaking down of the osseous framework of the nose. Sometimes the tubercles of this disease resembled very much those of lupus. Sarcoma had been confounded with the disease, but when the fungoid state was reached and the tumor suppurated the distinction was easily made. The disease had also been mistaken for acne, sycosis, lichen planus, erythema nodosum, molluscum fibrosum, and dermatitis medicamentosa. The *Bacillus leprœ* was invariably found in the tissues and stamped the disease when such examination could be made.

The anæsthetic form of the disease presented a greater variety and complexity of symptoms. While the demonstration of the bacillus was rarely practicable, yet the invariable presence of anæsthesia had almost a pathognomonic value. The macular lesions which were seen were pigmented, and tended to clear up in the center while they spread peripherally. On their first appearance the macules were hyperæsthetic, but this condition was followed by anæsthesia in the center as the affected surface widened. The author showed colored drawings representing a case that had existed five years, where the lesions had been well marked upon the feet and lower part of the leg. Here the central portion had presented a bluish or grayish appearance distinct from the reddish outline of the edges. There had been anæsthesia in the center, with normal sensation just outside the margin. In general it was found that there were many irregularities in the course of the anæsthetic symptoms. It was distinguished from chromophytosis by the absence of scaliness and the absence of the parasite of that disease. It was to be distinguished also from vitiligo and morphœa. The hairs of the affected surface often fell out. An interesting point was the plantar ulcer which very frequently formed, owing, the author thought, to the custom of going with bare feet. This lesion resembled the malum perforans.

The nerves most frequently affected were the ulnar, the peroneal, and the third and seventh pairs. There might be wrist-drop and a peculiar claw-like contraction of the fingers. Since the pathological lesion was a multiple neuritis, it was not surprising that there were many diseases of the central nervous system which resembled leprosy. The atrophy and degenerative changes might be limited to the muscles of the hand and forearm, and might present a perfect picture of the lesions of progressive muscular atrophy. They were distinguished by the presence or absence of sensory disorders. The disease most difficult to distinguish from it was syringomyelia. This disease had formerly been considered to be very rare, and to be met with only post mortem, but of late a number of cases had been reported. Its main symptoms were sensory disorders and trophic changes. The atrophy was localized in the muscles of the hand and forearm. There was a flattening of the thenar and hypothenar eminences, with absolute loss of pain and temperature sense, with retention of tactile and muscular sense. The reaction of degeneration was sometimes present. After a time the disease might remain stationary.

The author related the case of a person living in this country, but who had been born in the Sandwich Islands—a young man of twenty years. When eight years old he fractured the right clavicle. Within from one to three years afterward, the history not being definite, a numbness of the hand was felt. It was supposed to be of spinal origin, and the actual cautery was applied. Contraction of the fingers came on and had remained since, but the numbness had crept up the forearm. The right arm measured an inch and a quarter less than the left. There was also atrophy of the muscles of the right leg. A superficial sore appeared on the index-finger, and would not heal. Electric excitability of the hand was lost. After a time two or three brownish spots appeared upon the forearm. This case presented many of the symptoms of syringomyelia, but might be distinguished by the sensory loss. The child had been to the Sandwich Islands when nine years of age, and that fact was of weight in making the diagnosis. The fact that the present good health of the patient was not conducive to the spread of the disease might explain the asymmetrical character of the lesions and the non-progressive type of the disease. There were many abortive causes, and no doubt the removal of this boy to a different climate had increased his capacity for resisting the disease.

Dr. Hardaway said that, in his experience, most of the cases in this country were mixed cases. He presumed it was admitted that tropical cases were mostly anæsthetic, while in temperate climates the cases were mixed.

Dr. Morrow did not think so. In India it was comparatively a minimized form of the disease. In the Sandwich Islands there had been noticed a progressive increase in the number of anæsthetic cases, the anæsthetic representing the milder type. About one half were tubercular, one third anæsthetic, and the remainder mixed.

Dr. Bronson spoke of the great resemblance shown by some of the photographs which the author had presented to syphilitic lesions, and Dr. Greenough called special attention to the same point.

Dr. Bulkley asked if the lesion on the sole of the foot was sufficient alone to establish a diagnosis.

Dr. Morrow replied that the photograph of this lesion that he had shown had been taken several years before, and that since that time other lesions had appeared, and the patient had afterward been sent to the leper settlement. He did not think that lesion would be present as an early symptom, except in places where the people went barefoot.

The President cited the case of a woman, seventy-two years old, who had the anæsthetic form of leprosy, who suffered with an ulcer on the sole of the foot, though she had not gone barefoot.

Dermatological Bibliography.—Dr. G. T. Jackson, of New York, presented to the association a very complete list of dermatological published material.

The President returned to Dr. Jackson the thanks of the association.

The Occurrence of Prurigo in America.—Dr. Zeisler read a paper on this subject. His inquiry was intended to throw light upon the subject question of whether true prurigo occurred in America, and, if there was a difference in the proportionate amount, to what it might be due. In France, up to ten years ago, the disease had been almost unknown. In 1876 Dr. James C. White said that it was not seen in this country. It was now generally believed that true prurigo did exist here, but that the severe form was quite uncommon. The mild form of the disease did certainly occur. Out of 1,370 cases of skin diseases the author had seen twelve cases of prurigo—five of them severe and the rest mild. Out of 1,108 cases in private practice nine had been cases of prurigo, of which three had been severe and six mild. Out of the whole number, the percentage would be 0·875, which was a larger proportion than was generally supposed. According to the reports of this association, a year ago the percentage was 0·027, and last year it was 0·033. In Prague, in 1874, it had been 0·566, and in 1875, in the same city, it had been 0·714. In Christiania there had been reported an occurrence of a little over three per cent., while in Vienna it formed from two to three per cent. of all skin diseases. In the five severe cases there could be no doubt about the diagnosis. Of the twelve patients, only one of whom had been born of native parents, seven might be classed as being in poor circumstances, and four of these seven had been affected with the severe form of the disease. Of the five who had been in moderate circumstances, only one had had the severe form. Five of the seven with mild cases had been cured, and the other two were improving. The five severe cases, which had been watched for a long time, seemed at times to improve a little, and then relapse when neglected. Frequent bathing was one of the best remedies for the disease, and the reader thought that the greater habits of cleanliness in this country would explain the greater rarity of the affection.

The following conclusions were drawn: 1. Prurigo did certainly exist in America. 2. The severe form, while occurring in perfectly typical examples in patients born or reared here, was comparatively rare. 3. Prurigo mitis was not uncommon here.

Dr. R. W. Taylor, of New York, had seen two cases of what seemed commencing prurigo in children who had had chronic urticaria, and one case of true prurigo in the adult.

Dr. Fox had seen two cases in adults where there could have been no question about the diagnosis. Several cases had been presented before the New York Dermatological Society, and some of the members had questioned the diagnosis. Their objections had been based on the cases shown in Vienna in the clinic, where only the marked cases were presented. It seemed to the speaker that there had been a great diffidence in making the diagnosis, on the ground that the cases did not present these marked characteristics. In its mild form the speaker did not believe it to be a very rare disease, although, of course, it was not a common one.

Dr. Robinson had never seen a case in this country that he would be willing to diagnosticate as such, although he had seen them in Hebra's clinic.

Dr. Greenough had seen many cases in Vienna, but he had never seen at the Boston Dispensary any cases of what Dr. Zeisler would call the severe prurigo. He had seen several cases about which there was a question. He would not deny that they might have existed, and thought it possible that some of the cases that he and his colleagues had entered as pruritus had been mild cases of prurigo.

Dr. E. Wigglesworth, of Boston, said that the first case reported in this country had been reported by him. He had at present a case under observation—that of a boy who would be presented to the association on the last day of the meeting.

Dr. Bronson thought something of a bugbear had been made of the subject. If we accepted the view that the disease was essentially a neurosis which primarily affected the sensory and motor nerves, and that the trophic changes were secondary and the result of irritation, we were justified in recognizing it as of common occurrence, even here. It had been his experience that pruritus most affected those portions of the skin which were most affected by prurigo. He believed that the neurosis was identical in the two cases. From certain causes this neurosis was much aggravated in Vienna and some other foreign places, but it was sometimes seen here in the severe form. The speaker had never seen a case of the persistent form as it occurred in Vienna.

Dr. Jackson, Dr. Bulkley, Dr. Shepherd, Dr. Sherwell, Dr. Howe, Dr. Klotz, and Dr. Heitzman participated in the discussion, each having seen from one to three cases.

Dr. Zeisler said it was no objection to the diagnosis that the patients were cured. Mild cases were perfectly curable, especially since the use of naphthol. In severe cases the patients could be rendered very comfortable, at any rate.

Eczema Mercuriale.—Dr. J. F. Shepherd, of Montreal, reported the histories of two cases of this affection. These cases had followed the use of Scott's dressing, which was made of one part of mercury to four parts of ammoniac plaster. He had used the dressing in the treatment of chronic synovitis. Both cases reported had occurred in young men. In the first case the dressing had been kept on three weeks without renewal. At the end of that time the knee had regained its normal shape. A year later a similar attack had come on and the same application was made, but this time on a surface that had recently been blistered. At the end of a week the skin about the knee was found inflamed, red, and brawny. The next day the face was red, hot, and swollen, and covered with fine vesicles, the

eruption extending down as far as the clavicle. At the same time the eczema about the knee had extended as far as the groin. Recovery was complete in two weeks. In the second case the dressing was removed after three weeks, and an eczematous rash found on the surface which had been covered. Three days later there was a marked swelling of the eyelids, and in two days the whole face had become reddened. At the same time a papular eczema appeared on the leg and forearm, and the genitals were acutely inflamed. Desquamation occurred in two weeks, but the rash did not disappear for six weeks. A third case had been reported to him as occurring in the practice of a colleague, the history being very like those mentioned.

Dr. Morrow referred to the fact that in certain cases the eruption caused by drugs would persist for a long time, although the general rule was for a speedy disappearance when the irritating cause was removed.

Dr. Greenough had seen one patient who had seemed to have a peculiar idiosyncrasy. He had used the ointment and it had been followed by a severe dermatitis which had taken on a diffuse phlegmonous form, and he was confined to his bed for six months.

Clinical Observations on Injections of Insoluble Mercurial Salts in Syphilis.—Dr. H. G. Klotz, of New York, read a paper with this title. These injections seemed not to have been used much in this country, and little had been written on the subject. It had been generally considered that the method should be resorted to only in cases of emergency. Fumigations were not always well borne, and there was some danger of injury to the air-passages by inhalation of the fumes. The author had used the cyanide, as a soluble form of the mercurial, but it was expensive, and caused a good deal of pain. In private practice he had given twelve injections to twenty-three patients. It was better to have the patient lying on the face at full length, to avoid sudden motions. The point selected for the injection was preferably about an inch outside the gluteal fold; this point was such that the patient could sit afterward without much discomfort. The needle should be stouter and longer than that used for ordinary purposes. It should be inserted with one thrust, and then should be held quiet for a quarter or half minute, until the quivering of the muscle had ceased. The barrel was emptied slowly, and a fold of the skin pinched up as it was withdrawn. No massage was to be used, and the patient should be enjoined from muscular exertion for several hours.

At the very beginning of the practice, in the hands of the author, one or two abscesses had followed the injections, but for the past two years he had not seen an abscess; when they did occur they were not very troublesome. Sometimes there was a more or less painful swelling after the treatment, not followed by suppuration. The trouble had followed the use of calomel in five cases, and after the yellow oxide it had occurred but twice. Of the fifteen accidents, twelve had been experienced after the use of calomel in water. It was noticeable that the use of calomel in oil never caused local trouble. Salivation seemed less frequent than after inunction. A slight diarrhœa had been present in one case. One patient had had a chill after the treatment, and this had been followed by loss of appetite and a temperature of 103° F., with pain in the chest and difficulty of breathing, accompanied by a few rhonchi. The next day he was better, after profuse perspiration. There had been, probably, an embolism of oil from the injected fluid. In one other patient there had been pain in the chest, but nothing was found on physical examination, and he was soon better.

All affections of the skin disappeared rapidly after two or three injections, as a rule. The pigmented spots went rapidly, generally, but there was not so much effect upon the pustular lesions. In the tubercular syphilides there was a good effect at first, but it was not lasting, and the iodides had to be given. Mucous-membrane affections were benefited. Persistent primary induration had disappeared in one case after it had lasted a year. In two cases of tertiary syphilis the result had been very satisfactory.

Dr. Taylor thought that this subject of mercurial injections was a good illustration of the fact that there were fads and fashions in medicine. Such a method would rarely have to be resorted to as an emergency treatment. He had seen it carried out in Charity Hospital, and it had added much to the discomfort of the patients. Taking into consideration the dangers of embolism, the occurrence of abscesses, the painful nodules that formed, and the pseudo-paralytic condition of the legs, it seemed to him there would be considerable objection to the employment of this method of medication.

Dr. Morrow had had an excellent opportunity to watch the effect of these injections in a large hospital, and he would only reiterate his conclusions, which had been given before the New York Academy of Medicine—viz., that it was a reserve treatment to be followed in cases where the usual and better plan of administration by the stomach could not be followed. He could not see how any drug introduced into the tissues was transformed, by any strange chemistry of nature, into something more potent than if taken by the stomach. He remembered to have seen post-mortem examinations of persons that had died of some intercurrent disease, and the tissues about the point of injection had been in such a necrobiotic condition that he had concluded it to be bad surgery to duplicate these results on a large scale. He had used the treatment in two cases in the last two years, and he did not believe the results had been any better than they would have been by other methods. A strong argument against the treatment was the fact that there were so many dermatologists who had immense numbers of patients passing through their hands, and who rejected this treatment altogether.

Dr. Zeisler thought that, while the injections might be practicable in hospitals, they should not be used in private practice to any extent. He had never had the courage to treat a patient with the method, which seemed in many respects doubtful. He had always been satisfied with the old methods.

Dr. Bronson thought we should not condemn the method till we had learned all that was to be obtained from it. It seemed to him to represent a very scientific line of treatment. For frictions, the speaker preferred the mercurial soap to the ointment.

Dr. Heitzman said his son had given the injection in the most antiseptic manner possible. In the first case an extremely painful inflammation had been the result, but it had not formed an abscess. Two weeks afterward a second injection had been made, and an abscess had formed. He had been discouraged from making another trial. He did not consider the objection to fumigation, that it injured the respiratory tract, a serious one, for he had never seen such results.

Dr. Klotz raised the point that private patients were the very ones on whom this treatment should be tried. He had always explained to patients what the discomforts of the method were, and he had never had any difficulty with them. Some of the patients whom he had treated liked the injections so much that they had insisted upon having them afterward. The objection to the use of inunction was the fact that the patients could not do it thoroughly enough. Many bad results in the way of salivation, bone diseases, and eczemas had been caused by the reckless use of inunctions. In regard to the post-mortem appearances, he had seen cases where no bad results could be discerned at all. His total experience with the method had not been such that he felt that he could not go on.

(*To be concluded.*)

New Inventions, etc.

PRESENTATION OF INSTRUMENTS

AT THE ELEVENTH MEETING OF THE AMERICAN LARYNGOLOGICAL ASSOCIATION.

Dr. John O. Roe, of Rochester, N. Y., exhibited three instruments and said:

"At the meeting of this association last year I reported a case of internal œsophagotomy, and also described a new œsophageal bougie. I should now like to present, not only an improved form of the bougie then described, but also certain other instruments I have devised and have found exceedingly useful.

"*A New Œsophageal Bougie.*—The bougie which I described last year was made by attaching the tip of a conical gum-elastic bougie about three inches in length to the end of a hard-rubber bougie by

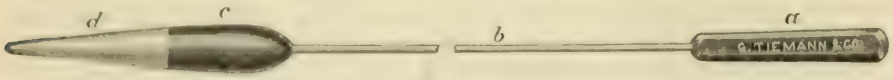


Fig. 1.

means of a plug and screw. Since that time I have made this improved œsophageal bougie, which I now show you (Fig. 1). This is made all in one piece by simply governing the vulcanizing process so that one end of the bougie is vulcanized as hard rubber while the other is vulcanized as soft rubber.

"It is well known that caoutchouc when mixed with 25 per cent. of sulphur and vulcanized at about 250° F. becomes soft rubber, whereas if the caoutchouc is mixed with 50 per cent. of sulphur and vulcanized at about 300° F. it becomes hard rubber. By carefully considering these principles in the manufacture, the bougie is made with one end of hard rubber and the other end of soft rubber, as is represented by *c* and *d*, Fig. 1.

"These bougies are made in a series of six or more of different sizes. I have each one of mine attached firmly to a whalebone stem, although the bougie can be so made that one stem can answer for the set by attaching it to them with a screw. The advantage of this form of bougie over both the long gum-elastic bougie and the bulbous hard-rubber bougie is that it combines the advantages of both and overcomes the objectionable features that both possess. The flexible soft-rubber tip facilitates the passage of the bougie through the throat and readily directs it into the stricture, and is thereby more easily introduced than is the hard-rubber bulbous bougie; and the slender, flexible whalebone stem causes much less irritation of the throat and gagging, and does not fill up the throat as does the long gum-elastic bougie.

"The advantage of combining the hard and soft rubber instead of making the instrument entirely of soft rubber is that the hard-rubber portion is unyielding and far better for the purpose of dilating œsophageal strictures than it would be if the instrument were made entirely of soft rubber.

"*An Improved Powder-blower.*—The next instrument is an improved powder-blower. Nearly every powder-blower has its objectionable features. Some have to be recharged each time they are used. Some are used with a bottle as a reservoir for the powder, and are necessarily bulky and clumsy and easily broken, or the powder is liable to spill out in handling or to find its way back into the rubber bulb that is used for blowing. I think you will agree with me that nearly all these objectionable features are overcome in this powder-blower, which I now show you (Fig. 2). The stem of the instrument passes through the bottom of the reservoir. A hole is made in the bottom of the reservoir to correspond with a hole that is made in one side of the stem of the instrument. It will therefore be seen that if the hole in the side of the stem, *b*, is turned upward so as to be directly under the hole in the bottom of the reservoir, *a*, the powder will fall into the stem or barrel of the instrument; and by giving it a half turn the powder in the reservoir is completely

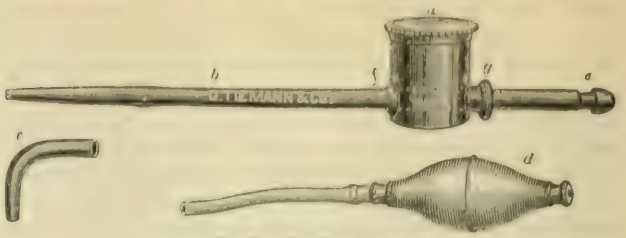


Fig. 2.—Powder-blower.

cut off. The position of the hole in the stem is indicated by an ivory guide, *f*, placed on the stem. When the stem is charged, only the powder that has fallen into it can be blown out. The stem is secured in the reservoir by the binding nut, *g*, which can be removed and the stem taken out for cleansing. The instrument can be used for throwing the powder not only straight, but also in any direction that is desired, by attaching, in the latter case, the curved tip, *c*, to the point of the stem. A flexible rubber tube can be attached to the stem at *e*, by which the powder can be blown out by the operator's breath, or by the rubber bulb, *d*, as shown in the cut. The different parts of the instrument are so nicely adjusted as entirely to prevent the escape of any powder from the reservoir, and it is thus admirable for the use of iodoform.

"The only objectionable feature is that this instrument is not so well adapted to the use of a variety of powders as an instrument made without the reservoir; but the surgeon can readily provide himself with several of the powder-blowers, as their cost is not great, and keep them filled with the powders which he most frequently uses. The facility with which this instrument is used and the saving of time otherwise required for charging the plain powder-blower can at once be appreciated by those who do a large amount of office work.*

"*A Nasal Bow-saw.*—I have one other instrument to show you which I have recently devised, and that is a new form of nasal hand-saw. At the meeting of this society last year I showed you my latest improved electric nasal saw, but as an instrument of this kind is not always at hand, the most simple and most nearly perfect hand-saw is therefore a desideratum.

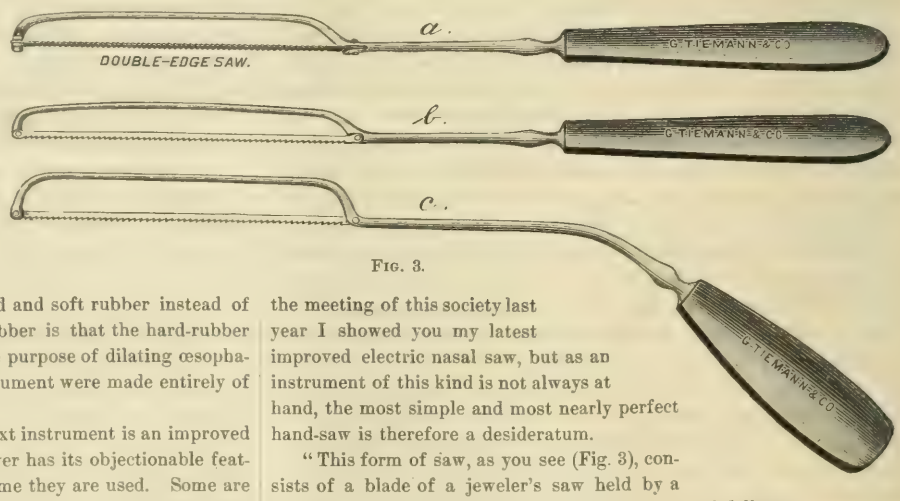


Fig. 3.

"This form of saw, as you see (Fig. 3), consists of a blade of a jeweler's saw held by a bow similar to a bow-saw, but made very light and delicate.

"The saw devised by Dr. Bosworth is a very excellent instrument. The only disadvantage the operator finds in using that saw is the flexibility of the blade, so that in attempting to saw off a very hard and rounding exostosis it is often with difficulty that the blade can be

* Since I described and exhibited this instrument before the Laryngological Association on May 28th last, the idea has been appropriated by a certain instrument-maker, who has published a similar cut of the instrument without giving any credit to the originator of the idea.

started in at exactly the spot the operator desires; and even in making a slight lateral pressure to hold the blade up to the point desired, the saw is very apt to make a curved cut. With this little bow-saw these objections are entirely done away with. A very much thinner and finer blade can be used in these saws than in the case where the blade must be sufficiently thick to carry itself. By using the same thin and highly tempered blades that jewelers use for sawing metal, an exostosis of any degree of hardness can be very easily and quickly cut through. These saws I have had made for me in various sizes and shapes. The only disadvantage attached to the saw is that the blade can only be made to cut as deep as the distance of the saw from the back. This objection is obviated by having a saw with the blade placed at right angles to the bow, and with the bow sufficiently high to allow it to pass over the obstruction. In other cases where the bow may interfere with the completion of the operation, the first incision may be made with this saw at exactly the spot desired and the operation completed with the Bosworth saw. The latter saw will then have the perfectly straight groove to run in which has been made with the bow-saw. One of the special advantages of this little bow-saw with the blade set at right angles is in sawing out exostoses in the floor of the nostrils. The very narrow blade will permit the sawing to be done on the exact curve of the floor of the nostril. The saw is also admirably adapted to remove small angular projections and irregularities of the septum. The very fine teeth of this little saw also give it an advantage over saws with coarser teeth, in that they leave a very smooth surface over which the soft parts more quickly spread, and the wound more readily heals.

"Some of these saws I have had made with the handle straight, on the line with the blade of the saw, while in others I have had the handle placed at about the same angle as in the Bosworth saw (see *a*, *b*, and *c*, Fig. 3). In many instances the little straight handle is much more conveniently used than the bent handle, especially when in sawing it is desired to deviate from a straight line.

"The saw with the plane of the blade placed at right angles to the back is represented by *a*, Fig. 3. The blade of this saw is made with teeth on both edges, so as to saw in either direction. In order to prevent the blade from cutting under, when sawing close to the septum, the blade should be placed entirely on the side of the bow, as shown by *b*, Fig. 3. The blade can be put on either side of the bow for sawing upon either side of the septum.

"All these instruments have been made for me in the most admirable manner, by Messrs. Tiemann & Co., 107 Park Row, New York."

A Pharyngeal Douche was shown by Dr. Samuel Johnston, of Baltimore, who said: This simple apparatus consists of an ordinary soda-water siphon charged in the usual way, with a soft-rubber tube twelve inches long attached to the nozzle.

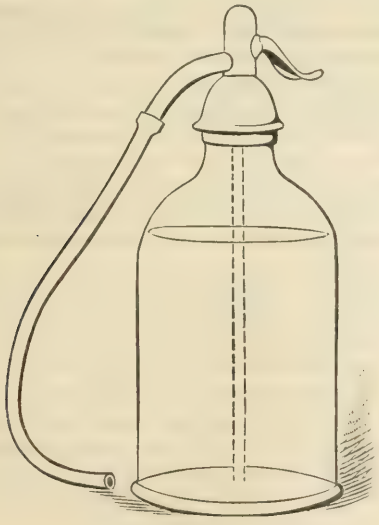


Fig. 4.

The method of using it is as follows:

A bib of water-proof cloth or oiled silk large enough to protect the clothing is first fastened around the neck of the patient, the free end of the bib resting in a basin to receive the return current. The tube is then inserted into the mouth to a convenient distance, and the pressure turned on by the attendant; the contents of the bottle will then flow with force into the mouth and out again, varying, of course, with the amount of pressure exerted on the stop-cock.

The quantity of tenacious mucus expelled by this means in some cases is enormous, and the relief afforded can only be appreciated by those who have had experience with this process of cleansing the oral cavity.

We have all, doubtless, used the syringe with a flexible rubber tube attached to the tip for washing out the mouth and nasal passages in cases of acute amygdalitis, diphtheria, scarlatina, etc., but I believe we have in this simple apparatus an agent which will give greater ease to those suffering with the class of affections before mentioned than any other local treatment yet employed.

Thus far I have only used soda water; the contents of the siphon can, however, be carbolized or otherwise medicated to suit special cases. A lady, recently under my care with quinsy, for several days used six to eight siphons daily in this way, greatly to her comfort and relief, and it is to her that I am indebted for the suggestion of this novel application of the soda-water siphon.

A Modification of Voltolini's Palate Retractor was shown by the president, Dr. Morgan, which was intended to draw the velum forcibly forward while operating on the bursa pharyngea. The handle was so

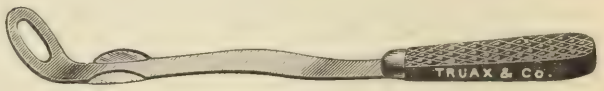


Fig. 5.

bent as to allow the hand of the assistant, who retracted the velum, to be entirely out of the line of vision of the operator. Truax & Co., of Chicago, had made the instrument.

Miscellany.

The Southern Surgical and Gynæcological Association will hold a meeting in Nashville, Tenn., on the 12th, 13th, and 14th of November, under the presidency of Dr. Hunter McGuire, of Richmond, Va. The preliminary programme includes the following: The President's Annual Address; "A Report of Gynæcological Work, with especial Reference to Methods," by Dr. R. B. Maury, of Memphis, Tenn.; "Direct Kelotomy, with Cases," by Dr. W. O. Roberts, of Louisville, Ky.; "Open Abdominal Treatment," by Dr. B. E. Hadra, of Galveston, Texas; "The Abortive Treatment of Acute Pelvic Inflammation," by Dr. Virgil O. Hardon, of Atlanta, Ga.; "The Importance of Early Treatment of Inflammatory Affections of the Uterus," by Dr. W. C. Dabney, of University of Virginia; "The Relation of the Nerve System to Reparative Surgery," by Dr. T. O. Summers, of Jacksonville, Fla.; "Concerning the Causes of Frequent Failure of Relief of Reflex Symptoms after Trachelorrhaphy," by Dr. W. F. Hyer, of Meridian, Miss.; "Cranial Surgery," by Dr. De Saussure Ford, of Augusta, Ga.; "The Treatment of Ectopic Pregnancy," by Dr. W. H. Wathen, of Louisville, Ky.; "Laparotomy in Extra-uterine Pregnancy," by Dr. Waldo Briggs, of St. Louis, Mo.; "Epithelioma of the Penis, with the Report of a Case," by Dr. D. W. Yandell, of Louisville, Ky.; "Laparotomy in Intestinal Obstruction," by Dr. C. Kollock, of Cheraw, S. C.; "An Experimental Study of Intestinal Anastomosis," by Dr. J. D. S. Davis, of Birmingham, Ala.; "Operative Interference in Ascites," by Dr. Hugh M. Taylor, of Richmond, Va.; "Observations pertaining to Pregnancy and Parturition," by Dr. W. Duncan, of Savannah, Ga.; "Puerperal Convulsions," by Dr. J. Herbert Claiborne, of Petersburg, Va.; "Some Remarks upon Aneurysms, relating more especially to their Surgical Treatment," by Dr. F. T. Meriwether, of Asheville, N. C.; "Coccygodynia and its Treatment," by Dr. Hunter P. Cooper, of Atlanta, Ga.; "The

Improved Cæsarean Section *versus* Craniotomy," by Dr. W. D. Haggard, of Nashville, Tenn.; "Conservative Surgery in Injuries of the Foot," by Dr. J. T. Wilson, of Sherman, Texas; "Gunshot Fractures of the Femur," by Dr. J. Brownrigg, of Columbus, Miss.; "Tropho-neuroses as a Factor in the Phenomena of Syphilis," by Dr. G. Frank Lydston, of Chicago, Ill.; "Trophic Changes following Nerve Injury in Fractures, with a Report of Two Cases," by Dr. W. Perrin Nicolson, of Atlanta, Ga.; "The Treatment of Malignant Diseases of the Rectum," by Dr. W. T. Briggs, of Nashville, Tenn.; "Gynæcology in its Relations to Obstetrics," by Dr. W. L. Robinson, of Danville, Va.; "Observations based upon an Experience of Seventy-five Abdominal Operations," by Dr. J. Taber Johnson, of Washington, D. C.; "Twenty Consecutive Cases of Abdominal Section," by Dr. L. S. McMurtry, of Danville, Ky.; "Triple Amputations," by Dr. J. B. Luckie, of Birmingham, Ala.; "The Treatment of Contracted Bladder by Hot-water Dilatation," by Dr. I. S. Stone, of Lincoln, Va.; "Complications occurring in the Clinical History of Ovarian Tumors," by Dr. Richard Douglas, of Nashville, Tenn.; "What Kind of Instruments does Modern Antiseptic Surgery demand?" by Dr. J. W. Long, of Randleman, N. C.; "Intestinal Anastomotic Operations with Segmented Rubber Rings, with Some Practical Suggestions as to their Use in other Surgical Procedures," by Dr. A. V. L. Brokaw, of St. Louis, Mo.; "Leucocythæmic Tumors as a Neoplastic Exponent of Rheumatism, and their Similarity to Malignancy—with a Case," by Dr. W. Locke Chew, of Birmingham, Ala.; "What Civilization is doing for the Human Female," by Dr. A. Lapthorn Smith, of Montreal, Canada; "The Achievements of Modern Surgery," by Dr. J. Ewing Mears, of Philadelphia; "The Treatment of the Pedicle in Suprapubic Hysterectomy," by Dr. W. M. Polk, of New York; "Pus in the Pelvis and how to deal with it," by Dr. Joseph Price, of Philadelphia.

Mortality in Cities in the United States.—The following table represents the mortality in the cities named, as reported to Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, and published in the abstract of sanitary reports received by him during the week ending October 18th:

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—										
				Cholera.	Yellow fever.	Small-pox.	Varioloid.	Varicella.	Typhus fever	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y.....	Oct. 12.	1,584,771	573	..	..	..	..	..	..	8	4	19	1	7
Philadelphia, Pa.....	Oct. 5.	1,040,245	330	..	..	..	..	..	..	14	1	2	1	2
Philadelphia, Pa.....	Oct. 12.	1,040,245	331	..	..	..	..	..	..	..	12	4	..	3
Brooklyn, N. Y.....	Oct. 12.	843,602	294	..	..	..	..	..	..	7	1	20	..	2
Baltimore, Md.....	Oct. 12.	500,343	141	..	..	..	..	..	..	1	2	3	..	..
St. Louis, Mo	Oct. 12.	450,000	146	..	..	..	..	..	..	4	6	6	..	..
San Francisco, Cal...	Oct. 4.	330,000	120	..	..	..	..	..	..	6	1	3	..	..
Cincinnati, Ohio.....	Oct. 12.	325,000	89	..	..	..	..	..	..	12	1	4	..	..
New Orleans, La.....	Oct. 5.	254,000	113	..	1	..	..	..	..	..	..	1	..	..
Detroit, Mich.....	Oct. 5.	250,000	66	..	..	..	..	..	..	2	..	3	..	..
Washington, D. C ...	Oct. 12.	250,000	90	..	..	..	..	..	..	5	..	8	..	..
Pittsburgh, Pa.....	Oct. 12.	230,000	95	..	..	..	..	..	..	5	1	10	..	..
Denver, Col	Oct. 11.	135,000	41	..	..	..	..	..	..	13	..	1	..	..
Rochester, N. Y.....	Oct. 5.	130,000	37	..	..	..	..	..	..	4	..	..	..	1
Providence, R. I.....	Oct. 12.	127,000	41	..	..	..	..	..	..	..	..	2	..	..
Indianapolis, Ind....	Oct. 11.	124,450	29	..	..	..	..	..	..	5	..	2	..	1
Toledo, Ohio	Oct. 11.	89,000	38	..	..	..	..	..	..	1	..	7	..	..
Fall River, Mass.....	Oct. 12.	69,000	30	..	..	..	..	..	..	3	..	..	..	..
Nashville, Tenn.....	Oct. 12.	65,153	16	..	..	..	..	..	..	..	..	..	..	..
Charleston, S. C.....	Oct. 12.	60,145	28	..	..	..	..	..	..	1	..	..	..	..
Lynn, Mass.....	Oct. 12.	53,000	12	..	..	..	..	..	..	..	..	..	..	..
Portland, Me	Oct. 12.	42,000	18	..	..	..	..	..	..	..	..	..	..	..
Council Bluffs, Iowa.	Sept. 16.	35,000	8	..	..	..	..	..	..	..	..	6	..	..
Council Bluffs, Iowa.	Sept. 22.	35,000	5	..	..	..	..	..	..	..	..	1	..	..
Council Bluffs, Iowa.	Sept. 29.	35,000	9	..	..	..	..	..	..	..	..	4	..	..
Council Bluffs, Iowa.	Oct. 6.	35,000	7	..	..	..	..	..	..	..	1	2	..	..
San Diego, Cal.....	Oct. 2.	32,000	4	..	..	..	..	..	..	..	..	..	..	..
San Diego, Cal.....	Oct. 9.	32,000	5	..	..	..	..	..	..	..	..	..	..	..
Yonkers, N. Y.....	Oct. 5.	30,900	10	..	..	..	..	..	..	..	..	..	..	..
Yonkers, N. Y.....	Oct. 12.	30,900	12	..	..	..	..	..	..	..	..	..	..	..
Binghamton, N. Y...	Oct. 12.	30,000	10	..	..	..	..	..	..	2	..	..	..	..
Auburn, N. Y.....	Oct. 12.	26,000	6	..	..	..	..	..	..	..	..	1	..	..
Haverhill, Mass.....	Oct. 12.	25,000	8	..	..	..	..	..	..	..	..	..	..	..
Newport, R. I.....	Oct. 10.	22,000	3	..	..	..	..	..	..	..	..	..	..	..
Newton, Mass.....	Oct. 12.	21,553	8	..	..	..	..	..	..	..	..	1	..	..
Keokuk, Iowa.....	Oct. 12.	16,000	1	..	..	..	..	..	..	..	..	..	..	..
Pensacola, Fla.....	Oct. 5.	15,000	7	..	..	..	..	..	..	..	..	..	..	..

Billroth on the Dangers of Carbolic Acid.—"The following letter of Dr. Th. Billroth, of Vienna, has been published: 'I have lately seen four cases in which fingers, which had suffered a most insignificant injury, became gangrenous through the uncalled-for application of carbolic acid. Carbolic acid is now much less used in surgery than formerly; we have only gradually become acquainted with its dangers. The acid may not only cause inflammation and gangrene, but also blood-poisoning, and so may even prove fatal. It is useful only in the hands of a skillful surgeon, and ought never to be used without his advice. The best lotion for recent injuries is the ordinary lead lotion, which can be bought at any chemist's. The best antidote in carbolic-acid poisoning is soap, which should be taken immediately and repeatedly until all symptoms of poisoning have disappeared.'"—*Lancet.*

Torticollis in Inflammation of the Middle Ear.—"Torticollis, when it occurs in the course of acute otitis media, has generally been looked upon as a very serious complication due to periostitis of the mastoid process, and the formation of an abscess, with myositis of the sterno-mastoid. That this is not always the explanation of the complication is shown by Dr. Radsikh in an article in the "Meditsinskoë Obozrênië," in which he gives an account of a case of inflammation of the middle ear following measles, which on the third day became complicated by torticollis, this being due to periadenitis of the neck, and Dr. Radsikh suggests that in these cases enlarged and inflamed glands in the neck may frequently be the cause of wryneck."—*Lancet.*

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

EXTRACTION OF CATARACT WITHOUT IRIDECTOMY.

*REPORT OF ONE HUNDRED CASES, WITH REMARKS.**

BY CHARLES STEDMAN BULL, M. D.,

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WITHIN the last three years the old method of the extraction of cataract without iridectomy, which was formerly devised and practiced by the French surgeon Daviel, and called by him "simple extraction," has been revived by Panas, Wecker, and others, and has been in many quarters hailed with all the *éclat* of a new operation. Most of the modern French authors report very enthusiastically in its favor, but none of them have as yet given us any detailed or conclusive statistics in regard to the results obtained, nor any comparative statements as to the advantages of the "simple operation" over those of the so-called "linear extraction with iridectomy" devised by von Graefe, and practiced almost universally with great success for the last twenty-five or thirty years.

The ideal operation for the extraction of cataract is undoubtedly the removal of the lens in its capsule through a corneal section, and without wound or excision of the iris; and the restoration of sight in this manner, with the preservation of a round and movable pupil, is certainly to be regarded as one of the greatest of operative achievements.

Sufficient time has now elapsed since the revival of the old "simple operation" to enable us to draw some conclusions as to the merits of this method of operating and the results obtained, in so far as the ultimate vision is concerned; and the writer now presents to the association for their consideration his own experience in one hundred cases of extraction of cataract by the simple method without iridectomy.

As a firm believer in the value of antiseptics in ophthalmic surgery, the reporter deems it wise to give in detail all the steps which he considers necessary in the operation, from the preparation of the patient for the operation to the final testing of the vision and the discharge of the case from observation.

Preparation of the Patient.—If the patient be a hospital case, he should have a bath of the entire body the day before the operation, special attention being paid to the cleansing of the hair and beard with soap and water. This is not considered necessary in the case of a private patient. On the day of operation the patient's face should be carefully washed with soap and water, and just before the operation the face should be laved with Panas's solution of the biniodide of mercury, or with a solution of mercuric bichloride (1 to 5,000), or with a saturated solution of boric acid, and the latter solution should be used for irrigation of the conjunctival *cul-de-sac*. The patient should be placed in the bed which he is to occupy throughout the entire course of treatment, so as to avoid all unnecessary moving about This precaution reduces to a minimum the dangers which may arise from prolapsed iris, opening of the wound, loss of vitreous, hæmorrhage, etc.

After the necessary local anæsthesia has been produced by a few drops of a five-per-cent. solution of cocaine hydrochloride, the conjunctival *cul-de-sac* is again thoroughly irrigated with the boric-acid solution, and the patient is then ready for the operation.

The instruments have previously been cleansed and sterilized in boiled water, and have been placed in a bath of absolute alcohol. From this bath they are taken wet as they are wanted for the operation. The hands of the operator and of the assistant, if he has any, are carefully cleansed with soap and water, and then washed with a solution of sublimate (1 to 2,000). Some operators prefer Panas's solution for purposes of cleansing and irrigation; this consists of mercuric biniodide, 0·05 gramme; alcohol, 20 grammes; and distilled water, 1,000 grammes.

The surgeon should sit behind his patient, and should operate on the right eye with the right hand and on the left eye with the left hand. In this way he is never in his own light. If he is not naturally ambidextrous, he should strive to make himself so. A speculum is then introduced to hold the lids open, and the eyeball is firmly grasped with a fixation forceps, the latter being made to seize the conjunctiva and subconjunctival tissue over the insertion of one of the straight muscles of the eye.

A straight, narrow knife, somewhat more slender than the cataract knife of von Graefe, is then introduced on the temporal side in clear cornea, near the limbus, and is passed quickly across the anterior chamber, horizontally in front of the iris, and is brought out at a corresponding point in clear cornea on the nasal side, and the incision is then completed, if necessary, by a to-and-fro movement. The length of the incision should involve about two fifths of the circumference of the cornea.

Some operators, in completing the corneal incision, make a small conjunctival flap as a protection against secondary infection from the conjunctival *cul-de-sac*. I never make such a flap if it can be avoided, as I regard it as a useless complication unless the patient has a chronic conjunctivitis or dacryocystitis; and it undoubtedly increases the danger from primary infection by enlarging the wound. In making the corneal section, care should be taken to pass the knife quickly across the anterior chamber and thus complete the section as rapidly as possible. This prevents almost entirely the escape of aqueous humor, and there is but little danger that the iris will fall over the edge of the knife and be divided.

If the iris prolapse outside of the wound as soon as the section is completed, it is better to restore it to its place in the anterior chamber before opening the capsule. The capsulotome or angular cutting needle is then introduced and carried well behind the inferior margin of the sphincter of the iris, and the capsule is then lacerated by a T-shaped incision or, better, by a quadrilateral one, care being taken to avoid wounding the iris.

* Read before the New York State Medical Association, September 27, 1889.

The extraction of the lens now follows. This is effected by pressure on the eye above the wound and counter-pressure on the lower portion of the cornea with a spatula or rubber spoon. This causes a gaping of the wound and a revolution of the lens upon its horizontal axis, the upper margin of the lens coming forward and presenting in the wound. A brief continuance of this pressure and counter-pressure causes the extrusion of the lens and a more or less extensive prolapse of the iris. It is perhaps safer to remove the speculum before this manœuvre is attempted, so as to avoid as far as possible the danger of prolapse of the vitreous. This should always be done in cases of complicated cataract, especially when the suspensory ligament is defective and the vitreous disorganized, or the lens partially dislocated.

The next step—a very important one—is the removal of the remnants of soft lens matter or cortex, if there are any, from the anterior chamber. This is best done by pressure with the fingers upon the eyeball through the closed lids; or by curette, or spoon, or spatula, by repeated slow movements of the instrument over the cornea from below upward toward the wound; or by repeated and continuous rotary massage of the lids upon the eyeball. These manœuvres should be accompanied by frequent irrigation of the conjunctival *cul-de-sac*, and even of the anterior chamber, by a warmed saturated solution of boric acid or by Panas's fluid. It is very rarely necessary to introduce any instruments into the anterior chamber.

The next step is the replacing of the prolapsed iris. If the iris has not spontaneously reduced itself during the manipulations employed for removing the lens fragments from the anterior chamber, it may be readily replaced or reduced by a gentle stroking with a smooth probe or spatula. If on reduction of the prolapsed iris the pupil is neither central nor round, some surgeons consider it advisable to do an iridectomy at once, so as to avoid the necessity of doing it later. But it is much better to so choose your cases for simple extraction as to exclude all such cases as may possibly necessitate an iridectomy.

For irrigation of the anterior chamber any small lacrymal syringe may be used, but it should always be sterilized and kept exclusively for the purpose. The nozzle should be introduced between the lips of the wound, and the fluid used should be injected very slowly and gently and in small quantities.

The final steps in the operation before the application of the bandage are a careful irrigation of the lids and conjunctival *cul-de-sac* with the boric-acid solution and the instillation of a few drops of a solution of eserine sulphate (half a grain to the ounce) into the *cul-de-sac*, or the application of an ointment of eserine of the same strength. This causes a contraction of the pupil, and thus aids in preventing a secondary prolapse of the iris.

The lids of both eyes are then closed, carefully and smoothly covered with a wad of antiseptic cotton, and a double roller flannel bandage applied over both eyes.

The after-treatment varies somewhat with the nature of the case and the temperament of the patient. The patient is to be kept in bed on an average for three or four days. He is allowed to sit up while eating and to rise from bed to satisfy the calls of nature. The room need not be darkened. It is my custom usually to remove the bandage and dressing on the next day, but without opening the eyes. The edges of the lids are to be gently cleansed with a saturated solution of boric acid or a solution of mercuric bichloride (1 to 5,000), and a drop of a solution of eserine sulphate is to be introduced. If there is much mucous secretion or any swelling of the lids, the lids are opened, the eyeball and conjunctival *cul-de-sac* are carefully irrigated with the boric-acid solution warmed, and then the eye is carefully inspected. If, on the contrary, the lids look well, the eye is not inspected until the fourth or fifth day, but the dressings are renewed and the lids cleansed daily. If on the fourth or fifth day the pupil is round and central, the eye is carefully cleansed, and, if the wound has closed throughout, the bandage is discontinued except at night, and then is used only on the operated eye. The eye not operated upon is usually left uncovered after the second or third day. If the pupil is round and central and the wound closed, but circumcorneal injection or pain is present, a weak solution of atropia should be used at once several times a day until both these symptoms have subsided.

A few words now in regard to the accidents which may occur in the course of the operation:

1. The iris may fall upon the edge of the knife in its passage across the anterior chamber, and may be wounded or excised as the corneal section is completed. This accident may happen to any surgeon. The rapid passage of the knife across the anterior chamber to its point of exit in the cornea on the opposite side, and the avoiding of any undue pressure on the eyeball by the fixation forceps, will go far toward preventing the occurrence of this accident. The rapid completion of the corneal section also aids in this endeavor. Should the iris be cut or excised in this first step of the operation, an iridectomy must be done at once, and the artificial pupil thus made clean and smooth.

2. *Prolapse of the Vitreous.*—This may occur at any period during the operation, and is always a misfortune. In the hands of a careful operator it is usually slight, and need not interfere with the usual careful manipulations for causing the extrusion of the lens. Any portion of vitreous that remains in the wound after the lens has been removed must be cut off, and great care must then be exercised in any manœuvres undertaken for extracting the remains of cortex from the anterior chamber. It is well, also, in such cases, to avoid all irrigation of the anterior chamber, as it will be very apt to increase the loss of vitreous. Should the vitreous prove to be fluid and the prolapse extensive, the lens should be removed at once, either with the blunt hook or spoon, and the eyelids at once closed temporarily for a few minutes. Then the iris should be replaced, eserine instilled, and both eyes closed with the usual antiseptic dressings and bandage.

3. *More or Less Extensive Hœmorrhage into the Anterior Chamber.*—This may be in great part prevented by avoiding the conjunctival flap. If the hæmorrhage comes from a wounded iris, the latter is to be smoothly excised, and then the further steps of the operation are to be interrupted until the hæmorrhage has been controlled and the blood, as

far as possible, removed from the anterior chamber, as its presence interferes with the proper opening of the capsule and the removal of the lens.

Complications or Anomalies of the Healing Process.—There are several of these complications, which will be considered in the order of the frequency of their occurrence:

1. *Posterior synechiæ* or adhesions of the posterior surface of the iris to the remains of the anterior capsule of the lens. These are very common, and are in many case filiform or thread-like in character. They rarely obstruct the pupillary area. They are caused by the edges of the lacerated anterior capsule coming in contact with the pupillary margin of the iris, which has already been bruised in the passage of the lens through the pupil. These adhesions occur independently of any actual iritis.

2. *Iritis*, usually of the mild, plastic type, and very often involving only a segment of the circumference of the iris. This is best combated by a weak solution of atropine and warm applications.

3. *More or Less Complete Obstruction of the Field of the Pupil by the Opaque or Thickened Posterior Capsule of the Lens.*—This is a very common complication of the healing process, and usually requires some operative interference—such as discission or some more serious surgical procedure, to be described later.

4. *A more or less irregular pupil*, usually oval, caused by a puckering of the iris in the upper part of the angle of the anterior chamber, without there being any actual adhesion or incarceration of the iris tissue in the lips of the corneal wound. For this there seems to be no remedy of any actual value.

5. *Incarceration of the iris* in the corneal wound, or else merely anterior synechiæ, a more or less marked adhesion of the iris to the inner lips of the wound. The use, once or twice a day, of a drop or two of a half-grain solution of eserine sulphate sometimes succeeds in breaking these adhesions, though more frequently it does not succeed; and it may prove disadvantageous by causing irritation of the iris, and thus increase the chances of posterior synechiæ.

6. *Secondary Prolapse of the Iris.*—If this occurs early and it can not be reduced, it should be cut off as neatly as possible, and the edges gently stroked into place in the anterior chamber. If the wound has already partially closed and the prolapse of the iris is a late occurrence, it is better to leave it undisturbed by any manipulation. This secondary prolapse of the iris is almost always of traumatic origin, from some sudden jar or displacement of the bandage on the part of the patient, and its prevention depends largely on careful nursing. Great care in operating and the rigid exclusion of all unsuitable cases—such as rigidity of the iris, prolapse of the vitreous, dislocation of the lens, or unmanageable patients—will all undoubtedly aid in reducing the cases of secondary prolapse of the iris to a minimum.

7. *Capsulitis, or Inflammation of the Capsule of the Lens.*—This is almost always of the mildly plastic character, and is usually associated with the mild form of iritis. Should it prove to be of the suppurative type, it is almost invariably accompanied by a purulent inflammation of the iris and infiltration of the tissue of the cornea in the vicinity of the wound, and is always the result of secondary infection from without.

8. *Suppuration of the Lips of the Wound in the Cornea.*—This is always the result of secondary infection, and, if not combated at once, may end in total loss of the eye from suppurative panophthalmitis. Its cause is usually some chronic inflammation of the palpebral conjunctiva or lacrymal sac, and it should be treated at once by a removal of the dressings and bandage, frequent irrigation of the wound, eyeball, and *cul-de-sac* with a hot solution of mercuric bichloride (1 to 5,000), and prompt cauterization of the entire length of the wound by the galvano-cautery. This may be repeated daily, if the surgeon deem it necessary, as long as it seems to influence the course of the suppurative process. If the latter increases in extent, in spite of hot applications and the cautery, the latter does no good, and should be discontinued.

Secondary or After-Operations.—An important factor in the restoration of good visual acuity in cases of cataract extraction is the performance of what are called secondary or after operations. These are usually of two kinds: 1. Discission or laceration of the posterior capsule. 2. Excision of a piece of thickened capsule or of a piece of membranous tissue, composed of thickened capsule and the products of inflammatory exudation. The gain in sight from a secondary operation is often very great.

1. *Discission or laceration of the posterior capsule* is very often, perhaps in the majority of cases, necessary, but sometimes is dangerous. It is a delicate operation, requiring great nicety in manipulation, good judgment and perfect sight on the part of the surgeon, a sharp knife-needle, and a good light. It is sometimes necessary to employ the electric light in this delicate operation. The capsule may be lacerated by a simple stop-needle with a double cutting edge, but by far the best instrument is a slender, sharp, curved knife-needle, with a sharp point and a curved cutting edge, shaped something like a sickle. This is plunged through the cornea on either side, near the limbus, and the capsule is then lacerated by a single vertical or transverse stroke of the blade, or, if necessary, a crucial incision is made through the capsule. Under cocaine, this may be done by a good operator without the employment of fixation forceps, and this is an advantage, as all undue pressure upon the eyeball is thus avoided. The danger of the operation is proportionate to the density and duration of the pupillary capsular membrane. A capsule which is not thickened by the products of inflammation can be lacerated easily and without danger; but pseudo-membranous opacities resulting from iritis or iridocyclitis must be approached with caution. This leads to a brief consideration of the second variety of after-operation.

2. *Excision of a Piece of Thickened Capsule or of a Pseudo-membrane, and its Removal from the Field of the Pupil and the Interior of the Eye.*—This may be done by making an incision in the cornea near the limbus, and employing the narrow cataract knife or Beer's triangular knife to cut out a triangular piece of the opaque membrane, and its removal by Tyrrell's blunt hook, or by the introduction

of Wecker's knife-scissors through the corneal wound, and the excision and removal of a triangular piece of membrane. This is an extremely delicate, somewhat difficult, and dangerous operation, as the operation may set up a fresh attack of iritis or iridocyclitis, with possibly subsequent closure of the gap made by the knife, or somewhat rapid phthisis bulbi or atrophy of the globe.

Some variations in the general technique of the operation of extraction of cataract without iridectomy have been proposed by different surgeons. Panas always employs an alcoholic solution of the biniodide of mercury as an antiseptic fluid for the irrigation of the anterior chamber. Some writers have used a solution of mercuric bichloride (1 to 10,000) for the same purpose. Knapp found that when small quantities of the latter were employed there was no reaction, but that the injection into the anterior chamber of moderate quantities was followed by more or less transient opacity, appearing in patches on the posterior surface of the cornea. He has therefore abandoned its use in favor of Panas's fluid or a saturated solution of boric acid.

Most surgeons make the incision in the cornea in its upper section, and this is undoubtedly wise, as the chances of secondary prolapse of the iris or loss of vitreous are much diminished, and because the corneal scar, if there be any, is partially concealed by the normal position of the upper lid.

Another modification of the technique of the operation as described in this paper is in the manner of opening the capsule, which consists in lacerating the capsule with the point of the cataract knife while making the corneal incision. This is the revival of a method practiced many years ago by Wenzel and other German surgeons, the capsule being split horizontally in the upper portion of the pupillary space. It was thought that it simplified the operation of extraction, and it certainly demands one instrument the less. It is a difficult manœuvre to perform, and may cause the corneal wound to be irregular and even ragged, and thus protract the healing process. If the capsule were thick, the knife would probably fail to penetrate it, and there would be some danger of causing rupture of the zonule and dislocation of the lens. It would be a very difficult manœuvre if the pupil were narrow and the anterior chamber shallow, and the iris would probably be wounded in such a case. In the opinion of the writer, this method of opening the capsule should be abandoned.

Comparison of the Two Methods of extracting Cataract, with and without Iridectomy.—The *advantages* of simple extraction without iridectomy are as follows:

1. It preserves the natural appearance of the eye, a central, circular, and movable pupil.

2. The acuteness of vision, other things being equal, is greater than after the old operation.

3. Eccentric vision and orientation are much better than by the old operation.

4. Small particles of capsule are not so likely to be incarcerated in the wound, and thus act as foreign bodies and excite irritation.

5. The necessity of after-operations is probably not so great as after the old operation.

The *disadvantages* of simple extraction are as follows:

1. The technique of the operation is decidedly more difficult. The corneal section must be larger in order that the extrusion of the lens may be facilitated, as the presence of the iris acts as an obturator or obstacle to its passage. The corneal section must be performed rapidly so as to avoid the danger of the iris falling on the knife and being excised. The cleansing of the pupillary space and the posterior chamber is much more difficult than after the old operation.

2. Posterior synechiæ, secondary prolapse, and incarceration of the iris are more frequent than after the old operation.

3. The operation is not applicable to all cases. This objection, however, applies to all operations.

Indications for performing Iridectomy.—The indications for performing an iridectomy in cases of cataract extraction may be formulated as follows:

1. When the vitreous is fluid or the zonula is ruptured, causing non-presentation of the lens and prolapse of the vitreous.

2. Insufficient length of the corneal section with prolapse of the iris.

3. Bruising of the iris during the operation.

4. A stiff, unyielding sphincter iridis.

5. Irreducible prolapse of the iris after the completion of the operation.

A few words in regard to the wisdom of the employment of general antiseptic rules.

1. The removal and exclusion, as far as is possible, of all bacteria by the employment of unirritating, aseptic fluids for all purposes of cleansing and irrigation, the best of these being boiled water or boiled boric-acid solution.

2. The employment, whenever necessary, of some really valuable antiseptic solution, such as chlorine-water, mercuric bichloride, or silver nitrate, the indications for their use being the appearance of the slightest muco-purulent secretion from the conjunctiva, or cloudiness of the lips of the wound.

3. The fearless employment of the galvano-cautery to the whole length of the corneal wound, if the lips of the wound show any signs of infiltration.

4. The performance of the operation with the most extreme neatness and accuracy, and with the minimum of traumatism.

5. Endeavor to obtain primary union of the wound by careful removal from between the lips of the wound of all foreign substances, and by perfect coaptation of the edges, and the maintenance of the most complete immobility of the organ possible until the wound is firmly closed.

Of the one hundred eyes on which this operation of the "simple extraction" of cataract was performed, useful vision was regained in all save one. This case was that of a patient whose eye had been rendered entirely blind by frequent attacks of irido-chorioiditis, and the lens was removed simply to allay the severe pain, and possibly to aid in quieting the inflammatory process. Not a single eye was lost from suppuration.

Fifty-two of the patients were males and forty-eight were females. The youngest patient was thirteen years old and the oldest was eighty-seven. The complications exist-

ing were as follows: Corneal macula or opacity in nine cases, broad arcus senilis in nine cases, old chorio-retinitis in six cases, chronic Bright's disease in five cases, chronic bronchitis and asthma in four cases, diabetes mellitus in two cases, dilated and immovable iris from a contused wound in two cases, conjunctivitis and marginal blepharitis in two cases, irido-chorioiditis and blindness in one case, posterior synechiæ from old iritis in one case, pulmonary phthisis in one case, and hypertrophy and valvular disease of the heart in one case.

The reduction of the prolapsed iris after the extraction of the lens occurred spontaneously in fifty-six cases, and the iris was replaced by the spatula in forty-four cases. In eighty-three cases there was neither incarceration nor secondary prolapse of the iris. In fifty-three cases there were no posterior synechiæ or adhesions of the iris to the lacerated capsule. In forty-seven cases these adhesions were present, and in ten of these they were due to plastic iritis.

The healing process was normal in eighty-six cases, though in some the process was very slow, especially in the closure of the external lips of the wound.

Iritis of the mild plastic type occurred in ten cases, and retraction of the iris toward the ciliary processes in three cases. There was loss of corneal epithelium in two cases, and "striped" keratitis in one case. The wound became infiltrated in three cases, necessitating the use of the galvano-cautery. Chorioiditis and hyalitis occurred in two cases, and irido-chorioiditis with occlusion of the pupil also in two cases. Capsulitis followed in one case.

The accidents which occurred during the operation were as follows: 1, loss of vitreous in thirteen cases; 2, hæmorrhage into the anterior chamber in two cases; 3, complete collapse of the cornea in two cases; 4, dislocation of the lens in three cases; 5, the lens was removed with the blunt hook in five cases.

The duration of the treatment varied from eleven days, the shortest period, to forty-seven days, the longest period.

Secondary or after operations were done in fifty-three cases—discission or laceration of the capsule in fifty cases, and excision of a piece of capsule or pseudo-membrane in three cases.

The resultant degree of vision in the one hundred cases was as follows: In six cases, $\frac{20}{20}$; in thirteen cases, $\frac{20}{30}$; in twenty-four cases, $\frac{20}{40}$; in twenty-two cases, $\frac{20}{60}$; in twenty-one cases, $\frac{20}{70}$; in ten cases, $\frac{20}{100}$; in two cases, $\frac{20}{200}$; counting fingers at several feet in one case. No perception of light in one case, eye previously blind for many years.

No.	Sex.	Age.	Nature of cataract.	Complications.	Operation.	Reduction of iris.	Healing process.	Second'ry prolapse or incarceration of iris.	Posterior synechiæ.	Duration of treatment.	Primary vision.	Secondary operation.	Ultimate vision.
										Days			
1	F	68	Senile, hard, L. E.	Broad arcus senilis.	L. E., prolapse of vitreous at moment of capsulotomy; lens removed by hook; collapse of cornea; hæmorrhage into anterior chamber.	By spatula.	"Striped" keratitis; slow healing of lips of wound.	None.	One.	23	20/200	Discission of posterior capsule 4 weeks later.	20/50
2	M	13	Traumatic 8 mos. before; R. E.	Tremulous iris; dilated pupil.	Normal, except slight loss of vitreous after extrusion of lens.	Spontaneous.	Normal.	None.	Two.	15	20/50	.....	20/40
3	F	26	Traumatic; blow f'm cork 3 mos. ago; R. E.	None.	Normal.	Spontaneous.	Normal.	None.	None.	18	20/100	....	20/70+
4	M	21	Traumatic 4 yrs. ago; L. E.	None.	Normal.	Spontaneous.	Normal.	None.	None.	20	20/100	Discission of thickened capsule 3 wks. later.	20/70
5	F	70	Senile, hard; R. E.	Corneal macula.	Normal.	By spatula.	Normal.	None.	None.	21	20/200	.....	20/70
6	F	22	Traumatic; R. E.	None.	Normal.	By spatula.	Normal.	None.	None.	24	20/100	.....	20/100
7	F	55	Hard, nuclear; R. E.	None.	Considerable soft lens matter carefully evacuated by pressure; irregular coaptation of lips of wound.	Spontaneous.	Slow.	None.	Two.	26	20/200	Discission 4 wks. later.	20/20
8	M	60	Senile & traumatic; R. E.	None.	Normal.	By spatula.	Slow.	None.	None.	22	15/200	Discission 3 wks. later.	20/70
9	M	42	Traumatic; R. E.	Incipi'nt catar'ct in oth. eye.	Normal.	Spontaneous.	Normal.	None.	None.	16	20/100	Discission 2 wks. later.	20/50+
10	M	62	Traumatic; R. E.	Ant. polar cat. in L. E. for many years.	Normal.	By spatula.	Slow.	None.	None.	22	10/200	Discission 4 wks. later.	20/100+
11	M	65	Hard, senile.	Aphakia in L. E. with old chorioiditis.	Prolapse of vitreous at once; lens dislocated downward and inward, and removed in its capsule by blunt hook.	By spatula.	Slow; iritis.	None.	Several.	28	8/200	Laceration of dense membrane 6 wks. later.	20/70+
12	M	38	Traum'tic, nuclear; L. E.	None.	Normal.	Spontaneous.	Slow; iritis.	None.	Several.	26	20/200	.....	20/50—
13	M	70	Hard, senile; R. E.	Broad arcus senilis.	Prolapse of vitreous; retraction of iris; lens disloc. downward, and removed in its capsule with spoon; loss of considerable vitreous.	By spatula.	Very slow; opacities and membrane in vitreous.	None.	One.	38	10/200	Discission 5 wks. later.	20/100
14	F	78	Hard; R. E.	None.	Normal.	By spat.	Normal.	None.	Two.	23	20/70	.....	20/40
15	F	40	Traumatic; R. E.	Incipient cat.; L. E.	Normal.	Spontaneous.	Normal.	None.	One.	15	20/70	Discission 4 wks. later.	20/40+
16	M	47	Traumatic; R. E.	None.	Normal; much soft cortex; free irrigation of anterior chamber.	By spatula.	Irido-cyclitis; dense membrane in pupil.	None.	Several.	47	3/200	Removal of a triangular piece of membrane 3 wks. later.	20/200+
17	F	68	Hard; L. E.	None.	Normal.	By spat.	Normal.	None.	None.	16	20/70	....	20/40
18	F	79	Hard; L. E.	None.	Normal.	By spat.	Slow.	None.	None.	24	20/100	.....	20/50
19	M	45	Hard; R. E.	None.	Normal.	By spat.	Normal.	None.	None.	22	20/200	... ...	20/50

No.	Age	Sex	Nature of cataract	Complications	Operation.	Reduction of iris	Healing process.	Second'ry prolapse or incarceration of iris	Posterior synechiæ	Days under treatment.	Primary vision	Secondary operation.	Ultimate vision.
20	M	64	Hard; L. E.	R. E., phthisis bulbi following extraction of cataract 15 mos. before.	Normal.	By spatula.	Wound healed on 3d day; on 9th day loss of epithelium from lower half of cornea; this was regenerated in 3 days under bandage.	None.	One.	Days. 19	20/70+	.....	20/50+
21	F	66	Hard; R. E.	None.	Normal.	By spat.	Slow.	None.	Two.	19	20/100	.....	20/70+
22	F	70	Hard; R. E.	None.	Normal.	By spat.	Slow.	None.	None.	22	20/100	Discission 3 wks. later.	20/70+
23	M	65	Hard; R. E.	Old choriolditis.	Normal.	By spatula.	Corneal epithelium raised by clear fluid in spots, like those in keratitis bullosa.	None.	Two.	14	20/200	.....	20/200+
24	M	46	Hard; L. E.	Macula corneæ.	Normal.	Spontaneous.	Normal.	None.	None.	16	20/100	.....	20/70
25	M	17	Traumatic; R. E.	None.	Normal; post. capsule torn by needle.	Spontaneous.	Normal.	None.	Two.	12	20/50+	.....	20/30+
26	M	60	Hard; L. E.	None.	Normal.	By spat.	Slow.	None.	None.	20	20/100+	.....	20/50+
27	F	54	Hard; L. E.	Old choriolditis.	Normal.	By spat.	Slow; iritis.	None.	One.	16	20/200	.....	20/100+
28	F	55	Hard; R. E.	Corneal macula.	Normal.	By spatula.	Normal.	None.	None.	22	20/100+	.....	20/70+
29	M	27	Semi-hard.	Irido-choroiditis, blind eye; great pain.	Normal; iris separated from its adhesions to capsule throughout entire circumference of pupil.	By spatula.	Normal.	None.	Several.	14	0	Blind eye.	0
30	M	58	Hard; L. E.	None.	Normal.	Spontaneous.	Normal.	None.	None.	16	20/100	Discission 3 wks. later.	20/40—
31	F	60	Hard; R. E.	Chronic conjunctivitis, but little secret'n.	Normal.	Spontaneous.	Normal.	Iris incarcerated.	None.	13	20/70+	.....	20/50+
32	M	61	Hard; L. E.	None.	Normal.	Spontaneous.	Normal.	Iris incarcerated.	None.	14	20/50	.....	20/40+
33	M	64	Hard; L. E.	Chronic Bright's disease.	Profuse hæmorrhage into ant. chamb., rendering operation very protracted.	Spontaneous.	Very slow; outer lips of wound long patulous.	Iris incarcerated.	None.	32	20/200	.....	20/70
34	F	56	Hard; R. E.	None.	Normal.	Spontaneous.	Normal.	Iris incarcerated.	None.	12	20/100	.....	20/40+
35	M	63	Hard; R. E.	Chronic Bright's dis.	Complete collapse of cornea.	Spontaneous.	Very slow; outer lips of wound long patulous.	Iris incarcerated.	None.	30	15/200	Discission 2 wks. later.	20/100
36	M	62	Hard; L. E.	Broad arcus senilis.	Normal.	Spontaneous.	Normal.	Iris incarcerated.	None.	13	20/70	.....	20/40—
37	M	64	Hard; R. E.	None.	Normal.	Spontaneous.	Normal.	No incarceration.	Two.	12	20/50—	Discission 2 wks. later.	20/30+
38	F	57	Hard; L. E.	Faint corneal macula.	Normal.	By spatula.	Normal.	No incarceration.	Three.	16	20/100	Discission in 3 wks.	20/50—
39	F	69	Hard; L. E.	Broad arcus senilis; Bright's dis.	Patient very hard to manage; prolapse of vitreous and partial disloc. of lens.	By spatula.	Very slow.	Iris incarcerated.	One.	29	20/200	Discission 2 wks. later.	20/40—
40	M	58	Hard nucleus; soft cortex; R. E.	Pulmonary phthisis.	Normal.	Spontaneous.	Normal.	No incarceration.	None,	14	20/50+	Discission 3 wks. later.	20/20—
41	M	66	Hard; L. E.	None.	Normal.	Sponta.	Normal.	No incar.	None.	11	20/50+	Discission 2 w. later.	20/20
42	F	51	Hard; L. E.	Chronic Bright's disease.	Normal.	Spontaneous.	Slow; protracted gaping of ext. lips of wound.	Iris pucker'd & pu. not centr'l	One.	26	20/100+	Patient would not consent to a discision.	20/50—
43	F	70	Hard; R. E.	Very broad arcus senilis; mark'd senil. of patient.	Slight loss of vitreous; some fragments of cortex left in anterior chamber.	By spatula.	Normal, but rather slow.	Iris incarcerated.	None.	19	20/200+	Discission 1 month later.	20/50+
44	F	62	Hard; R. E.	None.	Normal.	Sponta.	Normal.	No incar.	One.	12	20/50	.....	20/30
45	M	49	Semi-hard; L. E.	Very unruly patient.	Normal, but protracted.	Spontaneous.	Normal.	No incarceration.	None.	16	20/70	Discission 3 wks. later.	20/40+
46	M	58	Hard; L. E.	None.	Normal.	Sponta.	Normal.	No incar.	One.	13	20/40—	.....	20/30—
47	F	66	Hard; L. E.	Old choroiditis in R. E.	Slight loss of vitreous.	By spatula.	Normal.	No incarceration.	Three.	20	20/200	Discission 1 mo. later; chorioiditis found after discission.	20/70
48	M	53	Hard; R. E.	None.	Normal.	Sponta.	Normal.	No incar.	None.	14	20/40—	.....	20/30
49	F	75	Hard; R. E.	Chronic bronchitis, asthma, and naso-pharyngeal catarrh.	Vitreous prolapsed as section was completed; lens removed by blunt hook without opening the capsule; large amount of vitreous lost.	By spatula.	Iritis and infiltration of lips of wound; hot water, atropia, and galvano-cautery, the latter applied twice.	No incarceration.	Dense false membr. block'g entire pupil.	43	Light.	Removal of large irregularly triangular piece of iris and false membrane by Wecker's scissors.	20/100+
50	F	50	Hard; R. E.	None.	Normal.	Sponta.	Normal.	None.	Two.	12	20/50+	Discission 10 d. later.	20/30—
51	F	42	Semi-hard; L. E.	Chorio-retinitis syphilitica in R. E.	.....	Spontaneous.	Normal.	None.	One.	15	20/200	Discission 2 wks. later.	20/70+
52	F	61	Hard; L. E.	None.	Normal.	Sponta.	Normal.	None.	Three.	18	20/70—	Discission 10 d. later.	20/30+
53	M	58	Hard; L. E.	None.	Normal.	Spontaneous.	Normal.	None.	None.	12	20/70+	Declined any after-operation.	20/40—
54	M	59	Hard; L. E.	None.	Normal.	By spat.	Normal.	None.	None.	14	20/70—	Discission 8 d. later.	20/40
55	F	64	Hard; R. E.	Slight macula of cornea.	Normal.	By spatula.	Slow.	Iris incarcerated.	None.	22	20/100	.....	20/70+
56	F	70	Hard; L. E.	Broad arcus senilis.	Normal.	By spatula.	Slow, especially in external lips of wound.	Iris incarcerated.	None.	24	20/70	Discission 4 wks. later.	20/40
57	M	48	Tra'm'tic fr'm contusion; no wound of cornea; L. E.	Iris moderately dilated and immovable.	Slight loss of vitreous.	By spatula.	Normal; iris contracted under eserine.	No incarceration.	Two.	20	20/70—	Discission 6 wks. later.	20/30
58	M	63	Hard; L. E.	None.	Normal.	Sponta.	Normal.	None.	None.	14	20/50	.....	20/40
59	M	57	Second'y, follow'g repeated attacks of syphilitic iritis; R. E.	Several posterior synechiæ.	Normal, but somewhat protracted.	By spatula.	Slow iritis.	None.	Several.	22	20/200	Free discission 5 wks. later.	20/50
60	F	78	Hypermature; R. E.	Br'd arc. sen.; chron. bronch.	Normal.	By spatula.	Very slow.	Incarcera-t'n of iris.	None.	24	20/100	.....	20/70—
61	F	60	Hard; L. E.	None.	Normal.	Sponta.	Normal.	None.	One.	16	20/70+	Discission 2 w. later.	20/40+
62	M	56	Hard; L. E.	None.	Normal.	Spontaneous.	Normal.	None.	Two.	15	20/70	Declined any further operation.	20/50+
63	M	68	Hard; L. E.	Corn'l mac'la.	Normal.	Sponta.	Normal.	No incar.	One.	12	20/200	Discission 4 w. later.	20/70—
64	F	59	Hard; R. E.	None.	Normal.	Sponta.	Normal.	None.	Two.	15	20/50+	.....	20/40
65	F	62	Hard; R. E.	None.	Normal.	By spat.	Normal.	None.	One.	17	20/200+	Discission 3 w. later.	20/50+
66	M	71	Hard; R. E.	Broad arcus senilis.	Normal.	By spatula.	Slow.	Iris pucker'd upw.	None.	20	20/100	Discission 5 w. later.	20/50+
67	M	50	Hard; L. E.	None.	Normal.	Sponta.	Normal.	None.	None.	10	20/50	.....	20/40

No.	Sex.	Age.	Nature of cataract.	Complications.	Operation.	Reduction of iris.	Healing process.	Second'ry prolapse or incarceration of iris.	Posterior synechiæ.	Duration of treatment.	Primary vision.	Secondary operation.	Ultimate vision.
										Days.			
68	F	36	Soft; L. E.	None apparent.	Normal.	Spontaneous.	Normal.	None.	Two.	16	20/70+	Discission 2 wks. later.	20/40+
69	F	61	Hard; R. E.	None.	Normal.	Sponta.	Normal.	None.	One.	17	20/200+	Discission 4 w. later.	20/70+
70	M	72	Hard; R. E.	Chr. bronch. and asthma.	Slight loss of vitreous.	By spatula.	Very slow; patient can not lie down at all.	Iris incarcerated.	None.	30	20/200	Discission 2 mos. later.	20/100+
71	F	87	Hypermature; R. E.	Chronic bronchitis; cataract well advanced in L. E.	Normal.	By spatula.	Very slow; the external lips of the wound not healing for four wks.; some iritis and consid. pain; a slow inflam. process in chorioid and vitreous continuing for several weeks.	No incarceration of iris, but some p'k'ering of the folds of the iris upward.	Several.	27	Counting fingers at one ft.	None deemed advisable.	Fingers counted at three feet.
72	F	61	Hard; R. E.	None.	Normal.	Sponta.	Normal.	None.	Two.	16	20/70	Discission 3 w. later.	20/40+
73	M	57	Hard; L. E.	None.	Normal.	Spontaneous.	Normal.	Ir. puck'd upw., but no adhe.	None.	18	20/100	Discission 4 wks. later.	20/50+
74	M	59	Hard; L. E.	None.	Normal.	Sponta.	Normal.	None.	None.	14	20/50+	Discission 2 w. later.	20/20—
75	F	63	Hard; R. E.	Chronic hypertrophy and valvular disease of the heart.	Retraction of iris; loss of vitreous; lens removed with hook.	By spatula.	Violent irido-cyclitis, with plastic exudation, entirely blocking the pupil.	None.	Almost c'mpl'te adhes'n of iris to capsule.	30	Perception of light.	One mo. later divis'n of the iris & pseudo-memb. in a diagonal direction downward and outward with narrow knife.	20/70
76	F	52	Hard; L. E.	Central macula of cornea.	Normal.	Spontaneous.	Normal.	None.	None.	12	20/100	.....	20/70—
77	M	70	Hypermature; R. E.	Broad arcus senilis.	Normal.	By spatula.	Iritis of mild type.	None.	Several.	17	20/100	Discission 4 wks. later.	20/40
78	M	76	Hypermature; R. E.	Chron. blepharo-adenitis.	Loss of vitreous.	By spatula.	Iritis.	None.	Several.	22	20/200	Declined operation.	20/100
79	M	70	Hard; R. E.	Patient very feeble and badly nourished.	Retraction of iris toward ciliary processes, and lens removed with difficulty.	Spontaneous.	Infiltration of lips of wound, and some hypopyum on 3d d.; free irrigat'n of ant. cham. and application of galvano-cautery to whole length of wound.	Prolapse of iris on eighth day, and left undisturbed.	Several.	29	20/200	Discission 5 wks. later.	20/70+
80	F	64	Hard; L. E.	None.	Normal.	Sponta.	Normal.	None.	None.	15	20/70+	.....	20/40—
81	F	69	Hard; L. E.	Corneal mac.	Normal.	By spat.	Normal.	None.	None.	16	20/200	.....	20/100+
82	M	51	Semi-hard; R. E.	Diabetes mellitus.	Normal.	Spontaneous.	Slow.	None.	One.	18	20/50—	Discission 3 wks. later.	20/30+
83	F	58	Hard; B. E.	None.	Normal.	Sponta.	Normal.	None.	None.	12	20/40—	.....	20/30+
84	M	65	Hard; L. E.	None.	Normal.	Sponta.	Normal.	None.	None.	14	20/70+	Discission 3 w. later.	20/30+
85	M	54	Semi-hard; L. E.	Diabetes mellitus.	Normal.	Spontaneous.	Slow.	None.	None.	23	20/100	Discission 2 wks. later.	20/50+
86	M	42	Traumatic; R. E.	C'ntus. of eyeball f'm blow.	Normal.	By spatula.	Iritis.	None.	Several.	19	20/70+	.....	20/50+
87	M	46	Traumatic; L. E.	None.	Normal.	Spontaneous.	Normal.	None.	None.	11	20/50—	Discission on 17th day after extraction.	20/20—
88	F	68	Hard; L. E.	None.	Normal.	Sponta.	Slow.	None.	Two.	26	20/70+	.....	20/50
89	F	52	Immature in B. E.	Chronic Bright's dis.	Normal.	Spontaneous.	Iritis.	None.	Several.	23	20/200+	Discission 3 wks. later.	20/70
90	M	60	Hard; L. E.	None.	Normal.	Sponta.	Normal.	None.	None.	16	20/50	.....	20/40
91	F	63	Hard; R. E.	Feeble patient.	Normal, with slight loss of vitreous.	By spatula.	Infiltration of wound on 3d day; galvano-cautery at orifice.	Incarceration of iris.	None.	29	20/200	Declined operation.	20/70—
92	M	59	Hard; L. E.	None.	Normal.	Sponta.	Normal.	None.	One.	14	20/50—	.....	20/40+
93	F	64	Hard; L. E.	None.	Normal.	By spat.	Normal.	None.	None.	16	20/100	Discission 2 w. later.	20/50+
94	F	71	Hard; R. E.	Corneal macula.	Normal.	By spatula.	Slow.	Incarcera't'n of iris.	None.	20	20/200	.....	20/100
95	M	59	Hard; R. E.	None.	Normal.	Sponta.	Normal.	None.	None.	14	20/100+	Discission 3 w. later.	20/40+
96	F	60	Hard; L. E.	None.	Normal.	Sponta.	Normal.	None.	None.	16	20/70+	Discission 4 w. later.	20/30+
97	F	66	Hard; L. E.	None.	Normal.	Sponta.	Normal.	None.	Two.	17	20/100+	Discission 2 w. later.	20/50+
98	F	61	Hard; R. E.	None.	Normal.	By spatula.	Slow.	Iris incarcerated.	None.	29	20/70+	Declined any further operation.	20/50
99	M	56	Hard; R. E.	None.	Normal.	Sponta.	Normal.	None.	None.	13	20/70+	Discission 4 w. later.	20/20—
100	M	59	Hard; L. E.	None.	Normal.	Sponta.	Normal.	None.	None.	15	20/50—	Discission 3 w. later.	20/20

ON GUNSHOT WOUNDS OF THE ABDOMEN,

WITH ESPECIAL REFERENCE TO WOUNDS OF THE INTESTINES.

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(*Concluded from page 455.*)

In the cases which recovered without operation the diagnosis of penetration was made by Dr. Sands, Dr. Markoe, and Dr. Bull, and the recorded symptoms seem fully to justify it. If to them should be added the cases treated at the Roosevelt Hospital, the records of which are also apparently complete—six cases without operation, two deaths; and three treated by laparotomy, all fatal—we have these totals:

Without operation, 23 cases, 15 deaths. Mortality, 65 per cent.

With operation, 16 cases, 13 deaths. Mortality, 81·2 per cent.

Most of the Roosevelt cases treated without operation were under the care of Dr. Sands.

It is not a brilliant showing for either method of treatment, and we must still look beyond percentages of results to details and principles—*observationes perpendendæ non numerandæ sunt.* Time will not permit me to give even an abstract of the histories of the cases; I can only refer to some of the more important features.

In the first place, in some of the cases the injuries were such that death, in the light of our present knowledge, must be deemed to have been inevitable under any method of treatment. Of the thirteen cases treated by laparotomy at the Chambers Street and New York Hospitals, four were of this character; of the seventeen not operated upon, three were of this character, and possibly two others in which death followed promptly and there was no autopsy.

Of the remaining eight that died without operation, two survived one day, and one each two, three, four, five, twenty-three, and twenty-eight days. Of the four cases that re-

covered, in one (Sands's) the wound was "in the left hypochondrium, five inches and a half from the median line"; in another (Markoe's) in the "right hypochondrium, on a line with the free border of the liver" (·32-caliber ball); in another (Bull's), two inches to the right of and half an inch above the umbilicus, "a probe passed four inches"; in another (Bull's) the ball (·22 caliber) entered the right eighth intercostal space one inch posterior to the mammary line; a probe passed three inches downward and forward; there was considerable shock and some tympanites at first.

The patient that survived twenty-eight days died of pyæmia; the bullet entered above the right sacro-iliac synchondrosis and lodged under the skin six inches above the right anterior superior spine of the ilium; at the autopsy no wound of the intestine was found, and no peritonitis; it can hardly be doubted that his chances of recovery would have been increased by enlargement and drainage of the parietal wounds. Possibly the bullet did not fully enter the peritoneal cavity, but opened it, if at all, by a slit along the side of its track in the lateral abdominal wall.

Of the remaining cases, it can only be said that the injuries were such as have been successfully treated in other instances by laparotomy.

Of the ten cases of death after operation, the histories of four (including the two reported in this paper) have been published. In four, as I have said, the injuries seem to have been necessarily fatal; in two of the remaining five there is perhaps some ground for thinking that the chances of recovery might have been better if the operation had not been undertaken; in one of them a small bullet (·22 caliber) had lodged in the liver without wounding any other organ; it was removed, and the patient died of peritonitis; in the other the bullet had traversed the abdomen from the left eleventh intercostal space, three inches from the spinal column, and lodged under the skin below the free border of the ribs in the left mammary line; it was removed and the cavity explored with the finger through the wound of exit without finding evidence of intestinal injury; three days later the wound of exit was enlarged to three inches and a half and the finger again introduced; this was followed by a gush of fæces that had escaped from a ragged opening in the transverse colon, and had collected in a space that was apparently shut off from the general cavity by recent adhesions; the incision was further enlarged by a transverse addition extending four inches to the left, the cavity cleaned, the edge of the wound in the colon stitched to that of the parietal incision, and the cavity lightly packed with gauze. The patient died six hours later. Possibly, if the interference had been limited to providing free escape for the fæces, the patient might have recovered with a stercoral fistula, as so many others have done; but his condition previous to the operation was very unpromising.

Of the remaining four fatal cases, in one the operation was done three hours and a half after the receipt of the injury; five wounds were found in the small intestine and were closed; the patient survived forty-three hours, and at the autopsy an additional wound was found in the transverse colon, from which fæces had escaped into the cavity. In another the operation was done four hours after injury, and five wounds of the intestine were sutured; the patient survived twenty-four hours, and the autopsy showed general peritonitis. In the third (Dr. Wilkin's case, reported above) there was an interval of seven hours between the injury and the operation; there were six wounds of the intestine, and fæcal extravasation had already taken place and excited peritonitis. Of the fourth the hospital record gives no details.

The thirteen cases may be fairly summarized, I think, as follows: Three recovered; the injuries were multiple (six, two, and four perforations of the intestine, and in two free hæmorrhage from the wounded mesentery), and would probably have caused death if not repaired by the operation. In four the injuries were necessarily fatal within a short time, and at the most the operation hastened an inevitable death. In three in which the injuries were multiple (six, six, and five perforations), but limited to the intestine, it failed to save; and in these the probability of recovery without operation turns entirely upon the trustworthiness of the diagnosis in other cases which appear thus to have recovered. In one (wound of the liver alone by a small ball) the chance of recovery without operation was good; and in another the chance would probably have been better if the first exploration had been carried far enough to detect the wound of the bowels, and if the second had been limited to providing a free escape for the extravasated fæces. Of the nature of the injuries in the remaining case nothing is known.

Against the three recoveries is to be offset, then, one death, probably due to the operation, and the question remains whether or not the percentage of recovery under non-operative treatment justifies the belief that it would have furnished two recoveries from among the remaining twelve. My conviction is that at least seven of the twelve would certainly have died.

Corroborative evidence of a better prognosis under non-operative treatment has been recently supplied by Reclus,* in the recovery of three patients treated with opium and compression of the abdomen, and by a military surgeon, Dr. Nimier,† who has reported the results in 63 cases of penetrating wounds received by French soldiers in Tonquin, with only 53 deaths, a mortality of 78 per cent. His analysis has been criticised by Chauvel, who maintains that in 4 of the 15 cases recovery is not proved, and that in 27 of the fatal cases the survival was sufficiently long to justify the opinion that they might have been saved by operation.

Turning now from these details to general considerations, the facts relating to the pathology of these injuries can be briefly stated. When a bullet penetrates the abdominal cavity it usually causes multiple lesions of the viscera, the principal exception being when it is a small one and first encounters the liver, in which case it may lodge within that organ. It has long been a subject of dispute whether or not a bullet can traverse the cavity without wounding the viscera, but the possibility must now be conceded on the strength of a very few cases in which an

* St.-Laurens, "Thèse de Paris," No. 118, 1888.

† Nimier, "Bull. de la soc. de chir.," 1887, p. 281.

autopsy has proved both the fact of penetration and the absence of injury to the viscera.*

In several cases a ball has perforated the abdominal wall obliquely, cutting the parietal peritonæum for a greater or less distance between its orifices of entrance and exit, but not opening the intestine, and it seems probable that most of the cases of alleged complete perforation without visceral injury or of circuitous passage within the substance of the wall between two points separated by a considerable interval have been of this character, the apparent deflection being due to a change in the attitude of the patient, or to the comparatively slow motion of the ball, which permits the fasciæ to be pushed aside instead of being perforated. Certain it is that, even if it is possible for a bullet to traverse the cavity without wounding the intestines encountered in its passage, the occurrence is far too rare to have any weight in prognosis or treatment, and we may safely assume that any ball that has fairly entered the abdominal cavity has also wounded some of the viscera; while, on the other hand, the more oblique the track of the ball, the greater the probability of the escape of the viscera from injury, even if the peritoneal cavity has been opened. It sometimes happens that the intestine, if not perforated, is so bruised by the bullet that the contused part sloughs and an opening is formed, if the patient survives for a sufficient length of time.

The number of openings made in the stomach and intestines by a single ball has varied from 1 to 28 in observed cases, the average lying between 2·63 (Colonel Otis) and 5 (Reclus, in experiments upon animals). The size of the openings, while corresponding in a measure with that of the bullet, is yet so seriously affected by other circumstances that no favorable prognostic influence can be safely drawn from the small size of the ball. Thus, in Kocher's case, a ·22-caliber ball made an opening in the stomach one centimetre and a half in diameter, the increase in size being probably due to retraction of the divided muscular fibers; in others a small ball, by entering obliquely or by cutting along the convexity of a loop of intestine, has made an opening an inch or more in length. Sometimes the openings are even smaller than the ball that made them, the tissues being pressed apart instead of being punched out by it in its passage. In all except the smaller openings there is a marked tendency to eversion of the mucosa, and this may so fill the opening as greatly to hinder the escape of the contents of the bowel into the peritoneal cavity, although, on the other hand, it carries with it the possibility of direct infection by its own soiled surface. The escape of fæces into the peritoneal cavity appears generally to be slow to occur, except when the opening is large and the bowel is distended; and the same is true, so far as known, of the intestinal gases, the presence of which in the cavity has been rarely recognized except in connection with fæces. The direct observation has been made that some fresh small openings are impervious to gas even under considerable pressure. If an opening is made at a point uncovered by peritonæum, as on the posterior aspect of the duodenum or ascending or descending colon, the gas may escape into the connective tissue and be recognized under the skin.

The bullet may lodge in the abdominal parietes or in one of the solid viscera and become encysted there without having provoked any reaction, or it may come to rest within the stomach or intestines, to be subsequently passed with the fæces; or even in the bladder, and be voided with the urine through the urethra (case of Sands, "Roosevelt Hospital, New York, Reports," vol. xv, p. 32).

The mesentery or mesocolon is frequently perforated by the bullet, and dangerous hæmorrhage may ensue.

Of the solid viscera, the liver is the one most frequently wounded; wounds inflicted by small bullets, even when they lodge within it and are left there, are capable of spontaneous cure, and, I think, are not to be deemed very dangerous; but large or lacerated ones add greatly to the gravity of the prognosis, because of the free bleeding and of the irritating effects of the bile upon the peritonæum. Associated wounds of the pancreas, spleen, and kidney occasionally occur, and are very dangerous. Wounds of various large vessels have been reported—the common iliac and renal arteries, the common iliac, portal, splenic, and renal veins.

The position of the wound on the surface of the abdominal wall bears little or no fixed relation to that of the visceral injuries, but if the direction taken by the bullet can be ascertained, some inferences, more or less important, may be drawn. A bullet entering at right angles to the surface in the epigastrium or the left hypochondrium probably wounds the stomach or the transverse colon. The sigmoid flexure may be encountered at any point to the left of and below the umbilicus. The liver will be wounded by a ball entering at any point within the hepatic area, and if the ball is small there is considerable probability that it may lodge in this organ without wounding any other. Bullets entering the back between the twelfth rib and the ilium are likely to wound the kidney or colon, but small bullets entering at this point, within three inches of the spinous processes, are likely to lodge in the wall. As the position of the loops of intestine appears not to change much within a few hours after the receipt of an injury, the search for lesions may be safely restricted to the neighborhood of the line marking the course of the ball.

So far as I know, there has been no demonstration of the details of the process by which spontaneous closure of a wound of the intestine without stercoral fistula takes place. That healing can take place, and without the aid of art, is shown by Dr. Lange's case ("Med. News," 1887, p. 630). He closed several perforations with sutures and left one untouched, because it was small and seemed to be impervious. The patient recovered. We do know, however, that the irritation of an injury excites an adhesive peritonitis in the neighborhood by which an opposing serous surface may be fixed against the opening so as to close it against the escape of fæces, and thus effectually to protect the general cavity

* I can add to the cases already reported one recently received in the German Hospital, New York, in which laparotomy was done by Dr. W. Meyer. The ball entered below the apex of the heart, traversed the pleural and abdominal cavities, and lodged under the skin of the back at the left of the spine, grazing the lesser curvature of the stomach, but not opening it or wounding any other viscus.

while a permanent cicatrix is forming in the wound. And we know, also, that, even where faeces escape into the peritoneal cavity, the contamination may be prevented from becoming general by the agglutination of adjoining loops of intestine; and a channel may form between the wound in the intestine and that in the abdominal wall along which the extravasated faeces will pass to the exterior, and that this channel may be permanent or temporary.

The *symptoms* may be conveniently grouped in three classes—those common to all serious injuries, those indicative of special visceral injuries, and those later ones belonging to the pathological processes excited by the injuries.

Among the first are the symptoms of shock and hæmorrhage, often so closely associated that they can not with certainty be distinguished from each other. Shock, often extreme shock, is present in a large proportion of cases, but it is also sometimes very slight or even entirely absent. It is at times unquestionably the direct result of the physical injury inflicted upon the organism, and varies directly with it; but, on the other hand, it is sometimes slight when the injury is great, and great when the injury is slight. I am convinced that it is often as much affected by extraneous conditions, notably the circumstances under which the wound has been inflicted, as it is by the extent and severity of the injuries; that it is as much emotional as physical. Thus, in injuries inflicted by accident it is usually much less than in those inflicted with homicidal intent, and it is noticeably augmented by the patient's fear that the injury is a mortal one. Some severely wounded patients have walked to the hospital almost unaided, and have shown no pallor, no quickening of the pulse, no lowering of the temperature, while in others the prostration has been extreme where the injury has been slight, or even where no injury at all has been received. A few weeks ago a man who had just been shot in a quarrel, and presented all the symptoms of marked shock, was brought to my hospital; on examination, the bullet was found to have stopped at his undershirt, not even to have broken the skin; in another, stabbed in the abdomen, the pallor, almost imperceptible pulse, and semi-unconsciousness pointed to extreme shock or overwhelming hæmorrhage; yet the weapon had not even penetrated to the abdominal cavity, and, although it had divided the circumflex ilii artery, the bleeding had not been profuse.

External hæmorrhage is habitually slight, that from the track of the bullet soon ceasing, unless the deep epigastric vessels are wounded, and in this latter case the blood flows into the cavity much more freely than to the outside. Free hæmorrhage into the cavity is slow to manifest itself externally, unless the parietal wound is large. The constitutional signs of hæmorrhage are the common ones, and, as a rule, appear as the prolongation and intensification of those of the pre-existing shock. Blood in the urine indicates a wound of the kidney or bladder; blood voided at stool, if present in any considerable amount, is evidence of a wound of the intestines, but the symptom has rarely been noted, and only as a late one; vomited blood may come from the wounded stomach or upper part of the intestine, but such vomiting may occur when there has been no perforation of either stomach or intestine.

Vomiting immediately after the accident is common, and is evidence only of the moral or physical shock; but its persistence or return indicates the beginning of a peritoneal reaction, either peritonitis or that form of septicæmia described by Verchère, and to which he gave the name *septicemie intestino péritonéale*—an affection distinguishable from peritonitis by its slight elevation of temperature and slight abdominal tenderness and meteorism, and later by the clouding of the intelligence and the facies of a profound intoxication.

The signs of perforation of the stomach or the intestine are of the utmost importance in the diagnosis and the prognosis, but, unfortunately, they are rare and inconstant. One has been already mentioned—blood in the stools or in the vomit. Another is the escape of the liquid or gaseous contents of the bowel, and their recognition at the parietal wound or within the abdominal cavity, if the exploration is carried so far. This escape into the cavity is infrequent in the early stages, and is practically limited to those cases in which the intestinal wound is large, and in which the bowel is distended at the time of the accident; and its recognition at the cutaneous wound is very rare, being restricted to those cases in which the parietes are thin and the opening in them large. Occasionally the intestinal gases escape into the abdominal cavity in sufficient amount for their presence to be shown by the resultant loss of the area of hepatic dullness; but the cases in which this evidence can be obtained are extremely infrequent. On the other hand, resonant distension of the abdomen is common after the lapse of a few hours, and has long been deemed evidence of a probable perforation. Although authors are not agreed upon its explanation, it certainly is commonly due, not to free gas in the abdominal cavity, but, on the contrary, to distension by gas of the intestinal loops, and the explanation of this rapidly occurring distension is yet to be found. In one of my cases it was noted that the intestines, which were contracted when the abdomen was opened in the course of the operation, promptly became largely distended during the search for and the suturing of the wounds—a change which I attributed to the irritation of the handling and exposure. If this explanation is correct, it suggests a similar cause for the distension which follows injury. In two or three reported cases in which the bowel had been wounded at a point where it was uncovered by peritonæum, the intestinal gas escaped into the connective tissue, and was recognized by emphysematous crackling under the skin in the loins. Erichsen noted this symptom about twenty years ago, but, so far as I know, it has since been observed in only one additional case. Attention has been called to the possible existence of similar emphysematous crackling about the parietal wound, produced by the infiltration of intestinal gas after its escape into the peritoneal cavity, but the symptom does not appear to have been clinically noted in more than a single case; and, in view of the fact that it may possibly be produced by the entrance of the external air through the cutaneous opening, its presence can not, I think, be accepted as proof of the existence of a wound of the intestine.

In a few cases a thin liquid has escaped freely through

the parietal wound, sometimes with a fæcal odor or a slight recognizable admixture of fæces, and sometimes with a color suggesting the admixture of bile; it appears to be mainly a peritoneal liquid, having its origin either in a pre-existing dropsy or in a peritonitis excited by the traumatism.

The course and the prognosis of the injury have been indicated in what has preceded; they may be briefly summarized as follows: In the great majority of cases the course is toward a fatal termination by shock, hæmorrhage, peritonitis, and septicæmia. Death by shock and hæmorrhage follows promptly—usually within a few hours. As between peritonitis and septicæmia, death by the latter seems much the more common, although there may be some limited peritonitis associated with it. It has long been recognized that intestinal lesions, with or without recognizable escape of the contents of the bowel into the peritoneal cavity, lead to death with a train of symptoms which are not those of a frank suppurative peritonitis, and have been described under various names, such as peritonism, latent peritonitis, or the asthenic form of acute peritonitis. It has been described in detail quite recently by Verchère,* under the name of *intestino-peritoneal septicæmia*, and seems to deserve a place in our nosological schedule as a pathological entity with distinctive characteristics and requiring special treatment. Its origin is attributed to the infection of the peritoneal cavity by intestinal gases or microbes that have escaped either through an opening or by transudation through the unbroken intestinal wall, and by this is set up a fermentation which produces ptomaines, whose absorption is the immediate cause of the poisoning. Attempts to isolate these ptomaines have not yet been successful. At the autopsy there is found but a slight redness of the peritonæum, or possibly at one or more points a distinct inflammation, and sometimes a brown fœtid effusion; the intestines are distended, and decomposition advances rapidly. The clinical features are a prompt and marked meteorism; painlessness of the abdomen, both spontaneous and on pressure, except for that which is due to the wound of the parietes when present; a normal, subnormal, or but slightly elevated temperature until shortly before death, when it rises rapidly; a small, rapid pulse; anorexia, thirst, nausea, and even vomiting of fæcal-like matter; and a marked alteration of the expression. Its course may be marked during the first three or four days only by constipation, anorexia, and meteorism; then the severer symptoms appear, and death follows in from five to twelve days from the beginning. A well-marked case came under my observation at the New York Hospital in December, 1888—a stab-wound of the abdomen, which I treated by laparotomy and suture of four wounds of the intestine; the patient survived for a week, and until the last twenty-four hours I was hopeful of his recovery; at the autopsy the intestinal wounds were found completely healed, and there was slight peritonitis at only two points. I believe the best treatment is to be found in drainage of the peritoneal cavity, or possibly in free purgation if that can be effected.

In some of the patients that survive, a stercoral fistula is established and persists for a longer or shorter time, perhaps indefinitely or until closed by operation; in others, after a day or two of anxiety, because of the threatening of peritonitis, the symptoms subside and the patient goes on to a complete recovery. Occasionally this progress toward recovery is abruptly interrupted by the intercurrence of an acute peritonitis, due apparently to the tardy escape of fæces through a wound of the bowel, or through the opening created by the sloughing of a contused portion, or to the leakage into the peritoneal cavity of pus that has formed in the track of the bullet through the abdominal wall.

It is not surprising, in view of the facts above stated concerning the mortality and the character of the lesions, that the opinion should be widely held that a resort to laparotomy is imperatively demanded in any case of penetrating gunshot wound of the abdomen. Not only has it been generally taught and believed that recovery under non-operative treatment is so rare that the fact of recovery is almost to be deemed a proof that the intestine has not been wounded, but also the very existence of a communication between the interior of the intestine and the peritoneal cavity creates a condition of probable infection which we have learned to recognize as a grave danger, and to the prevention of which all our efforts are now directed. While the statistics which I have collected indicate, to my mind, that the mortality under non-operative treatment has been considerably overestimated, yet few, I think, who were cognizant of the facts would be willing to take their chances under it if they believed that laparotomy held out even an equal prospect of success. Unfortunately, the chances of error in the statistics at present at command are so great that the question can not be thus determined, and it seems unlikely that the doubt cast upon the diagnosis in almost all cases of recovery without operation will ever be entirely removed; we must therefore still be guided by general considerations.

The first question in every case—one upon the affirmative answer to which all other questions turn—is whether or not the bullet has entered the peritoneal cavity. As has been above shown, the cases in which the bullet has entered the cavity without wounding the alimentary canal are so few that the possibility of its escape from injury in any given case of penetration may properly be disregarded. From this I would except only those cases in which a small bullet has entered at such a point and in such a direction that its course must lie for a considerable distance in the substance of the liver, and those in which the ball has traversed the abdominal wall very obliquely. In view of the fact that this opinion is almost universally held, it seems somewhat singular that so much attention should have been paid to the means of recognizing a wound of the intestines. It is sufficient as a first step to prove the fact of penetration; and this can be readily done by a measure which not only involves no additional risk, but may even be properly deemed salutary. I refer to a free incision along the track of the bullet. It has occasionally happened that the surgeon has not been able thus to follow the course of the ball, but I am convinced that in the great majority of cases it can be successfully done if the incision is deepened carefully and a close watch is kept for the slit-like opening which the bul-

* Verchère, "Revue de chirurgie," 1888, p. 559.

let usually makes in a strong fascia. If the search fails, I see no great objection to a small incision near the wound, preferably in the median line, for the purpose either of recognizing the presence of blood in the abdominal cavity, or of introducing the finger to feel for the opening made by the bullet in the parietal peritonæum. I have employed this measure several times in stab-wounds, and never with an ill result. Such a free incision along the track of the bullet is not only valuable as a means of diagnosis, but is also an important aid in the proper treatment of the parietal wound, for it favors the removal of foreign bodies that may have lodged in the track, and, by securing efficient drainage, protects the peritoneal cavity from infection by pus that may form in the parietal wound.

I hold the opinion strongly that this exploration should be made in every case of doubtful penetration, even if no further operative treatment is to be undertaken, for it is only by having first clearly established the fact of penetration that the non-operative treatment can gain the credit of its successes and perhaps show its superiority.

As soon as the wound in the parietal peritonæum has been thus demonstrated and exposed, the escape through it of blood, intestinal gas, or fæces may at once prove the existence of an important internal hæmorrhage or of a wound of the bowel; and if there should be no such escape, the introduction of a sponge upon a holder may furnish the evidence. In the absence of positive proof of the existence of a wound of the stomach or intestine, the surgeon who proposes to close such a wound, if present, has his choice of several procedures. He may seek for the wound by direct examination of the viscera, either through his first incision, after having enlarged it, or through another made in the median line for the purpose; or he may seek to demonstrate its existence and to be guided to its position by injecting gas into the bowel through the anus, as proposed by Senn.

This insufflation of hydrogen gas or of atmospheric air under moderate pressure has been studied experimentally, and has been actually employed in practice in some eight or ten reported cases. It is asserted that its action is prompt, efficient, and free from danger, and that by its aid, in at least one case, a perforation was found which would certainly have been otherwise overlooked. Two main objections at once suggest themselves: first, that the resultant distension of the bowel may prove a serious obstacle to the closing of the parietal incision; and, second, that the escaping gas may force out the liquid or gaseous contents of the intestine into the peritoneal cavity, and thus cause a dangerous infection. It is maintained that the first objection does not arise in practice, and that the gas or air is rapidly absorbed by the intestinal mucosa; but in a recent report of two cases by Dr. H. C. Dalton, of St. Louis ("Weekly Medical Review," Sept. 28, 1889), the distension is said to have constituted a very serious trouble, leading to the tearing out of the intestinal sutures in one case, and greatly interfering with respiration in the other, in which laparotomy was not done. Dr. Dalton further states that Dr. Senn told him he had himself experienced the same difficulty, but had been able to overcome it by elevating the hips (presumably with a tube or cylindrical speculum in the anus) and making pressure upon the intestines with "a large funnel-shaped towel." In view of this evidence and of Dr. Senn's admission, it must be held, I think, that the objection is better founded than the statements heretofore published have led us to suppose.

As to the second objection—the danger of infection by the contents of the bowel forced out by the gas—it does not seem to be capable of direct proof or disproof; that is, if fæces were found in the peritoneal cavity after the insufflation, it could not be known that they had not previously escaped; and the possible causes of infection are so numerous that if it should ensue it could not be attributed with certainty to the insufflation. A comparison of the frequency of infection in a large number of cases in which the test had been employed with that in a similar number in which it had not been used might throw some light upon the question.*

Another theoretical objection to the test—that the gas might fail to escape through an existing perforation, and that consequently its negative evidence was not trustworthy—has also been proved by experience to be well founded. In Dr. Dalton's second case the test gave no evidence of perforation, but the post-mortem disclosed two large openings in the stomach covered by semi-solid food; and in another case, above referred to, it was observed that intestinal gas could not be forced out by pressure through a visible perforation.

Finally, other lesions than perforation of the intestine are possible and equally in need of operative treatment, to which the test of insufflation gives no clew, notably hæmorrhage, and here again its negative evidence would not justify abstention. In short, I believe the method, as a preliminary to operation and as a means of diagnosis, to be distinctly inferior to an exploratory incision in facility, efficiency, and security.

The penetration having been demonstrated and an operation determined upon, the surgeon has to choose between an incision in the median line and one passing through the bullet wound. The preference has usually been given to the former, but those who have employed the other do not appear to have found any unusual difficulty in completing the operation. In one case in which the incision was made along the outer border of the rectus, a second incision was carried transversely from the upper end of the first along the free border of the ribs, giving very free access to the abdominal cavity. The patient recovered; but so large an incision is to be deprecated. Two methods of searching for wounds of the small intestine have been employed; in one, the bowels are freely exposed or turned out through a relatively large incision; in the other, only a small portion is drawn out at a time through a small incision and immediately returned after examination. I think the former method is to be preferred for several reasons: the larger incision does not in itself add materially to the danger, less time is required, the exposure of the intestines, if they are properly

* Insufflation has been done in nine reported cases with eight deaths. For brief details of seven cases, see a paper by Burrell in the "Boston Med. and Surg. Journal," July 25, 1889.

protected, is not much increased, and the search can be more readily extended to their fixed portions if desirable. Moreover, the manipulations needed for the repair of other injuries than those of the movable parts of the small intestine require a fairly large incision.

There seems to be no reason to doubt that the ball pursues a straight course through the abdominal cavity, and consequently it is not desirable to spend time or enlarge the incision in order to examine portions of the viscera or wall that lie well outside of that course; as the coils of the small intestine may shift their position, the examination should, however, cover the entire length of its movable portion in every case, and also the sigmoid flexure if the wound is on the left side, and the central part of the transverse colon if it is near the umbilicus.

Time will not permit discussion of the various methods of closing wounds of the intestine, and I shall therefore only add that experience has shown that a single row of Lembert sutures of fine silk is sufficient in all wounds of moderate size. If the wound is large and ragged, and especially if two or more such are near each other, it is better to excise the corresponding portion, and either reunite the divided ends or establish a lateral anastomosis. Since Dr. Senn reintroduced this method and so greatly improved it by his invention of absorbable bone plates, experience has shown its efficiency and ease and rapidity of execution. Possibly the independent and, perhaps, somewhat earlier suggestion of the French surgeons * to use plates of cartilage or catgut rings to reunite the divided intestine end to end may prove equally practicable and safe, but at present lateral anastomosis is to be deemed preferable.

In consideration of the fact that death is so frequently caused by septicæmia, I think a drainage-tube should always be used, in order that the peritoneal effusion may escape as rapidly as possible, and that thus the chances of fatal absorption may be reduced.

It is greatly to be regretted that the anticipated improvement in results to be obtained by laparotomy under antiseptic protection should not yet have been realized, but, notwithstanding the unfavorable showing of the statistics at present, I believe that the operation will not only make a better record in the future by a closer selection of cases in which it shall be resorted to, but also that it will show an actual gain in the saving of life, as the result of an earlier and better performance. The tabulation of statistics, according to the length of the interval that has elapsed between the receipt of the injury and the performance of the operation, has unmistakably shown that the chances of success diminish almost to disappearance as this interval lengthens. The cause thereof seems very clear. The patient has to recover not only from his injury and his operation, but also usually from an already established peritonitis or septicæmia, and experience has clearly proved that the dangers of the laparotomy itself are vastly increased when it is undertaken in the presence of such a complication. The simple exposure of the congested and distended intestines creates a dangerous shock, and when to this are added the greater difficulties and the necessary prolongation of the operation and the dangers arising from the already established infection, it is not surprising that the result should be so uniformly and so promptly fatal. These are the patients who die upon the table or shortly after their removal from it, and this is the side, I think, upon which we should first restrict the operation. Between the two parties—those who would operate in every case and those who would operate in none—stands a third: those who would operate only after symptoms indicative of dangerous processes have appeared; but I believe this course to be the worst of all, and that if it were generally followed it would lead to the entire abandonment of the operation. We know that an individual in fairly good general health can have his abdomen opened and explored without very great risk, and one who has just received an abdominal wound not necessarily fatal ought, at the moment and for a short time thereafter, to be able to bear such an exploration almost equally well. In such a case the risks of the operation, when performed under proper safeguards, are, I believe, less than those of the injury which the bullet has probably inflicted, and it is in such cases, notwithstanding the record, that I believe the operation is capable of furnishing valuable and superior results. If, on the other hand, several hours, perhaps a day, have passed and the patient is doing well, it may be better to accept the indication that the injury is not severe and is capable of spontaneous cure, and to abstain from interference. But when several hours have passed and the condition of the patient has changed greatly for the worse, and especially if the abdomen is largely distended and painful, then I believe we should abstain from an attempt to seek and close the perforations. It is urged against such abstention that the case is hopeless without it; it may be so, but I believe it is still more certainly hopeless with it, and to operate under such circumstances seems to me needlessly to compromise our art and to create a harmful prejudice against a resort to the operation under more favorable conditions. Must we then stand idly by and let the patient make his struggle for life unaided? Possibly, if the limitations of our art require it. But between non-interference and the full operation there may lie a middle course, by which the desperate chances of these unfortunates may be somewhat bettered. We have seen that a few such have survived without operation, the fæces and the peritoneal pus escaping through the parietal wound, and perhaps leading to the establishment of a stercoral fistula. Is it not possible that this way of escape may be made easier, that an enlargement of the bullet-wound and drainage of the peritoneal cavity may save some who could not survive a more formal operation? Slight as the chance may be, it seems to me to be the only one we can offer to such patients. In conclusion, I offer the following:

Summary of the Points to which I have sought especially to call Attention.—The (incomplete) hospital statistics of New York city show, for an average period of ten or twelve years previous to 1885, 17 cases of recovery under non-operative treatment after gunshot wound of the abdomen supposed to be perforating. The integral statistics of three hospitals—the New York, Chambers Street, and Roosevelt

* Michaux, "Gaz. des hôpitaux," Aug. 13, 1887, p. 805.

—contain 23 cases, with 15 deaths—a mortality of 65 per cent.

The integral statistics of New York city since 1884 give 29 cases of laparotomy for gunshot wound of the abdomen, with 25 deaths—a mortality of 86·2 per cent.; and the statistics of the three hospitals above mentioned give 16 cases, with 13 deaths—a mortality of 81·2 per cent.

In view of the apparently greater mortality after operation, it is highly desirable that any doubt as to the correctness of the diagnosis in cases recovering without operation should in the future be avoided if possible, and that with this object the track of the bullet should be traced to the abdominal cavity.

Preliminary incision along the track of the bullet, or, in case of need, in the median line, is the best and safest means at our disposal to recognize the presence or absence of wounds of the viscera.

The relations between the number and severity of the visceral lesions and the size of the bullet, or the early symptoms, are not, in the majority of cases, sufficiently constant to guide us in the choice between operating and not operating.

An improvement in the results of operative treatment may be expected if the operations are undertaken earlier (before the intercurrence of peritonitis or septicæmia), and if their duration is shortened by rapidity of execution and by restriction of the search for lesions to the readily accessible portions of the intestine and to the probable course of the ball. While some may die through the overlooking of a perforation, fewer, I think, will be killed by the operation.

In cases in which considerable time has elapsed since the receipt of the injury and in which the symptoms of septicæmia or peritonitis are present, with marked distension of the abdomen, an attempt to discover and close the perforations of the intestine will almost certainly be fatal, and operative interference should be restricted to the establishment of free drainage of the abdominal cavity through the wound.

In cases seen at an earlier period and in which these grave symptoms have not been developed, the probable chances of success are sufficient to justify an operation to repair the injuries.

In the present state of our knowledge it can not be said that either interference or non-interference should be the rule of practice, and the surgeon may be guided by his own convictions and feelings, whether they lead him to seek to do as much good or only as little harm as possible.

Note.—Since the foregoing paper was read I have learned that I failed to recognize as a New York case a successful one reported by Dr. Manley in the "Medical News" for September 24, 1887. The addition raises the list to 30 cases with 25 deaths, a mortality of 83·33 per cent. Three days after the paper was read, on October 20th, I operated in another case which has progressed to the present time, the tenth day, without an unfavorable incident, so that the patient may fairly be deemed out of danger. He is a man, thirty-two years old, who was shot by a policeman with a revolver of ·38 caliber, the ball entering four inches and a quarter below the umbilicus and one inch and a half to the right of the median line. The operation was done five hours after the receipt of the injury. There was some escape of fæces into the abdominal cavity, with beginning peritonitis. Two large ragged openings, closely adjoining each other, in the lower part of the ileum were closed with a single row of Lembert sutures. It is interesting to note that the wounds were separated by a bridge of tissue only an eighth of an inch wide, and evidently had been made by the ball passing along the side of the intestine in the furrow of a sharp bend, on each side of which it cut out a piece without itself entering the lumen of the bowel. I purpose to report the case in full in due time. Accepting it as successful raises the New York city list to 31 cases with 25 deaths, a mortality of 80·64 per cent.

34 East Thirty-third Street, *October 29, 1889.*

GASTROSTOMY

FOR NON-MALIGNANT ORGANIC STRICTURE OF THE ŒSOPHAGUS.

By J. C. CLARK, M. D.,
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Stricture of the œsophagus due to cicatricial contraction caused by swallowing of caustic alkali or acid is so rare that it is seldom a case is seen in the general hospitals of our largest cities, and when the patients do present themselves it is at a time that little can be done to relieve them.

A young woman recently entered the Olean Hospital suffering from the above-described condition, whose future, unless relieved, was slow starvation in the charitable institution of the county. She depended entirely upon her work for a living, and, being unable to take nourishment enough to keep up her strength, had finally to stop and depend upon friends to support her. After the operation of gastrostomy was decided upon the important question arose: how much of an invalid would she be if the operation proved successful?

My object in this article is, first, to report the case; second, to give more details of after-treatment; and finally, to answer the above-given question. Two important elements were favorable for recovery—first, the age of patient, and the fact that she was not in an extremely enfeebled and emaciated condition. Dr. Lewis A. Stimson, of New York, says ("Reference Hand-book of the Medical Sciences"): "In several of the successful cases, it is noted that the obstruction was not complete, and that the patient was nourished by the mouth up to the time of the operation. . . . If the operation is done at all, it should be done as early as is practicable."

History.—Nellie P., aged twenty, single, native of the United States, servant girl, admitted to Olean Hospital July 22, 1889. The patient gave the following history: In September, 1888, she took two swallows of strong washing fluid, producing severe inflammation of the mouth, pharynx, œsophagus, and stomach. Since that time for ten months she has not been able to swallow any solid food whatever, and when taking fluids can feel them stop and then trickle into the stomach. She has attacks daily, and sometimes several times during the day, of great difficulty in breathing, and is only relieved by vomiting whatever has last been taken and a large quantity of ropy saliva. She sustains life with milk, beef-tea, and whisky, taking half a pint of whisky daily. Does not drink her food, but sips it slowly from a teaspoon. Has lost strength rapidly during the past three months, and is considerably emaciated.

Examination.—Œsophageal bougies, of large, medium, and small caliber, being passed, all meet obstruction at eleven inches

and a half from the incisor teeth. They cause some irritation, but no blood is vomited. The heart and blood-vessels being found normal, a diagnosis of non-malignant organic stricture of the œsophagus, four to five inches above the cardiac orifice of the stomach, with dilatation above the stricture, was made.

One week after admission the patient had several attacks of spasm of the glottis, and for twelve hours nothing would pass the stricture. From morning till night patient was to be seen with a tumbler of milk and a teaspoon continually feeding to satisfy her hunger.

August 5th.—Patient has lost ground during the last few days; has attacks of vomiting and spasm of the glottis every day. Rectal alimentation commenced to-day.

10th.—A moderate attack of amygdalitis during the week. All right again. Rectal feeding working perfectly; absorbs a pint and a half of peptonized milk and an ounce of Cibyl's beef-juice daily.

14th, Operation.—Antiseptic precautions used. The usual incision was made through the skin and muscles. When the peritonæum was opened, the greater curvature presented itself in the wound. The stomach was drawn downward and from the left and two long silk ligatures one inch apart, one above the other, were passed through to the mucous coat and used during the operation and for a month after as a guide to the wall of the stomach. Horse-hair drainage was used between the skin and peritonæum upon each side.

Iron-dyed silk was used to unite the stomach to the peritoneal surfaces. The upper and lower angles of the wound were closed loosely with silk, and the wound was dressed antiseptically. The operation was commenced with cocaine, but its use was found not practicable. Ether not acting well, chloroform was given.

15th.—No vomiting after operation. At 7 A. M., temperature 100·5° F., pulse 90. Tinct. opii deod., gtt. xx, every four hours by the rectum.

16th.—At 7 A. M., temperature normal, pulse 88. Rectal feeding working well; a quart of milk and six drachms of Cibyl's beef-juice daily. At 4 P. M., temperature 101° F., pulse 98. Complains of pain in the wound. Dressings removed. No pus. The opening into peritoneal cavity was found closed by adhesions between the opposing surfaces. The sutures between the skin and the peritonæum were partially removed because of great tension, giving immediate relief to the patient.

Having secured deep union at the upper and lower angles of the wound, and there being no reason for opening the stomach for some days, I determined to allow the skin and superficial part of the wound at these points to heal by granulation, so that the contraction of the scar would give a snug fit and grasp the proposed tube tightly. The sutures were removed at the angles, and the skin was allowed to separate.

At 9 P. M., temperature normal, pulse 88.

18th.—Temperature continues normal. The patient was given two cups of thin chicken-broth to-day by the mouth, with no unfavorable result.

Opium stopped.

25th.—The patient continues to improve. Nourishment pushed; takes a quart of milk by the mouth, and a quart by the rectum; swallows better than she did before the operation.

To-day, the eleventh after the operation, an incision was made into the stomach, between two silk ligatures, large enough to allow a glass tube of the size of a lead-pencil to be introduced, producing no symptoms.

September 2d.—The permanent tube, furnished by Messrs. Stohlmann, Pfarre, & Co., was put into the stomach to-day, and the patient commenced eating solid food.

The tube is of silver, with a caliber of a third of an inch,

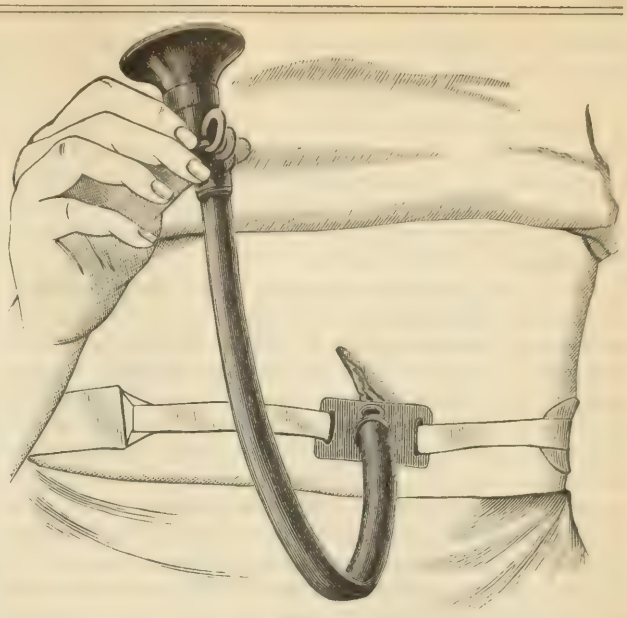


Fig. 1.

two inches long, with a flange half an inch from the outer end; straight except at the inner end, where it makes a slight curve. It was introduced by removing the glass tube and dilating the

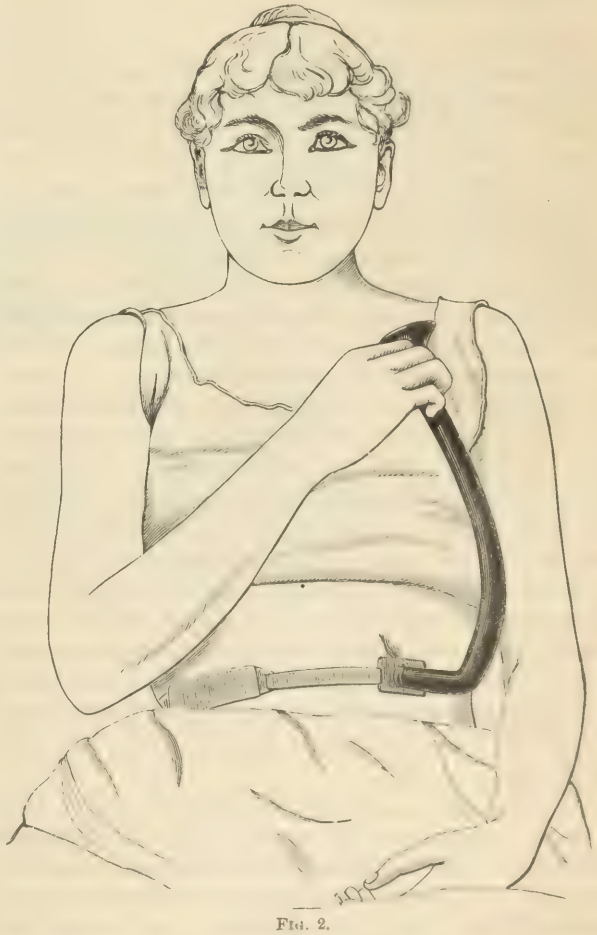


Fig. 2.

small opening into the stomach by means of a Hanks's uterine dilator. A soft, flexible rubber tube, with a caliber of half an inch, was connected to the silver tube, a hard-rubber mouth-piece being fitted to the outer end. The silver tube was first

kept in place by an ordinary piece of tape; but the patient would eat so heartily that the tape became uncomfortably tight after meals, and required to be let out.

On September 18th she went to bed, neglecting to tighten the tape, and awoke in the morning to find the tube entirely out of the stomach. It was necessary to use the dilator again before the tube could be reintroduced, and this complication was overcome by using elastic webbing with the tape, which allows of free distension of the stomach.

An attempt was made to pass a bougie from the stomach upward, but was not successful.

There is and has been no leakage at the side of the tube, and, after a few days' practice, there was no trouble from air entering the stomach while eating, or from swallowing solid particles of food while chewing them. There is no trouble whatever in the food passing into the stomach after mastication, there being no valves or complicated apparatus to get out of order. This method of feeding is simplicity itself. After eating, the rubber tube is doubled up, tied, and put into a pocket provided for that purpose upon the inside of the dress.

At night the patient removes the rubber tube, corking up the silver tube, and connects them again in the morning without assistance.

30th.—The patient left the hospital to-day, having gained twenty-five pounds in weight, and, instead of terminating a miserable existence in some charitable institution, returns to her usual duties in perfect health.

THE BLUNT CURETTE IN UTERINE HÆMORRHAGE.

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In a paper read at Newport, June 27th, Dr. Georges Apostoli, of Paris, in lauding the use of electricity in uterine affections, remarked that the curette had fallen into desuetude in France, the place of its birth, and he intimated that the doctor of to-day who still stuck to its use had not kept pace with the advance of gynæcological science.

That electricity is an important agent in the treatment of uterine troubles no one denies, and we are chiefly indebted to the care, industry, and perseverance of Dr. Apostoli for our present knowledge of its therapeutic value; but it is not applicable in all cases where the curette can be used, and in some where its application is suitable it gives no better and not as rapid results. The use of the curette is best limited to those troubles arising from disease of the endometrium, while that of electricity should be limited to those affections arising from disease of the parenchyma or the appendages of the uterus. Each of these fields overlaps the other to some extent, and here either agent can be used indifferently.

The bleeding caused by fibroids of the uterus can be arrested by the curette, but we do not get the diminution in the size of the fibroid that is obtained by the use of electricity. Metrorrhagia, due to degeneration of the endometrium, may be cured by electricity, but it takes more time and the results are not more satisfactory than those given by the curette. But the curette is as inapplicable in salpingo-ovaritis as is electricity in uterine polypi. The field of each is pretty sharply defined, and the closer each agent is confined to its own sphere, the better will be the results obtained.

The present tendency in America seems to be to ignore the blunt curette in all cases where the sharp curette can be used. This is bad practice, for denuding the uterus of all of its mucous membrane is no small matter, and with the sharp curette this can be done not only where the membrane is diseased, but also where it is healthy. With the blunt curette, however, it is only the diseased portion of the membrane that can be removed, while the uterine glands are emptied of their contents. Where we wish to remove a small piece of the endometrium for diagnostic purposes we find nothing to take the place of the sharp spoon; and in intra-uterine growths of long standing, where the bases are broad and firm, the sharp curette will be found to be indispensable. When, however, we have to deal with growths of recent formation, as in the case of retained placenta or placental polypi, or where we have a degenerated condition of the mucous membrane, all that is necessary can be removed by the blunt curette, after which a strong styptic should be applied to arrest the bleeding and produce a healthy action on the endometrium.

Practically speaking, all diseases of the endometrium in which the blunt curette is applicable have the one common manifestation of hæmorrhage. This may be constant or periodical, profuse or moderate, and from various causes, which can be best illustrated by giving the histories of a few typical cases. It will be best, however, to say first a few words about the use of antiseptics and the dilatation of the uterus. Bearing in mind the direct communication between the uterine and abdominal cavities, and how richly supplied the uterus is with absorbent vessels, the greatest care should be used in all operations on that organ to prevent infection. The vagina should be thoroughly cleansed before all operations on the endometrium, and both uterus and vagina after. This can be done by solutions of permanganate of potassium, carbolic acid, corrosive sublimate, or creolin. Of these, creolin is probably the best, though I have got excellent results from the solution of the permanganate, as I have also done from simple hot water. For all operations on the uterine cavity a dilatation of the cervical canal is necessary. Where intra-uterine growths exist, the canal, as a rule, will be found more or less patulous, and here rapid dilatation will be found most suitable. Any of the many ingenious uterine dilators can be used for this, but I find a set of steel urethral sounds among the best. Drawing the cervix well down with a volsella, these are passed singly from the smallest to the largest, when a return to the moderate-sized ones is made, and two or more passed together till sufficient room is obtained. If the cervical canal is normal in size, or nearly so, as is generally found in degeneration of the endometrium, rapid dilatation causes too much bruising and injury to the cervix; so here it is better to dilate gradually by means of tents—laminaria, sponge, slippery elm, or tupelo. Of these, the tupelo is much the best, though requiring more time than the sponge.

Anæsthetics can be used or not as is deemed best by the operator, but in most cases, where the patient is of a

nervous temperament, their administration will be found to ward off complications. In all cases absolute rest should be enjoined for some days after the operation, for it not only prevents accidents, but it favors the return of the uterus to its normal state.

Some of the following cases were operated upon quite a while ago, but they are selected as types, showing where the blunt curette can be used:

Case I. *Endometritis with Subinvolution.*—In November, 1879, I was called to see Mrs. M. J., twenty-six years of age, who was a resident of Baltimore. Eight months previous to that time she had had her first child, since which time she had suffered more or less from hæmorrhage. During the last month this had become so profuse that she was compelled to take her bed, and was then too feeble to be around. Examination revealed a retroverted uterus, much enlarged and tender. Sounding was exceedingly painful, and gave a depth of four inches. After the parts were thoroughly cleansed, a small sponge tent was inserted and allowed to remain for ten hours. On the removal of the first, a second tent was introduced and allowed to remain till the following morning, when it was removed, and the uterine cavity carefully examined with the finger, but nothing abnormal could be found except a softened and thickened condition of the endometrium. This was thoroughly curetted with a blunt curette, after which liq. ferri subsulph. was applied to the whole cavity. From this time on the hæmorrhage ceased, and in one month sounding gave a depth of three inches and a quarter.

This case illustrates well a common class, where the trouble dates back to childbirth, and is probably due to improper care and a too early return to household duties.

Case II. *Fleshy Mole.*—Mrs. J. B., of Columbia, Pa., sent for me to see her in September, 1880. She was twenty-nine years of age, the mother of three children, and supposed herself again pregnant. The previous April her menses failed to make their appearance, but during July and August there was a slight show of blood. When called, she seemed to be suffering from labor-pains with considerable bleeding. On examination, the uterus was found as large as the fist; its cervix was rigid, but its canal was large enough to admit the tip of the finger with difficulty. A firm, fibrous mass could be felt presenting at the internal os, and as this in no way resembled the normal product of conception, the cervix was drawn down with a volsella while the uterus was dilated with the finger. The mass was nearly as large as a hen's egg and pear-shaped, being attached by its base to the posterior wall of the uterus near its fundus. This was removed with some difficulty by the blunt curette and a solution of permanganate of potassium used to irrigate the cavity. Recovery was rapid and complete, the woman having since borne children. Though the mass presented no placental structure, it was undoubtedly the product of a blighted ovum and had probably become attached to an inflamed endometrium, thus escaping expulsion.

Case III. *Retained Placenta and Membranes.*—In June, 1881, I was called to see Mrs. F. H., of Columbia, Pa., a multipara, who had three days before been delivered by a midwife. The cord and only part of the membranes had come away, and, as the discharge had become very offensive and there was considerable fever, I had been sent for. Before examining, the vagina was irrigated with hot water, when the uterus was slowly dilated with the fingers and the placenta found firmly attached posteriorly and above. About half of this was removed with the hand, but some portions were so firmly attached that the blunt curette had to be used. Finally, all was removed and the cavity presented a uniformly smooth surface, after which it was irrigated with a hot solution of potass. permang. Recovery was uninterrupted, and in ten days the woman was attending to her regular duties. Prompt interference here probably saved the life of the mother, as there were marked symptoms of blood poisoning when I was called.

Case IV. *Degeneration of the Endometrium near the Menopause.*—In December of 1881 I was called in, by her attending physician, to see Mrs. M. A., of Columbia, Pa., an invalid mother of several children. She was forty-seven years of age, and had suffered irregularly for eighteen months from metrorrhagia. During the last month the hæmorrhage had become very profuse, and, as it did not yield to internal remedies, operative interference was deemed expedient. The uterus was found to be slightly enlarged, tender to the touch, and very flaccid, but normal in all other respects. A tupelo tent was introduced, and the following day a larger one was substituted, which in twenty-four hours gave sufficient room for the finger. On examination, the endometrium was found to be thickened and soft, so that shreds of tissue could be easily removed with the finger, but no growth of any kind could be found. A teaspoonful or more of degenerated tissue was removed by the blunt curette, after which Monsel's solution was applied to the cavity. For some days there was a slight discharge of bloody water, but this ceased in a short time, and after a month the woman, though still feeble, suffered no more from hæmorrhage and was much improved in health.

Case V. *Incomplete Abortion at about the Third Month.*—Hannah, a multipara, thirty-two years of age, presented herself at the Johanniter Hospital, in Beyrout, Syria, in November, 1887, to be treated for corneal ulceration and partial staphyloma. A solution of atropine was instilled into the eye and subsequently the portion of prolapsed iris removed. Three days later she was taken with pains and hæmorrhage from the womb, when she informed me that she thought herself about three months pregnant. The womb was found as large as the fist, with the cervix sufficiently dilated to admit the finger to the internal os. This was found partly dilated, with the uterine contents presenting. As hæmorrhage was profuse, the pains strong, and all hopes of preventing the catastrophe passed, the cervix was drawn down with a volsella, the canal rapidly dilated with the fingers, and the uterus emptied of its contents with a blunt curette. As the uterus was now well contracted, the vagina only was washed out with hot water and rest enjoined. Recovery was rapid and without complications. This is undoubtedly the best treatment to adopt in all cases of incomplete abortion, though strenuously opposed by some good authorities.

Case VI. *Placental Polypi of Several Months' Standing.*—During March, 1889, I was called in consultation by a physician who was attending Mrs. C. P., of Baltimore. She was a multipara, some thirty-eight years of age, and had miscarried several months previous to the consultation, since which time she had suffered from bleeding, that became profuse on the least exertion, but almost ceased, to give place to leucorrhœa, when she was quiet. The uterus was several times its natural size, and the cervix was sufficiently dilated to admit the finger as far as the internal os. Rapid dilatation was undertaken and accomplished in a short time, with urethral sounds, and three polypi of moderate size were found attached to the posterior wall near the fundus. These were removed with ease by the blunt curette, the hæmorrhage arrested with Monsel's solution, and the vagina irrigated with warm water. Several hours after the operation there was a severe chill with a sharp rise of temperature, but by the next morning all bad symptoms had passed and she made a rapid and complete recovery.

THE
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NEW YORK, SATURDAY, NOVEMBER 2, 1889.

"MARASMUS" AND OTHER VAGUE CAUSES OF DEATH.

At the last day's session of the American Public Health Association meeting, at Brooklyn, Dr. Ashmun, of Cleveland, inveighed against the practice of some physicians who employ the term "marasmus" to cover a great variety of causes of death among infants. Statistics are of little value where even a few practitioners, in any given community, consent to this vague form of certification. "Marasmus" under those circumstances has no pathological relevance, and means little more than that the child ceased to breathe. The reports of institutions are, in too many cases, robbed of their utility to the student of the causes of infantile mortality by the evasion and omission of the true causes of death. The root of this evil may lie either in indifference, in carelessness, or in a desire to conceal; but, whatever the motive, the result is one and the same so far as concerns every scientific purpose and pursuit. It was alleged at the meeting above referred to that ignorance was another occasion for this and some other mischievous forms of certification. One speaker went so far as to say that there were professors in our medical colleges whose teachings tended to promote vague pathological ideas and a slip-shod use of terms. If the teacher himself has not advanced beyond the "marasmus" period in pathology, it is unreasonable to expect precision and definiteness of expression on the part of those who are taught by him. And so the evil maintains itself for years, and is spread. "The profession itself needs enlightenment" was the sentiment of more than one of the speakers on the occasion referred to; a keener intelligence on the part of the profession in these matters is a prerequisite to the profitable study of "the great American Plague"—namely, the loss of children under five years—by associations or by individuals, on the statistics of the Federal census or the annual reports of asylums or maternities.

In conformity to this sentiment, the newly appointed special committee on infant mortality in the Public Health Association was proposed to be one whose work should extend over a number of years and might not be reported upon under three years, and even then might take the form of a report of progress. One result may be expected from the initial work of the committee; that it will early show to the profession the indispensable need which exists, in regard to the profound study of this subject, that the certifying members of the profession shall truly, clearly, and fully designate the causes of death in infants as well as in adults. The Health Officer of the port of New York spoke in this discussion of the duty devolving on officers of registry, in boards of health, of refusing to accept certificates of physicians who habitually resorted to such vague expressions as marasmus, infantile asthenia, atrophy, debility, or cardiac syncope, which meant little more, to writer or to reader, than that death had taken place. This view puts upon the registry departments of our boards of health a responsibility which is altogether new to some of them, the opinion of some registrars seeming to limit them to a slavish adoption of whatever cause may be specified to them by the practitioners. We call to mind a singular instance of this where an official permitted "cholera infantum" to stand in his tables through the whole of the winter quarter, because one or more physicians had chosen to adopt that expression as synonymous with entero-colitis or infantile diarrhœa. The "throwing out" of certificates of death is not the pleasantest duty of the health officer, and, if performed without tact and judgment, may become exceedingly unpleasant, but it is nevertheless a duty that should not be shirked or overlooked.

RAILWAY SHOCK.

The subject of railway shock has been brought very prominently before the profession and the public of late. It must be admitted that at first thought some of the results which have been rightly ascribed to it seem to be hardly traceable to this source. In an address before the Lehigh Valley Medical Association Dr. Dercum ("Therapeutic Gazette") treats of the subject in a practical way. The causation of railway shock, he says, differs from that of other forms of shock in that it is more composite. It presents, therefore, special features which distinguish it from surgical shock, common traumatic shock, and purely emotional shock. If shock may be classified under three heads—that which acts upon the corporeal organization, that which affects the psychical functions, and that which involves both of the preceding—railway shock may embrace any of these three forms. In railway accidents the trunk and head are specially subject to injury; the body as a whole may be thrown violently against surrounding objects, and the brain and spinal cord may be so shaken or bruised that degenerative processes, actual organic changes, may be set up in the nervous centers of these organs. But, even apart from serious physical injury, the purely psychic effects of a railway accident may be of the most serious nature. The incidents connected with such a disaster may, taken together, form one of the most terrible pictures that the mind can conceive of. The vastness of the destructive forces, the magnitude of the results, the imminent danger to the lives of numbers of human beings, and the hopelessness of escape from the danger give rise to emotions quite sufficient in themselves to produce shock or even death. Whether there is a temporary loss of consciousness or not, the sudden, excessive, exhausting expenditure of nervous energy in the excitement, the fright, the horror of the moment must certainly result in a general weakness more or less marked and more or less enduring.

Two cases in point are related: A powerful man is exposed in a very severe and destructive collision, but escapes with only a few bruises on the limbs and a fracture of the nasal

bones, not having been stunned. Recovering from the more immediate nervous excitement, which lasted some weeks, he remains for years afterward, perhaps for the rest of his life, haggard, depressed in mind, with occasional palpitations, with loss of sleep, bad dreams, and loss of energy and of self-control. In the second case, personally studied by Dr. Dercum, a lady of nervous temperament, but always in good health, witnessed at close quarters a shocking mutilation of her little daughter by a railroad-tie. She was standing on the platform, and the train was moving silently past her. The mother was not injured, but remained hysterical for three weeks, and then miscarried. A year afterward she was neurasthenic, depressed, melancholic, of sallow color, weak, irritable, and unable to attend to household duties. Her pulse was weak and rapid, her knee-reflexes were sluggish, her back was painful with tenderness over the lumbar region, and her grip was tremulous. Why is it that in railway accidents passengers who are dreadfully mutilated show transient or slight symptoms of shock, while others who sustain hardly any physical injury are profoundly shocked and may be rendered invalids for life? Perhaps the very depth and intensity of the bodily injury may blunt the nervous centers or preoccupy the mind, the bodily injury being generally received before the mind can fully realize what is going on.

A short space is devoted to the consideration of the so-called "erethistic" form of shock, which is to be regarded as either a preliminary or an incomplete stage of simple shock, or as a stage of imperfect reaction from simple shock. In this there is prostration with excitement. The patient tosses about, complains loudly, says he can not breathe, acts as though suffering intense agony, and has a sense of impending death. He pays no attention to his surroundings, being absorbed by his own agony. He has muscular tremor, rapid short breathing, with occasional deep inspirations, a rapid, soft pulse, a hot and dry skin, and a flushed face.

The methods of treatment mentioned by Dr. Dercum are well known to the profession. In simple shock it is better to do too little than too much. In the severer forms, dry heat to the body, lowering of the head, and the injection or ingestion of whisky or some preparation of ammonia may be required. Injections of ether are recommended, but in abdominal operations, where he has seen them applied, they have seemed to act as local irritants, the stimulant action on the heart being not through absorption of ether into the blood, but by a reflex action. In profound shock, which resists other measures, strychnine may be injected, or digitalis or atropine may be used. In the "erethistic" form, chloral, the bromides, and opium are to be avoided or used with great caution. Genuine musk is the best remedy, say fifteen grains by the rectum; as a substitute for it, valerian or fluid extract of hops may be given. In chronic cases rest is required, prolonged far beyond the apparent needs of the patient's condition. For neurasthenia Weir Mitchell's method is the best. A sharp lookout must be kept for symptoms of chronic inflammation of the spinal cord and for concealed disease of the vertebral column.

MINOR PARAGRAPHS.

REFLEX DISTURBANCES FROM A WISDOM TOOTH.

How small an irritation may give rise to the most painful and most widely distributed of reflex neuroses is well illustrated by a case cited in the "Deutsche Medizinal-Zeitung" from the practice of a dentist, Dr. Herrmann, of Halle. A man of forty-seven had suffered for twenty years with an intense pain which began in the frontal region, but afterward involved the whole right side of the face and neck, and ultimately resulted in periodical mental excitement accompanied by delusions. A score of doctors and the most varied remedial measures had been ineffectual in affording him relief. Finally he sought admission to an asylum, where the physicians hit upon a misplaced wisdom tooth as the probable cause of the morbid manifestations, and called in a dentist to extract it. In addition to malposition, its roots had large exostoses, as was seen upon its successful removal under chloroform narcosis. The wound healed under antiseptic precautions in two weeks, and the reflex disturbances, neurotic and psychic, gradually disappeared altogether. They have not returned in the year now elapsed since the dental operation. This cure of a psychosis by extracting a tooth is in curious contrast with the not infrequent cases of insanity set down in many of our asylum reports as due to the extraction of teeth.

"NELLY BLY" AND HER DOCTORS.

A SPRIGHTLY contributor to the "World" doubtless amused that paper's readers last Sunday by her account of visits made in rapid succession to a number of well-known New York physicians, ostensibly for headache for which she professed not to be able to assign a cause, but really, it is to be presumed, to "fake" for the article in question. Her story is thoroughly good-natured, if not in good taste, and its setting is entirely suitable. A London newspaper once remarked of a like performance in Boston that it illustrated not so much the incapability of the town's doctors as the degradation of the journal in which the account appeared. It is to be supposed that, when Miss "Nelly" really wants medical advice, she will adopt different tactics.

ARTIFICIAL EYES MADE OF CELLULOID.

THE Paris correspondent of the "Journal of the American Medical Association" mentions an intense fœtor which sometimes results from the use of celluloid artificial eyes. The odor resembles that of bromine; the material is said to contain monobromide of camphor. The writer suggests that there is a liberation of bromine under certain conditions of its contact with the tissues beneath it, and that the extraordinary odor thus arises. These artificial eyes are said to come from Germany, but the place of their manufacture is not known to the writer. Professor Gayet, of Lyons, is the observer of the facts noticed.

TYPHOID FEVER AT YALE UNIVERSITY.

THE death of three students of Yale by typhoid fever seems to indicate that a grave type of the disease has attacked that community. Fever is not an uncommon occurrence among the students in the early part of the autumn session, after which time it gradually dies out. The medical officers of the college rather expect some cases after the students rejoin their classes in the autumn, and they are in the habit of regarding it as "vacational" or imported. Commonly the type of the fever is light, and it is rarely fatal, whether the student remains in town or is conveyed to his home. The authorities of the college con-

sider the water supply used by the students as pure and above suspicion. If the present condition of things persists, a bacteriological examination of the drinking-water and a survey along its sources will become necessary.

THE BROOKLYN HEALTH EXHIBITION.

It is proposed to keep the exhibition of sanitary appliances open until December 1st, and to give free admission to everybody interested in such displays. Being the first attempt of the kind, the undertaking has been tentative, and some things devoid of sanitary merit have been admitted, which simply help to pay expenses; but meritorious objects are to be found there, and very few persons will go there without discovering something instructive. A course of lectures will be given, at about weekly intervals, on sanitary subjects. The exhibition hall is at the junction of Fulton and Pineapple Streets, a short distance from the bridge.

THE ART OF COOKING.

Mr. Edward Atkinson lately spoke before the American Public Health Association on the economics of cooking. He not only gave the audience a sample of the work performed by his single-lamp-power ovens, but he gave to each person desiring it a reprint of his paper, prepared for him by the publishers of the "Popular Science Monthly," a day in advance of the regular appearance of the magazine.

"HYMEN AND ÆSCULAPIUS."

Under this heading a paragraph appears in the "British Medical Journal" for October 19th, which relates the fact of the marriage of the illustrious statistician, Dr. Bertillon, to a lady graduate in medicine, Mademoiselle Schultze, who had recently passed her examination for the doctorate with distinction and brilliancy. Other instances are not wanting where bright young medical women have been married to men already eminent in Parisian practice. The profession there shows an inclination to absorb them into the ranks as well by marriage as by the diploma.

A FATAL INJURY IN LAWN TENNIS.

A death from injuries incurred in lawn tennis has been reported from Staten Island. The accident occurred in the course of the regular play of the game, two of the players coming violently into collision. One of them, a young lady, was knocked down and stunned, but her injuries were at first regarded as not very serious. She was injured internally, however, and death ensued in about a week after the accident.

ITEMS, ETC.

The New York Neurological Society.—At the next meeting, on Tuesday evening, the 5th inst., Dr. Ira Van Gieson will read "A Contribution to the Pathology of the Laryngeal and other Crises in Tabes," and the Commission on the Treatment of Epilepsy and Chorea by the Correction of Ocular Defects will present a report.

The late Dr. James B. Hunter. — At a meeting of the Practitioners' Society of New York, on October 4, 1889, it was

Resolved, That the members of this society express their deep regret at the sudden and untimely death of their late colleague, Dr. James B. Hunter. They recall the fact that Dr. Hunter was one of the founders of the society, that he was its first president and always took an especial interest in the success of its work, to which he made practical and original contributions. Dr. Hunter was esteemed for his social qualities as well as for his eminence as a physician, and in his unfortunate death the members feel a sense of great personal bereavement.

[Signed.] W. T. Bull, R. F. Weir, C. L. Dana, } *Committee.*

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending October 29, 1889:

DISEASES.	Week ending Oct. 22.		Week ending Oct. 29.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	58	13	42	16
Scarlet fever	32	4	41	4
Cerebro-spinal meningitis	0	0	4	4
Measles	27	1	42	2
Diphtheria	79	26	80	12
Small-pox	0	0	1	0

The Philadelphia Polyclinic and College for Graduates in Medicine.—The ceremony of laying the corner-stone of the new hospital, with Masonic offices, has been set down for today.

The "Gazette de gynecologie."—It is announced that Dr. P. Ménière has retired from the editorship and from medical practice, on account of failing health, and that the "Gazette" will hereafter be edited by Dr. Philippeau.

The Death of Isaac E. Taylor, M. D., LL. D.—As we go to press we learn of the sudden death of Dr. Taylor, President of the Faculty of Bellevue Hospital Medical College, which occurred on the evening of Wednesday, October 30th. An appropriate notice will appear in our next issue.

Changes of Address.—Dr. John A. Fordyce, to No. 66 Park Avenue; Dr. John B. Hamilton (Washington), to No. 924 McPherson Square; Dr. Faneuil D. Weisse, to No. 46 West Twentieth Street.

Society Meetings for the Coming Week:

Monday, *November 4th:* New York Academy of Sciences (Section in Biology); German Medical Society of the City of New York; Morrisania Medical Society (private); Brooklyn Anatomical and Surgical Society (private); Utica Medical Library Association; Boston Society for Medical Observation; St. Albans, Vt., Medical Association; Providence, R. I., Medical Association; Hartford, Conn., City Medical Association; Chicago Medical Society.

Tuesday, *November 5th:* New York Obstetrical Society (private); New York Neurological Society; Elmira Academy of Medicine; Buffalo Medical and Surgical Association; Ogdensburgh Medical Association; Hampden, Mass., District Medical Society (Springfield); Hudson, N. J., County Medical Society (Jersey City); Androscoggin, Me., County Medical Association (Lewiston); Baltimore Academy of Medicine.

Wednesday, *November 6th:* Society of the Alumni of Bellevue Hospital; Harlem Medical Association of the City of New York; Medical Microscopical Society of Brooklyn; Medical Society of the County of Richmond (Stapleton), N. Y.; Penobscot, Me., County Medical Society (Bangor); Bridgeport, Conn., Medical Association.

Thursday, *November 7th:* New York Academy of Medicine; Brooklyn Surgical Society; Society of Physicians of the Village of Canandaigua; Medical Society of the County of Orleans (annual—Albion), N. Y.; Boston Medico-psychological

Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington).

FRIDAY, *November 8th:* New York Academy of Medicine (Section in Neurology); Yorkville Medical Association (private); Medical Society of the Town of Saugerties.

SATURDAY, *November 9th:* Obstetrical Society of Boston (private).

Letters to the Editor.

POLITZER'S POWDER-BLOWER.

NEW YORK, *October 28, 1889.*

To the Editor of the New York Medical Journal:

SIR: Under the head of "New Inventions, etc.," in the Journal for October 26th, Dr. John O. Roe, of Rochester, describes an improved powder-blower. He has evidently overlooked an identical powder-blower, invented by Politzer and described by him in his "Treatise on Diseases of the Ear," p. 469. I have used one for a number of years, which I obtained of Reynders & Co. GORHAM BACON, M. D.

HÆMORRHAGE AFTER REMOVAL OF THE TONSILS.

SUPERIOR, NEBRASKA, *October 21, 1889.*

To the Editor of the New York Medical Journal:

SIR: I have read with much interest the paper of Charles H. Knight, M. D., viz., "Note on the Galvano-cautery in the Treatment of Hypertrophied Tonsils," in the Journal for October 12th. In speaking of serious hæmorrhage following the operation of amygdalotomy and means to check it, he says "the loop of a cold-wire snare may be applied, possibly with the aid of a transfixion needle." Since reading his paper I have thought a little personal experience in this direction might be worthy of publication. Last July I removed partially a hypertrophied tonsil of the right side from a girl aged fourteen, using Mathieu's amygdalotome. Considerable resistance was met with in drawing the knife of the instrument through it, and hæmorrhage was not marked at first, but in about fifteen minutes became alarming. Tannogallic acid, cold, and pressure were used, but still it continued increasing. The patient was in my office and handy to what few instruments I possessed, a Jarvis's snare among them, but I had not read Dr. Knight's paper, or I should have used the "loop of the cold-wire snare." But the following is what flashed through my mind and what I did do: By the assistance of a tenaculum I drew the stump toward the median line and transfixed it with a needle and passed a loop of No. 24 silver wire over it; then, by the use of Sims's shield and Wyeth's needle-holder for a wire-twisting forceps, I succeeded in bringing such a pressure upon the circumference of the stump as to check all hæmorrhage. The wire made a groove for itself, so I removed the needle and cut the wire short, and left it in position for two days, when it was removed. This was another method of using the "cold-wire loop" without the snare, and perhaps as practicable, as it was the means of allaying a great deal of excitement on the part of the parents as well as relieving a little anxiety in another direction. I learned after the operation that repeated applications of tincture of iodine had been made to the enlarged tonsil on the recommendation of another physician without appreciably diminishing its size. The hæmorrhage was from numerous arterial twigs, their mouths being kept open in all probability by the fibrous condition of the gland. Delavan, in the "Reference Hand-book," speaks of E. W. Clark's using a strong ligature in a case at the New York Hospital. I take it that his ligature was silk, which I should think would be harder to tie in this location than a wire would be to twist. I had not received the "Hand-book" at the time I operated, but neither in it nor in Knight's paper am I able to find any reference to a ligature, silk or wire. J. S. BUTLER, M. D.

Proceedings of Societies.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Eighty-fourth Annual Meeting, held on October 28, 1889.

The President, Dr. ALEXANDER S. HUNTER, in the Chair.

THE business of the evening was devoted entirely to the reception and adoption of reports by various committees, and the election of officers for the ensuing year. Considerable discussion was elicited by a clause contained in the report of the Comitia Minora. In it the committee recommended that physicians who for a period longer than two years were delinquent in the matter of fees should have their names omitted from the printed list of the society's members. Upon a vote this clause was retained, but it was explained that the names would not be withheld entirely, but would be printed in a separate list.

The treasurer's report showed a balance in hand of $1,176.

The report of the Committee on Hygiene contained information as to many of the more glaring defects in the methods of conducting the work of the public schools, in so far as concerned the health, cleanliness, and general well-being of the pupils during school hours. The following is a list of the officers elected for the ensuing year: President, Dr. Alexander S. Hunter; vice-president, Dr. J. Leonard Corning; secretary, Dr. Charles H. Avery; assistant secretary, Dr. William E. Bullard; treasurer, Dr. John S. Warren; censors, Dr. Daniel Lewis, Dr. George H. Fox, Dr. Laurence Johnson, Dr. N. G. McMaster, and Dr. George A. Abbott; delegates to the Medical Society of the State of New York, Dr. D. H. Goodwillie, Dr. William Stevens, Dr. Albert S. Newcomb, Dr. Frank B. Carpenter, Dr. Samuel Lloyd, Dr. Peter A. Callan, Dr. Ralph Waldo, Dr. Urban G. Hitchcock, Dr. William A. Dayton, Dr. Charles A. Powers, Dr. Willy Meyer, Dr. Henry D. Chapin, Dr. George R. Elliott, Dr. John Dorning, Dr. Seneca D. Powell, Dr. Robert T. Morris, Dr. Francis Valk, Dr. David D. Jennings, Dr. William C. Jarvis, Dr. Malcolm McLean, Dr. Egbert H. Grandin, Dr. William P. Northrup, Dr. R. C. M. Page, and Dr. Robert B. Talbot.

NEW YORK STATE MEDICAL ASSOCIATION.

Sixth Annual Meeting, held in New York, September 25, 26, and 27, 1889.

The President, Dr. W. T. LUSK, of New York, in the Chair.

(*Concluded from page 470.*)

Forced Respirations; Additional Observations. — Dr. GEORGE E. FELL said that last year he had presented before the association his method of inducing forced respirations in the narcotized human subject. The mechanical apparatus by which he effected this consisted of a bellows, an arrangement for heating the air, and an air valve with tracheal and other connecting tubes. The object of the present paper was to set forth more definitely the encouraging results which had followed the use

of his contrivance. He reported a number of cases of opium narcosis in which breathing had been performed for the patients for periods varying from two to twenty-one hours, their lives being thereby saved.

Alcoholic Paralysis.—Dr. T. D. Crothers, of Hartford, Conn., read a paper with this title which went to point out the direct connection existing, in the author's opinion, between chronic alcoholism and such pathological changes in the brain as were concerned in producing many of our cases of insanity with paralysis.

Dr. E. M. Moore said that the paper marked a new departure. Great difficulty always surrounded the incarceration of persons undoubtedly unable to control themselves in the matter of alcoholic stimulants. The condition had come to be regarded as only temporary. The author, in his paper, however, had taken a true view of the case. There might be such cerebral change as would make it impossible for the tendency to alcoholism ever to pass away in certain subjects. There would be no difficulty in controlling such people if physicians could make up their minds to designate such persons as insane. The law would be sufficient for this, and it would be an immense boon to society to be able to deal with them. He hoped this paper would be an entering wedge.

Dr. A. L. Carroll thought that before the alcohol habit could be acquired there must exist a predisposing vulnerability. Thousands were never apparently injured by its use, while others would be led away by a glass of wine at dinner. While with one class drinking was a vicious propensity which might be cured by shutting them up, with another the tendency was a neurosis and beyond control. Such people would remain all right for months, and then came the neurotic craving which overmastered them, and very heart-rending cases they were.

A Few Fads.—Dr. H. D. Didama, of Onondaga County, in a humorously caustic paper, touched in chronological order on many of the medical vagaries of recent times. After reviling the "blue-glass fad," he went on to speak of the sulphureted-hydrogen fad. This he characterized as an attempt to cure a dire disease with medicated wind. Consumption was, however, a disease of obstinate fixity. Its bacilli—had they not resisted carbolic acid and bed-bug poison, and grown fat upon "Rough on rats"? Even when surprised by a rear attack, they did not "silently steal away," but died at their posts. Beings of whom the world never heard before or since recorded lots of cases cured. Gas generators, at ten dollars a machine, were found in thousands of offices. And now—well, the bacilli and the scoffers wore a triumphal smile.

Some Uses of the Transfixion Ligature.—Dr. T. H. Manley, of New York, in this paper went deeply into the earlier and most recent methods for the control of hæmorrhage. He did not think that the management of hæmorrhage kept pace with the advance of surgery. While operating one day in the region of the great vessels for the removal of strumous glands of the right side of the neck, and while teasing out the last of these, a gush of blood occurred. Every pressure and means were used to control the bleeding, but to no purpose, and the patient soon began to show alarming symptoms. Just then the author was inspired with an idea, and seizing a needle-holder armed with needle and silk, he plunged the needle into the wound near the thyreo-hyoid membrane, carried it sufficiently low to pass under the great vessels, and then, making a sharp turn, brought the point out through the middle of the sheath of the mastoid muscle, and tied the whole mass embraced by the ligature. The condition of the veins immediately suggested that the internal jugular and common carotid artery had been tied. He then closed everything. The patient rallied fairly well. The transfixion ligature was removed the next day, and the patient went on to an uneventful recovery and was discharged with the wound solidly healed on the tenth day. It had been gratifying to him to hit on any contrivance at a time when his patient might have bled to death. It had occurred to him that the employment of a ligature, by transfixing the parts and inclosing the nearest available and suitable point of a bleeding vessel within it, was a method which might be followed with advantage and safety. With this idea he had entered upon a series of experiments upon the cadaver and upon living animals for the purpose of demonstrating the regional topography and points of selection for the passing of ligatures, what was likely to be included in such ligatures, and the disturbed functional or the pathological result to be looked for by the temporary embrace of important vessels and nerves by ligature. He had also put the plan into successful practice whenever occasion had offered. His inferences were in favor of the method being one which should commend itself to surgeons in selected cases, and for military purposes he should deem it of great value.

A New Urethrograph.—Dr. Stewart exhibited a recent modification of his urethrograph and described the operation of obtaining diagrams of the general conformation of the urethral canal.

Dr. Gouley said the instrument, while not a perfect one, was a vast improvement on any of the others.

The Bacteriology of Drinking-water.—The author, Dr. E. K. Dunham, commenced his paper by going fully into the principles involved and the procedures adopted in the estimation of the bacteriological element in drinking-water. He then traced the history of a given sample of water, giving some typical illustrations of the application of the principles underlying the bacteriological test of water as met with in actual practice. His conclusions were that the bacteriological examination of water alone could not, save under exceptional circumstances, furnish the data for a direct verdict as to its sanitary value.

New Hypnotics: Sulphonal, Amyl Hydrate, Hydrobromide of Hyoscine, Hypnone, Paraldehyde, and Urethrane —*their Therapeutic Applications, Contra-indications, Toxicology, and Methods of Administration.*—Dr. W. H. Flint, of New York, opened the discussion on this subject by a paper which evidenced most exhaustive research. He had collected from all the sources at command, both here and abroad, the experience, observations, and deductions from experiments with this class of new drugs. Physicians, he said, recognized natural sleep as an invaluable ally in combating disease, and regarded hypnotic medicines as among the most effective weapons of their therapeutical armamentarium. They cordially welcomed and tested new soporific remedies. The number of valuable sleep-producing medicaments had happily been augmented of late by new discoveries in the domain of synthetical chemistry, and by the utilization of certain compounds long known to science.

The object of the present discussion was to give a summary of the therapeutical applications, contra-indications, toxicology, and modes of administration, and in some cases to give the physiological action of these hypnotics with a view to throw some light upon the relative merits of the individual remedies. The writer desired to accomplish his part of the discussion by presenting a *résumé* of the most important papers on this subject which had come to his notice, adding thereto the results of his own observations. The group of somnifacients to which attention was invited comprised sulphonal, amylene hydrate, paraldehyde, urethrane, and hypnone. In respect to sulphonal he could report thirty-three cases treated, with the following conclusions arrived at: That sulphonal, even in single doses of twenty or thirty grains, was in the main a safe and reliable hypnotic, free from unpleasant concomitant effects, and usually from all unde-

sirable sequelæ. The only objectionable after-effect witnessed by himself was moderate somnolence on the morning following its administration; in none of the cases was there derangement of the appetite or digestion, nor was the circulation or respiration appreciably affected. The cutaneous and renal secretions were neither increased nor diminished, and nausea, vomiting, or constipation did not follow the use of the drug. The average length of the time in which sleep ensued after the administration of sulphonal was about an hour. The average duration of the sleep was a little over six hours, and success attended the use of the drug in about 87 per cent. of all the cases. Since his early experiments with the drug had been published about a year ago, he had constantly employed it in private and hospital practice, and it had continued to favorably impress him. Reviewing his own experience and that of others, he concluded that the physiological action of sulphonal had not yet been satisfactorily established, although notable contributions on this subject had been made during the current year. Sulphonal was chiefly valuable in nervous insomnia, in some forms of insanity, notably in acute maniacal conditions, in acute sthenic febrile diseases, the opium habit, in conditions of gastric irritability, at least temporarily in neurasthenia, and in some cases of anæmia. The effects of the remedy had been generally better in his experience where the patients were strong and plethoric, and in these cases the after-effects were most frequently absent. Sulphonal was contra-indicated because of its comparative uselessness in insomnia from pain, cardiac dyspnœa, gastrectasis, congested stomach, etc. The causes of this failure in the presence of pain, cough, and dyspnœa seemed to be its slight narcotic action, and in gastrectasis, chronic gastritis, and gastric congestion its slow solubility. It seemed to be contra-indicated on account of its possible hurtful effects in great physical prostration, in acute melancholia, and in insanity after abortion, after labor, and perhaps in sclerosis and in angina pectoris. Clinically, toxic symptoms did not generally follow the use of sulphonal in adult cases until thirty grains or more had been given at one dose, or in doses quickly succeeding each other. It must, however, be conceded that small doses did sometimes act unfavorably owing to individual idiosyncrasies. The milder toxic symptoms from sulphonal were fatigue, depression, tinnitus aurium, and nausea. The writer had also seen marked pallor and œdema beneath the eyelids in several cases in patients waking from sleep after taking sulphonal.

The graver symptoms thus far reported were diarrhœa, peripheral aphasia and ptosis, a cutaneous eruption like that of rubeola or urticaria, brachycardia, inco-ordination, semi-coma, and collapse. Sulphonal should be administered by the mouth in hot beverages or in hot liquid foods an hour or more before its effects were desired. Its use by the rectum was not generally satisfactory. He would urge the necessity of employing only the pure sulphonal, as some bad results had come, no doubt, from the use of a spurious article.

There was no need for alarm at the sensational statements of some authors who had used too large doses, or had used the drug when it was contra-indicated. The dose should be carefully adjusted to the requirements and peculiarities of each case, and since the effect of a full dose was often felt on the second or third night after its administration, it was well to decrease the dose on these nights whenever the drug must be given uninterruptedly for days or weeks. He had not seen evidence yet that the sulphonal habit existed, nor had he seen any cachexia or dyscrasia which could be fairly attributed to the drug. Favorable effects had resulted in about eighty per cent. of his cases. Children took it readily and tolerated it very well.

Amylene Hydrate.—This hypnotic, the speaker said, he had employed in thirty-eight cases of insomnia from various diseases. In these, success had resulted in sixty-seven per cent. Upon the basis of his own experience and that of the authorities, he had reached the following conclusions: The physiological action of amylene hydrate was similar to that of alcohol. In therapeutical doses it produced sleep by its soporific action on the cerebrum. In toxic doses it paralyzed the cord and medulla, finally abolishing the reflexes, arresting the respiration, and paralyzing the heart. It was applicable, therapeutically, to insomnia from nervousness, from excessive mental exertion, from anæmia, fevers, insanity, cardiac diseases, the opium habit, and from the withdrawal of narcotics that had been constantly employed. It was contra-indicated because not efficacious in insomnia from pain, cough, and often in cardiac and uræmic dyspnœa. Its use by the mouth was contra-indicated in gastric diseases attended with irritation or nausea, because of its irritating character, but it might be given by the rectum in such cases. It should not be given to fastidious patients on account of its taste and odor, and children did not generally tolerate it, for the same reason. The toxic effects from therapeutical doses were generally unimportant, consisting of headache, slight nausea, gastric distress, and thoracic oppression. Serious symptoms sometimes followed, as loss of reflexes, paralysis of the extremities, mydriasis, low temperature, feeble pulse, and superficial respiration. Amylene hydrate was best given by the mouth, in soft capsules, or in mixture, or solution, disguised by peppermint water, raspberry syrup, or extract of licorice. The mixture should be thoroughly shaken before being used in order to avoid an overdose being taken. The dose for adults was thirty to forty-five grains by the mouth and forty-five to seventy-five by the rectum. The author had never seen any cases in which an amylene hydrate habit had been engendered or a cachexia due to the remedy developed.

Paraldehyde had been used by the author in thirty-five cases of insomnia from a variety of causes for the purpose of comparing its effect with other hypnotics. The doses had varied from sixty to ninety minims. Successful results were obtained in 72 per cent. of the cases. The writer's inferences, drawn from his own studies, were as follows: The remedy in moderate therapeutic doses acted like ethyl alcohol, producing sleep by its hypnotic action on the cerebrum. This sleep was, however, preceded by a brief period of excitement, during which the reflexes were augmented. In larger doses it paralyzed the spinal cord and abolished the reflexes, finally arresting respiration by paralyzing the medulla. It also exerted a paralyzing action on the vaso-motor centers. Like amyl nitrite, it caused central myosis and stimulated intestinal peristalsis. In full doses it slowed and tranquillized the respiration. It did not notably affect the temperature, but sometimes caused a slight diaphoresis; the blood-pressure was slightly reduced by small doses, more markedly so by large ones, and the pulse was somewhat slowed. Paraldehyde did not particularly irritate the stomach. It was not yet decided whether it produced methæmoglobinæmia. The remedy was not indicated in the insomnia of acute and chronic melancholia, epileptic dementia, acute alcoholism, the opium habit, hypochondriasis, hysteria, neurasthenia, chronic gout, exhaustion from over-work, dyspnœa, or the cough of pulmonary diseases. Paraldehyde was contra-indicated in cases of cyanosis with depression of the respiratory center, as in advanced emphysema and cardiac dilatation, in painful diseases, gastric ulcer and gastritis, or in pharyngeal and laryngeal ulceration, and was to be used cautiously in anæmia, as it might reduce the oxyhæmoglobin of the blood. The milder toxic effects were headache, nausea and vomiting, vertigo, and slight cerebral congestion. In powerful toxic doses it produced deep sleep with anæsthesia, then abolition of the re-

flexes, and death from paralysis of the respiratory center. Paraldehyde might be given a long time in moderate but yet effective doses, with no harmful results. If, however, too large doses were given for a long time, tremor of the hands, œdema, anæmia, delirium, and a condition resembling chronic alcoholism might be developed. In a rabbit poisoned by relatively large doses of this drug, fatty degeneration of the liver was produced. It was best given in soft capsule or disguised with cinnamon water or compound tincture of cardamom. The average dose for an adult was one drachm. It should not be given subcutaneously on account of the local irritation and pain which it produced, nor could it be given by inhalation, as it acted too slowly and was apt to be irritating. It did not seem to have an accumulative effect, nor was tolerance of the remedy established.

Urethrane the author had tried in forty-two cases of insomnia, and found it to be possessed of moderate hypnotic qualities, although insufficiently powerful to successfully rival the remedies already mentioned. In regard to the physiological action of urethrane we had the authority of Schmiedeberg for the statement that large doses of the drug produced loss of mobility with insensibility and unconsciousness. The respirations were increased in depth and frequency, and the heart-beat steadily sustained the blood-pressure at the normal point. Sensation persisted much longer than motion, and the temperature fell. The reflexes were but little affected in the urethrane sleep. Diuresis and diaphoresis sometimes occurred. Urethrane was best applied therapeutically to insomnia in cardiac diseases without great dyspnœa and to cases of moderate mental excitement. When sulphonal, amyl hydrate, and paraldehyde were too powerful, it might render good service in insomnia from melancholia. Urethrane was contra-indicated in insomnia from pain and cough, as it had no anodyne properties, nor was it powerful enough for use in delirium tremens or in mania. It could scarcely be said to have toxic effects until very large doses—as, for instance, 180 grains—were taken. In some cases it had been known to cause nausea, somnolence, and gastric distress. Being soluble in two parts of water and being very free from offensive taste, urethrane might be given by the mouth or by the rectum. In aqueous solution it might also be used subcutaneously. The adult dose varied from 15 to 30 grains, and for children from 12 to 18 grains was a fair dose; from two to three years old, 8 grains, and from four to fourteen years, 15 to 20 grains. The average dose for subcutaneous use was 4 grains.

Hypnone.—The author's experience with this drug was too limited to justify him in formulating conclusions based upon his own observations. From that of others he decided as follows: Therapeutically, it might be used in the absence of a better hypnotic in primary or nervous insomnia, but its effects were very uncertain, and, tolerance being soon established, larger doses were required than at the beginning of the treatment. It was contra-indicated in sleeplessness from cough, and was not to be given to patients with feeble stomach. It was best administered in doses of from 3 to 7½ grains, in capsules or almond-oil. His own experience with hypnone had, however, been so disappointing that he had practically abandoned its use.

Charles Rice, Ph. D., of New York County, reviewed the general points in the chemical history of the new hypnotics. Sulphonal was, he said, at present the most favored, but it had great disadvantages both pharmaceutically and therapeutically. It was almost insoluble in water, and its effect therefore was too slow. Recent experiments in Germany had resulted in the production of several more compounds of greater intensity from the sulphonal group. Of these, tetranol was the most intense of all. We should probably soon have the market flooded with a whole series of these compounds, each more powerful than its predecessor. The conflict was also imminent as to who should be the lucky manufacturer of the drugs, because it was thought there were "millions in it."

Dr. Squibb said any remarks he might make would be in the line of conservative policy. These new hypnotics had been alluded to as having millions in them. It seemed to him that the more largely they were advertised the more they were used, and perhaps successfully used. The search for such remedies was entirely wrong, in his mind. Sulphonal was quoted at about $1.35 an ounce in the market, and cost about 15 cents. It was controlled by a patent in this country, though not so abroad. It would be observed that there was no one of the hypnotics discussed which was susceptible of being used subcutaneously.

Dr. Carroll said he had been struck by the discrepancy between the hypnotic effects reported from similar doses by different authors.

The subject was still further discussed by Dr. Truax, who, while drawing inferences favorable to sulphonal, did not think that the new drugs, so far, took the place of those already in use.

Dr. L. H. Sayre presented a patient from whom he had amputated the right leg at the level of the junction of the upper and middle thirds of the femur. The patient was a young man, who had suffered for a long period with bone disease of the lower right extremity, commencing at the knee joint. Resection of this joint failing to arrest the process of necrosis, and the femur becoming involved, amputation had been performed, having for its special provision the leaving of a useful stump to which might be attached a practicable artificial limb. At the level referred to a circular cut was made, dividing the soft parts to the bone. A longitudinal incision was then made, enabling the operator to disarticulate the head of the femur from the cotyloid cavity. The result of the operation had fully justified the expectations, as the patient was now before them, wearing, for the second time only, an artificial leg the movements of which he was already able fairly to control.

AMERICAN DERMATOLOGICAL ASSOCIATION.

Thirteenth Annual Meeting, held at Boston, on Tuesday, Wednesday, and Thursday, September 17, 18, and 19, 1889.

The President, Dr. I. E. Graham, of Toronto, in the Chair.

(*Continued from page 473.*)

Officers for the Ensuing Year.—The following officers were elected: President, Dr. P. A. Morrow, of New York; vice-president, Dr. G. N. Tilden, of Boston; secretary and treasurer, Dr. G. T. Jackson, of New York.

Dr. J. T. Bowen, of Boston, and Dr. C. W. Allen, of New York, were elected members of the association.

Dr. Bulkley presented the report of the Committee on Statistics.

It was voted to hold the next meeting of the association at Richfield Springs, N. Y.

Lupus Erythematosus.—Dr. W. A. Hardaway, of St. Louis, presented the history of a case. The patient, twenty-three years of age, had been well until October, 1887, at which time some spots were noticed upon the nose. These were treated with chrysarobin salve by the attending physician, who considered it a case of eczema. The treatment brought on an acute dermatitis, which obscured the real disease for a time, but, on clearing it up under soothing ointments, it was found that the disease was lupus erythematosus. The patient went to the Hot Springs of Arkansas after six weeks, and there it was

considered to be eczema. In March, 1888, the eruption occupied the same area, and was of a dusky-red color, the borders being sharply defined. Some improvement followed the use of sulphur and salicylic acid. For some reason a lead salve was ordered, and, by a mistake of the apothecary's, crystals of the acetate were put in it. The reader was called to see the patient, and found him with a temperature of 103° F., with great swelling of the lymph glands in the front of the neck, and with the upper lip incrusted. On the second day the swelling of the neck was very hard, and there were some spots of eruption on the forehead, not quite reaching the hairy scalp. On the third day there were pustular and bloody crusts upon the cheeks, resembling those of pustular eczema, and some œdema of the throat. The temperature was 104·5°, probably due to the adenitis. During the next two weeks the lower lip lost its crust and the fever abated, and within a month the disease had undergone complete involution. The glands became involved in a tubercular process all over the upper part of the chest. Hectic supervened, and he died suddenly of pneumonia after some days.

Dr. Taylor was skeptical about the acute attacks of lupus erythematosus of Kaposi. In one case which Dr. Bulkley had had in New York many of the clinical features of Kaposi's description had been absent. It seemed to him that Kaposi had got hold either of cases of syphilis or of quasi-acute cases of iodide-of-potassium poisoning.

Dr. Greenough would question whether the fatal result had not been due to the violent dermatitis that had twice been set up and had resulted in affection of the lymph glands rather than to the lupus erythematosus itself.

Dr. Shepherd thought if the lupus had been left alone there would have been no glandular affection. In patients with a tubercular family history small irritations would sometimes set up glandular disease.

A Hitherto Undescribed Form of New Growth of the Vulva.—Dr. R. W. Taylor, of New York, read a paper on this subject. (To be published.)

Dr. Greenough, referring to one of the author's cases, asked if the growth in parts free from pressure showed any tendency to exuberant growth.

Dr. Taylor replied that it did not. It was entirely flat.

Dr. Bronson said that he had seen the case, and at first glance it had had the appearance of epithelioma. He could hardly conceive that an irritation acting for a time and then ceasing would start a process which could prove so rebellious. It seemed to him that there must be some specific cause at the bottom of it.

Dr. Heitzman said that the clinical picture and the microscopical study were entirely at variance in this case. The process, he believed, was malignant. He had studied the sections, and found that the rete mucosum was not thickened, but, on the contrary, very much thinned. The papillæ were very much enlarged. The tumor was certainly a sarcoma. The history of lack of ulceration and attempts at cicatrization, and the fact that the lymphatics were not affected, tallied with the view that it was sarcoma. As no autopsy was made, it would be impossible to say that there were not metastatic formations.

Dr. Robinson agreed with the last speaker that the case was one of sarcoma.

Dr. Taylor said that, while he could vouch for the clinical features, he had awaited with a good deal of interest the opinions of the last two gentlemen. It seemed to him, clinically, that it was something more than an inflammatory growth. The specimens had been carefully examined during a period of six months by Dr. Van Gieson, at the laboratory of the College of Physicians and Surgeons, and there had been nothing hasty in the conclusions offered.

Some General Suggestions in Dermatological Therapy.—Dr. S. Sherwell presented a paper on this subject. (To be published.)

Dr. Bulkley had been especially interested in the matter of eczema upon the lip. He had been through with all varieties of treatment, and had come to conclusions identical with those of Dr. Sherwell. He could recall many patients who came for treatment each winter, and who were better during the warm months. He would go a step further than Dr. Sherwell, and look at the general condition of the patient, for some persons of catarrhal habit needed proper internal medication. In regard to the cases of anal eczema, he had seen fissures touched with nitrate of silver, and he was very cautious about the use of this remedy, for he had seen one case of general eczema set up, and the man had been kept in bed for three or four weeks.

Dr. Zeisler believed that many cases of eczema of the lip were due to a diseased condition of the roots of the hairs, and in his hands the best treatment was by depilation. He was positive that the catarrh excited the eczematous condition and the sycosis. He had no doubt that the catarrh was of mycotic origin, although it was not yet proved. The treatment by depilation was efficient and cheap and did not cause any dermatitis.

Dr. Taylor spoke of the fact that dry sulphur was used to rub into the so-called "mange" of dogs, one variety of which was parasitic.

What Real Value have the Natural Mineral Waters in the Treatment of Diseases of the Skin?—Dr. L. D. Bulkley, of New York, read a paper with this title. It was, he said, the popular impression that natural mineral waters helped certain skin diseases; that some were to be applied on the outside, and some were to be taken internally, for the purpose of washing out the noxious agent. No doubt many cases were benefited, but any one who had seen many cases of the effects of natural mineral waters must have been many times disappointed. The water was but one element in the case; hope and faith might play an important part. Then there were the change of scene, rest from ordinary occupation, and perhaps the enforcement of regular hours. In Europe most of the springs had resident medical advisers, but, unfortunately, there were few of them in this country. It should be remembered that in certain instances other appropriate remedies were being taken at the same time; witness the treatment of syphilis at the Hot Springs of Arkansas. But in any case it was the water, pure and simple, which contributed most to the cure. Most of the waters had little effect upon the skin, but touched especially the kidneys, liver, bowels, etc. We could not always predict the effect of the water from its chemical analysis. Certain mineral waters were taken hot at the springs, but cold, or even with ice, when at a distance. In the case of iron, arsenic, and bromine springs the results were rather indefinite. Sometimes cutaneous diseases depending on debility were improved. Everybody had seen cases of eczema which had been treated at the sulphur springs in vain. Where there was a rheumatic element back of the cutaneous lesion no doubt some good could be received, but in those cases it was the alkaline water and not the sulphur which was of benefit.

Like all other remedies, the use of springs must be carefully prescribed in order to be of the greatest use. Probably more benefit was derived in eczema than in other diseases, and even then it should be toward the close of the case. First should be used the alkaline and moderately purgative waters, and then a tonic course. Carlsbad was advisable where there was much abdominal plethora. In acute cases the hot springs should be used. Care must be taken lest acute eczema be excited by the springs, for some very severe cases had been lighted up in this manner. In psoriasis sometimes sea-bathing was of far more

benefit than the mineral springs. In syphilis little benefit followed unless other treatment was kept up. Acne would often be benefited somewhat, and the iron springs were better than the sulphur. The chief difficulty in the use of this treatment was the fact that the patients were not under supervision, and were apt to follow their own fancy or the guidance of the attendants at the baths.

Dr. Hardaway had lived in the vicinity of several springs, and had seen a large number of patients who had tried the treatment. A large part of the benefit, it seemed to him, was due to the fact that the patients were away from their business. Undoubtedly some were helped by the water simply as water. In various gastric and intestinal disturbances which might lie at the root of an acne of the erythematous form in people who were lithæmic the water would act well. There were some persons who gave up a dissipated, irregular life, and spent the time quietly and regularly when at the springs. He had never seen any specific effects from the waters.

Dr. Klotz thought it a pity that the natural springs in this country, which he considered equal to those of Europe, should be so neglected.

Dr. Taylor spoke of the fact that there were so many social attractions at Saratoga that the patients were apt to be led away from the purpose of their visit. He had never seen any marked effects from the waters at Saratoga, but he had seen bad results, and he would advise persons with any renal or any commencing vesical or urethral trouble to leave the Hathorne water alone. In some of the patients who had what we called portal congestion the iron waters acted very harmfully; some patients had been brought to the verge of death by persistently drinking the water.

Dr. Sherwell had had a patient with erythematous eczema much injured by a trip to one of the sulphur springs. The patient had returned in a pitiable condition.

Dr. Denslow had found that eczema in his cold climate tended to become chronic, and patients had to be sent to a warmer locality. Those that were benefited most, as a rule, did not have much to do with the waters of the springs. He advised patients with acute disease to have nothing to do with them at all. Where there had been any benefit it had been in the old chronic cases, and the acute cases had been aggravated. Even in that case it seemed to him that the chronic cases would have been just as much benefited by the change to a warm climate, leaving the waters alone.

The President, in answer to an inquiry made by Dr. Bulkley, said that the St. Catherine Springs and the Preston Springs had given good results, but generally in rheumatic cases, and he preferred the latter place for this class of patients.

(*To be concluded.*)

Book Notices.

The Diseases of Children, Medical and Surgical. By Henry Ashby, M. D. Lond., M. R. C. P., Physician to the General Hospital for Sick Children, Manchester, etc., and G. A. Wright, B. A., M. B. Oxon., F. R. C. S. Eng., Assistant Surgeon to the Manchester Royal Infirmary, etc. London and New York: Longmans, Green, & Co., 1889. Pp. xix–681. [Price, $6.]

The original feature of this work is one which commends itself strongly to us; it is written conjointly by a physician and a surgeon, and so presents a consideration of the diseases peculiar to children as viewed from the standpoint of each. It is not merely a compilation, but is based upon the personal experience of the authors and is written in a practical manner. Pathology is not greatly dwelt upon, and the diseases which are not peculiar to children, or are not modified by their occurrence in early life, are either omitted or briefly mentioned.

The arrangement is fair. A short space is given to the most important facts in the physiology of infancy and childhood, then the diseases incident to birth are considered, together with the hygiene and diet. Next are the diseases of the digestive and other systems of the body, general diseases, fevers, diseases of the bones, joints, nose, ear, and skin, and tumors and injuries, concluding with a short but valuable chapter on the administration of anæsthetics to children. In this arrangement we do not understand why the authors have decided to place the specific fevers between the diseases of the respiratory and those of the circulatory systems, and the general diseases between those of the circulatory and those of the nervous systems. They seem rather out of place, but there may be good reasons which induced the authors to assign them these positions. Still it would seem better to place them either before or after the diseases of the special systems.

The book is fairly well got up, the cuts are very clear and good, and the work commends itself as a useful addition to the library.

Hygiene of the Nursery. Including the General Regimen and Feeding of Infants and Children and the Domestic Management of the Ordinary Emergencies of Early Life. By Louis Starr, M. D., Clinical Professor of the Diseases of Children in the Hospital of the University of Pennsylvania, etc. Second Edition, with Twenty-five Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1889. Pp. x–17 to 280. [Price, $1.]

The ounce of prevention is essentially the principle underlying Dr. Starr's directions for the maintenance of health during infancy and childhood. Realizing that the little things of life are great things, he presents in forcible fashion practical suggestions not to be found thus aptly expressed in other books relating to the care and training of children. A conscientious study of these ten chapters will enable any young mother to successfully rout Mesdames Brown, Jones, and Robinson on their own ground, and render all gratuitous advice concerning the new baby a work of supererogation. The author tells the truth about sleep, bare legs, roller-skates, and bicycles, and utters a protest against the indiscriminate bathing that washes infants into heaven. An excellent dietary is given, and hints for emergencies constitute one valuable feature of this admirable little treatise, which everywhere aims to be of use to that helpless, hapless, yet loving and lovely creature, the young mother who is striving to act well her part without any previous education in the practical duties of life.

Lectures on Obstetric Nursing. Delivered at the Training School for Nurses of the Philadelphia Hospital. By Theophilus Parvin, M. D., Professor of Obstetrics and Diseases of Women and Children at Jefferson Medical College, etc. Philadelphia: P. Blakiston, Son, & Co., 1889. Pp. viii–9 to 104. [Price, 75 cents.]

The lectures that are contained in this little hand-book present much that is interesting and useful. The style is clear and often graceful, and the subject-matter treated intelligently, with an absence of exaggeration that is refreshing and reassuring. The multiplication of little books that are good is always to be commended, for little books are read. The perusal of this one is both pleasant and profitable.

BOOKS AND PAMPHLETS RECEIVED.

A Text-book of Animal Physiology, with Introductory Chapters on General Biology and a Full Treatment of Reproduction. For Students of Human and Comparative (Veterinary) Medicine and of General Biology. By Wesley Mills, M. A., M. D., L. R. C. P. (Eng.), Professor of Physiology in McGill University and the Veterinary College, Montreal. With over Five Hundred Illustrations. New York: D. Appleton & Company, 1889. Pp. xxii–700. [Price, $5.]

The Cerebral Palsies of Children. A Clinical Study from the Infirmary for Nervous Diseases, Philadelphia. By William Osler, M. D., Fellow of the Royal College of Physicians, London; Professor of Clinical Medicine in the University of Pennsylvania, etc. Philadelphia: P. Blakiston, Son, & Co., 1889. Pp. 103. [Price, $2.]

An Experimental Study in the Domain of Hypnotism. By Dr. R. von Krafft-Ebing, Professor of Psychiatry and Nervous Diseases in the Royal University of Graz, Austria. Translated from the German by Charles G. Chaddock, M. D., Assistant Physician, Northern Michigan Asylum. New York and London: G. P. Putnam's Sons, 1889. Pp. viii–129. [Price, $1.25.]

Hypnotism: Its History and Present Development. By Fredrik Björnström, M. D., Head Physician of the Stockholm Hospital, etc. Authorized Translation from the Second Swedish Edition. By Baron Nils Posse, M. G., Director of the Boston School of Gymnastics. New York: The Humboldt Publishing Co. Pp. 126. [The Humboldt Library.]

Studies in Intestinal Surgery. By W. B. Van Lennep, A. M., M. D., Philadelphia, Pa. [Reprinted from the "Hahnemannian Monthly."]

A Case of Cerebral Syphilis following an Attack of Thermic Fever. By Lewis H. Adler, Jr., M. D., Philadelphia. [Reprinted from the "Boston Medical and Surgical Journal."]

A Case of Loreta's Operation for Stricture of the Pylorus. By T. W. Huntington, B. A., M. D., Sacramento, Cal. [Reprinted from the "Occidental Medical Times."]

The Case of Mrs. Wilhelmina C. D. Lebkuchner. By Matthew D. Field, M. D., New York. [Reprinted from the "Medico-legal Journal."]

The Pine Belt of New Jersey. A Region of Sandy Soil and Pine Forests. By Isaac Hull Platt, M. D., of Lakewood, N. J. [Reprinted from the "Transactions of the American Climatological Association."]

Scientific Work by Alienists. By F. B. Stephenson, M. D., Surgeon, United States Navy. [Reprinted from the "Boston Medical and Surgical Journal."]

The Purulent Conjunctivitis of Infants, and Blindness in New York State. By Lucien Howe, M. D., Buffalo. [Reprinted from the "Transactions of the New York State Medical Society."]

A Report of Three Interesting Cases, viz.: Case I—Adenoid of the Vault of the Pharynx. Case II—Strumous Ozæna. Case III—Tubercular Phthisis; Secondary Tubercular Ulcer of the Tongue (Presented before the Kings County Medical Association, May 7, 1889). By Sidney Allan Fox, M. D. [Reprinted from "Gaillard's Medical Journal."]

The Value of Creasote in Fifty Cases of Disease of the Air-Passages. By William Perry Watson, A. M., M. D., Jersey City, N. J. [Reprinted from the "Virginia Medical Monthly."]

Atropine in Enuresis. By William Perry Watson, A. M., M. D., Jersey City, N. J. [Reprinted from the "Archives of Pædiatrics."]

Diphtheritic Paralysis. By Lewis H. Adler, Jr., M. D. [Reprinted from the "American Lancet."]

Prolapse of the Womb, with Especial Reference to the (so-called) Hypertrophic Elongation of the Supra-vaginal Portion of the Cervix, with Report of a Case. By Lewis H. Adler, Jr., M. D. [Reprinted from the "Medical News."]

The Early Diagnosis of Extra-uterine Pregnancy. By J. M. Baldy, M. D., Philadelphia. [Reprinted from the "Medical Record."]

Abstract of a Paper on the Choice of Treatment of Urinary Concretions. By John W. S. Gouley, M. D. [Reprinted from the "Journal of the American Medical Association."]

Leprosy, with a Report on Two Cases. By George Dock, M. D., Galveston, Texas. [Reprinted from the "Transactions of the Texas State Medical Association."]

A Clinical Atlas of Venereal and Skin Diseases, including Diagnosis, Prognosis, and Treatment. By Robert W. Taylor, A. M., M. D., Surgeon to Charity Hospital, New York, and to the Department of Venereal and Skin Diseases of the New York Hospital, late President of the American Dermatological Association. Illustrated with One Hundred and Ninety-two Figures, many of them Life Size, on Fifty-eight beautifully colored Plates. Also many large and carefully-executed Engravings through the Text. Parts VII and VIII. Diseases of the Skin. Philadelphia: Lea Brothers & Co., 1889.

Miscellany.

Sectarianism in Medicine.—The question of the expediency of open affiliation with homœopathic practitioners—to the degree, at least, of obliterating any antagonism recognizable by the public—has lately been under discussion at two meetings of the Philadelphia County Medical Society, having been introduced by Dr. Edward Jackson. Dr. Solomon Solis-Cohen's closing remarks in the debate were as follows:

"I have not sought this controversy. Dr. Jackson has thrust it upon the society. We are compelled to plead 'not guilty' to his charge of narrowness. Homœopathy purports to be a new revelation in medicine; to embody the perfect truth, unknown before. It is, therefore, not only proper but necessary to quote from the 'Organon' of its founder to determine what is entitled to the name. If I want to know what Judaism is, I must go to Moses and the prophets. If I wish to learn about Christianity, I must go to the New Testament. If I wish to find out in regard to Mohammedanism, I must consult the Koran. Nor am I justified in believing, in opposition to the New Testament, that Christianity is truthfully represented by the man who cheats all the week and goes to church on Sunday; or in accepting, in opposition to his sacred books, as an exponent of Judaism the man who practices chicanery all the year and fasts on the Day of Atonement. Just as little can I accept as interpreters of homœopathy, in opposition to its founder, the men who find their profit in professing it, but hourly violate its canons in their practice. The 'Organon' clearly defines what should be called homœopathy, and as explicitly, and with the utmost opprobrium, condemns and rejects the 'mongrel system' which Dr. Jackson attributes to the Hahnemann College and its alumni. But later authorities than Hahnemann do the same thing. There are very many honest homœopathists, sincere in their delusions. Almost the last utterance of the late Dr. Adolph Lippe, who has not been dead two years, was a most scathing denunciation of those whom Dr. Jackson would have us believe are truthfully called homœopathists. As to recantation of each mistake a man may make in his lifetime, the cases are not parallel. The errors of the homœopathic system are not mere individual errors in detail, to which all of us are liable. They are fundamental; and they have been systematized into a creed; a veritable confession of faith. It is a faith that meets a public demand, and hence has a commercial value that unfits a man for the profession of medicine, because it imprisons his judgment. Such a faith in systematized error must, if professed, be lived up to. Or it must needs be repudiated before one can be acknowledged as fitted for a calling which, above all others, demands absolute freedom from prejudice and untrammeled liberty of action. Science and 'tenets' are incompatible. Tenets are fixed. Science is progressive. Dr. Jackson has asserted that certain men do not practice homœopathy, yet they belong to homœopathic county and State societies; and it was their allegation of the existence of 'schools'—not ours—which defeated the bill for State examinations. We tried to ignore sects or schools. They declared it was an 'allopathic' scheme to suppress trade rivalry. It seems to me that, with a perversion of logic worthy of Hahnemann himself, Dr. Jackson, in endeavoring to remove from these men the stigma of ignorant dogmatism, has brought against them a much more serious accusation. If science forbids us to consult with the unqualified, surely honesty equally prevents fraternization with those who make false professions. How we are open to the charge of sectarianism I can not see. It is another specimen of

Hahnemannian logic. Because a crank chooses to flock by himself in a corner, are all the rest of mankind sectaries? We prescribe no opinions, but hold ourselves free to act or refrain from action, as our best judgment may dictate. We 'ostracize' no one. We repudiate not particular 'tenets,' but the very idea that there can be 'tenets' in medicine. It is by refusing to admit tenets that the profession has advanced in spite of past errors, and will continue to advance in spite of present errors. The door by which the members of this society entered the temple of a profession whose only demand upon its votaries is that they earnestly seek truth and honestly follow it, that same door is open for all who may elect to enter. But if, turning back from that door, men have chosen to band themselves under the title invented by the man who said that previous to him all medicine was folly, and that he had discovered the eternal and infallible law beyond which there could be no progress, such men must accept the consequences of their voluntary action. As for the scientific text-books, cited as taught at the Hahnemann College, they and Hahnemann's 'Organon' can not be fruitfully studied in the same school. You can not teach the New Testament and the doctrine of the Thugs from the same pulpit. If such were attempted, human nature would take the lower, because the easier course. It seems to me that this is wholly a matter of conscience. If the conscience of a man will allow him to take part in what I must deem deceit, that is his personal affair. It is not my place to attack or upbraid him. But when this society is asked to indorse his conduct, it becomes a different matter; and I have the right to oppose such stultification."

Mortality in Cities in the United States.—The following table represents the mortality in the cities named, as reported to Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, and published in the abstract of sanitary reports received by him during the week ending October 25th:

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—									
				Cholera.	Yellow fever.	Small-pox.	Variloid.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y.	Oct. 19.	1,585,669	641	..	..	..	..	..	..	12	3	24	1	5
Brooklyn, N. Y.	Oct. 19.	843,602	294	..	..	..	..	..	..	5	2	17	..	2
Baltimore, Md.	Oct. 19.	500,343	165	..	..	..	..	..	..	6	..	6	..	1
St. Louis, Mo.	Oct. 19.	450,000	164	..	..	..	..	..	..	4	4	12	..	..
Boston, Mass.	Oct. 19.	420,000	175	..	..	..	..	..	..	6	..	10	..	2
Cincinnati, Ohio.	Oct. 19.	325,000	102	..	..	..	..	..	..	1	..	6	..	1
New Orleans, La.	Oct. 12.	254,000	105	..	..	..	..	..	..	1	..	3	..	..
Detroit, Mich.	Oct. 12.	250,000	59	..	..	..	..	..	..	2	..	4	..	..
Cleveland, Ohio	Sept. 21.	235,000	80	..	..	..	..	..	..	5	..	2	1	..
Cleveland, Ohio	Sept. 28.	235,000	96	..	..	..	..	..	..	8	..	7	..	..
Pittsburgh, Pa.	Oct. 19.	230,000	86	..	..	..	..	..	..	13	2	13	..	..
Louisville, Ky.	Oct. 12.	227,000	57	..	..	..	..	..	..	7	..	..	..	..
Minneapolis, Minn.	Oct. 12.	200,000	46	..	..	..	..	..	..	4	2	4	..	..
Minneapolis, Minn.	Oct. 19.	200,000	44	..	..	..	..	..	..	6	1	7	..	..
Providence, R. I.	Oct. 19.	127,000	47	..	..	..	..	..	..	2	..	4	..	1
Denver, Col.	Oct. 18.	125,000	52	..	..	..	..	..	..	15	..	1	..	..
Indianapolis, Ind.	Oct. 18.	124,450	32	..	..	..	..	..	..	3	..	2	..	..
Richmond, Va.	Oct. 12.	100,000	41	..	..	..	..	..	..	1	..	..	..	..
Richmond, Va.	Oct. 19.	100,000	36	..	..	..	..	..	..	..	..	2	..	1
Toledo, Ohio	Oct. 18.	89,000	29	..	..	..	..	..	..	..	..	3	..	..
Fall River, Mass.	Oct. 19.	69,000	25	..	..	..	..	..	..	1	..	..	..	..
Nashville, Tenn.	Oct. 19.	65,153	25	..	..	..	..	..	..	..	..	..	..	..
Charleston, S. C.	Oct. 19.	60,145	48	..	..	..	..	..	..	1	..	..	..	..
Lynn, Mass.	Oct. 19.	53,000	19	..	..	..	..	..	..	..	..	..	..	..
Portland, Me	Oct. 19.	42,000	13	..	..	..	..	..	..	..	..	..	..	..
Galveston, Texas.	Oct. 4.	40,000	7	..	..	..	..	..	..	..	..	..	..	..
San Diego, Cal.	Oct. 16.	32,000	5	..	..	..	..	..	..	..	..	..	..	..
Binghamton, N. Y.	Oct. 19.	30,000	6	..	..	..	..	..	..	..	..	..	..	..
Yonkers, N. Y.	Oct. 18.	30,000	7	..	..	..	..	..	..	..	..	..	..	..
Auburn, N. Y.	Oct. 19.	26,000	8	..	..	..	..	..	..	..	..	..	..	..
Haverhill, Mass.	Oct. 19.	25,000	11	..	..	..	..	..	..	1	1	..	..	..
Newport, R. I.	Oct. 17.	22,000	7	..	..	..	..	..	..	..	..	..	..	..
Keokuk, Iowa.	Oct. 20.	16,000	2	..	..	..	..	..	..	..	..	..	..	..
Rock Island, Ill.	Oct. 13.	16,000	4	..	..	..	..	..	..	..	..	2	..	..
Pensacola, Fla.	Oct. 12.	15,000	4	..	..	..	..	..	..	1	..	..	..	..
Pensacola, Fla.	Oct. 19.	15,000	3	..	..	..	..	..	..	..	..	..	..	..

The Ohio State Sanitary Association will hold its seventh annual meeting in Dayton, on the 21st and 22d inst., under the presidency of Dr. D. H. Beckwith, of Cleveland. The programme includes the following items:

"The Relations of Theologians to Sanitarians," by Dr. D. J. Snyder, of Scio; "Sanitation *vs.* Medication," by Dr. S. P. Bishop, of Delta; "Recent Advances in Ætiological Science," by Dr. E. R. Eggleston, of Mount Vernon; "Sanitation in Small Villages," by Dr. Austin Hutt, of Waverly; "Bodily Comfort as a Sanitary Object," by Dr. G. C. Ashmun, of Cleveland; "The Influence of Climate upon so-called Malarial Fevers," by Dr. W. Owens, of Cincinnati; "The Cadaveric and Vital Alkaloids," by Professor C. C. Howard, of Columbus; "Will General Sanitation ever become Popular?" by Dr. John McCurdy, of Youngstown; "Bacteria, or the Flies we Feed on and the Bugs that Kill us," by Dr. W. S. Battles, of Shreve; the president's address—1. "The Use of Pork; its Relations to Scrofula and Consumption." 2. "Mosaic Prohibition of Pork as taught by the Scriptures, and the Prejudices of most of the Ancient Nations to its Use as Food." 3. "Description of *Trichina spiralis* and its Dangerous Effect on the Human Body"; "Food as a Therapeutic Agent," by Dr. H. J. Herrick, of Cleveland; "The Best Food for Man," by Dr. J. D. Buck, of Cincinnati; "The Relation of Water-supply to Disease," by Dr. H. J. Sharp, of London; "The Necessity of Uniform Rules, Regulations, Reports, and Records of Local Boards of Health," by Dr. F. Gunsaullis, of Columbus; "The Sanitary Teachings of the Bible," by Professor E. T. Nelson, of Delaware; "The Hygiene of the Chronic Insane," by Dr. J. W. Scott, of Cleveland; "Garbage and Night-soil Crematories from a Financial and Practical Standpoint," by Dr. George I. Garrison, of Wheeling, W. Va.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

THE TREATMENT OF THE RUPTURED PARTURIENT UTERUS,

*WITH A REPORT OF TWO CASES.**

BY CHARLES A. L. REED, M. D.,

PROFESSOR OF DISEASES OF WOMEN AT THE CINCINNATI COLLEGE OF MEDICINE AND SURGERY AND AT THE CINCINNATI POLYCLINIC; FELLOW OF THE AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNÆCOLOGISTS.

TREATMENT of the ruptured parturient uterus has not as yet been formulated into definite principles, although Trask, after his first critical study of the subject in 1848, earnestly contended for some rule which would serve as a guide to the practitioner in this unfortunate emergency. It is true that he made an attempt at framing rules which would serve this important end, and did indeed take a step in advance of his time by clearly indicating his preference for abdominal section in this class of cases, stating that "neglect of this mode of delivery augmented the mortality from this accident." Yet, clear as Trask's convictions manifestly were on this subject, he could not divest himself of the conservatism of his era, and presented the conclusions of his classical research in the following words: †

"1. When rupture occurs, where there is no disproportion between the pelvis and the head of the child, and the head remains in the cavity of the pelvis, the child being ascertained to be living, the careful employment of the forceps should be attempted; if the head retreat, perforation is to be preferred. An impaction of the head in the hollow of the pelvis would, of course, require the use of the perforator.

"2. Should the fœtus have escaped into the peritoneal cavity, the feet may be sought, and the child delivered by turning, provided there be a pelvis beyond doubt ample, a head of moderate dimensions, and the edges of the uterus uncontracted, or the rent confined chiefly to the vagina.

"3. But as contraction of the uterus almost uniformly takes place upon the escape of the child, it will prove an obstacle to almost every case of escape of the child in which the vagina is not also involved to a very considerable degree. The performance of gastrotomy will then offer the best chances of success."

Although the foregoing conclusions were promulgated over thirty years ago, and although the researches of Jolly and Harris have since confirmed the value of abdominal section in these cases, I am convinced that the practice of to-day is practically in accord with the teachings of Trask. My warrant for this statement is not found in the details of reported cases, which are generally furnished to the journals by progressive surgeons, but it is found rather in the fact that, with few exceptions, the text-books on obstetrics teach practically the same principles of practice which were current before the modern triumphs of abdominal surgery.

Parvin, one of the latest as he is one of the ablest of our obstetric writers, after alluding to gastrotomy in these cases, adds: *

"But it does not follow that abdominal section should be made in all cases of uterine rupture when the fœtus can be readily delivered through the normal passage, but only in those in which there has been hæmorrhage or escape of amniotic fluid into the abdominal cavity; even in the latter good results have been had in some cases by washing out the peritoneal cavity through the rent with an antiseptic fluid, and securing drainage."

Lusk, in connection with the report of a recent case, says: †

"When the child can be removed through the natural passage without increasing the extent of the rupture, and the latter is confined to the lower segment, laparotomy is of doubtful value. In many such cases recovery *quoad vitam* has been obtained by the employment of antiseptic irrigation and filling the gap with antiseptic gauze. . . . The plan of treatment recommended is, of course, only effective where no infection of the abdominal cavity has taken place at the time of rupture."

It is but a few years since Leishman's work was on the text-book list of nearly all the American medical schools; in many instances it still holds its place, and consequently it has exerted, and still exerts, an important influence in molding the practice in this country. His summary of treatment is, therefore, of extreme importance. I believe that he fairly epitomizes the treatment—the average treatment—of to-day in the following words:

"On the whole evidence we must pronounce in favor of gastrotomy when the child is in the peritoneal cavity; of turning when it has remained in the cavity of the uterus; and of the forceps or perforation when the head can be easily reached within the pelvis."

These extracts from current authors are presented to show that there has been but little progress in the management of these cases since the days of Trask, and to give a brief *exposé* of a treatment which I do not believe to be in harmony with the well-established canons of modern surgery.

The points at issue can best be studied by responses to queries which occur, with practical pertinence, to the mind of the unfortunate consultant in cases of ruptured parturient uterus.

What shall be done with the child which is yet within the ruptured uterus?

Most cases of rupture of the uterus occur in vertex presentations, and the first objective evidence of the occurrence of the accident is recedence of the head. Contraction of the longitudinal fibers is the next phenomenon, and the head, following the direction of least resistance, is forced into the rent. In some cases, however, instead of contraction of the longitudinal fibers, inertia supervenes, and labor, for the time, comes to a standstill. If, happily, the rent be now incomplete, the timely inertia arrests the extrusion of the head and saves the peritoneal cavity from invasion. It is pre-

* Read before the American Association of Obstetricians and Gynæcologists, at Cincinnati, September 17, 1889.

† "American Journal of the Medical Sciences," 1856.

* "Science and Art of Obstetrics."

† "New York Medical Journal," September 14, 1889.

cisely this latter contingency which should dictate the treatment: *Apply the forceps and deliver at once.*

The usual alternative of the treatment is turning, as advised by Leishman. It is against this alternative that I desire to enter my protest. It should be remembered that at this juncture, as a rule, the differential diagnosis between complete and incomplete rupture can not easily be made. In this case we should always act upon the presumption that the rupture is incomplete; and our practice should be adopted with reference to saving the peritonæum. In the cases of Trask, Jolly, and Harris, turning figures as one of the primary causes of rupture. Ought we, therefore, in a case in which at least partial rupture has already weakened the uterine wall, to adopt a manœuvre which has been known to produce rupture of the uninjured wall? Clearly the proposition is as irrational as the practice is disastrous.

But there are instances in which delivery by the forceps *per vias naturales* is impracticable—*e. g.*, cicatricial bands at the internal os, and extreme kyphosis, as in Lusk's recent case already alluded to. What should be done under such circumstances? I contend that all efforts at delivery by any expedient whatever should be at once abandoned. The attempt at applying the forceps should not be made if pelvic contraction or other insurmountable obstacle to delivery is manifest; and if a single application of the forceps demonstrates the impracticability of delivery by that method, the verdict should be accepted at once. Repeated effors at applying the forceps should be avoided, as each effort will do more or less damage to an already damaged uterus, and may thus interfere with the resolution of that organ. Turning should not be thought of. At this juncture either craniotomy or embryotomy has been practiced. The ascertained mortality of the procedure but confirms the condemnation which a rational contemplation of it furnishes. What, then, should be done? I advise that the patient be at once submitted to abdominal section, and delivery effected either by incision of the uterus, if the rupture is incomplete; through the (if necessary) enlarged rent, if the rupture is complete; and that the uterus be then treated according to either Sänger's or Porro's method, as may be indicated.

What shall be done in cases of rupture of the uterus in which the child and after-birth have been successfully extracted by the natural passage?

The first thing that ought to be done after successful delivery by the natural passage should be to determine, by cautious and gentle manipulation, whether or not the case is one of complete or incomplete rupture. If found to be incomplete, the case should be treated by antiseptic irrigations. I do not employ chemical antisepsis in aseptic surgery, but in this case we have to deal with an open and absorbent surface, and, very shortly, with the products of putrefaction in contact with that surface; hence it becomes eminently proper to employ either a phenolic or a mercuric-bichloride solution.

But in the event that the tear is found to communicate with the peritoneal cavity, we are at once brought face to face with one of the moot questions connected with the subject. It is just here where Parvin asserts that abdominal section would not be justifiable unless "there has been hæmorrhage or escape of amniotic fluid into the peritoneal cavity"; and it is precisely in these cases that Lusk tells us that "recovery *quoad vitam* has been obtained by employment of antiseptic irrigation," etc., but warns us that this plan of treatment is "only effective where no infection of the abdominal cavity has taken place at the time of rupture." How are we to know whether "there has been hæmorrhage or escape of amniotic fluid into the peritoneal cavity?" By what process can we determine whether or not "infection of the abdominal cavity has taken place at the time of rupture?" Clearly, the only rational recourse at our hand is exploratory incision, and I may go a step further and say that exploratory incision, in the ordinary acceptation of the term, falls far short of the requirements of the case. Those of us who are familiar with making the toilet of the peritonæum after a bloody ovariotomy know with what facility even large clots may elude the finest tactile sensibility. It is manifest that in cases such as that under discussion nothing short of copious flushing can at once establish the diagnosis of intraperitoneal extravasation, and rid the cavity of the offending stuff.

In illustration of the importance of abdominal section under these circumstances I beg leave to call attention to the following case:*

Case I.—Mrs. D., aged twenty-eight, had borne three children in rapid succession and without difficulty. When seized with her fourth labor, she was compelled to rely for a time upon a midwife, as her attending physician was temporarily absent. The case was one of shoulder presentation, one arm having come down. When the physician arrived, the patient had been in active labor about three hours. Pains were excessive. Ten minutes later symptoms of shock were suddenly manifested, the presenting shoulder receded, and there was relaxation of the soft parts. With commendable presence of mind the arm was replaced, the forceps applied, and the child delivered alive. Delivery having been effected, hold was retained on the cord, and, as was then thought, a successful effort made to deliver the placenta.

I arrived five hours after the accident. With the assistance of Dr. Smolly, the abdomen was opened with an incision five inches in length, and a laceration of the uterus was found, four inches in length and involving nearly the entire anterior wall. In the rent a piece of placenta of about the size of three fingers was found. This had been torn off, probably during the efforts at dislodgment. No clots of consequence were found in the abdominal cavity. The peritoneal rent corresponded with the muscular tear. It was not so extensive as that in the other case which occurs in this report. The edges of the wound were relieved of all fringes of tissue, carefully approximated, and closed with twelve deep interrupted sutures of silk. The peritonæum was then closed by continuous catgut suture, and the abdominal incision closed in the ordinary way. The patient made an uninterrupted recovery.

If there is any case at all in which a reasonable presumption of non-contamination of the peritonæum would obtain, it would certainly be in this one; yet section revealed the existence of an altogether unsuspected condition, which, had it not been removed, would in all probability have induced septic peritonitis and death. But it is not

* "Lancet Clinic," 1888, vol. lx.

alone to remove existing infection of the peritoneal cavity that abdominal section should be done in these cases, but it is to close the rent, and thus prevent, if possible, the migration of the germs of putrefaction from the cavity of the uterus into that of the peritonæum. It is true that this can not be done in all cases, tears low down in the posterior wall being beyond the range of operation; but, when it can be done, the edges of the wound should be carefully trimmed, approximated, and securely closed by the Czerny-Lembert suture.

What shall be done in cases in which the child has been born, but in which the placenta has escaped into the peritoneal cavity?

This complication occurs with relative frequency, and when it does occur it is the next in order of events to claim attention. In this class of cases we have a condition in which it would seem that removal of the placenta could be readily effected through the rent; but that it is, on the contrary, a very difficult manœuvre, is shown in the following case, which, when I was called to it, presented exactly the problem indicated in the question at the head of this paragraph. I take the liberty of presenting the case in the language of Dr. Shaller, the attending physician, as employed by him in his report to the Cincinnati Academy of Medicine: *

"On Saturday, April 29, 1888, at 6.30 A. M., I was called to see Johanna M., in labor with her fifth child. She was a well-built, strong German woman. I learned that pain had set in at eleven o'clock Friday night, a midwife being called in at 4 A. M., though after her arrival no uterine pains occurred.

"The abdomen, while tender to pressure, was not abnormally so, and the pulse at 100 was good and full. Digital examination revealed the head engaged in the superior strait, clearly defined in its entire circumference. There was no flooding, and, abdominal pains prevailing, I gave morph. sulph., gr. ¼, hypodermically, and left the patient. Returning within an hour, I found her bleeding freely.

"Examination at this time showed that the head had receded. Introducing my hand, and finding the feet within easy reach, I brought them down, and the child was delivered in one hour, with bearing-down pains. The abdomen being tender, I forbore external pressure, and in this way failed to observe uterine contractions. The child was dead when born.

"After cutting the cord, I waited a short time for the expulsion of the placenta. There being no pains, I thought to take hold of the cord in order to make traction, but there was no cord to be found. Examination of the bed failed to offer any clew to the missing cord, and a digital vaginal examination met with no better success. The hand was then passed into the vagina; the cervix uteri could not be defined; and, on passing the hand higher, it suddenly seemed to have entered into an infinity of space. Never before had I realized the magnitude of the abdominal cavity, for, normally, the hand while in the vagina is grasped and limited by the surrounding tissues. For the hand to pass suddenly from a confined area into a boundless region, under the circumstances mentioned, produces rather a weakness in one's knees. To the right and anteriorly the contracted uterus was felt. The placenta could not be found; and, giving the patient two drachms of fluid extract of ergot, I left to procure assistance. I fortunately succeeded in finding Dr. C. A. L. Reed, who proposed abdominal section for the removal of placenta and clots."

The following description of the operation is in the words of Dr. Reed:

"The operation was actually begun about 1 P. M., four hours after the discovery, and nine hours after the occurrence of the rupture; Drs. Shaller, Wenning, Mayer, and Marsh present and assisting. An incision was made about five inches in length. The uterus was found to extend well up to the umbilicus.

"While making a preliminary exploration the cord was found; taking it as a guide, the placenta was easily found lying low down in the pelvis and back of the uterus. It was now removed, and with it a number of clots. The abdomen was carefully cleansed. Search was now made for the rupture. The position of the placenta and the knowledge that the majority of such ruptures occur in the posterior aspect of the organ attracted attention in that direction. The apparent homogeneity of the structures, whether felt through the vagina or through the abdominal incision, led to further confusion. It was not until Dr. Shaller introduced his hand into the vagina and thrust his finger through the rupture that the latter could be made out. It was found on the anterior surface of the uterus, extending longitudinally from a point midway through the cervix and involving a part of the anterior vaginal wall. This description applies only to the rupture as it existed in the muscular structure; the peritoneal rupture began coincidently with the upper angle of the deeper rent, but extended off to the left, involving the anterior layer of the broad ligament and a portion of the serous covering of the bladder, leaving quite denuded an area of muscular tissue, triangular in shape, three inches and a half in perpendicular, with a base quite two inches in extent. This ragged curtain of peritonæum was turgid with extravasated blood, held firmly in the meshes of the yet adherent subserous cellular tissue.

"Two lines of sutures were employed—one deep, involving the muscular structure; the other superficial, involving the peritonæum. The sutures in the muscular tissues were of sterilized silk, interrupted, and twelve in number; the peritoneal sutures, also of sterilized silk, were thirty in number, and, with the exception of the last half-dozen applied low down in the pelvis, were after the Czerny-Lembert method. Suturing low down in the pelvis was extremely difficult, so that the double-in-and-out stitch or the so called 'serososerous' suture could not be applied, the simple interrupted suture being substituted. The abdominal cavity was again cleansed, and the incision closed in the usual way, a drainage-tube being left in position.

"*After-treatment.*—After the operation the pulse never went below 110, the patient resting comfortably the first twelve hours, after which, severe pain and vomiting setting in, I gave morph. sulph., gr. ¼, hypodermatically. On Sunday, twenty-four hours after the operation, the pulse was 130; temperature, 101°; eructations frequent, no stool or flatus; the urine was drawn twice, after which it passed without pain and normally. There was no bloody discharge from the vagina; the abdomen was tender and tympanitic. Hot-water injections were given every three hours. The drainage tube was emptied of blood and cleansed with sulphurous-acid solution (one fifth) every six hours. Ice, iced milk, and brandy were given freely.

"Thirty-six hours after the operation vomiting set in, with increase of pain and tympanites. The second dose of morph. sulph. was administered. Calomel, ¼ grain every half-hour. Temperature, 102°; pulse, 140. Slight bloody discharge from vagina. A rectal injection of pure glycerin, later hot water, and still later the introduction of a rectal tube, failed to pro-

* "Lancet Clinic," 1888, vol. lx, p. 515.

duce stool or wind. Grains xx of calomel were given in one dose. Forty-eight hours after the operation the extremities became cold, pulse feeble, slight delirium, tympanites very great, no stool. The patient died Monday at 6 P. M., fifty-four hours after the operation, from the effects of peritonitis."

This case is one which demonstrates the serious nature of injury to which the uterus is subject by rupture. There can be no doubt but that the parenchyma of the organ sustained serious damage by the contractions which ultimately provoked the rupture, that this damage existed in the fibers of the uterus in an area much more extensive than that involved by the tear. I have often felt that I should have done a Porro operation in this case, but I was deterred by two considerations—viz., first, all of the damaged tissue could not be removed by supra-vaginal amputation of the uterus; and, secondly, I did not go prepared to do the latter operation. It has occurred to me that the long retention of the placenta and clots before the operation had already given rise to peritonitis, which proved to be the fatal factor in the case.

What shall be done in cases in which the child, or the placenta, or both, have escaped into the peritoneal cavity?

It would seem that the duty of the practitioner is clear under these circumstances. Yet, when he turns to our authors, he finds himself led in both directions at once. He finds himself taught that abdominal section should be done in cases of evident contamination of the abdominal cavity; he is told that the operation should not be done in all cases in which "the fœtus can be readily delivered through the natural passage"; and he is reminded of recoveries from antiseptic irrigations and antiseptic gauze packs; and then he wonders whether, indeed, it be possible to gain direction out of indirection. He is left entirely on his own responsibility, and to solve the problem strictly on its merits.

The first fact to claim attention is that the uterus, in the act of rupturing, must have discharged some blood into the peritoneal cavity; and the next is, that the child and placenta must have carried with them more or less of detritus. Amniotic fluid may have found its way into the abdomen. These considerations alone should prompt abdominal section —if not for the purposes of delivery, yet for the purposes of cleanliness. If the abdomen is to be opened for the purpose of flushing, why not effect delivery through the incision at the same time? There are other considerations prompting to this course. The advice of Parvin, that abdominal section should not be done when the fœtus can "be readily delivered through the natural passage," is liable to a dangerous interpretation at the hands of practitioners who are anxious to evade the responsibilities of the knife. With them "ready delivery" is liable to imply not merely the introduction of the hand, which is not devoid of danger; nor the mere grasping of the presenting part, which is not always easy; nor the mere turning in the abdominal cavity, which is always hazardous; but a test of the tractile power of the operator and the resistant power of the patient. In this way patients may be subjected to a hazard which the knife in the hands of a skillful operator could not incur.

But we are "informed" that good results have been had in some cases by "washing out the peritoneal cavity through the rent with an antiseptic fluid and securing drainage"; and, again, we are told of recoveries by "employment of antiseptic irrigation and filling the gap with antiseptic gauze." I will not dispute the fact of such recoveries, for they are well authenticated, but I can not but concur with Harris that every such recovery is to be looked upon as a misfortune, tending, as it does, to stimulate others to persist in a practice that is essentially unscientific.

The only danger to life, however, does not come from extraperitoneal infection, which may have found its way into the cavity at the time of rupture, or that may have been carried thither by the child, or the placenta, or both, nor yet that may have subsequently traversed the wound in the form of lochia. It must be remembered that the parenchyma of the uterus has sustained serious damage (1) by its own violent contractions, (2) by the rupture, (3) may be by the use of the forceps, (4) by the escape of the child through the tear, (5) by repeated digital examinations, (6) by the introduction of the hand, (7) by efforts at traction to determine the feasibility of delivery *per vias naturales*, and (8) by the forcible withdrawal of the child through the rent. All these influences may have been brought to bear upon a uterus before the surgeon is called. What prospect has such a damaged uterus for resolution? Is it not much more liable to become the breeding-ground of septic germs that may have originated in the first instance at the placental site? And, if we thus have established a suppurative parenchymatous metritis, is not the death of the patient from septicæmia almost a foregone conclusion? In the light of these considerations extirpation of the uterus is clearly indicated, and should be recognized as a definite probability in undertaking abdominal section in these cases.

The conclusions to which my brief studies and limited experience force me are as follows, viz.:

1. In cases of rupture of the uterus, with the head presenting, delivery by forceps should be attempted, but should be abandoned if not found easily practicable. Turning should not be undertaken, but the case should be at once recognized as one for either the Cæsarean or Porro operation.

2. In cases of ascertained incomplete rupture, treatment should be by antiseptic irrigations and rest.

3. All cases of ascertained complete rupture should be submitted to abdominal section so soon as the condition of the patient with reference to shock will admit, for the following purposes—viz., (1) to explore the abdomen, (2) to remove all foreign bodies, (3) to cleanse the peritonæum, (4) to close the rent if the labor has been short and the uterus not seriously damaged, and (5) to remove the uterus if the labor has been long and the uterus seriously damaged.

Hydrocephalus.—"Dr. Rodionoff mentions in the 'Meditsinskoë Obozrênië' a somewhat remarkable case of recovery from chronic hydrocephalus in a child of eleven months old. The mother took good care of it until it was two years old, and then left it to itself. It was thus exposed to a hot sun for many weeks, and, strange to say, a year later the size of the head had diminished, and the child was able to creep about. When it was four years old the hydrocephalus had disappeared, and the child was able to talk. Dr. Rodionoff seems disposed to refer the cure to the action of the sun's rays."—*Lancet.*

ABSCESS OF THE BRAIN.*

By T. M. MARKOE, M. D.

A. R., aged twenty-two, native of Syria, peddler, was admitted to the New York Hospital October 2, 1888. He was found in a cellar in a stupid condition, and could give no satisfactory account of himself, nor could he explain how he got into the position in which he was found. It was ascertained, however, that a year before the present accident he had received, while in Havana, an injury of the head. Of this injury there existed as evidence a crucial cicatrix, considerably depressed into the thickness of the scalp, but not suggesting depression of bone. Near the center of this cicatrix is a soft spot, as if at that point the bone was deficient. This scar, which is from an inch and a half to two inches in its longest diameter, is situated parallel to and about half an inch behind the fissure of Rolando, and is firm and sound, and free from any sign of inflammation. His mental condition is dull and apathetic. Pupils normal and react naturally to light. The face gives some signs of paralysis in the obliteration of the wrinkles of the forehead on the right side, slight drooping of the right upper eyelid, and some drawing of the right corner of the mouth. Extrusion of tongue normal. The right arm shows no difference in sensation from the opposite side, but there is a marked indisposition on the patient's part to move it, especially as high as his head. Right leg, some sluggishness of movement, not so marked as in the right arm. His pulse was 68, respiration 21, temperature 100·6° F. He is in a condition of active salivation, but for what the mercury was administered he could not explain.

He was kept quiet in bed and bromide of sodium and iodide of potassium, in doses of thirty grains of the former and ten of the latter, were given three times a day. On the 4th he was occasionally delirious, the delirium not being of a violent character.

October 5th.—To day he had a convulsion which was repeated five times, at intervals of from an hour and a half to three hours. Each convulsion began with twitching of the muscles of the right side of the face, then of the right arm, extending to the right leg, and then becoming general. Each attack lasted about five minutes, during which there was no change in the pupils.

6th.—Two more convulsions to-day of the same character. In the intervals no change could be noticed in his mental condition, the pulse and temperature remaining almost unchanged.

Under the conviction that the symptoms depended upon a meningeal inflammation in the region of the scar of the old injury, vesication with blistering collodion was established over the injured region, covering a space as large as the palm of the hand.

11th.—Since last note the temperature has been normal. He has otherwise remained in the same condition as before. He has had an occasional convulsion of the same character as those described above. The temperature to-day has risen to 101·6°. He also complains of pain in his head, and is more restless than he has heretofore been. The sensation both of arm and leg on the affected side lessened distinctly.

12th.—Both pulse and temperature increased. Examination of scalp showed a fluctuating tumor within the region of vesication, just in front of the old cicatrix, extending over the frontal and parietal region. The left eye closed by œdema of the lids from the proximity of inflammatory swelling. The abscess was opened by a free incision, through which the finger detects bare bone. Much relief was given by the release of the pus, so that the patient seemed a little brighter. Before the abscess was opened the temperature reached 101°; now about normal.

Taking into consideration the facts that no real improvement had taken place in the man's condition, that the signs of pressure were rather increasing than diminishing, and that the progression of the symptoms gave reasonable ground for believing that intracranial suppuration had already taken place, it was decided that an operation was not only justifiable, but that it afforded the only prospect of relief. After more than usually careful and thorough antiseptic preparation of the shaven scalp, the operation was performed October 13th.

The incision already made for the evacuation of the subcutaneous abscess was enlarged so as to expose the region of original bone injury. The skull was found to be deficient over a space oval in shape and covering more than two square inches. This bone deficiency was filled by a firm, thick, fibrous-looking membrane in which no bone could be detected. The appearances were those of a skull which had been trephined and in which the deficiency had been filled by the usual fibrous cicatrix. Everything about the external surface of this cicatrix was normal. The next step of the operation was to remove this cicatrix and expose the surface of the brain, for it was rightly judged that the cicatrix involved both dura mater and pericranium, and was therefore in direct contact with the cerebral surface. While doing this very carefully with the scissors, and before it was more than half completed, pus began to ooze out and soon flowed freely. About three ounces were evacuated of thick, curdy pus. The removal of the remainder of the cicatrix disclosed the orifice of a cavity extending nearly three inches into the substance of the brain, the walls of which cavity, as far as could be ascertained by the finger passed over them, consisted of unaltered brain substance. After the full evacuation of the abscess cavity a large drainage-tube was introduced, the cutaneous flaps were approximated by a few sutures, and a light antiseptic dressing was applied.

14th.—Some improvement seems to have followed the evacuation of the cerebral abscess. He is more intelligent, and takes more notice of what is going on about him; is less restless, and in every way more comfortable. The dressings were changed after thirty-six hours, and the tube shortened an inch.

15th.—Temperature rose to 101° yesterday, but to-day it is nearly normal. Tube found in the dressings. Discharge free, saturating the dressings. Decided improvement in mental condition. He recognized me to-day, and tried to say he felt better, and to put out his hand to shake mine.

16th.—Has had no convulsion since the operation. There is marked protrusion of brain-substance into the wound, in the center of which protrusion is an opening, which discharges freely, from which the tube has been removed.

17th.—Without any marked change of symptoms, the wound is assuming more and more distinctly the character of fungus cerebri of the non-reparative and unfavorable kind. Discharge quite free.

20th.—No new features have presented themselves till this afternoon, when he became very restless and complained of a great deal of pain in his head. Slight delirium returned for the first time since the operation. His temperature rose rapidly to 105°, and the pulse reached 130, the pupils at the same time becoming contracted.

Thinking that this sudden inflammatory access might depend upon retention of pus in the cavity of the abscess, the opening was enlarged, and a small drainage-tube pushed into the cavity. This gave issue to some retained pus. The drainage-tube penetrated to the extent of three inches. This gave slight temporary improvement of pulse and temperature, but the evidences

* Read before the New York Surgical Society, October 9, 1889.

of paralysis became more and more marked. In fact, the symptoms of general meningitis became more and more distinctly recognizable. Temperature ranged from 102° to 105°. Stupor deepened daily. Cheyne-Stokes respiration, and death on October 25th, twelve days after the operation.

Autopsy.—There are two incisions in the scalp crossing each other over the center of the left parietal bone, each incision being about four inches in length. Beneath the flaps thus made there is an opening through the calvaria, from which a fungoid mass protrudes. This opening is situated in the left parietal bone, is oval in shape, its long diameter being an inch and five eighths, and its shortest being an inch and an eighth. It extends from about half an inch to the left of the interparietal suture, and reaches within a few lines of the temporal ridge. Anteriorly it approaches the coronal suture within about half an inch. The precise situation of the abscess cavity is the most important feature of this description. The cavity has a diameter of an inch and a depth of an inch and a quarter. This shows a diminution of at least two thirds since the evacuation of the abscess. The orifice of the cavity would admit easily the little finger, and is surrounded, and in fact formed, by a mass of granulation-substance, which projects from the surface of the hemisphere about an inch, more abundant anteriorly than posteriorly. The meninges are consolidated and adherent to brain-surface all round the orifice of the cavity, most extensively on its front boundary. No evidence of general meningeal inflammation. The topography of the abscess cavity brings it anterior to the fissure of Rolando, which its posterior border skirts very closely for about an inch. It approaches the longitudinal fissure within perhaps four lines, and anteriorly it occupies the posterior part of the second and a portion of the first frontal convolution, reaching downward to, and perhaps encroaching on, the third frontal convolution. The main development of the abscess, therefore, was in the middle portion of the ascending frontal convolution, with the boundaries above indicated.

The case thus presented offers several points worthy of special note. In the first place, it illustrates the general law, so strongly insisted on by von Bergmann, that abscess of the substance of the cerebral lobes, exception being made of metastatic and tubercular abscesses, is never primary or idiopathic, but always depends upon some traumatism, or upon some focus of suppuration outside of the brain substance itself. In this case the abscess was undoubtedly the result of a double trauma, first an old compound fracture with its resultant cicatrix, and second a recent injury, probably caused by his fall into the cellar in which he was found. That these injuries were the starting-points of the suppuration seems to be indicated not merely by their juxtaposition, but also by the fact that the cicatricial disc which closed the old trephine hole was in fact the superficial or external wall of the pus cavity. In the second place, it is well to note that the absence of high temperature does not necessarily exclude the diagnosis of cerebral abscess. In this case the temperature remained near the normal point throughout, except for two or three days, when it rose nearly to 102° in consequence of an acute suppuration under the scalp after the blistering. It will be noted that after this superficial abscess was opened the temperature fell nearly to the normal point. The pulse also during the whole observation was not materially accelerated. Just before death the sudden rise of temperature to 105° and of the pulse to 130 seemed to indicate general meningitis, which, however, on post-mortem, could not be verified.

A third point of interest in the case is its bearing on the doctrine of cerebral localization. The clinical symptoms pointed unmistakably to the seat of the lesion as revealed by the autopsy; but it may be noticed that the paretic symptoms were at no time strongly pronounced. He could at all times move both arm and leg, but the movements were so feeble and so imperfect, particularly of the arm, that a moderate degree of paralysis could not be doubted. The convulsions, also, beginning in the face, then attacking the arm, and finally the leg, pointed to the middle portion of the fissure of Rolando as their anatomical seat; but, inasmuch as, with the extensive lesion discovered after death, the symptoms during life were so very slight, so far as paralysis is concerned, some explanation seems desirable of the want of quantitative correspondence between the two. It has occurred to me, in thinking over these features of the case, that perhaps the position of the lesion might help us to this explanation, and I have reasoned in this way. All the experimentalists on localization seem to agree in stating that the centers for face, arm, and leg lie in the convolutions on each side of the fissure of Rolando, and not on either one side or the other alone. Thus, to quote from Landois: "The center for the face occupies the lowest third of the ascending frontal convolution and reaches also on the lowest fifth of the ascending parietal. The arm-center occupies the middle third of the ascending frontal and middle three fifths of the ascending parietal convolutions, while the leg-center lies at the upper end of the sulcus and extends backward into the parietal lobule and perhaps on to the superior frontal convolution." This being the accepted view of the extent of the different centers on both sides of the fissure, the fact that the lesion we are studying occupied only one side of the fissure—namely, the ascending frontal convolution, while the ascending parietal convolution on the other side was not involved—seems to me to be a possible and even a probable explanation of the marked want of correspondence between the clinical and the pathological features of the case.

It is to be regretted that no satisfactory examination of his speech condition could be made. He could not speak or understand a word of English, and was, besides, of so low an order of intelligence that in the half-comatose condition induced by the injury we could draw no reliable inferences from his slow and half mumbled expression. This observation would have been the more valuable as the lesion closely approached the posterior part of the third left frontal convolution.

SOME OF THE MANIFESTATIONS OF SYPHILIS OF THE UPPER AIR-PASSAGES.*

By THOMAS AMORY DE BLOIS, M. D.,
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In bringing before you this well-worn subject, it is merely to chronicle a few of the different forms of cases as

* Read before the American Laryngological Association at its eleventh annual congress.

seen by the laryngologist in his daily practice, perhaps showing what we may do and what we had better leave undone, with a view of preventing some of the horrible deformities which are so often the sequelæ of syphilis in its nasal and buccal lesions.

It would be most natural to divide the subject into three local varieties—according to whether it occurs in the nasal passages, the pharynx, or the larynx; and these in turn according to its attacking the soft or the deeper or hard structures—call it secondary or tertiary if you will.

The "plaque muqueuse" of the nose is rare compared to the occurrence of "patches" in other localities. I have never known it to resist the ordinary astringent treatment. But when the cartilaginous septum of the nose is attacked it is a very different matter; perforation inevitably follows, and it is with great difficulty that the necrosis is arrested, the process creeping along beneath the mucous surface, and it is generally not checked until it reaches the surrounding bony structures. The falling in of the end of the nose does not necessarily follow; I have seen many cases where the nose was to outward appearance intact, but was within a ruin.

The turbinates and vomer frequently die and remain entombed, the nares being too small to allow of their removal whole.

Two years ago, at the Boston City Hospital, I had a case of this kind, the sequestrum being too tough to be cut with the forceps, and it was without sufficient support to allow of being drilled through with the dental engine. It was found necessary to split up the nose, and I then removed the vomer and one turbinate with the forceps. Long drills will frequently be found convenient for detaching and removing these fragments. Perforations into the antrum are most disastrous in their results, because it is so difficult to properly treat and cleanse these localities and remove what necrosed tissue may exist.

J. W., a fireman by occupation, contracted syphilis six years previous to my seeing him. He had a large perforation into the right antrum. Necrosis was still progressing rapidly; the fœtor was fearful. I removed pieces of dead bone many times, and curetted whenever and wherever possible. He was obliged to leave the fire department on account of the disagreeable odor, and he disappeared unrelieved.

When the destruction of bone extends from the anterior nares down around the incisor teeth, these should be removed, and the necrosed alveolar plates drilled out with the dental burr. It will be found that this operation is an exceedingly bloody one. Iodoform and tannin blown with a great deal of force up into the empty tooth cavities is a good antiseptic dressing.

A. F., an Italian, a Boston Dispensary patient, had syphilis of unknown duration even to himself. One central incisor tooth had come away and one was removed; the drill passed easily up into the nares, through the alveolar processes, which were easily removed, shortening the dental arch considerably. He improved somewhat under large doses of iodide of potassium, the bichloride pill, and cod-liver oil.

The loss of the anterior nasal spine of the superior maxillaries is followed by the frog-like deformity which disfigures so much. If any treatment short of excision of the bone is possible, it certainly should be diligently followed, for the aspect of the face is more repulsive than when the cartilaginous septum is entirely gone.

In the mouth and pharynx we find our most usual field of syphilitic affections, and, although the destruction of the soft parts advances with lightning-like rapidity, yet it seems as if Nature were here more lavish in her restoring processes.

The perforating ulcer of the velum is the ordinary form which the lesion takes, and, as the part is in such constant motion, the healing is rendered doubly difficult.

It is useless to employ any form of local treatment before the patient is fully under the influence of medicines, and, although mercury is necessary, yet the greatest reliance must be placed on the potassic iodide. Its quick effect upon the symptoms of syphilis is certainly the greatest help we have at our command. In most cases the destructive process may be retarded or checked in twenty-four hours, but sometimes a much longer period is required.

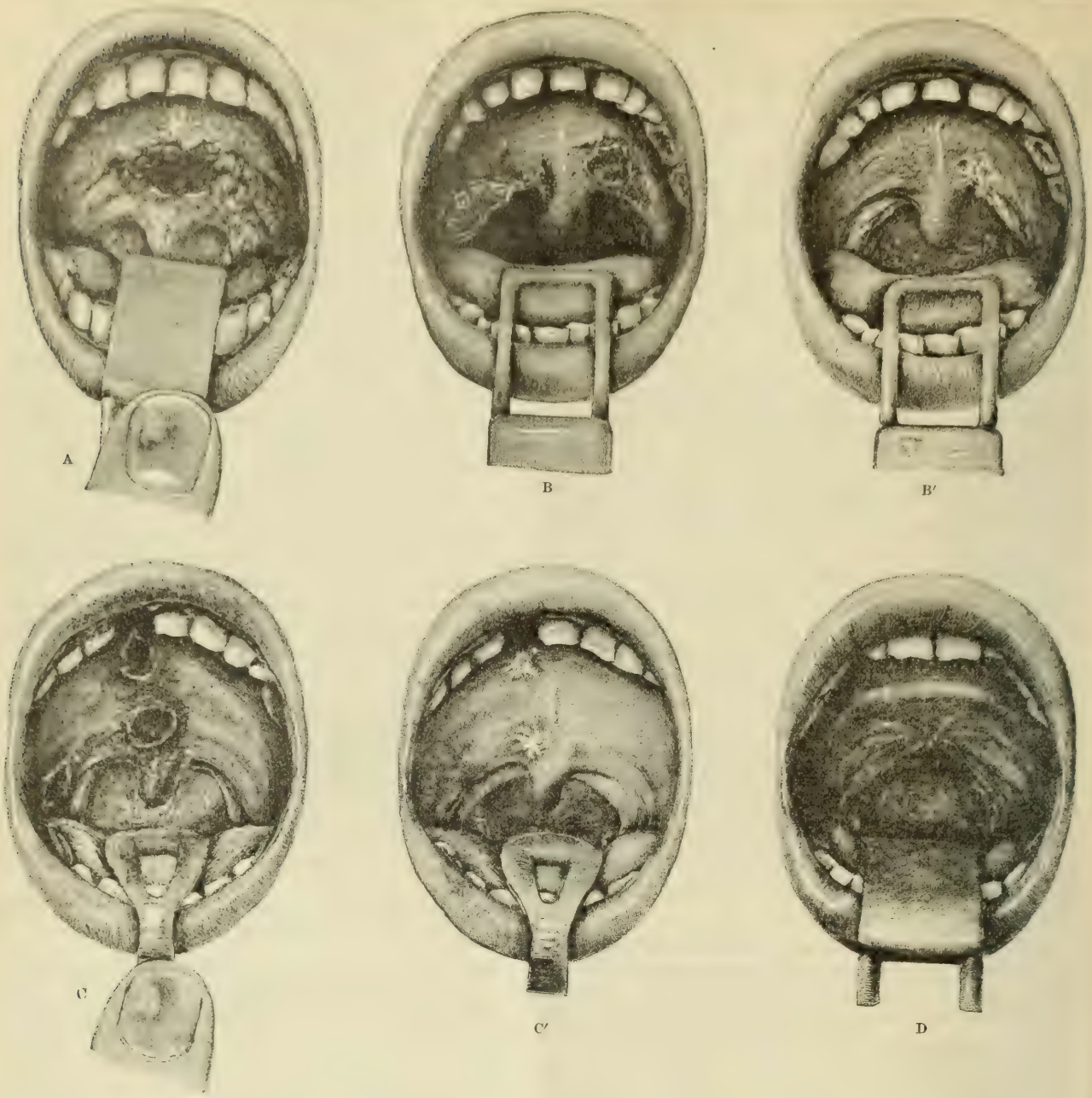
The sketch (A) is from the case of Mr. C., a theatrical manager, who was sent to me, having been under treatment with stillingia for some weeks, during which time the largest single perforation I ever saw had progressed to the size shown in the diagram. After he had been on the iodide for about forty-eight hours I freshened the edges of the ulcer and brought them together with silk sutures; at the end of another day these had completely sloughed out. I attributed my want of success to having been too hasty in my procedures. I then increased the iodide and used the stick nitrate of silver as a caustic and stimulant; under this treatment the perforation closed gradually. I never allowed the edges to harden, and finally, although the opening never closed entirely, it was reduced to such a size that a probe could with difficulty be passed through it, and speech and deglutition were normal.

In a few other cases, where the perforation was not so large, entire closure was effected without suturing.

Mrs. K., a married lady, who had contracted syphilis and concealed it from her husband, and whose palate I was very anxious to save, I had the same experience with. As the transverse perforation was very large, I was afraid one of the two isthmuses would slough, so I sutured very soon after seeing the case. But the sutures sloughed out, and one isthmus also, so that the semi-detached portion hung down on one side, and finally, after causing a great deal of trouble in swallowing, was to a great extent absorbed, and remained as a kind of excrescence at the side of the tonsil, excision having been declined.

Mrs. R. (sketches B and B′) showed another example of a perforation which did not heal until the isthmus had been cut through, treatment not having been commenced soon enough. The deep ulcer behind the right pillar was prevented from forming cicatricial adhesions by frequently being stretched open with a probang.

Mrs. T. (sketches C and C′), also a married lady. In this case there was a perforation of the soft palate, with one through the anterior pillar, and a third through the mucous membrane and involving the bony palate. In this case the perforations were treated with nitrate of silver, and the denuded and necrosed palate was curetted with a sharp scoop; the openings healed rapidly, except the one near the tonsil, which, although it healed, never closed.



Of three other cases involving the hard palate, in two the opening healed, in one after curetting and in one after being burred out with the dental burr. In one case, after being burred out under ether and once with cocaine, it did not heal, and finally, after a good deal of necrosis had taken place, the palate plate was removed with forceps at the Boston Dispensary by my colleague, Dr. J. W. Farlow.

Miss N. H., an actress, came to my office complaining that a furuncle had ruptured in her mouth. On examination, I found that there were two syphilitic ulcers involving and exposing the bones of the hard palate. The lower surface was cut out with the burr and the edges were stimulated with caustic, and they healed quickly under iodide of potassium and the corrosive chloride of mercury.

Mrs. O. D. B. (sketch D) had had loss of substance of the soft palate, which had adhered to the pharyngeal wall, quite high up. This closed the posterior nares and occasioned great discomfort. In syringing through the nose I found that there was, as is usual in these cases, a very small opening into the mouth. This I carefully stretched until the nozzle of a syringe could be passed through. I refrained from detaching the velum from its new adhesions, for, whereas phonation was almost normal (as is invariably the case where the attachment is high) and deglutition all that could be wished, yet I knew that, if the palate were even successfully detached, neither function would continue, without the use of an obturator plate, on account of the great shortening of the velum.

Passing on to the larynx, we find that the worst results in this locality are from the cicatricial adhesions which so frequently take place.

Mr. G. F. had had a certain loss of substance on the tip of the epiglottis, and also bands of cicatricial tissue binding it down on the left side as far as the arytenoid, which was thus greatly crippled in its action. When I first saw him, ten years after

the first infection, he was almost voiceless. Very little effect, except to increase the inflammation, was derived from such operative measures as dilating and stretching the parts. Medication, and the consequent absorption which took place, was of great benefit, and his voice is now quite audible, the motion having been greatly increased and vicarious action from the other side set up.

I might, in conclusion, draw attention to my poor results in any attempt at operative procedures during the activity of the ulcerative lesions of syphilis, for at that time the vitality of the parts seems to be much more feeble. But when, through the action of medicine, the ulceration is apparently arrested, it is the proper time to endeavor to correct or prevent deformities.

In removing necrosed portions of the hard palate with the drill, burr, or trephine, it seems advisable not to perforate the bone, for not only would a fistulous opening be very apt to follow, but, should this not be the case, there would be much more scar contraction than if the outline of the bony parts was left.

INTESTINAL SUPERDIGESTION.

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There is a very prevalent misconception of the conditions of the so-called intestinal fermentation. The idea seems to be very general that fermentation is opposed to digestion—that is to say, that a food may either be digested or undergo a fermentation, but can not be both digested and fermented. Fermentation, broadly speaking, includes digestion, which is the normal or physiological fermentation which food undergoes previous to its absorption. But the fermentation referred to above is not used in this sense, but in the narrower one of pathological fermentation. In studying this subject it must, however, be borne in mind that the digestive processes are fermentations; that they are induced by soluble or unorganized ferments,* and that the pathological fermentations are maintained by organized ferments—different micro-organisms.

Many organized ferments require that the substances which they are to act upon shall first have been modified by some other ferment, either soluble or organized, before they can exert their peculiar action. For instance, the yeast-plant can not ferment cane-sugar directly, while it can induce the alcoholic fermentation in the glucoses. In the fermentation of cane-sugar by the yeast-plant, the sugar is first inverted—that is, transformed into dextrose and levulose, two glucoses—before the alcoholic fermentation occurs. The inverting of the cane-sugar is accomplished by a soluble ferment which accompanies and is probably produced by the yeast-plant itself. At all events, its action precedes the alcoholic fermentation induced by the plant. Similarly, according to Schützenberger, the butyric fermentation is usually, perhaps invariably, preceded by the lactic fermentation. It seems that certain changes in the albuminous constituents of milk are produced by the lactic ferment, which fit these albumins to nourish the butyric ferment, and thus enable it to grow.

Another illustration of this peculiarity of ferments is found in the different organisms which prevail at different times during the progress of a putrefaction. To what extent the varying susceptibility of individuals to infectious diseases illustrates this phenomenon is not yet known.

In the gastric digestion of proteids the process ends with the formation of peptones, but in pancreatic (tryptic) digestion of proteids the decomposition of the albuminoid molecule is more profound, and we find in addition to the peptones leucine, tyrosine, hypoxanthin, aspartic acid, and glycocoll. With these products the fermenting action of the pancreatic juice probably ends, but this action has paved the way for the growth of micro-organisms, which flourish among the products of the tryptic digestion, and, as the result of their action upon these products, there are produced such bodies as indol, scatol, phenol, fatty acids, ammonia, hydrogen, sulphuretted hydrogen, carbonic acid, and ptomaines (Ewald, Charles, and Landois).

In making artificial digestion experiments, the readiness with which putrefaction sets up in the pancreatic digestion of proteids is very striking, particularly when compared with gastric processes.

Now, since this putrefactive process is impressed upon the products of the digestion, and is not a change produced in the original food-stuff itself, but rather a continuation of the decomposition processes set up in the albuminoid molecule by the digestive ferment proper, it seems to me that the term superdigestion fitly characterizes it. Certainly the term indigestion is eminently improper and misleading.

In general terms, superdigestion may be defined as pathological fermentation of the products of normal digestion. It is always induced by micro-organisms, and varies according to the food.

We may therefore have—

a. Superdigestion of proteids.

b. Superdigestion of fats.

c. Superdigestion of carbohydrates.

a. Superdigestion of Proteids.—Proteids are digested both by the gastric and by the pancreatic juices, but hyperdigestion of the products of gastric digestion is infrequent, at least in the stomach, while further change of the pancreatic products is exceedingly common. This difference is probably due less to any doubtful antiseptic action on the part of the gastric juice than to the difference in extent of the digestion or decomposition of the albuminoid molecule produced by the two juices. We may dismiss stomachic superdigestion of proteids and confine ourselves to that which occurs in the intestine. The most interesting of the intestinal decomposition products of proteids, for our present purpose, are the fatty acids, the ptomaines, and the gases, which latter comprise carbonic-acid gas, ammonia, nitrogen, hydrogen, marsh gas, and sulphuretted hydrogen. Certain of the gases unite with each other and form non-volatile salts, and others are formed in relatively small amount, so that in this form of superdigestion flatu-

* Fermentations by micro-organisms, producing the same products as the soluble digestive ferments, have no bearing on the present discussion, and are not here referred to.

lence is not a marked symptom, excepting in certain cases of diarrhœa producing putrefactions, and then the origin of the gas is by no means certain.

The fatty acids do not accumulate in sufficient quantity to produce a strong acid reaction in the intestine, and probably, therefore, do not cause pain. In their further decomposition the fatty acids give rise to gases. The ptomaines are the important products of the hyperdigestion of proteids. These bodies are alkaloids, and, like the vegetable alkaloids, produce their effects through the agency of the central nervous system. They are partly excreted with the fæces, and in part absorbed. After absorption they have another gantlet to run in the liver, one of whose functions, as Schiff has shown, is to destroy these bodies. Consequently, it is only when they are formed in excess, or the liver fails to destroy them, that they gain entrance to the general circulation and produce general effects. The nature of the symptoms produced by the ptomaines varies according to the physiological properties of the ptomaine produced. A not uncommon group of symptoms produced in this way comprises constipation, headache, drowsiness, and listlessness, or even a marked depression—the so-called biliousness. Here there seems to be at work a ptomaine or ptomaines possessing the properties of morphine and curare. In infants to whom no opium had been given, but in whose intestines a proteid superdigestion was present, I have occasionally seen the following symptoms: Constipation, coma, contracted pupils, slow and shallow respiration, and a depressed heart-action.

It is exceedingly common to find, particularly in young children, a sudden high fever, often preceded by a convulsion, which can be attributed to nothing else than an intestinal putrefaction, and which disappears completely and finally when a brisk cathartic has removed the putrid contents of the bowel. In infants, conditions closely resembling typhoid fever, but only lasting two or three days, may be attributed to a similar cause.

Certain eruptions on the skin betoken poisoning from the intestinal canal, particularly erythematous eruptions.

I have elsewhere ("Medical News," March 3, 1888) expressed my belief in superdigestion being the important factor in the ætiology of summer complaint.

Generally speaking, the superdigestion of proteids plays a more important rôle in infants and young children than it does in adults.

The treatment of the condition follows from its pathology, and consists, first, in the use of a cathartic—preferably calomel—to remove the putrefying masses from the intestine; second, in the administration of an intestinal antiseptic, of which naphthaline is my own favorite, but good ones are found in salol, bismuth salicylate, quinine tannate, and small doses of calomel; and, finally, in withholding all albuminous food until the abnormal process in the intestine has entirely ceased. Of these three steps, the most important is the one relating to diet. By it alone many cases can be controlled. The least important is the use of intestinal antiseptics, and much disappointment arises from depending upon this means alone.

b. Superdigestion of Fats.—The great bulk of the fats ingested are normally rendered absorbable by emulsification. Normally a small proportion of the fats and abnormally a larger one undergoes a decomposition into glycerin and the corresponding fatty acid. As already indicated, the fatty acids themselves break up under the influence of certain organized ferments, yielding gases—to wit, carbonic-acid gas, hydrogen, and marsh gas. It is somewhat doubtful whether even the small amount of fats which is decomposed into glycerin and fatty acids, under apparently normal conditions, is a process essential to the digestion of these substances, and when a large proportion of the fats ingested undergoes this decomposition, either before or after emulsification has occurred, it must be regarded as a superdigestion. The subsequent gaseous decomposition of the fatty acids is unquestionably a superdigestion. Owing to the comparatively small amount of fat taken as a food, the gases resulting from its fermentation do not of themselves constitute an important clinical factor; but when they go to increase the flatulence produced by other decompositions they must be taken into consideration.

For reasons which will appear further on, the gaseous fermentation of fats occurs most frequently in connection with the gaseous fermentation of carbohydrates.

c. Superdigestion of Carbohydrates.—The carbohydrates used as foods are starch, cane-sugar, maltose, lactose, and glucose. Cellulose is a carbohydrate which is found in connection with other carbohydrates in many substances used as foods. It has a pathological but not a physiological importance. Starch is digested both by the saliva and by the amylolytic ferment of the pancreatic juice. The action of the saliva occurs in the mouth, and continues, to some extent at least, in the stomach, for the experiments of Chittenden and Griswold show that the presence of 0·005 per cent. of hydrochloric acid increases the diastatic action of the saliva, while a stronger acid diminishes it, 0·1 to 0·4 per cent. being sufficient to completely stop the action of the saliva. Nevertheless, even in the presence of the comparatively stronger acid, peptones which are found in the stomach in the digestion of proteids are capable of stimulating the saliva to increased action (Charles, "Physiological Chemistry"). This fact plays an important rôle in the treatment of the superdigestion of carbohydrates in the intestine. The digestion of starch by the saliva, by the pancreatic juice, and by diastase may be represented by the following equations:

$$\underset{\text{Starch.}}{3(C_6H_{10}O_5)} + H_2O = \underset{\text{Grape-sugar.}}{C_6H_{12}O_6} + \underset{\text{Dextrin.}}{2(C_6H_{10}O_5)}$$

$$\underset{\text{Dextrin.}}{2(C_6H_{10}O_5)} + 2H_2O = \underset{\text{Grape-sugar or glucose.}}{2(C_6H_{12}O_6)}$$

According to Mering, the action of saliva on starch produces dextrin and maltose, $C_{12}H_{22}O_{11}$. But whether grape-sugar or maltose is produced by this action is immaterial to our present purpose, as both may subsequently undergo the same pathological fermentations.

Cane-sugar and lactose, both of which are saccharoses and have the same formula, are digested by being inverted, that is, by being broken up into dextrose and levulose, both of which are glucoses. The action occurs in the intestine and may be represented as follows:

$$\underset{\text{Cane-sugar.}}{C_{12}H_{22}O_{11}} + H_2O = \underset{\text{Dextrose.}}{C_6H_{12}O_6} + \underset{\text{Levulose.}}{C_6H_{12}O_6}$$

It will thus be seen that all the carbohydrates in their normal digestion are converted into glucoses.

It now remains to be seen what abnormal fermentations the glucoses may undergo in the small intestine. In the first place, glucose, under the influence of one or other of the many lactic ferments, is transformed into lactic acid, which substance, when present in the intestine in large quantity, seems to be a cause of pain.

The reaction is as follows:

$$\underset{\text{Glucose.}}{C_6H_{12}O_6} = 2(\underset{\text{Lactic acid.}}{C_3H_6O_3})$$

Lactose may break up directly into lactic acid, thus:

$$\underset{\text{Lactose.}}{C_{12}H_{22}O_{11}} + H_2O = 4(\underset{\text{Lactic acid.}}{C_3H_6O_3})$$

The lactic acid is then acted upon by the butyric ferment, if it be present, with the following result:

$$\underset{\text{Lactic acid.}}{2C_3H_6O_3} = \underset{\text{Butyric acid.}}{C_4H_8O_2} + \underset{\text{Carbonic-acid gas.}}{2CO_2} + \underset{\text{Water.}}{2H_2O}$$

The alcoholic fermentation under the influence of yeast may also occur:

$$\underset{\text{Glucose.}}{C_6H_{12}O_6} = \underset{\text{Alcohol.}}{2C_2H_6O} + \underset{\text{Carbonic-acid gas.}}{2CO_2}$$

The alcohol may then undergo the acetous fermentation thus:

$$\underset{\text{Alcohol.}}{C_2H_6O} + O = \underset{\text{Aldehyde.}}{C_2H_4O} + H_2O$$

$$\underset{\text{Aldehyde.}}{C_2H_4O} + O = \underset{\text{Acetic acid.}}{C_2H_4O_2}$$

The following fermentations of the lime salts of fatty acids, which are induced by micro-organisms, should also be noted:

$$\underset{\text{Calcium formate.}}{(CHO_2)_2Ca} + H_2O = \underset{\text{Calcium carbonate.}}{CaCO_3} + \underset{\text{Carbonic-acid gas.}}{CO_2} + \underset{\text{Water.}}{2H_2O}$$

$$\underset{\text{Calcium acetate.}}{(C_2H_3O_2)_2Ca} + H_2O = \underset{\text{Calcium carbonate.}}{CaCO_3} + \underset{\text{Carbonic-acid gas.}}{CO_2} + \underset{\text{Marsh gas.}}{2CH_4}$$

Cellulose, which has been referred to as a carbohydrate ingested with certain food-stuffs, undergoes the following gaseous fermentation under the influence of some micro-organism not as yet isolated:

$$\underset{\text{Cellulose.}}{C_6H_{10}O_5} + H_2O = \underset{\text{Carbonic-acid gas.}}{3CO_2} + \underset{\text{Marsh gas.}}{3CH_4}$$

In summing up, we find that glucose may undergo the alcoholic fermentation with liberation of carbonic-acid gas, or it may be converted into one of several fatty acids, and these, breaking up in their turn, give rise to carbonic-acid gas, and either hydrogen or marsh gas. Bringing together the first and last of this long string of processes, we may say that the carbohydrate foods, in superdigestion, produce large quantities of gas in the intestine.

The clinical features of the superdigestion of carbohydrates are very well exhibited by the following cases:

Case I.—J. L., aged thirty-three, had been sick about three weeks with severe pain, which could ordinarily be referred to the abdomen, but at times seemed to spread over a much larger region, so that it was difficult to say where there was not pain. Distress had been constant, but at times during the day was more marked than at others. These times could not be fixed with any reference to meals, but paroxysms of marked severity were very certain to occur at night. From this cause much sleep had been lost. During ten days the gentleman had been able to present himself at his office but two or three times, and was then so weak as to be utterly unable to attend to business. There had been no fever throughout the trouble. His physical appearance was one of emaciation, with features pinched and drawn. The emaciation was so marked as to lead to the suspicion of tuberculosis, but an examination of the lungs revealed them to be perfectly healthy. The abdomen was considerably distended and tympanitic, bowels slightly costive. He had been advised to take a "light" diet, under which ambiguous term was included toast and tea, rice, blanc mange, and other farinaceous foods. Carbohydrate superdigestion being diagnosticated, he was given a saline laxative, and his diet limited to albumins—viz., meat, fish, and white of egg, while starches, fats, and sugars were strictly prohibited. Milk, as it contained sugar, was among the foods forbidden. After being deprived of carbohydrates for only two meals, his pain disappeared and did not recur. He was able to sleep the first night, and reported the next day as feeling better than he had for three weeks. This freedom from pain continued throughout the case. Here it was perfectly evident that the withholding of carbohydrates kept out of the intestine those substances which could maintain the abnormal fermentations there going on. The problem then was simply one of withholding this kind of food until the offending micro-organisms had been removed from the intestine, either by the aid of remedies or by their own death from starvation. At the end of a week a small piece of bread was allowed, but the return of gas and a slight colic, a few hours after its ingestion, showed that the intestine was not yet ready to receive food of this character. A strictly albuminous diet was then observed for another week, when an attempt showed that the carbohydrates could be borne. During the period of dieting, intestinal antiseptics were administered, but whether any advantage was gained from their use is very doubtful.

A strictly albuminous diet is quite difficult to maintain, the craving for bread being so great that nothing short of the tortures of this form of dyspepsia will keep the patient's courage up to the required pitch. I have frequently ameliorated this trouble by allowing the patient, toward the end of his period of dieting, a small piece of bread with each meal, and immediately after the meal administering a diastatic ferment. The choice of a diastase is by no means unimportant. The pancreatic ferments should be avoided, lest by their action upon the proteids they pave the way for more trouble. An active malt diastase is to be preferred, and I have found in these conditions an efficient agent in the substance known as maltine. By this means we are enabled to digest starch in the stomach, from which organ it is absorbed, so that little or none of it can reach the seat of the trouble in the intestine. If the patient take more bread than can be handled in this way, he is reminded of his indiscretion some two or three hours after his meal. Instead of using diastase, I have had patients swallow saliva, promoting its secretion by the use of chewing-gum, but the practice has not been followed by any beneficial results.

Case II.—M. T. had been troubled more or less continuously for two years with constipation, flatulence, and abdominal pain.

The pain appeared usually a few hours after meals, and of late the paroxysms of flatulent colic had become frequent and severe. He was very anæmic, had an anxious expression of countenance, but was not so emaciated as might have been expected from the long duration and severity of his trouble. The principal symptom for which he applied for relief was constipation, and he said that he had not had a stool for two weeks, although he had been taking cathartics continuously. Physical examination revealed an abdomen enormously distended and tympanitic, but not tender. There was no fever and there were no gastric symptoms. He was given ten grains of calomel to take at bedtime, and to be followed by Epsom salts in the morning. He reported the next evening, stating that he had taken the calomel and three doses of salts, but had had no movement from the bowel. Resort was then had to croton-oil, with the effect of producing a copious discharge of gas and liquid and solid fæces. The stools were exceedingly offensive in odor, indicating that a superdigestion of proteid material had occurred as well as superdigestion of the carbohydrates. The carbohydrate trouble being the more pressing, attention was directed to it, and the patient put on a strictly albuminous diet. Owing to the long continuance of the gaseous fermentation, the bowels had become enormously dilated, with corresponding muscular atony, producing a complication peculiarly unfortunate, because of the difficulty of keeping the intestine cleared of the fermenting masses. This difficulty was overcome, however, with suitable cathartics. The necessary period of abstinence from carbohydrate food was in this case unusually protracted, lasting some five weeks, for which reason the plan of digesting bread in the stomach was peculiarly useful. Notwithstanding the greatest care in diet, he had during this period one severe attack of flatulent colic, and, at another time, for several days he required washing of the stomach, but practically he was free from pain throughout the whole period. Some two or three weeks after he was enabled to return to a general diet, and before he had regained completely his strength, he developed an hysterical condition, which baffled handling. The bowel trouble had, however, been entirely overcome.

The condition often occurs in an acute form, and yields readily to proper dietetic treatment. I have seen a good diastase, administered so as to digest the starches in the stomach, quickly arrest a very severe case, even when the starchy foods were only limited and not absolutely prohibited. In a mild form, superdigestion of carbohydrates is a very common affection and yields readily to treatment, a cathartic alone being often sufficient to break up an attack.

All forms of superdigestion are apt to recur.

The Thymus in Cases of Sudden Death in the Water.—"Dr. Nordmann, of Basle, describes a case of sudden death while bathing of a healthy young soldier, who, though a good swimmer, was seized with sudden rigidity and dyspnœa, sinking at once to the bottom. All attempts at restoration to life were fruitless. At the post-mortem examination nothing noteworthy was found except an enlarged and hyperplasic thymus. Dr. Nordmann has since collected three other cases recorded by von Recklinghausen of sudden death in the water, and in all of them an enlarged and pathological thymus was found. Why an enlarged thymus which had given rise to no symptoms during life should suddenly cause death under the circumstances in question is not at all clear, but Dr. Nordmann suggests that it is possible that an acute swelling occurs in the gland, due to the collection of a large quantity of secretion in the follicles of the gland, similar to the condition observed by Friedleben during the process of digestion and assimilation."—*Lancet.*

A CASE OF PTOMAINE POISONING.*

By JAMES P. MARSH, M. D.,
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> "It is true, without exception, so far as we know, that the excretions of all living things, plants and animals, are poisonous to the organisms which excrete them."—Vaughn and Novy.

This patient was a bright boy, five years of age, and, although delicate, had never suffered from any severe illness or injury. He had had, somewhat more frequently than other children, short attacks of febrile movement, which had usually been attended by gastro-intestinal irritation and followed in a few days by the expulsion of intestinal worms. One month previous to his fatal illness he had been attacked by measles, which pursued a regular course. His convalescence had been uneventful, excepting that he had occasionally complained of abdominal pain, which, being transitory in character, I had attributed to slight functional disturbance of the bowel and had not considered of enough moment to demand active medication.

During the night of December 6th he was taken with severe abdominal pain accompanied with vomiting. I was called to him at 9 A. M., December 7th, when I found him in the following condition:

Pulse 122, temperature (axilla) 104·5° F., respiration 48. His countenance is flushed and very anxious. Severe paroxysmal abdominal pain is present. Says his head aches. I prescribe bromide of potassium and morphine for the headache and abdominal pain, also antipyrine for the pyrexia.

12 Noon.—Pulse 144, temperature 104° F., respiration 52. He is vomiting. The abdomen is very hot and painful. The headache is severe and he has a slight cough. There is pain over the lower lobe of the right lung, accompanied with a slight friction murmur in this region.

5 P. M.—Dr. E. D. Ferguson calls as consultant. Pulse 140, temperature 102·5° F. He is still vomiting and quite delirious. The abdomen is very "board-like," tympanitic, and painful. The patient has assumed the position of peritonitis. A diagnosis of ptomaine poisoning is reached and a large single dose of calomel and soda ordered, to be followed by five-grain doses of salol. The former treatment is to be continued with the administration of whisky.

8 P. M.—Pulse 148, temperature 100·5° F., respiration 36. The bowels have moved, the passage being very yellow. He is still vomiting, but not suffering from much cough.

December 8th, 12 Midnight.—The temperature having increased, a five-grain powder of antipyrine is given. [This was the last antipyrine administered.]

7 A. M.—Pulse 110, temperature 102·75° F., respiration 38.

3 P. M.—Pulse 152, temperature 100·5° F., respiration 48.

Has had a short sleep, the first since the attack began, and he wakes rational.

6 P. M.—Pulse 134.

8 P. M.—Pulse 118, temperature 101° F., respiration 48. He is very delirious. The bowels are moving constantly. Although considerable flatus escapes by the anus, the abdomen is so greatly distended by gas that I order enemata of turpentine and glycerin.

December 9th, 8 A. M.—Pulse 136, temperature 101° F., respiration 80. Has just vomited black vomit. The breathing is costal. The countenance, position, and general condition are exactly like those of peritonitis.

1 P. M.—Pulse 132, respiration 80. Is throwing up black vomit constantly.

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* Read before the Medical Association of Troy and Vicinity, October 2, 1889.

8 P. M.—He is sinking into collapse.

December 10th, 12 Midnight.—He is in a state of collapse.

6 A. M.—He dies.

5 P. M.—Autopsy. Present, Dr. Ferguson, of Troy, Dr. Lyons, of Plattsburgh, and Mr. John Cathill, medical student. Rigor mortis is present but not marked. The abdomen is very much distended and "board-like" to the touch. There are absolutely no evidences of peritonitis. The small intestines are moderately distended with gas and very translucent. The transverse and descending colon are empty and their circular fibers contracted to a remarkable degree. There is no evidence of intestinal ulceration. The mucous coats of the small intestine are congested, but not inflamed. Peyer's patches are normal. No lesions characteristic of typhoid fever are to be found. The stomach is not inflamed, but the veins of the mucous coat are dilated and the organ contains a large quantity of black vomit. The gall-bladder is full, but there is no obstruction of the gall-ducts. The liver is large and hyperæmic, and near the suspensory ligament are areas of infarction. The kidneys are normal. The lungs are healthy excepting slight hypostatic congestion and slight pleural roughness of the lower right lobe. There are fæcal masses in the appendix, but not any appendicitis. No intestinal worms have been discovered.

When first called to this case, the condition was one which impressed upon me the fact that it is not always possible to reach a diagnosis, although all the ante-mortem evidence is in. It occurred to me that the case might be one of febricula, of the prodromes of scarlatina, of gastritis, of typhoid fever, of typhlitis, of meningitis, or of peritonitis, either from perforation of the bowel or from an abscess rupturing into the peritoneal cavity. A febricula could be excluded by reason of the initial intensity of the symptoms. Scarlatina, at first, could not be distinguished, but, as neither rash nor nephritis appeared subsequently, it must be eliminated. As a rule, gastritis does not have so intense a fever nor tympanitic and "board-like" abdomen. Typhoid fever rarely begins so abruptly, and its clinical history does not tally at any point. The bowel symptoms were manifestly too prominent to allow of a diagnosis of meningitis. Rapidly perforating typhlitis, when present, produces more of the symptoms that obtained in this case than any other disease with which I am familiar. Yet, however, there was no history of inguinal tenderness. The abdomen became so hard, tympanitic, and painful to pressure that at no stage of the disease could I entirely free myself from the idea that the peritonæum was more or less involved. But now, that I can deliberately weigh all the symptoms and facts connected with the case, I can find no supposition that accounts for so many of the symptoms as that of ptomaine poisoning.

But the main evidence for the diagnosis must rest upon the post-mortem. Vaughn and Novy declare that "post-mortem examination after sausage poisoning shows no characteristic lesion."* However, in autopsies made upon persons who had died from the effects of eating poisonous mussels, Schmidtmann found hæmorrhagic infarctions of the liver. Dr. George A. Hendrics, in a report by him of a post-mortem made upon a fatal case of tyrotoxicon poisoning, says: "The cæcum, ascending, transverse, and descending colon were empty, and their circular fibers were tightly constricted, except at intervals where the intestine was distended with gas." This peculiar contraction of the colon was present in my case, and I have never seen it so marked in any other condition. It seems to me that future investigation will show that the contraction of the circular fibers of the colon and the peculiar translucency of the intestines, together with hepatic infarction, constitutes true pathological evidence of ptomaine poisoning.

As regards the exact chemical substance which produced the death of this little patient, I can not declare definitely. However, as hyperthermia was one of the signs, I am inclined to think that the active agent was one or more of the "extractives." The symptoms were somewhat similar to those of tyrotoxicon poisoning; but this substance is excluded by reason of the high temperature. It seems to me that it is a tenable hypothesis that, the emunctories having been left in an enfeebled state by the attack of rubeola, there occurred a cumulative storing at some point in the child's system, which came into rapid and fatal action upon the slightest functional disturbance of the stomach and bowels.

And, finally, this case contains for me a grave warning. Inasmuch that of late the surgical dictum to open the belly and make the diagnosis when in doubt and life is threatened has been almost universally accepted and acted upon several times, I almost felt that I was doing wrong to let this child perish without doing a laparotomy. Within the last year, in three cases similar to my own, I have known the practitioners to make a diagnosis of peritonitis with the greatest confidence, and yet a subsequent post-mortem absolutely refuted their position. Had I done laparotomy in this case it would but have added one to the fatal operations; it would not have saved the child, and would have added additional momentum to that feeling of hostility toward abdominal surgery which is so rapidly growing in the lay mind.

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* "Ptomaines and Leucomaines," Philadelphia, 1888, p. 42.

Compression of Pulmonary Artery in the Course of Acute Pneumonia.—"Dr. E. Tordieu ("Journal de médecine," No. 14) records the case of a child, five years of age, admitted into hospital for well-marked acute lobar pneumonia of the left upper lobe, who presented a loud systolic murmur in the second left interspace, and traceable toward the axilla. The bruit persisted when the patient was discharged, but so also did the dullness and bronchial breathing at the left apex. The notion of congenital narrowing of the pulmonary artery was unsupported by any collateral evidence; and it was shown that similar bruits have been described which were subsequently proved to have been due to pressure upon the pulmonary artery by enlarged glands or phthisical consolidation. It was therefore surmised that a like causation explained the bruit in this case—a notion which was borne out by the fact that the bruit completely disappeared later, when a soft hæmic apex murmur alone was audible."—*Lancet.*

Tubercle Bacillus.—G. W. Watson, in the "Ohio Journal of Dental Science," says: "I have very good authority for saying that diseased roots and teeth have a great deal to do in starting tubercular trouble in the lymphatic glands of people predisposed to this disease. Tubercle bacilli, gaining admission to the jaw through the diseased teeth, speedily infect the structures in their neighborhood. It would be right, therefore, for us to look well to the teeth of patients having a tubercular tendency, and see that they keep their mouth in a thoroughly healthy and aseptic condition."

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GONORRHŒAL RHEUMATISM.

In the "Normandie médicale" for September 1st, M. Buffet publishes some interesting observations upon this subject. He calls attention to the fact that the affection fails to follow the classic type, as regards its being confined to single joints and attacking the large joints only. On the contrary, it affects the small joints as well; and may invade other tissues—such as the sheaths of tendons, the muscles, nerves, and areolar tissue. There is much in common in this disease with acute articular rheumatism. Several joints are successively attacked. But there is not the same mobility, there is no appreciable fever, no profuse perspiration, and no urinary changes. The form of disease under consideration lasts longer than classic articular rheumatism, its duration sometimes extending over months. Resolution is not its only termination. There may be ankylosis, complete or partial, and muscular atrophy. It may terminate in rapid suppuration, as in a case cited in which death ensued in eight days as a sequence of suppurative inflammation of the knee. One attack affords no protection against a second, several patients suffering from three or four attacks; which causes Jaccoud to predict for the unfortunate victim of gonorrhœa with articular manifestations a repetition of his woes should he chance to contract gonorrhœa again. This author also maintains that the treatment of the gonorrhœa present is without influence upon the development of the articular affection. The amount of discharge appears to bear no relation to it, either. And salicylate of sodium is positively without any effect whatever.

The physician's first duty is to place the limb in a good position, in view of possible ankylosis. As to other measures, revulsives and blisters are chiefly of value. When the effusion is abundant, the joint may be punctured. Tonic treatment is always indicated—quinine occupying the first place as a remedy—for the depression is great. Massage, sulphur douches, and electricity are useful in combating stiffness of the joints and muscular atrophy. To sum up: Gonorrhœal rheumatism may be confined to one joint, but may attack several joints. Small joints may be affected as well as large ones. Tendinous sheaths may be invaded as well as muscles, nerves, and cellular tissue. The clinical difference between this and ordinary articular rheumatism consists in the absence of fever and perspiration and in the fixity and duration of the lesions. The disease may terminate in ankylosis, suppuration, or muscular atrophy. Treatment consists in a good position for the limbs, revulsion, massage, and electricity. Salicylate of sodium and anti-gonorrhœal remedies are without effect. Tonics are indicated.

THE HYGIENE OF THE EYE.

Galezowski, through the medium of the "Gazette hebdomadaire des sciences médicales," gives excellent suggestions concerning the circumspect use of the eyes for close work. Spectacles are a medicine, the remedy for ametropia. Appropriate glasses should correct every error of refraction as soon as it is discovered. Only in this way can sight be preserved without further damage. In latent hypermetropia glasses are not necessary for distant vision. Established hypermetropia requires the constant use of glasses, especially when presbyopia exists. Myopic eyes, above all others, require the most rigid hygiene. Without it grave intra-ocular changes result that are beyond the reach of therapeutic measures. In marked myopia there is perpetual effort made by the eye to obtain binocular vision during work. Experience has proved that such vision is not secured when the distance for distinct vision is less than from 75 to 90 inches. Under such circumstances work soon strains the eye, bringing about muscular asthenopia. Intra-ocular disorders quickly follow, if this condition of myopia is not overcome. It should be corrected by the weakest glass that will secure good sight, which is exactly what the myopic patient avoids, preferring the strongest glass—one that calls accommodation and convergence into action, the most important thing not to do. When myopia exceeds 3·5 or 4 diopters, glasses should always be used for work. Ordinarily, a medium degree of myopia requires glasses of only half the strength of those used for seeing at a distance. They must be suitable for the kind of work and the wearer, who should not use them for greater distances than from 75 to 90 inches. Other damage is done by calling accommodation and convergence into play. Eyes that are sensitive, strained, or affected with opacities require glasses of neutral tint, that allow no yellow rays to pass, which diminish the intensity of solar light without altering its composition. In the choice of a profession, attention must be paid to the visual power of the individual, as it is impossible to make a good soldier of a man who has myopia to the extent of 6 diopters; so, also, is it impossible to make such a man an engraver or a type-setter. Rest should be given the eye during work. If this precaution is followed, steady reading or writing is possible without producing congestion, partial closing of the lids, and sensitiveness to light. In every occupation the most comfortable and convenient posture is the one to choose, for thus strain is averted. Persons who write much should avoid bending over, as this quickly causes fatigue. It is well to write sitting for a time, and then to write standing. Reading in bed is an abomination, tending to provoke strain and asthenopic disorders.

MINOR PARAGRAPHS.

OBESITY AND STERILITY.

In the "Revue générale de clinique et de thérapeutique" Dr. Philbert gives some interesting facts concerning the relation of obesity to sterility, and the favorable results obtained by hygienic measures for the reduction of fat. In the male, ex-

cessive embonpoint retards the development of the generative organs, producing atrophy in certain cases, while in others the conditions are similar to those that obtain in childhood. After adult age, polysarcia notably diminishes sexual desire, which returns with the loss of the superfluous flesh. In the female, amenorrhœa and dysmenorrhœa result from excess of fat. An accumulation across the abdomen exerts mechanical pressure that impedes utero-ovarian function. Possibly ovulation fails of accomplishment in consequence of defective nerve excitation. The requisite loss of flesh puts the organs into their normal state, rendering fecundation possible. Five cases are recorded of very stout women married several years without offspring, who became mothers in consequence of treatment that did away with obesity. This treatment included a course of baths and mineral waters, such as those of Brides and Salins-Montiers. Fertility ceased whenever the obesity returned. Some of the women gave birth to several children, the first usually arriving during the year following the beginning of treatment.

THE SANITARY EFFECTS OF BURNING RUBBISH.

The secretary of the Michigan State Board of Health has issued a circular in which he mentions an unusual deficiency of ozone in the air of Lansing and a sense of want of air felt by the inhabitants, accompanied in some instances by weakness of the heart's action, which he thinks are attributable to vitiation of the atmosphere in consequence of numerous fires in swampy places, due to the drouth, and to fires kindled in the streets for destroying refuse. He even suggests that an increased prevalence of certain diseases, such as inflammation of the tonsils, pleurisy, cerebral inflammation, and croup, may have been partly due to these fires. He thinks they are chiefly noxious at night, when the wind commonly dies out, and asks that such fires as are necessary be kindled in the morning. His inferences, it will be seen, are quite at variance with the old practice of building bonfires against pestilence. Coming from such a careful observer, they are, however, worthy of attention.

THE REPORT OF THE STEVENS COMMISSION.

The commission appointed about two years and a half ago by the New York Neurological Society to investigate the feasibility of curing epilepsy and chorea by the correction of ocular defects, maintained by Dr. George T. Stevens, made its report on Tuesday evening of this week. The commission consisted of Dr. Edward C. Seguin, chairman, Dr. M. Allen Starr, secretary, Dr. Charles L. Dana, Dr. W. R. Birdsall, Dr. David Webster, Dr. W. Oliver Moore, and the editor of this journal. The plan of procedure was for the neurological members of the commission to furnish Dr. Stevens with a certain number of epileptics and choreics, and to report upon the results of their treatment by him. The commission could not report a single cure, but it reported a number of instances of improvement. Dr. Stevens protested against the commission's report as premature, and read a reply in which he maintained that the inquiry had been improperly conducted, and that the results had not in all instances been fairly recorded in the report. A general discussion was begun, but was adjourned to the next meeting.

THE DIGESTIVE ORGANS AND MELANCHOLIA.

Before the recent Congrès international de médecine mentale, Dr. Beltencourt-Rodrigues, of Portugal, read a paper upon this subject, an abstract of which is given in the "Progrès médical." While not overlooking the general causes of insanity, he said, it was also of extreme importance to understand its proximate causes. In a certain number of persons suffering from melancholia the writer had observed gastro-intestinal disturbances which, according to recent theories, were produced by toxic elements circulating in the organism. This had led him to imagine that infection from the alimentary canal might be a cause of melancholia—an hypothesis that was sustained to a certain degree by the complete recovery of several patients suffering from this form of mental disease, after antiseptic treatment directed to the digestive tract.

RABIES AMONG DEER.

The deer of Ickworth Park, England, having become diseased, Mr. Adami, the demonstrator of pathology at the University of Cambridge, was invited to study the causes of the trouble. An inquiry by the agents of the Privy Council had already been made, which had declared the disease to be anthrax. Mr. Adami was not able to confirm this decision, but after a thorough study reported the cause to be rabies, a disease that has not often been found among deer. The "British Medical Journal" states further that Mr. Adami was so unfortunate as to inoculate himself. On the seventeenth day after this accident he resorted to Pasteur's Institute at Paris, and was treated for inoculated hydrophobia. On the ninth day after the beginning of the treatment he had premonitions of the disease, but these did not progress, and the unfortunate pathologist now considers himself cured and protected.

CORNELL UNIVERSITY'S MEDICAL ASPIRATIONS.

A recent report by President Adams, of Cornell University, seems to put forth a "feeler" after a medical department, in order that Ithaca may have a full-orbed university, *totus, teres atque rotundus*. President Adams is reported to have expressed the wish that such a department, with a large endowment, might be established in New York or Brooklyn, which might very properly be styled "the College of Medicine of the Cornell University." Is this a bid to the Bellevue Hospital or the Long Island school to come in under the ægis of Cornell? They are about the only ones remaining that have not a placental attachment; but neither of them can be said to enjoy "a large endowment."

SICKNESS FROM POLLUTED WELL-WATER.

At West Albany there are 1,200 men employed in the car-shops. Among them there has been much sickness of a febrile character, called "malarial," but which seems to be referable to a bad quality of drinking-water taken from wells. There have been absent as many as 200 workmen in twenty-four hours. Dr. Balch, secretary of the State Board of Health, has condemned the wells formerly in use, and they have been closed. Since then the number of new cases has been much reduced.

THE NEW YORK PHYSICIANS' MUTUAL AID ASSOCIATION.

We would call the attention of those of our readers who are members of the association to the notice, in our list of "Society Meetings for the Coming Week," of the annual meeting, on Thursday evening, at the Academy of Medicine. The importance of the association's work can hardly be over-estimated, and it is desirable that it should receive the personal attention of all the members.

THE TENTH INTERNATIONAL MEDICAL CONGRESS.

In a letter to Surgeon-General John B. Hamilton, of the Marine-Hospital Service, dated October 7th, Professor Virchow

says: "The organizing committee of the Tenth International Medical Congress is now constituted. I myself am elected president, and Dr. Lassar (Karlstrasse, 19, N. W.), secretary-general. We shall be very happy to receive the 'Transactions of the Ninth International Medical Congress,' and we hope to see you and many of your countrymen at the new session."

THE CARTWRIGHT LECTURES.

It is announced that Dr. Billings, of the army, is to give the course this year, on the 14th, 20th, and 22d inst., at 8 P. M., at the College of Physicians and Surgeons, on the subject of "Vital and Medical Statistics." In ordinary hands the importance of this theme would stand in inverse ratio to its attractiveness, but nobody needs to be told that Dr. Billings's genius will invest it with liveliness.

THE "MEDICAL MIRROR."

This is the title of a "Monthly Reflector of the Profession and its Progress," the first number of which is announced for January, 1890, to be edited by Dr. I. N. Love, of St. Louis. The prospectus states that, while the new journal will be made of interest to physicians in general, it will earnestly endeavor to accomplish the complete organization of the profession of the Mississippi Valley. Dr. Love seems specially qualified to carry his undertaking to a successful issue, and we look to see it done.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending November 4, 1889:

DISEASES.	Week ending Oct. 29.		Week ending Nov. 4.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	42	16	32	9
Scarlet fever	41	4	35	1
Cerebro-spinal meningitis	4	4	2	2
Measles	42	2	13	1
Diphtheria	80	12	74	16
Small-pox	1	0	0	0

Hygiene at Gettysburg.—A professorship of hygiene and physical culture has been endowed, in the sum of $25,000, at the Pennsylvania College, at Gettysburg, by the parents of the late Dr. Charles H. Graff.

The American Association for the Study and Cure of Inebriety will give a dinner to its president, Dr. Joseph Parrish, at his home, in Burlington, N. J., on Tuesday, the 12th inst., on the seventy-first anniversary of his birth.

Changes of Address.—Dr. Edward J. Bermingham, to No. 23 East Forty-sixth Street; Dr. Louise Fiske Bryson, to No. 38 West Thirty-eighth Street.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from October 20 to November 2, 1889:*

Mearns, Edgar A., Captain and Assistant Surgeon. Granted leave of absence for two months. Par. 5, S. O. 244, A. G. O., October 19, 1889.

Kendall, William P., First Lieutenant and Assistant Surgeon. Leave of absence extended one month. Par. 6, S. O. 244, A. G. O., October 19, 1889.

So much of Par. 2, S. O. 241, October 16, 1889, from this office, as directs Beechemin, Louis, Captain and Assistant Surgeon, to report for duty at Fort Apache, Arizona Territory, is revoked. He will report in person to the commanding officer, Presidio of San Francisco, Cal., for duty at that station. Par. 7, S. O. 248, A. G. O., October 24, 1889.

Clendenin, Paul, First Lieutenant and Assistant Surgeon. Relieved from duty at Fort McIntosh, Texas, and will report in person to the commanding officer, Camp Eagle Pass, Texas, for duty at that station. Par. 7, S. O. 248, A. G. O., October 24, 1889.

Chapin, Alonzo R., Captain and Assistant Surgeon. Relieved from duty at Newport Barracks, Kentucky, and will report in person to the commanding officer, Fort Yates, Dakota, for duty at that station. Par. 7, S. O. 248, A. G. O., October 24, 1889.

Shannon, William C., Captain and Assistant Surgeon. Relieved from duty at Fort Yates, Dakota, and will report in person to the commanding officer, Fort Apache, Arizona Territory, for duty at that station. Par. 7, S. O. 248, A. G. O., October 24, 1889.

Raymond, Henry I., First Lieutenant and Assistant Surgeon. Upon being relieved from duty at Fort Bidwell, California, will report in person to the commanding officer, Newport Barracks, Kentucky, for duty at that station. Par. 7, S. O. 248, A. G. O., October 24, 1889.

Davis, William B., Captain and Assistant Surgeon. Relieved from further duty at Fort Porter, New York, and will report in person, upon expiration of his present sick leave of absence, to the commanding officer, Fort Preble, Maine, for duty. Par. 6, S. O. 248, A. G. O., October 24, 1889.

Wakeman, William J., Captain and Assistant Surgeon. Relieved from duty at Fort Walla Walla, Washington Territory, and will report in person to the commanding officer, Fort Bidwell, California, for duty at that station. Par. 7, S. O. 248, A. G. O., October 24, 1889.

Egan, Peter R., Captain and Assistant Surgeon. On being relieved from duty at Camp Eagle Pass, Texas, will report in person to the commanding officer, Fort McIntosh, Texas, for duty at that station. Par. 7, S. O. 248, A. G. O., October 24, 1889.

By direction of the Secretary of War, so much of Par. 2, S. O. 24, October 16, 1889, from this office, as relates to Heger, Anthony, Lieutenant-Colonel and Surgeon, is amended to read as follows: Lieutenant-Colonel Anthony Heger, surgeon, is relieved from further duty in the Division of the Atlantic, and will at once report to the Major-General commanding the army for duty in this city. Par. 5, S. O. 252, Headquarters of the Army, A. G. O., October 29, 1889.

By direction of the Secretary of War, Par. 3, S. O. 24, October 16, 1889, from this office, is so amended as to grant O'Reilly, Robert M., Major and Surgeon, leave of absence for six months, with permission to leave the United States, to take effect November 1, 1889. Par. 6, S. O. 252, A. G. O., Washington, D. C., October 29, 1889.

Forwood, William H., Major and Surgeon, by direction of the President, is detailed as a member of the Army Retiring Board at St. Paul, Minn., convened by War Department Order dated January 12, 1889, published in S. O. 10, January 12th, from Headquarters of the Army, *vice* Mearns, Edgar A., Captain and Assistant Surgeon, hereby relieved. Par. 12, S. O. 254, A. G. O., October 31, 1889.

Gibson, Joseph R., Major and Surgeon. Granted leave of absence for seven days, to take effect from date of being relieved from duty at Fort Sheridan, Illinois. Par. 9, S. O. 249, A. G. O., October 25, 1889.

Gorgas, William C., Captain and Assistant Surgeon, by direction of the Secretary of War, is relieved from temporary field

duty in the Department of the Missouri, and will join his proper station (Fort Barrancas, Florida). Par. 2, S. O. 251, A. G. O., October 28, 1889.

MAUS, LOUIS M., Captain and Assistant Surgeon. Granted leave of absence for two months on surgeon's certificate of disability. Par. 11, S. O. 249, A. G. O., October 25, 1889.

By direction of the Secretary of War, so much of Par. 10, S. O. 242, October 17, 1889, A. G. O., as directs MAUS, LOUIS M., Captain and Assistant Surgeon, to report in person for duty at Fort Stanton, New Mexico, to relieve Captain MARCUS E. TAYLOR, Assistant Surgeon, is revoked, and Captain TAYLOR will proceed to Boise Barracks, Idaho Territory, as directed in said order, as soon as medical attendance shall be provided for Fort Stanton. Par. 10, S. O. 249, A. G. O., October 25, 1889.

CABELL, JULIAN M., First Lieutenant and Assistant Surgeon. Granted leave of absence for two months, to take effect about November 10, 1889. Par. 7, S. O. 249, A. G. O., October 25, 1889.

By direction of the President, the Army Retiring Board convoked at Vancouver Barracks, Washington Territory, by War Department Order dated December 15, 1888, published in S. O. 292, December 15, 1888, from Headquarters of the Army, is dissolved. Par. 1, S. O. 250, A. G. O., Washington, October 26, 1889.

Appointments in the Medical Department.

WILLCOX, CHARLES, First Lieutenant and Assistant Surgeon, to rank from October 29, 1889.

MCVAY, HARLAN E., First Lieutenant and Assistant Surgeon, to rank from October 29, 1889.

FRICK, C. B., First Lieutenant and Assistant Surgeon, to rank from October 29, 1889.

Death.

TAYLOR, MORSE K., Major and Surgeon (retired), died October 20, 1889, at San Antonio, Texas.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending November 2, 1889:*

NASH, F. S., Passed Assistant Surgeon. Detached from duty in the Bureau of Medicine and Surgery and ordered to the Petrel. November 14, 1889.

BOGERT, E. S., Medical Inspector. Ordered to examination preliminary to promotion to medical director.

NORTON, O. D., KITE, I. W., and STONE, E. P., Assistant Surgeons. Ordered to examination preliminary to promotion to passed assistant surgeons.

Society Meetings for the Coming Week:

MONDAY, *November 11th:* New York Academy of Medicine (Section in Surgery); New York Ophthalmological Society (private); New York Medico-historical Society (private); Lenox Medical and Surgical Society (private); New York Academy of Sciences (Section in Chemistry and Technology); Boston Society for Medical Improvement; Gynæcological Society of Boston; Burlington, Vt., Medical and Surgical Club (annual); Norwalk, Conn., Medical Society (private); Baltimore Medical Association.

TUESDAY, *November 12th:* Medical and Chirurgical Faculty of Maryland (semi-annual, first day, Hagerstown); New York Medical Union (private); Medical Society of the County of Rensselaer, N. Y.; Camden, N. J., County Medical Society (semi-annual—Camden); Newark, N. J., Medical Association; Trenton, N. J., Medical Association (private); Norfolk, Mass., District Medical Society (Hyde Park); Baltimore Gynæcological and Obstetrical Society.

WEDNESDAY, *November 13th:* Medical and Chirurgical Faculty of Maryland (second day); New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medico-legal Society; Medical Society of the County of Albany, N. Y.; Pittsfield, Mass., Medical Association (private); Worcester, Mass., District Medical Society (Worcester); Philadelphia County Medical Society.

THURSDAY, *November 14th:* Society of Medical Jurisprudence and State Medicine; Brooklyn Pathological Society; New York Physicians' Mutual Aid Association (annual); Medical Society of the County of Cayuga, N. Y.; South Boston, Mass., Medical Club (private—annual); Pathological Society of Philadelphia.

FRIDAY, *November 15th:* Chicago Gynæcological Society; Baltimore Clinical Society.

SATURDAY, *November 16th:* Clinical Society of the New York Post-graduate Medical School and Hospital.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN THEORY AND PRACTICE OF MEDICINE.

Meeting of October 15, 1889.

Dr. R. C. M. PAGE in the Chair.

Enteralgia and Chronic Peritonitis.—Dr. A. JACOBI read a paper on this subject. He said that cases of primary peritonitis of any kind were very rare, and that these were mostly due to traumatism, or from wounds and probing of the same, and from paracentesis for ascites. Most cases, however, were of a secondary nature, with very numerous causes. These cases might arise under the influence of general diseases—rheumatism, alcoholism, scarlatina, measles, erysipelas, malaria, scurvy, tuberculosis, carcinoma, etc. Among the most frequent causes of peritonitis were the catarrhal and inflammatory diseases of the female sexual organs. The writer thought it was very easy to understand how an intestinal catarrh developed into an enteritis and then into peritonitis, if we remembered the facility with which anatomical changes took place in the mesenteric glands in the course of such a disease. The diagnosis of chronic peritonitis was frequently obscured by such conditions as adhesions around tumors, a movable kidney which had become fixed, and intestines which had become glued together—all of which had no recognizable symptoms. In chronic peritonitis the respirations were not necessarily accelerated. Particularly was this true in pelvic peritonitis. There might be occasional vomiting if there happened to be an existing acute catarrh. Constipation was frequent; diarrhœa not unusual. The abdomen was apt to be tumid. Chronic peritonitis was diagnosticated with more or less certainty in the following manner: The patient should lie upon the back, with the lower extremities extended. Then flexion and extension of the limbs would often cause pain in the abdomen. Then, by palpation over the abdomen, much might be discovered which would point to adhesions or exudations. By pressure, very distinct and circumscribed pain might be felt by the patient. Pain was a very frequent symptom in chronic peritonitis. It might be mild, severe, of short duration, or permanent. Its variability depended often on the degree of irritation or congestion. Acute attacks were frequent when there was a cause for exacerbation. The seat of

pain varied with the location and extent of the lesion. Extensive peritonitis in the pelvis might not give rise to pain unless waked up by defecation, cohabitation, or micturition. In some cases the pain could not be diagnosticated from the enteralgia produced by other causes—such as flatulence, fermentation, and abnormal contents in the abdomen. Anatomical changes in chronic peritonitis gave rise to the very same symptoms and conditions. The results of this disease were varied. A simple attack of exudation might shape the future of the patient so far as health was concerned.

Tabes mesenterica was another form of chronic peritonitis the recognition of which the author considered of practical importance. The main symptoms common to every form and case of tabes mesenterica were atrophy and tumid abdomen. Emaciation and atrophy reached a degree hardly ever met with in any other morbid condition. The subcutaneous fat rapidly disappeared. The skin was flabby, thin, and inelastic; around the limbs it was loose and baggy. In the beginning the muscles could be recognized; afterward even they became emaciated to such an extent that their outlines disappeared, and those of the bones were distinctly perceptible. The eyes lay deep in the orbit, and had a peculiarly dry and hungry look. The bones of the face, with the thin, flaccid, dry, and scaly skin over them, furnished a terribly senile expression. The surface was mostly cool, the limbs were cold, the cutaneous veins were very distinct and blue, and much dilated over the chest, but still more so over the abdomen. The voice was thin and tin-like, the cry tearless, the pulse slow, from exhaustion of the heart muscle, or, more frequently, rapid, thin, and compressible. The lymph bodies of the neck and inguinal regions, sometimes also of the axilla, were tumefied. The preceding symptoms were more or less common to all cases. There were many, however, which exhibited numerous variations in important particulars. The appetite might be ravenous or entirely lost. Some cases began with little or no diarrhœa, but in all, the stools were fœtid. The majority, however, commenced with a severe form of intestinal catarrh, attended with numerous offensive discharges. The peculiar foul, musty, pungent, ammoniacal odor was due in part to acids, formed by the fat which had not been absorbed, sulphides, and other products of putrefaction. In the further development of the morbid condition there might be constipation, but diarrhœa was more frequent. It might not be very copious or the evacuations very numerous. In some cases there was tenesmus, with but little substance; in others the quantity was large and expelled suddenly, in an instantaneous gush. The temperature varied. It might be normal or subnormal or elevated. The tumid belly was absolutely painless in some cases, but very sensitive in others, the latter mainly in those with elevated temperature. The large size of the abdomen, with its network of dilated veins, contrasted fearfully with the ghastly and atrophic limbs. It might be large enough to press the diaphragm upward and interfere with the function of the heart and lungs. The nature of the tumefaction varied. It might be tense or flabby, hard or soft, doughy or firm, uniform or irregular. Nodules or lumps of different shapes and sizes might be discovered by palpation. Gentle percussion would elicit tympanites. It was not unusual to find œdema, extensive dullness from fatty liver, albuminuria, local inflammations of the abdominal surface connected with abscesses in the peritonæum, and cough depending on tubercular disease of the lungs. The author thought that the variety of symptoms belonging to tabes pointed distinctly to different morbid processes, and that these symptoms appeared to prove that there were several distinct forms of tabes which depended on different causes, and were attended with varying anatomical alterations. He said that tabes mesenterica ought no longer to appear as a nosological entity in the text-books. The former belief, that death was due to failure of absorption, was no longer tenable. Starvation might take place through impervious ness of the mesenteric lymph bodies. The first changes which took place in them were of a congestive and inflammatory nature, and secondary in character. Primary changes, when they did occur, were mostly neoplastic. As in other glands, the inflammation might be a simple one, or suppurative, fibrous, caseous, or tubercular. Simple adenitis was occasioned by any kind of irritation. The first process consisted in dilatation of the blood-vessels, with reddening, softening, and succulence of the tissue, endothelial changes in the lymph spaces, and new formation of cells. Afterward the red discoloration was replaced by a grayish-white color, now and then interrupted by small blood-points which would turn into pigment. The difference between the cortical and medullary substance would fade or disappear. The capsule became tense over its swollen contents. These were the cases in which a complete recovery could be expected. Besides the simple secondary hyperplasia of the mesenteric glands which resulted in obstruction, and the tubercular infiltration which terminated in the same disturbance of function, there was a third condition which led to the symptoms called tabes mesenterica—viz., chronic tubercular peritonitis. It was quite frequent, but its symptoms varied in duration and severity. The capability of recovery in this disease was sometimes surprising. The present justifiable belief was that only those cases of chronic peritoneal tuberculosis would have a chance of recovery which were local, and not the result of general tubercular infection. In estimating the size of a child's abdomen, it should be borne in mind that it was normally larger in proportion than that of the adolescent or adult. The diagnosis of tubercular peritonitis was apt to be difficult. There were many cases which could not be distinguished from non-infectious peritonitis and simple inflammatory processes. Many of the caseous tuberculizations were small and inaccessible to an accurate physical examination. Where the distension of the stomach appeared after an intestinal catarrh the stools either improved in character or remained offensive. If the temperature continued high and the symptoms exhibited a typhoid character, the existence of an acute attack of tubercular peritonitis was probable. The prognosis was always uncertain, except in the very worst cases. It was absolutely fatal when the tabes mesenterica meant peritoneal and glandular tuberculosis complicated with or depending upon generalized tuberculosis.

Dr. F. Delafield said that he was in the habit of regarding these cases of peritonitis from an anatomical standpoint. He made the following distinctions: 1. Cases of chronic peritonitis in which the lesion was only a form of connective-tissue adhesion. 2. When there existed connective-tissue adhesions and also serous or purulent fluid. 3. Chronic peritonitis, with increased thickening, and fluid present in quantities. In the first class of cases there were no symptoms, and the adhesions were revealed only at an autopsy. The patients would have localized pain, referred to some part of the colon, and might have adhesions or not. It was very difficult to determine. To distinguish these cases from a tubercular peritonitis was also difficult, and when there existed waxy liver as a complication they became troublesome. Not infrequently such cases behaved like carcinoma of the liver. Chances of error also lay in stenosis of the pylorus, giving rise sometimes to an enormously dilated stomach, which might occupy almost the entire abdomen. Pain in different parts of the abdominal cavity was frequently misleading. Sometimes it was a reliable indication, but at other times could not be depended upon at all. Then chronic peritonitis, with both adhesions and fluid, was difficult to distinguish from tubercular peritonitis and from the various forms of carcinoma of the peritonæum. Very much depended

upon the particular shape that the peritonitis took. The intestines might be matted in some parts of the abdomen, there might be fluid in another part, and organized connective tissue might divide the abdominal cavity into several compartments. As to the third form, in which diffuse thickening existed with presence of fluid, but without adhesions, it was difficult to distinguish from tubercular peritonitis and from simple cancer of the peritonæum or cirrhosis of the liver. This latter was especially difficult when the peritonitis involved the capsule of the liver. The capsule would become enormously thickened and the liver diminished in size, as in true cirrhosis.

Dr. W. H. Thomson thought the diagnosis of this condition extremely confusing. He had never made a diagnosis of chronic peritonitis without a mental reservation that the patient might really be suffering from something else. He remembered two cases of cancerous disease of the peritonæum which had in common a feature of some value in distinguishing the condition from that of tubercular peritonitis. The first case was that of a lady who, at forty-five years of age, gradually began to decline in health and present symptoms of ascites. The pains of which she complained were very fugitive, and the only local symptoms were rigidity of the abdominal walls on palpation and pressure. At no time was there any rise of temperature. The particular symptom was the extremely low percentage of urea in the urine. The autopsy showed acute carcinoma of the peritonæum. The pain which the patient had complained of most often, and which had been on the left side, was explained by the fact of the disease having involved two of the false ribs of that side. In the second case to which he had referred cancer of the peritonæum was found. The same condition of the urine existed before death. He believed Germain Sée's diagnostic points in cancer of the stomach and peritonæum were tenderness and enlargement of the post-clavicular glands. In one case of cancer of the peritonæum the speaker had been able to verify this suggestion. In cancer of the peritonæum there was no exacerbation of temperature, while in tuberculosis there was. He had a case at present in a youth nineteen years old, with a history of constipation and pain in the abdomen, hip, and knees. There was also considerable cutaneous hyperæsthesia. For some weeks past there had been a temperature of 101° to 102° F. The striking feature was the progressive emaciation. There was very little doubt that the case was one of tubercular peritonitis. There was some redness about the umbilicus, which was a thing the speaker had not noticed before. When ascites complicated these diseases the difficulties of accurate diagnosis became insurmountable.

Dr. Leonard Weber said that he had not seen a case of chronic peritonitis which was not the result of infection. He was not inclined to believe that any such form existed, though it might. He looked at the conditions described in the first part of the author's paper—in which, at some time in the patients' histories, there had been acute attacks of peritonitis—as conditions consequent upon those attacks. Some of the cases described seemed to indicate the result of adhesions, lacerations and perforations, the patients dying of acute perforating peritonitis and not chronic peritonitis.

NEW YORK ACADEMY OF MEDICINE.

Meeting of October 17, 1889.

The President, Dr. Alfred L. Loomis, in the Chair.

On Gunshot Wounds of the Abdomen, with Special Reference to Wounds of the Intestines.—Dr. L. A. Stimson read a paper with this title. (See page 449.)

Dr. John A. Wyeth said it seemed that the question resolved itself into one of operation or non-interference. The arguments used in the very able paper which had been read recalled to his mind a meeting held nine years before, in that same room. At that meeting a paper had been read by a man recognized as a leader, which had attracted great attention at that period. He referred to a paper on the "Progress of Peritoneal Surgery," read before the members of the Academy on October 6, 1881, by Dr. J. Marion-Sims, who had then said: (1) "Wounds of the peritoneal cavity have a common course to run." (2) "They have a common termination, and that is death by septicæmia." (3) "This is the general law in death after ovariotomy." (4) "It is the general law in death after gunshot and other wounds of the abdominal cavity." (5) "The septicæmia is the result of absorption of bloody serum found in the peritoneal cavity after wounds or operations." (6) "Gunshot wounds of the pelvic cavity are recovered from because of natural drainage afforded by the track of the ball." (7) "Patients with gunshot wounds of the abdomen die of septicæmia because there is no natural drainage and the bloody serum falls into the peritoneal cavity and is there absorbed." (8) "The effect of bloody fluid upon the abdominal cavity is such as to demand abdominal incision and suturing of the divided tissues." The speaker then went on to say that there could be no fixed laws in the matter of interference in gunshot wounds of the abdomen. It was necessary to be guided by the condition of the patient and the situation of the wound, as well as by the size of the missile. Gunshot wounds of the intestine made by small bullets, owing to the contractility of the gut, were not so likely, other things being equal, to be followed by the escape of the intestinal contents and by peritonitis. If called to a case in which the patient had been wounded by a small-sized bullet, which had passed from before backward through the abdominal wall, above the level of the umbilicus, he would prefer to wait rather than interfere. An injury such as this from a small-sized bullet was not so apt to wound the gut. If the bullet was a large one and had passed through the abdominal wall above the navel, and the patient had passed out of the period of shock, had a good pulse, and was in a generally fair condition, the speaker said he would be inclined to open the abdomen to see if there were any of the viscera wounded. But below the umbilicus the abdomen was full of the small intestines, and it was scarcely possible for a bullet to pass through the abdominal wall from before backward in this region without wounding the small intestines more or less. In such cases he would open and explore. In any event, if the caliber of the bullet was No. 38 or No. 40, he would not hesitate to operate, but would not invade the abdomen if the bullet used had been a small one. It was of vital importance to operate at the proper time, and that was when the patient came out of the condition of shock. This might mean a few hours, or even ten or twelve hours. He mentioned a case in which a boy had been shot below the navel, the bullet passing obliquely through the abdominal cavity. This patient had remained in a condition of shock for five hours, at the end of which time he had come out of it, and in an hour had been in excellent condition, remaining so for five hours more. When the speaker was called to see him, six hours later—in fact, at the "eleventh hour"—peritonitis had set in and the boy was practically comatose. In such a case, he thought, the patient would have had a chance of recovery if interference had been commenced at the proper time. As to drainage, if the abdomen was opened and the patient was still weak and there existed considerable extravasation, it was better to leave the wound open.

The Chairman said it seemed that in this country special and ample opportunity was afforded for the study of gunshot wounds of the abdomen. He thought this was proved by statistics, unless such statements exaggerated the facts. While

walking through a London hospital Sir W. MacCormac had remarked to him that American surgeons had considerable advantage in this respect because in America pistols were as commonly carried and used as toothpicks. The speaker thought that something should perhaps be allowed for the temperament of those who used the weapons. As to the size of the missile, he thought experience indicated that a '22 caliber bullet would make the more fatal injury, and cited a case in which a bullet of that size had made five intestinal perforations. He also thought that greater stress should be laid upon the part of the intestines which suffered perforation than upon the size of the bullet. If the wounds were near the mesenteric attachment they were more likely to close spontaneously than if inflicted at points distant from such attachment. He was firmly of the opinion that some operation should always be done. The shock from chloroform or ether anæsthesia, he contended, added enormously to that of the initial shock from the injury, and therefore, where only moderate search was indicated, he advocated the use of cocaine. The absence of blood in the urine did not prove that the bladder or kidneys were uninjured. Lateral anastomosis was not indicated as a part of the primary operation after gunshot wounds of the intestine.

Dr. W. Meyer related a case in which the patient had shot himself in the abdomen. The bullet could be felt at the left of the spinal column. The patient had expectorated and vomited blood. Finding that the man grew gradually worse, it was decided to explore the abdomen. No perforation of the intestines was found and none of the stomach. When, however, the stomach was pulled forward, an abrasion of its posterior surface was discovered. The injury had been so superficial that it did not require sewing, and it was merely dusted with bismuth. The patient sank gradually and died, and, unfortunately, no post-mortem could be obtained. It was a point to be noted that the bullet had entered the abdominal cavity, and had found its way to the back of the stomach without perforating either it or the intestines. Still the man had both vomited and expectorated blood. As to interference in cases of gunshot wounds, he thought for the first twelve hours it was better to let patients alone; then, if the diagnosis of internal hæmorrhage was made, it would force the knife into the surgeon's hand.

Dr. Curtis thought that the statistics of gunshot injuries, with the results of their treatment, were thoroughly unreliable. The high mortality rate might be the result of operations undertaken by inexperienced surgeons. The men who had been given the opportunity of operating in three or four cases were the men who were best able to handle them. He was glad that Dr. Stimson had emphasized the point that an operation upon patients in a moribund condition was unadvisable. No good could come to the patient, and great injury was thereby done to surgery.

Dr. T. H. Manley then narrated the history of a case of gunshot wound of the intestine in which he had operated and in which the patient had made a good recovery. The only difficulty which had presented itself in the case had been that of keeping the edges of the wound in coaptation, the thoracic and abdominal movements during respirations tending constantly to retard union.

NEW YORK SURGICAL SOCIETY.

Meeting of October 9, 1889.

The President, Dr. Lewis A. Stimson, in the Chair.

Abscess of the Brain.—Dr. Thomas M. Markoe read a paper with this title. (See page 509.)

Dr. L. A. Stimson reported a case in corroboration of what the author had said concerning the absence of fever and the relation between the formation of cerebral abscess and external injury. A case had come under his care of a man who had been struck on the head in a quarrel and received a scalp wound. He had been treated as an out-patient in one of the hospitals. After the lapse of some time, he had begun to suffer from pains in the head and had sought treatment at another hospital. When the man finally came under the speaker's observation he was entirely free from fever, but unconscious most of the time. On passing the patient one day when he happened to be conscious, the speaker noticed that there was paralysis of the left forearm. He trephined him the next day at the corresponding motor center, a little above the upper end of the scar which marked the site of the scalp wound alluded to. On removing the button of bone and introducing a hypodermatic needle, pus was found. An incision was made and about an ounce of pus let out. The man died, and the autopsy showed that the abscess occupied the convolution immediately behind the fissure of Rolando and at about the middle of the fissure. The paralysis has been limited to the extensor muscles of the forearm and hand. An examination of the seat of injury showed that there had been no fracture, except possibly of the external table, but that a limited carious process had followed, with perforation of the bone at one point. Between this lesion of the skull and the brain abscess there was, however, no direct continuity, normal brain tissue intervening of one third of an inch in thickness. The position of the abscess corresponded very satisfactorily to the data furnished by experimentalists.

Ligation of both External Carotids.—Dr. Markoe showed a specimen from a case in which he had tied both external carotid arteries for cirsoid aneurysm of the scalp. The vessels had contracted well as the immediate result of the operation, and he had been inclined to hope for a good result and had intended to tie more vessels. His patient had, however, passed from under his notice, and last summer had been in the hospital, where the president had seen him.

Dr. Stimson said the patient spoken of by Dr. Markoe had come under his care, having suffered from severe hæmorrhages at a point on the scalp where an ulcer had formed. He dissected out and removed all the dilated vessels. The patient lost a good deal of blood at the operation, notwithstanding every precaution, including that of compressing the scalp by an elastic bandage. He was put to bed in fair condition. During the night he took enough liquid nourishment to have formed the equivalent of transfusion, and he did fairly well until about two o'clock in the morning, when he woke up very depressed, said he knew he was going to die, and asked to have a clergyman sent for. He died at 6 A. M., fourteen hours after the operation.

Dr. J. A. Wyeth said he had noticed with surprise the rapidity with which the collateral circulation was established after ligation of these vessels. In Dr. Markoe's case the tumor had soon reasserted itself. He had recently treated a case of large retro-pharyngeal tumor. When he advised temporary removal of the upper jaw and total extirpation of the mass, the patient's father, a physician, declined to have so formidable an operation performed, on account of the scars that would remain, and its removal with the galvanic-cautery wire was therefore undertaken. The hæmorrhage was so profuse that plugging was resorted to, which controlled it. The plug was afterward removed by the house surgeon. A few hours later, while the lad was sleeping, alarming hæmorrhage occurred, and both external carotids were tied. On account of his exsanguinated condition, no attempt was made to remove the tumor at this operation. Five days afterward the speaker split the soft palate in the median line, sawed through the hard palate an inch on each

side of the attachment of the vomer, and removed the included portion of bone, to which the growth was adherent. This procedure gave a good view of the neoplasm, and he gradually scraped the remnants of it off with a sharp spoon. The bleeding was so profuse that he could not take time to apply the cautery to the points of attachment, but was forced to plug the vault of the pharynx.

Dr. F. E. Lange said that, about four weeks before, he had operated in a case of sarcoma of the alveolar process of the upper jaw which had developed in a nævus that involved the whole cheek. The vascularity of the region had caused a rapid growth of the sarcoma. Thinking that ligation of both external carotid arteries would render the bleeding insignificant, he had done this, and had operated with the head hanging. Still a good deal of blood was lost, the arterial hæmorrhage being quite profuse. He slit the upper lip, and bleeding occurred from both sides of the incision and from the arteries of the bone, and the ligation did not seem to have so much effect as he had expected. Good, free collateral circulation had been established. He did not think he could have been mistaken about the vessels which he tied.

Intestinal Strangulation.—Dr. L. S. Pilcher, of Brooklyn, presented a specimen taken from a case in which the patient had died after a laparotomy for the relief of intestinal strangulation, with the following history: A man, aged thirty-seven, was admitted into the Methodist Hospital on September 14th, with symptoms of intestinal obstruction. The abdomen was tympanitic, rigid, and tender; pulse, 140; temperature, 100·4° F. He was vomiting frequently a greenish fluid, without feculent odor; his attending physician stated positively that on the preceding day he had vomited feculent matter. Ten days previously he had had his last normal stool; four days before admission he had had a slight movement of the bowels, described as black and tarry in character. Seven days before admission he had a transitory attack of severe colicky pain in the abdomen; previous to this time he had supposed himself well, as he always had been. This attack did not prevent him from working as usual for the next three days, after which time the colic returned, accompanied with vomiting, and these symptoms persisted until his admission into the hospital. Cathartics, opiates, and enemata had been used vigorously before his admission. After his admission another enema was administered, without result. The stomach was then washed out, after which laparotomy was proceeded with. Exposure of the intestines revealed a general peritonitis already present, with great distension of the small intestine throughout its whole extent. The incision was lengthened sufficiently to permit of the ready turning out of the small intestine; the large intestine, quite empty, was then traced backward, beginning on the left side; at the hepatic flexure it was found to be imbedded in a mass of old organized inflammatory material, which bound it to the posterior wall of the cavity. This formed a band an inch or more in breadth, gluing all the adjacent structures together; on the proximal side of the band there was the livid, softened, distended ascending colon. It was evident that any attempt at breaking up the inflammatory adhesions would be attended with great risk of rupture of the intestine, a risk that was increased by the depth of the involved parts from the surface. The speaker accordingly proceeded at once to circumvent the obstruction by forming an anastomosis by bringing the lower portion of the ileum up to the ascending colon a few inches beyond the point of obstruction. This was accomplished by the use of Dr. Abbe's catgut rings. Great difficulty was experienced in returning the distended small intestines, and a puncture was necessary to empty them. This being closed, they were returned into the abdominal cavity. The patient never rallied from the shock, but died within an hour after his return to bed. The autopsy showed a chronic ulcer of the ascending colon, which had not perforated the peritonæum, but had nevertheless occasioned the local peritoneal exudation that had caused the obstruction. It was found that, so far as the anastomosis was concerned, everything had been accomplished that had been attempted at the operative procedure.

Dr. Abbe thought that in these cases of acute obstruction the operation for effecting anastomosis had better be delayed until after the colostomy. The shock was too much for the patient to stand. After obtaining relief from the colostomy there was no danger after a fortnight in anastomosis.

Dr. Abbe presented a specimen illustrating a typical case of internal intestinal strangulation by a band. A lady of thirty-five was suddenly seized with vomiting and hypogastric pain. She was attended by a physician who endeavored to bring about purgation. Enemata, calomel, and other purgatives failed. Not even wind passed the bowel. Vomiting increased, and on the third day became stercoraceous. The abdomen became tympanitic, but showed no dull area to suggest the seat of obstruction. At the end of the fourth day, when she was first seen by Dr. Abbe, she had already for six hours shown characteristic apathy and exhaustion. Her temperature was normal, her pulse 100. Laparotomy was immediately resorted to under ether. The abdomen was found filled with distended and highly congested small intestines, among which was seen a small coil of pale and empty intestine. This and the distended gut both terminated in Douglas's *cul-de-sac*. The Falloppian tube on each side was turned upward and fixed by adhesion so as to form a tight pocket behind the uterus, in which was caught a strangulated knuckle of the ileum, with its adjacent coil for three inches. The attempt to remove it was futile, on account of its fixation, and, as the patient's strength began to flag, he was obliged to do an ileostomy of the lowest distended coil as rapidly as possible. The patient lived five hours and died of the shock of strangulation plus operation.

The gut was found gangrenous under the line of the strangulating band. Fæcal vomiting occurred twice after the operation.

NEW YORK NEUROLOGICAL SOCIETY.

Meeting of Tuesday, October 1, 1889.

The President, Dr. George W. Jacoby, in the Chair.

Lesion of the Pons Varolii.—Dr. A. A. Boyer presented a case of this affection with a history, of which the following is a brief synopsis: C. W. B., aged forty-five, syphilitic, in June, 1888, while at work, suddenly felt a sensation at the back of his head as if he had been shot. The shock was not severe enough to cause him to fall or lose consciousness. It was followed immediately by intense headache. Afterward, nausea, vomiting, and insomnia became prominent symptoms for six weeks, and he was treated for gastritis; there was then an interval of two weeks without these symptoms, after which they returned in greater severity. On August 14th his left thigh suddenly grew cold and numb; then the condition extended to his foot, and during the night spread up the trunk, left arm, and left face. In the morning there were anæsthesia and paralysis of the whole left side of the body. On examination eight months later, he had a hemiplegic gait, inco-ordination of the left arm, good equilibration, paresis of the left leg, paralysis of the left arm, drooping of left side of mouth, some atrophy from disuse on the left side, hemi-anæsthesia, and hemi-analgesia. The lesion would therefore seem to have been pretty definitely lo-

cated in the pons Varolii, to the right of the median line, above the line of Cubler, and involving the fillet, the reticular formation, and the pyramidal tract. The writer thought a lesion here would be high enough to produce paralysis of the facial muscles of the opposite side, and low enough to leave the ocular nerves unaffected. He believed the most reasonable theory as to the nature of the lesion was that of thrombosis as a result of obliterating endarteritis or hæmorrhage. It could not be a tumor.

Dr. W. R. Birdsall saw no necessity for assuming a lesion of the pons Varolii to explain the symptoms, which seemed to be wholly unilateral. He usually expected something particularly characteristic in pontic lesions, such as alternating paralysis. He thought a capsular lesion would account for all the symptoms in this case, and the absence of other pontic features would strengthen that view.

Dr. M. A. Starr agreed with Dr. Birdsall as to the localization of the lesion. He thought the case one of ordinary hemiplegia with a lesion in the internal capsule. Unless there were certain cranial nerve lesions, alternating paralysis, or some other characteristic symptoms, there was no need to locate the disease in the pons.

Dr. Boyer said he had been led to locate the lesion in the pons, because there had been no loss of consciousness at the onset of the attack, although very decided and varied paralysis had been developed immediately. In his opinion this pointed strongly to a minute lesion, and nowhere above the pons would a small lesion be likely to produce such wide results. The inco-ordination now remaining after the disappearance of most of the motor symptoms indicated a lesion of the fillet or of the commissural fibers in its vicinity.

The Curability of Locomotor Ataxia.—Dr. L. C. Gray then read a paper thus entitled (to be published).

Dr. C. L. Dana said that we had changed our conceptions as to the variations in clinical types and as to the pathological lesions of locomotor ataxia. Probably ninety per cent. of our cases were typical and answered to the classic descriptions of the disease. But there was a minority of cases which had a non-typical manifestation, types with optic atrophy, with latent spinal symptoms, with spastic symptoms, with peripheral lesions, etc., and the prognosis was different in these forms. For instance, the prognosis was not bad in the spastic variety, but exceedingly so where there was rapid emaciation of the lower extremities. He had recently examined his notes of cases, and the results of treatment in 56 cases (22 syphilitic) had been as follows: 10 very much improved (3 syphilitic); 6 improved (4 syphilitic); 14 stationary (3 syphilitic); 13 progressive (8 syphilitic), 2 fatal; 10 doubtful or unknown.

He believed locomotor ataxia to be a degenerative disorder, affecting nerve fibers primarily, not beginning at a single focus, but at several different places at various times. In order to cure the disease we should have to discover a drug that would stop this degenerative process. As to suspension, he had tried it in 22 cases, with 600 suspensions, since last April. Of these, 4 patients were very much improved, 6 improved, 6 unimproved, and 6 had discontinued the treatment. He thought there was no question as to very marked benefit being produced by suspension.

Dr. Birdsall, on hearing the title of Dr. Gray's paper, had been led to think that some new view of the hopefulness of cure was to be introduced by the author, but he coincided with the writer in the opinion he had expressed as to the incurability of the disease. Various physicians entertained different ideas as to what should be termed a cure of a disease. Some considered patients practically cured where the pathological process had been arrested under treatment, although many symptoms might remain. If this were true, possibly some cases of locomotor ataxia might be called to a certain extent cured. In one of his cases ataxia had disappeared, and had not now returned in nine years, although the patient had of late suffered from various crises, gastric and laryngeal, and some cerebral symptoms, such as loss of consciousness. For five years the active symptoms had been referred to the trunk and upper extremities. It was a syphilitic case. He had had another case where the tendon reflex had returned after abolition for many months, and ataxia had also disappeared; but pains and numbness had subsequently become manifest in the upper extremities. He would not himself speak of any case as cured, but only as arrested in its progress. It was well that we were able to recognize the disease much earlier than formerly, and had better opportunities for early treatment. Our measures should be chiefly hygienic—the regulation of diet, avoiding of excesses, diminishing of labor, etc. He had tried suspension in a few cases, but with no favorable results. At the same time, he did not deem it wise to throw it altogether aside as yet. He had seen injurious effects from large doses of potassic iodide, and, in his opinion, tabetic patients were not so well able to tolerate this drug as some suffering from other disorders. We must modify our opinion somewhat of the varieties of tabes, since Déjerine and others had discovered peripheral nerve lesions in some cases of locomotor ataxia.

Dr. Starr said, with regard to the difficulty of diagnosis between peripheral and cerebral cases, that we must judge from the order of occurrence of symptoms as well as from the symptoms themselves. He referred to Déjerine's paper, where it was shown that peripheral cases were distinguishable by the rapidity of their development as contrasted with those of cerebral origin; alcoholic, lead, and arsenical disorders could scarcely be mistaken for actual locomotor ataxia, for a sharp line could be drawn between them; and, even in the cases of obscure cause, the course was much more rapid in neuritis. Some seven years before Dr. Austin Flint had read a paper on the self-limitation of phthisis. A similar description might apply to locomotor ataxia also. It was possible that the sclerosis of the cord might be a protective process, an effort of nature to arrest or provide against the effects of disease. A pathologist in New York had taught for two years that connective tissue was thrown out by nature as a defense. Thus locomotor ataxia might also be a self-limited disease like phthisis in many instances, although in the majority of cases it was not.

His own records showed some twenty-five cases seen in the last four years, seventeen of which were carefully detailed. In nine of the seventeen there had been periods of non-progression at times, while in eight there had been steady advance in spite of treatment; but, as similar treatment had been employed in all of these cases, the temporary arrest of the disease in some could not be ascribed to the therapeutics. He agreed with Dr. Dana that eye cases manifested atypical symptoms. In three of his cases with blindness there had been no progress subsequent to the failure of sight. He thought it worth while to try specific treatment in patients with a history of syphilis, but he had little faith in its efficacy, as in his experience—as in that of continental observers—it afforded less benefit in locomotor ataxia than in other syphilitic nervous affections. He usually employed small doses of arsenic and biniodide of mercury, which was the English treatment. In thirteen cases treated by suspension at the Vanderbilt Clinic, tabulated by Dr. Peterson, there were seven cases of locomotor ataxia. There had been distinct improvement in two cases only, and none at all in four, while in two the results had been bad, the suspension producing syncope, nausea, and vomiting, severe pain, and enuresis at different times. It might be stated, therefore, that a small proportion only of cases had been improved by suspension.

Dr. B. Sachs had observed in two cases the disappearance of the cardinal symptoms of locomotor ataxia without treatment. The first was as follows: B. L., a merchant, aged forty-eight, seen on August 18, 1886, complained of retching, with dizziness, a numbness of the left arm, and unsteadiness in walking. Both knee-jerks were absent, and could not be elicited with Jendrassik's method. There was slight swaying with the eyes closed, and the patient complained of a feeling as though his drawers were too tight around the waist. The speaker made the diagnosis of tabes incipiens, but with some hesitation, for the general condition of the patient was very good. After two months a slight knee-jerk returned on the right side, and a few months later the left was recovered. Three years had now elapsed since the observation of these symptoms, and the man was in perfect health at the present day. He believed it to have been a functional depression of the cord due to overwork. A second case had shown all the symptoms of tabes, except that the knee-jerk was absent on one side only. The patient had the Argyll-Robertson pupil and the Romberg and girdle symptoms. He had seen him four months before, and all of the symptoms had diminished.

A simple syphilitic spinal meningitis might simulate a posterior sclerosis, and this should be borne in mind when cases improved under treatment. He mentioned another case, diagnosticated as locomotor ataxia by Erb twelve years before, the patient now living in Utah, which had been stationary for five years. So far as actual curability was concerned, he could not speak of that unless a progressive form had been arrested. He would classify cases into optic and spinal types. As to suspension, he had found it unsatisfactory, and had been unfavorably impressed by it. It had seemed to him better in spastic cases, such as myelitis.

Dr. E. Waitzfelder had been using suspension in a case of spastic paraplegia, and it had made the patient worse, as well as several others with myelitis, but he had noted considerable improvement in gait in several patients with locomotor ataxia who had been subjected to this method of treatment.

Dr. W. M. Leszynsky had observed a few favorable results in the employment of suspension in spinal cases. He had also used it in a case of paralysis agitans three or four times with good effect.

Dr. Gray said that Fournier's and Rumpf's syphilitic patients had shown great improvement under treatment, but this had not been his own experience. He believed there were certain cases where there would be great difficulty in distinguishing peripheral from central symptoms. As to the matter of self-limitation mentioned by Dr. Starr, he saw no analogy between tabes and phthisis. In treatment he preferred to follow French authors and employ inunction in syphilitic cases rather than potassic iodide, for the results were much better.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN SURGERY.

Meeting of October 14, 1889.

Dr. Robert Abbe in the Chair.

Severed Tendons.—Dr. B. F. Curtis presented a patient who had received a transverse wound of the left forearm, severing all the flexor tendons. The accident had been caused by glass. The ends of the tendons had been united by sutures, with extension of the hand. Part of one of the tendons had sloughed, leaving a deep depression where the wound had healed by granulation. The patient had recovered considerable power. The speaker thought that further improvement might be effected by an operation which would free the tendons from the cicatricial tissue which surrounded them.

The Chairman remarked that the question of further repair was one of interest. He did not see why the tendons should not be dissected out and grow up in new cellular tissue. They might then be sutured individually, and, if a new bed were formed, would then have an opportunity of surrounding themselves with loose cellular tissue.

Dr. R. H. Sayre spoke of a case in which there had been a cross cut of the forearm through the annular ligament, followed by union of the tendons in one mass. An operation was performed in which the tendons were dissected out, resulting in restoration of separate movements, with great increase in the power of extension.

Contraction of the Annular Ligament of the Wrist.—The Chairman presented a patient upon whom he had operated for the relief of contraction of the annular ligament of the wrist joint due to extensive tuberculous deposits in the forearm. He had made a free incision through the ligament, on the limb, and on the flexor tendon of the first finger. He had also removed about two hundred rice seed bodies which had been found connected with the tuberculous deposit. His patient had now excellent play in the fingers, and would make a satisfactory recovery. These cases were now recognized as tubercular in their origin, and afforded an excellent field for clean antiseptic work.

Fibrous Contraction of the Fingers.—Dr. Curtis reported a case occurring in a girl whose right finger had been bound down upon the palm of the hand as the result of cellulitis. After raising a flap and uncovering the tendon, he found that it and its sheath had become one mass of fibrous tissue. He dissected out the tendon from this fibrous mass until he succeeded in getting a freely movable finger; at least his patient had got perfect palmar flexion.

The Chairman remarked that in the case he had reported no passive motion had been made, but active motion had been allowed at the end of six days.

Diseases of the Bones.—Dr. A. M. Phelps presented a child, three years and a half old, upon whose foot he had operated for disease of the tarsal bones. He had scraped out each of the bones except the cuneiform and os calcis, which last he had removed. In so doing he had left nothing but the periosteum. The Esmarch bandage was then removed. No ligatures were applied, the blood being allowed to find its way freely into the excavated portions. The wound was then closed and dressed. He had been told that at the end of three weeks it had healed by primary union throughout, and at the end of five weeks there had been reproduction of solid bone, and the child could walk well. No pus formation had followed the operation, and after a few days a thin dressing of plaster of Paris had been applied and the child allowed to walk about. Another case was that of an Italian girl who, since she was five years of age, had suffered from osteomyelitis involving the tibia and fibula, the leg being flexed at a right angle. The question as to amputation or exsection having been discussed, it was decided to exsect the knee joint. The operation showed the lower end of the femur also to be involved in an old tuberculous condition. The diseased portions were removed, as much of the periosteum being left as possible, and the ends of the tibia and femur were approximated. Bony union had resulted, though, of course, there had been want of general development in the bone after such extensive disease, the girl having been bedridden for five years.

Knots, Ligatures, and Sutures.—Dr. B. F. Curtis read a paper on this subject. He gave an elaborate and minute description of the technique of tying, ligaturing, and suturing according to the best and most recognized methods.

Several forms of knots were used in surgery. The surgeon's knot and the square or reef knot were tied in pretty much the same way, the only difference being that in the surgeon's knot there was an extra twist on the first half, which prevented it from slipping while the second half was being tied. When the tension was extreme, and a slippery catgut was used, it was well to tie a third turn after the square knot was completed. This additional turn should always be employed in tying the surgeon's knot in catgut, for the double turn of the first twist did not correspond to the second turn made in the ordinary way. The greatest tension should always be exerted upon the first turn, for that was tied around tissues which were more or less elastic and yielding, and the encircling loop of thread helped to take up the extra strain, so that the material might safely be put to its fullest stretch. This was not the case with the second turn, which had no such safeguard, and might easily break if too much of a pull was put upon it. The "clove-hitch" knot was sometimes useful in surgical work. As it did not slip easily, it was employed in securing the catheter in the bladder, and in reducing dislocations and deformities. It was surprising to know that the now almost obsolete "granny knot" was still used by some surgeons. In ligating thick pedicles, where the tissues were very elastic, and a slippery catgut was used, a surgeon's knot might be employed, but, as a rule, it should not be used for ligatures. In tying a ligature, the points of the thumbs or fingers should be carried down the thread close to the knot, so as to make a direct pull upon the knot itself, thus avoiding displacement of the artery-forceps or tissues, or the dragging off of the inclosed mass. When there was difficulty in securing a bleeding point on account of the friable nature of the tissues, or because the latter were too dense to be pinched up by the forceps or ligature, the hæmorrhage could be arrested by passing a suture deeply through the tissues beneath the bleeding vessel and tying the whole mass so as to include it. It was in this way that Horsley controlled hæmorrhage in his extensive operations upon the delicate brain tissue. When an artery was to be tied in its continuity, catgut was now almost exclusively used. It was not necessary to draw the thread tight enough to divide the internal coat of the artery, as used to be the rule, for the lumen of the vessel would be obliterated by simple adhesion of the internal surfaces. If a permanent obliteration of the vessel was desired, it would be better to apply two ligatures, and divide the artery between them. If a vein had received a small wound, and the vessel could be picked up by forceps without entirely occluding its lumen, a ligature might be thrown around the forceps and the permeability of the vein retained. In treating the pedicles of tumors, especially those which were to be dropped into the abdominal cavity, it was not safe to depend upon a ligature simply tied around the pedicle or mass. It was necessary to transfix the pedicle with the ligature before tying, and to tie it in two or more places. It was in these cases that the interlacing ligature was of valuable service. Lawson Tait had introduced a very good method of applying ligatures to pedicles, which combined all the advantages of the various methods, and required less time to apply it; this was the "Staffordshire knot." The best material for ligatures for pedicles of any size was silk; catgut was too readily absorbed and too bulky when sufficiently thick to be strong. The silk became encapsulated and gave no trouble. Various forms of suture were used in the accurate coaptation of parts after operations or wounds. The interrupted suture was to be preferred where there was much tension, for if it yielded in any place the integrity of the other stitches would not be impaired. If the continuous suture was used in such a case and one of the stitches should break or cut out, the whole line would become slack. In exposed parts of the body where close and smooth apposition was required, the interrupted suture was the best. The continuous suture was to be employed for almost all other wounds than those just noted, on account of the ease and rapidity with which it could be applied. A modification of the continuous suture was found in the chain-stitch or "glover's suture." Another form was the "quilt suture," designed to bring broad surfaces into apposition. This suture had a tendency to cause eversion of the edges of the wound, making it an excellent suture in operations on the skin, which had a natural tendency to inversion. The "cobbler's stitch" was another form of the continuous suture, and was very useful for covering in broad, oozing surfaces in pedicles where it was impossible to ligate *en masse*. In some cases where there was great tension of the skin, or where there was a tendency of the deeper parts to fall away from each other and leave a cavity, the lead-plate suture might be used; it acted as a support to the part. The hare-lip suture was useful in very much the same conditions as the preceding suture. The buried suture could be used to prevent the formation of cavities after wounds, and was frequently used in plastic operations, or after excision of anal fistulæ. In cases where a strong supporting suture was required the wire suture was generally used. In suturing the tendons and nerves, much ingenious surgery was necessary to overcome mechanical difficulties. One of the obstacles to the suturing of nerves was the fact that degenerative changes were set up at once in the divided ends, so that, even with immediate restoration of physical continuity, functional restoration was delayed until the nervous tissue could be regenerated. The only available forms of suture for the intestine and stomach were those which brought the peritoneal surfaces together and prevented leakage of the contents. This requirement was most simply fulfilled by the Lembert stitch, whether applied as an interrupted or as a continuous suture. One of the greatest difficulties in circular suture of the intestine was the treatment of the mesenteric attachment at the wound. It required great care to cover the raw surfaces here with the ordinary Lembert suture, even when the two peritoneal layers of the mesentery had been fastened together by a stitch at the wound. A passage-way of non-serous surfaces was very apt to be left in the wound, communicating at one end with the interior of the bowel and at the other with the fatty cellular interspace between the two layers of the mesentery. This formed an easy route for infection, and was the point where the suture most frequently gave way. The old idea of protecting the line of sutures with a strip of the omentum stitched around outside had lately been revived by Dr. Senn. The best needles for use in intestinal work were the fine needles with long eyes, such as were used by ladies for working in crewels. Fine silk was the best material for the suture. More complicated methods of suture were in favor with some surgeons, such as those of Czerny, Wölfler, and others. A great advance in intestinal surgery had been made by Senn's proposition to employ perforated plates of decalcified bone when it was desired to make an anastomotic connection between two adjacent loops of bowel, instead of the tedious operation of uniting the edges of the openings in the two loops to each other by sutures. These plates had a large opening in the center to allow the contents of the intestine to flow through. This method insured a continuous patent intestinal canal. Dr. Abbe had suggested oval catgut rings. These were coils of catgut of about the thickness of a lead-pencil, and flattened by pressure between two plates of glass. Brokaw, of St. Louis, had experimented successfully on dogs with rings made of short pieces of rubber tubing threaded on catgut strands, to which the silk threads were attached. Perhaps the most important development in the use

of the rings was their adaptability to lateral anastomosis in the place of end-to-end suture of the intestine. A considerable number of cases were on record in which the rings had been used successfully for entero-enterostomy and gastro-enterostomy.

Greig Smith had introduced a very ingenious suture for securing the stomach to the abdominal wall for gastrostomy. It was also available for securing any cyst to the abdominal wall for drainage, and in the operation of lumbar colotomy. It would be a hard matter to say which was the best method of closing the abdominal wound in laparotomy. Everybody was agreed, however, upon the necessity of bringing the peritoneal surfaces into contact. Some surgeons used only a single row of sutures, which passed through all the layers of the abdominal wall, while others applied several series, uniting each layer independently. In suturing the bladder and in the treatment of the uterine wound after Cæsarean section, the Lembert stitch was to be preferred.

The author of the paper contrived to make his subject, which was of necessity one of detail and technicalities difficult to describe and to follow, thoroughly interesting. Many of his points were admirably elucidated by very cleverly executed diagrams.

The CHAIRMAN said it was remarkable that while the field of operative surgery was becoming enormously enlarged, the practical details of its performance were being cut down to smaller dimensions. The old authors, if writing on the subject of Dr. Curtis's paper, would have included very much more material and very many more styles of work. Now only the essentials had been given, and yet even here some things might with reason have been left out; for instance, the hare-lip pin seemed to him a device of the past. He advocated the use of sutures to secure secondary union. The sutures might be introduced at a primary operation, and then, when so desired, the wound could be kept open for forty-eight hours by stuffing. This could then be removed, and the sutures tied, when it would be found that union was secured as effectively as by primary coaptation. In the matter of suturing tendons he would like to allude to a form of injury of the finger known as Ségond's fracture. The end phalanx of the finger dropped, and there was no power of raising it. The injury was very easily incurred. A lady in slipping off a stocking had caused the accident; another had caught the end of her finger in a fold of her dress. A patient of the speaker's had had his finger struck by a base-ball, and the result had been produced, and another had stubbed his finger. In the case last mentioned he had operated by making a free incision over the parts, dissecting till he had reached the extremely attenuated attachment which had drawn back the phalanx. He had then divided the tendon and, after removing sufficient to reduce it to the required length, sutured the ends together with silk, making use of the second method described by Dr. Curtis. He had left the suture buried and it remained so at the present time. The patient could use his finger and had good motion in the joint.

Dr. SAYRE said that he would like to call attention to a use of the buried suture which had not been mentioned. By continuing the shoemaker's stitch and passing up to the edge of the skin the operator could avoid the needle punctures. This made a very beautiful cicatrix, which in plastic surgery was very desirable.

Dr. R. H. M. DAWBARN spoke in terms of approval of Dr. Abbe's catgut rings. He had used them in two cases on the living subject and had been struck with the ease and rapidity with which the anastomosis could be effected.

Dr. V. P. GIBNEY said that he had had some experience in the deformity alluded to by the chairman, but had never had an opportunity of operating for its relief. Some three or four years ago, however, two or three patients had presented themselves on various occasions at his clinic with a condition of the phalanx such as had been described. He had resorted to various expedients in the way of splints, but only to find them perfectly useless. Finally he had superextended the fingers and put on a very light plaster-of-Paris bandage, which he had kept on for three or four weeks, and in one instance for as long as two months. These patients had recovered perfectly. In a case at present under his notice the patient had fitted a little splint into the finger of a glove, but was always removing it. Now there was a distinct area of inflammation and the finger looked gouty. Using the finger increased this inflammatory appearance.

The CHAIRMAN said that he had noticed this inflammatory zone of which Dr. Gibney had spoken. He thought the plan of superextension and immobilization with plaster was an excellent one, and he would certainly prefer it to that of suturing and leaving the silk *in situ*.

A Case of Nephro-lithotomy followed by Nephrectomy.—Dr. ANDREW J. MCCOSH read a paper with this title. He said operations for the extraction of renal calculi were not of very common occurrence. On that account it was important that all cases of nephro-lithotomy should be reported in order that a definite conclusion might be reached as to the surgical position this operation was to occupy. Cases in which the result had not been satisfactory were even more important than those in which a cure had been accomplished.

W. H., aged forty-four, a canvasser, was admitted into the Presbyterian Hospital, July 15, 1889. Some five years previously he had begun to feel pain in his back, especially on the right side. This had continued, with intermissions, ever since. Lately it had increased. At the time of admission to the hospital he passed, in his urine, a large amount of blood. This continued for a few days, after which the urine appeared perfectly clear and natural. At times he suffered from frequent and painful micturition. He had tried all sorts of treatment without benefit. Exertion so aggravated his pain that he had been unable to attend to his business. He had been obliged to remain in bed on this account, his strength gradually failing. Within the preceding eighteen months he had lost twenty pounds in weight. When admitted, he was a large, athletic, robust-looking man with well-developed muscles. He was anæmic, however, and had a careworn expression. He complained of pain in his right loin, at times excessively severe, and never altogether absent. He described it as of a gnawing character. His right testicle had always been more or less retracted. The urine contained albumin and a few pus-corpuscles. No red blood-corpuscles or crystals of any kind were present. Daily examination of the urine for six days gave the same result. The amount of albumin was about a half of one per cent. The pus-corpuscles were sometimes entirely absent, and were never numerous. The diagnosis of renal calculus was made. As the patient had for years been subjected to various kinds of treatment without benefit, an exploration of the kidney was proposed. On July 20th the patient was anæsthetized with chloroform. A vertical incision at the outer edge of the right erector spinæ muscle was made from the last rib to the crest of the ilium. The lumbar muscles were found to be enormously developed, and the circumrenal fat could not be reached until an unusually deep wound had been made. Tearing through this, a small portion of the kidney could be seen, but not until strong pressure by the hand of an assistant had been made through the abdominal wall could the kidney be brought well into view. To sight and touch it appeared to be healthy. The finger, passed around the kidney, soon discovered a hard body of about the size of a walnut in its pelvis. A needle thrust against it verified the diagnosis of renal calculus. The kidney was situated so deep and high under the ribs that a transverse

incision, at right angles to the vertical one, was made for two or three inches outward. This gave more room, but the pelvis of the kidney could not be brought into view. It was decided to extract the stone through the kidney structure proper. Accordingly, a cut about an inch and a half long was made through the external border. By cutting and tearing, this incision was extended down to the pelvis, whence the stone was easily extracted with a long forceps. The bleeding from the cut kidney was moderate and easily controlled by pressure. Not a drop of pus escaped from the kidney, which appeared but little diseased. The stone weighed one hundred and twenty-two grains and was covered by small, rough crystalline projections, apparently composed of oxalate of calcium. Bleeding having ceased, two cat-gut sutures were placed in the capsule, which drew the walls of the incision into apposition. The external wound was partly closed and packed with boro-salicylic gauze. At the end of the operation the patient was in good condition, and recovered rapidly from the anæsthetic. For the first few days the urine contained a considerable amount of blood, but at the end of a week this had disappeared. For a few days there was a purulent discharge from the urethra with pain on micturition. The original dressing was not changed until the fourth day. The discharge had not soaked through the dressings, and there had been no indication for interference. Twenty-four hours after the operation the patient said that he was more comfortable than he had been for years. The first week the temperature had varied between 99° and 100·5° F. On the tenth day there was severe pain in the wound with elevation of temperature. It was feared that the exit for pus was insufficient. The house surgeon then passed his finger deeply into the wound to break open any pockets which might have formed. This was followed by a discharge of urine from the wound, which lasted but a few hours. The result had been a decided improvement in the patient's condition. At the end of three weeks he was out of bed and feeling fairly well. A granulating sinus still existed in his loin, but, except on the one occasion, there had been no sign of urine in the wound. Improvement continued, and on the thirtieth day the patient was discharged apparently cured. On the afternoon of the same day, however, he experienced severe pain in his kidney, accompanied by vesical tenesmus and the passage of blood *per urethram*. His temperature rose to 102° F., and his pulse to 110. The next day the temperature remained elevated, the pain continued, and pus and blood were passed in the urine. The sinus in his loin was explored, and found to be an apparently healthy granulating channel leading toward the kidney without pouches or lateral branches. On the third day the patient's condition was much worse, and an accumulation in the pelvis of the kidney was suspected. An exploration by the finger was followed by a sharp gush of urine and blood. An effort was made to stop the hæmorrhage by pressure of the finger, but it was found necessary to pack the wound with iodoform gauze to arrest it permanently. No improvement in the patient's condition followed; the temperature rose to 104° and the pulse to 120. Considerable blood was passed in the urine. At the end of twenty four hours the dressing was removed, and this was followed by profuse bleeding, rendering repacking necessary. Although bleeding from the external wound had been prevented by the tampon, considerable blood appeared in the urine, which continued till the next day. The temperature remained the same, and the pain and restlessness increased. It was estimated that at least thirty-two ounces of blood had been lost during the three days, and it was evident that more energetic action would have to be adopted. On the 24th of August, thirty-five days after the first operation, chloroform was administered with the intention of freely exposing the kidney and, if necessary, of removing it. The condition of the patient was decidedly unfavorable. Without disturbing the gauze in the sinus, incisions through the old cicatrices were rapidly carried down until the kidney was exposed. As soon as the gauze had been removed, free hæmorrhage took place, but was controlled by pressure. It was expected, from the experience of the former operation, that removal of the kidney would be difficult on account of its depth, its high position, and the large development of the lumbar muscles. The space between the ribs and the iliac crest being short, the last rib was exsected. This gave sufficient space to allow the kidney to be drawn well into the wound. The pedicle was secured by a ligature *en masse*, the kidney was cut away, the vessels and ureter were tied separately, and the wound was irrigated with boro salicylic solution and packed with gauze. Toward the end of the operation the patient required rectal and hypodermic stimulation. The extirpated kidney was found unusually large. On its external border, where the original incision had been made, there was found an oval opening leading down to its pelvis. The kidney-substance forming the edges of this opening was softened and seemed to be breaking down or sloughing. The whole organ was congested, and a stone of the size of a pea had been found in one of the calices. The patient rallied slowly, and by the next day had decidedly improved. The urine, drawn a few hours after the operation, contained considerable blood. From this time onward there was complete suppression of urine. Toward afternoon, twenty-four hours after the operation, persistent vomiting began; the temperature rose to 105°. Vomiting continued and the pulse grew weaker, and the patient, from extreme restlessness, passed into a state of semi-coma, and died at 11 P. M., thirty-two hours after the operation. Death was due principally to uræmic poisoning, and partly to exhaustion from loss of blood. The remaining kidney, for there had been one, had failed to perform its function.

This case had been a very disappointing one. At the end of a month the patient had been apparently cured, when suddenly symptoms of pyelitis, or pyelo-nephritis, developed. These rapidly reached a point where a fatal termination was imminent. In an attempt to ward this off the kidney was reopened. The result was persistent hæmorrhage without amelioration of the other symptoms. The bleeding took place from the parenchyma of the kidney, and its source appeared to have been the numerous blood-vessels which had been torn. The writer had never seen or heard of a case where moderate pressure for a few moments would not entirely control bleeding from lacerated kidney tissue. The question as to whether the hæmorrhage had been due to the sloughing of the edge of the wound or to failure in contraction of the blood-vessels on account of the cicatricial tissue, he was unable to answer. He thought that, after unfavorable operations, it was always instructive to review the technique and consider how it might with advantage have been modified. In this case he could not see how the unfortunate complication could have been foreseen or avoided. He said that the secondary disease might possibly have been prevented if the stone had been extracted through an incision in the pelvis of the kidney instead of through the substance proper, although it had been considered preferable to incise the kidney itself. He thought it would have been wiser to extirpate the kidney twenty-four or thirty-six hours earlier, thereby saving the loss of blood. So far as the writer knew, no such complication had ever before arisen. This was his third case of nephro-lithotomy. In two cases recovery had been prompt and permanent. In one the stone was extracted by an incision in the pelvis; in the other, through the body of the kidney. In the case in which the pelvis was opened the escape of urine persisted for twelve days; in the other case it ceased in twenty-four hours.

New Inventions, etc.

NASAL INSTRUMENTS.

By J. W. Gleitsmann, M. D.

1. *A Nasal Bone Forceps.*—Although the writer feels some aversion to increasing the already large number of existing designs of nasal forceps, the instrument here described has, after repeated trials, proved so satisfactory that he deems it advisable to publish a description of it. The forceps has the usual angle of nasal instruments. The branches, which are slender but very strong, cross each other when the instrument is closed, thereby occupying very little space. They can be introduced through the narrowest nasal speculum to any desirable depth, and, on account of their smallness, do not obscure the field of vision. The chief point distinguishing it from other devices is the location of the joint near the distal end, by which arrangement great power can be exerted when the blades seize the part to be removed (Fig. 1).

The design had its origin in the desire to extract pieces of septal cartilage, or still oftener bones which had been operated upon either with the nasal trephine or the saw. Especially in using the saw the

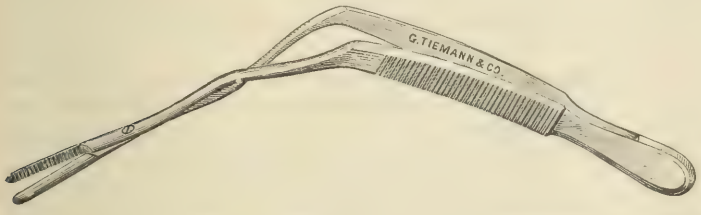


Fig. 1.

severed bone was often found to be difficult of removal on account of being firmly imbedded in the stenosed canal or still adherent to the septum by a shred of undivided mucous membrane. The failure to extract the bone with a slender forceps and the difficulty of overlooking the field when using a stronger straight forceps led to the construction of the instrument.

Although intended only for removal of bone which had been operated upon, quite recently a foreign body, a shoe-button, which yielded to no other instrument, was extracted from the nostril by the aid of the forceps, having blades with three prongs, as shown by the second drawing (Fig. 2).



Fig. 2.

2. *A New Nasal Dilator.*—The dilator here described is made from the wood of the *Nyssa aquatica*, or tupelo-tree of the Southern States, which was first introduced into medical practice by Dr. G. E. Sussdorf. In the May number of the "Richmond and Louisville Journal," 1879, he recommended its use for tents to dilate the os uteri, and subsequently Mundé corroborated his statements. The root is subjected to heavy hydraulic pressure, and, when exposed to moisture, offers the following advantages: It expands very rapidly and equably, and is therefore preferable to laminaria, which swells irregularly, and consequently exerts unequal pressure. Its surface is smooth and does not lacerate the tissue when introduced into a narrow opening. After removal the tissues do not appear dry, but even more moist and pliable than before. Tupelo has also to a certain degree antiseptic properties; it does not favor decomposition, and no smell is perceptible after it has been extracted. Its chief advantage for our purpose is the softness of its texture, which enables us to cut it into any desirable shape with an ordinary knife (Fig. 3).

The writer was for some time in search of an agent to produce sufficient dilatation of naturally narrow nostrils, which did not require active interference—viz., which did not present a turbinated hypertrophy or a septal exostosis. Further, cases often presented themselves for treatment in which after such operations sufficient space could not be gained for satisfactory nasal drainage, or in

Fig 1.



Fig 2.

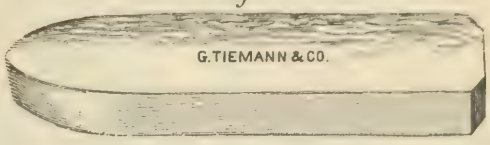


Fig. 3.

which the danger of subsequent formation of adhesions was imminent. The soft rubber tubes and similar divices did not fulfill the requirements, and a more thorough and efficient method seemed highly desirable. Tupelo, to which the writer's attention for this purpose was first drawn by Messrs. Tiemann & Co., has proved to him so eminently satisfactory that he considers it his duty to lay the results of his experience before the profession. He has employed it now in about a dozen cases, and in no instance has it failed to meet his expectations. A single case may serve as an illustration: A patient with naturally very narrow nostrils and bilateral exostoses on the lower part of the septum suffered from almost complete obstruction of the nares, the lateral walls and the septum being in immediate contact with each other without the presence of true turbinated hypertrophy. On one side the septal exostosis had been removed by a physician, but the operation had not given the desired relief. The introduction of the tupelo dilator four times opened the nostril enough for all practical purposes, and no contact of the parts took place afterward. The other nostril was treated in precisely the same manner, tupelo being introduced after the wound from the nasal trephine had healed sufficiently, and the result was equally satisfactory. The writer feels confident that he has materially shortened the time of treatment of suitable cases since applying the tupelo dilators, and he would feel loath to part with them.

The manner of application is very simple. After the nostril is thoroughly cleansed with a disinfectant solution and anæsthetized with cocaine, a piece of tupelo is cut to correspond to the required size, seized with an ordinary forceps, and introduced to the desired depth. After remaining in the nose for fifteen to twenty minutes the expansion is accomplished and the piece, generally swollen to quadruple its size, removed. After another cleansing, the patient can be sent home, or, as it has been my custom lately, a piece of tinfoil, which also can easily be shaped according to the requirements of the case, is inserted, to prevent contact of the parts, if there should be such an indication. The tinfoil may remain with impunity till the patient pays his next visit. The smaller piece of tupelo in the drawing represents the size generally employed. It was put into water for ten minutes, and the second figure shows the appearance of the piece after that time. This is the usual expansion obtained in the nostril. It has been found most convenient to have the tupelo made up in pieces of six inches by an inch and a half

Miscellany.

The Medical and Chirurgical Faculty of Maryland will hold a semi-annual meeting in Hagerstown, on Tuesday and Wednesday, the 12th and 13th inst., under the presidency of Dr. A. Friedenwald, of Baltimore. The programme includes the following titles: "Persistent Headaches and how to cure them," by Dr. J. J. Chisolm; "Practical

Remarks on Hernia," by Dr. Robert W. Johnson; "Report of a Case of Double Popliteal Aneurysm cured by Ligature," by Dr. J. Edwin Michael; "The Use of the Galvano-cautery in Skin Diseases," by Dr. George H. Rohe; "The Early Detection of Pulmonary Consumption," by Dr. William B. Canfield; "Typhoid Fever," by Dr. Joseph T. Smith; "Remarks on some Recent Cases of Abdominal Tumor," by Dr. Randolph Winslow; "The Origin and Treatment of Pus Accumulations in the Female Pelvis," by Dr. T. A. Ashby; "Remarks on the Principal Modes of treating Hæmorrhoids," by Dr. S. T. Earle; "Rhachitis considered in Regard to some of its Special Symptoms," by Dr. William Lee; "Post-nasal Obstruction in Children," by Dr. J. N. Mackenzie; and "A Review of Hypnotism," by Dr. George J. Preston.

The New York Academy of Medicine.—At the next meeting of the Section in Surgery, on Monday evening, the 11th inst., Dr. F. R. Dennis will read a paper on "Fractures of the Base of the Skull," and Dr. F. Kammerer will report a case of "Operation on a Sarcoma of the Dura Mater and Ligature of the Longitudinal Sinus."

At the next meeting of the Section in Pædiatrics, on Thursday evening, the 14th inst., Dr. M. Putnam Jacobi will make "Remarks on a Case of Empyema" (the discussion to be opened by Dr. F. Delafield); Dr. L. E. Holt will read a paper on "The Anatomical Characters and Nomenclature of the Diarrhœal Diseases of Infancy"; and Dr. H. D. Chapin will read a paper entitled "Observations relating to the Summer Diarrhœa of Infants" (the discussion to be opened by Dr. W. P. Northrup).

At the next meeting of the Section in Orthopædic Surgery, on Friday evening, the 15th inst., Dr. Henry Ling Taylor will read a paper on "The Treatment of Pes Equino-varus by Continuous Leverage."

Mortality in Cities in the United States.—The following table represents the mortality in the cities named, as reported to Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, and published in the abstract of sanitary reports received by him during the week ending November 1st:

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—										
				Cholera.	Yellow fever.	Small-pox.	Variloloid.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y.	Oct. 26.	1,586,567	612	..	..	..	..	..	..	14	5	16	2	11
Philadelphia, Pa.	Oct. 19.	1,040,245	327	..	..	..	..	..	..	9	5	13	..	3
Baltimore, Md.	Oct. 26.	500,343	156	..	..	..	..	..	..	3	2	7	..	1
Boston, Mass.	Oct. 26.	420,000	180	..	..	..	..	..	..	6	..	11	..	2
Cincinnati, Ohio.	Oct. 26.	325,000	108	..	..	..	..	..	..	5	..	8	..	..
New Orleans, La.	Oct. 19.	254,000	107	..	..	..	..	..	..	..	..	2	..	..
Washington, D. C.	Oct. 19.	250,000	100	..	..	..	..	..	..	4	..	5	..	2
Detroit, Mich.	Oct. 19.	250,000	68	..	..	..	..	..	..	..	2	4	..	..
Louisville, Ky.	Oct. 19.	227,000	45	..	..	..	..	..	..	2	..	2	..	..
Minneapolis, Minn.	Oct. 26.	200,000	45	..	..	..	..	..	..	1	1	3	..	..
Kansas City, Mo.	Oct. 26.	180,000	44	..	..	..	..	..	..	3	1	1	..	..
Providence, R. I.	Oct. 26.	127,000	46	..	..	..	..	..	..	..	1	1	..	..
Indianapolis, Ind.	Oct. 25.	.....	28	..	..	..	..	..	..	2	2	1	..	..
Toledo, Ohio	Oct. 25.	89,000	32	..	..	..	..	..	..	1	1	7	..	..
Fall River, Mass.	Oct. 26.	69,000	15	..	..	..	..	..	..	1	1	..	..	1
Nashville, Tenn.	Oct. 26.	65,153	23	..	..	..	..	..	..	1	..	..	..	..
Charleston, S. C.	Oct. 26.	60,145	44	..	..	..	..	..	..	1	..	..	..	1
Lynn, Mass.	Oct. 26.	53,000	19	..	..	..	..	..	..	1	..	1	..	..
Portland, Me.	Oct. 26.	42,000	17	..	..	..	..	..	..	..	..	1	..	..
Manchester, N. H.	Oct. 19.	42,000	19	..	..	..	..	..	..	1	..	2	..	..
Galveston, Texas.	Oct. 11.	40,000	13	..	..	..	..	..	..	..	..	1	..	..
Council Bluffs, Iowa.	Oct. 14.	35,000	7	..	..	..	..	..	..	..	..	1	..	..
Council Bluffs, Iowa.	Oct. 21.	35,000	7	..	..	..	..	..	..	..	..	2	..	..
Binghamton, N. Y.	Oct. 26.	30,000	14	..	..	..	..	..	..	1	1	..	..	1
Haverhill, Mass.	Oct. 26.	25,000	.....	..	..	..	..	..	..	1	1	..	..	..
Newton, Mass.	Oct. 19.	21,553	5	..	..	..	..	..	..	1	..	2	..	..
Newton, Mass.	Oct. 26.	21,553	3	..	..	..	..	..	..	..	..	..	..	..
Rock Island, Ill.	Oct. 20.	16,000	7	..	..	..	..	..	..	..	..	4	..	..

Resolutions offered by the Board of Obstetric Surgeons of the Maternity Hospital on the Death of Dr. Isaac E. Taylor.—*Resolved*, That in the death of their late president, Dr. Isaac E. Taylor, the members of this board have met with an irreparable loss—the loss not only of a faithful and efficient colleague, but of a warm personal friend.

Resolved, That in his beautiful and serene old age they recognized the noblest type of the good physician, who retired from the active practice of his profession in the fullness of his fame and with the universal love and respect of his associates.

Resolved, That they extend to the family of the deceased their heartfelt sympathy and that they will unite with them in cherishing his memory.

Resolved, That copies of these resolutions be sent to the family and to the medical journals.

Fordyce Barker, M. D.,	Henry J. Garrigues, M. D.,
Walter R. Gillette, M. D.,	Robert A. Murray, M. D.,
William T. Lusk, M. D.,	Egbert H. Grandin, M. D.,
Montrose A. Pallen, M. D.,	Henry C. Coe, M. D.,
Consulting Surgeons.	*Attending Surgeons.*

Henry C. Coe, M. D., *Secretary.*

ANSWERS TO CORRESPONDENTS.

No. 295.—Thiersch's solution consists of 1 part of salicylic acid and 6 parts of boric acid, dissolved in 500 parts of hot water.

No. 296.—A five-per-cent. emulsion of creolin is probably germicidal, but not so "effective in a given time" as a 1-to-1,000 solution of corrosive sublimate. As to its being too strong to use on a surface where primary union is sought for, if the contact is prolonged, some of the creolin may cling to the surface and act as a foreign body; it will not interfere with healing in any other way.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

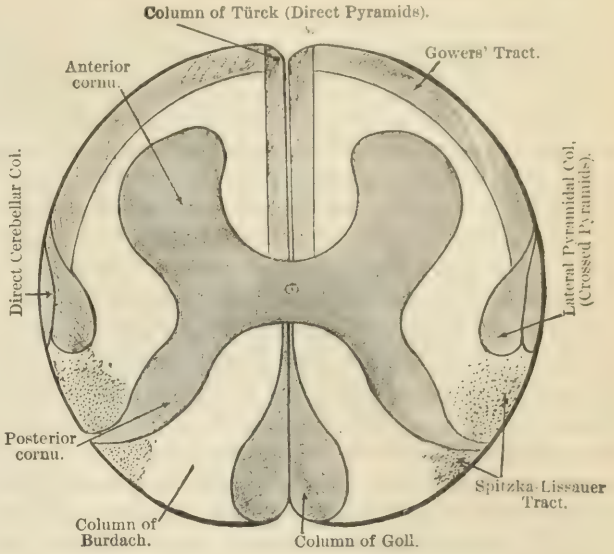
THE CURABILITY OF LOCOMOTOR ATAXIA, WITH AN ACCOUNT OF OUR PRESENT KNOWLEDGE OF ITS PATHOLOGICAL ANATOMY.

By LANDON CARTER GRAY, M. D.,
PROFESSOR OF NERVOUS AND MENTAL DISEASES IN THE NEW YORK POLYCLINIC.

At the very outset of this subject we are confronted with the query as to what we mean by the term locomotor ataxia. The truth is that this designation, originally of clinical derivation, is no longer in consonance with either our modern clinical or pathological knowledge, for the ataxia of this disease is often wanting, is generally a late symptom, and in some instances is static and not locomotor. Nor are the other synonyms—tabes dorsalis and posterior sclerosis—any more appropriate, since the pathological process is not a softening or tabes, is occasionally of cervical and not dorsal origin, and modern research, as I shall point out later on, has demonstrated that the lesions are by no means confined to the posterior columns. Yet usage has atoned for the manifest imperfections of these terms, and it would be rash to suggest anything in their place until our present knowledge of the exact textural alterations and their anatomical site has become precise, as I have no doubt that it will be in the very near future. But by the term locomotor ataxia or its synonyms the neurological world, if I may venture to correctly interpret its consensus of opinion, means a group of symptoms characterized by stabbing or lightning-like pains, which in their typical form are sudden, severe, and not fixed in location; loss of knee-jerk; pupils responding sluggishly or not at all to light, generally to accommodation, small in size (Argyll-Robertson pupil); optic-nerve atrophy; ataxia, manifested by a peculiar gait and an inability to perform movements requiring accurate muscular coaptation; swaying of the body with eyes closed (Romberg symptom); patches of anæsthesia throughout the affected limbs; transient ptosis or strabismus; paroxysms of sudden and severe gastric, laryngeal, nephritic pains that are called crises; trophic joint lesions.

To these main pathognomonic symptoms may be added others of secondary importance, such as vesical paresis, various kinds of sensory impairments, muscular atrophies, paralyses, trophic lesions, etc.; but these occur in other spinal diseases, and their diagnostic value will therefore be made or unmade by the accompaniment of the main or pathognomonic symptoms.

Until within about a decade these symptoms were thought to be due to disease of the posterior columns of the cord and the adjacent gray matter of the posterior horns, and there was a difference of opinion as to whether these posterior columns and cornua were together or separately the paths of sensory conduction.* Then Flechsig's embryological researches mapped out the direct cerebellar columns in the posterior portion of the lateral columns. Then Woroschiloff demonstrated that section of both posterior columns and the posterior halves of both lateral columns in the lower dorsal region of the rabbit did not prevent sensory impulses passing from the hinder limbs to the motor structures in the cervical cord and the brain. This was in 1874. Gowers, three years afterward, was the first one to confirm anatomically what Woroschiloff had observed physiologically by the discovery of the antero-lateral peripheral tract which has since come to be known as the Gowers column, although Westphal, Kahler, Pick, Strümpell, and Leyden had also partially figured this column before. That this is a sensory tract is proved by the fact that it is the site of an ascending degeneration, as is made patent by the cases of Haddon, Gowers, Westphal, and myself in cases of tabes dorsalis, and by Tooth in a case of compression myelitis. The objection of Déjérine, that the degeneration of this peripheral tract might be due to a meningitis, has been abundantly disproved, especially by Sherrington, who has found the column in the eighth month of intrauterine life, and who has also demonstrated that it takes on its medullary covering at a different time from other strands of the cord. Bechterew, in his turn, has subdivided the Gowers tract into an anterior and posterior portion, and has also been confirmed by Sherrington's embryological observations. In 1885 Dr. E. C. Spitzka called attention to a tract which he describes as being "an area bordering on the entry line of the posterior roots and the posterior gray horn on one side and on the periphery of the cord on the other," and to this he gives the name of the *analgesia tract*, as he had found it impaired in all cases of analgesia, and healthy in all cases without analgesia. Immediately adjoining the gelatinous head of the posterior horn, as described by Dr. Spitzka in the same paper, there is a column of vertical fibers which he believes to bear the same relation to the gelatinous substance that the ascending roots of the fifth pair bear to the gelatinous substance of the tuber cinereum of Rolando, and this analogy inclines him to believe that the



* For the benefit of the non-neurological reader I have inserted a chart of the spinal cord, indicating the strands to which allusion is made in this paper.

tract may be possessed of trophic functions, although he can affirm nothing more positive than that it was healthy in those cases in which there were no trophic disturbances, as well as in that other class of cases with cutaneous lesions directly related to the fulminating pains. By one of those curious coincidences which have been so frequent in the history of medicine, in the same year Dr. Lissauer, in a long and minute description of the posterior horn in its relation to locomotor ataxia, also described these two tracts with great precision, calling the region in which they lie the *rim zone* (*Randzone*), and maintaining that it consisted mainly of fine fibers from the posterior roots, most of which passed into the gelatinous substance, while a smaller portion went to the inner part of the posterior columns. According to this author, the posterior horn receives posterior root fibers of two kinds—firstly, large ones that proceed directly into the spongy substance and then take another direction; secondly, small fibers (mixed with fibers from other columns) that branch immediately after entering the cornu and pass up as an ascending column in the *rim zone*. This *rim zone* was degenerated in twelve of thirteen cases examined by Lissauer, in three being a field of degeneration by itself. As a rule it was attacked early. In two of my own cases it was distinctly degenerated, although I do not know at what stage. Lissauer states that the large root fibers are affected at a late period relatively, disease of them proceeding slowly. In two cases they were normal. Lissauer also believes that the loss of the large root fibers of entry and the alterations in Clarke's column may be regarded as the first pathological phenomena in locomotor ataxia. The direct cerebellar column of Flechsig, the antero-lateral peripheral column of Gowers, and the Spitzka-Lissauer postero-lateral column, are therefore all outside of the posterior columns, and are yet sensory tracts which are affected in locomotor ataxia. The old subdivision of the posterior columns into the columns of Burdach and the columns of Goll remains unimpeached, except that the outlines of the latter in the different levels of the cord are being very considerably modified.

Until 1883 it was supposed that this symptom-group which we call locomotor ataxia was always due to affection of the sensory columns of the cord, but in that year Déjérine reported the following two cases of peripheral neuritis with these symptoms:

Male, aged forty. Symptoms of ataxia arrived at a marked stage of inco-ordination, loss of patellar reflex, very marked derangement of sensibility, anæsthesia, analgesia in the lower limbs, no myosis, slight diminution in volume of the pelvic muscles, Romberg symptom. *Post mortem* the spinal cord, the spinal ganglia, and the posterior roots normal macroscopically and microscopically, but the cutaneous nerves, taken from different regions of the calves and thighs and subjected to osmic acid and picro-carmine, showed very marked alterations of a parenchymatous neuritis.

Female, aged fifty, unable to walk. For several months she had felt pains in the lower extremities; shortly afterward she had difficulty in walking, and gradually she became unable to walk. Pains in the arms for several weeks. She was slightly cachectic, probably from alcoholism. The upright station was still possible, but only with the eyes open. No myosis. Emaciation of trunk muscles. Muscular strength still quite marked. Slight diminution of faradaic contractility. Absolute inco-ordination of lower extremities, somewhat less in superior extremities. Anæsthesia and analgesia very marked, with retardation of several seconds in the transmission of painful impressions over the whole surface of the body, excepting the face. No thermo-anæsthesia. Loss of patellar reflex. The sensory troubles were more marked in the inferior portions of the skin. *Post mortem* an interstitial hepatitis was found. The spinal cord and the nerve roots appeared healthy to the naked eye. Microscopical examination, while nerves were still fresh, revealed extreme parenchymatous neuritis of the cutaneous nerves of the calves, thighs, arms, abdomen, and thorax. There was not a healthy tubule after preparation in the cutaneous nerves of the calves and thighs; osmic acid had no action upon them. The same alterations were found in the skin of other regions, diminishing gradually in ascending to the upper portion of the body. Slight alterations were found in the intramuscular nerves, such as slight increase of the nuclei of the primitive fibers. There was absolute integrity of the posterior and anterior roots throughout the length of the cord. After hardening, the spinal cord and the spinal ganglia were found microscopically intact.

The well-known law of a secondary degeneration is that there must be an original focus of disturbance from which the nerve fibers secondarily degenerate, upward in the case of the sensory strands, downward in the case of the motor strands. The beautiful safranin stainings of Adamkiewicz have made it evident that the lesion of the nerve tubules in locomotor ataxia primarily affects the axis cylinder or its medullary layer, and that the changes in the neuroglia are secondary, the results that had previously been obtained by Schiefferdecker and Homén with aniline blue being thus confirmed and rendered more precise; and this, to my mind, increases the probability that some such focus, either of arterial origin or due to some cellular alteration in the lower dorsal or lumbar portion of the cord, is the starting point of locomotor ataxia.

Dr. E. C. Spitzka regards the middle area of Burdach's columns as the site of the primary disease, as the connective tissue is thickest here, there is a dense maze of overlapping ascending and descending fibers from the posterior roots, and the lymphatics are most sparse. In other cases a meningitis, such as has often but by no means invariably been found, would be quite capable of acting as the starting point; and when we consider the autopsies in Déjérine's cases, and couple them with the well-known clinical fact that locomotor ataxia can follow a peripheral trauma, we may very properly surmise that the original lesion may occasionally be a peripheral one. It is difficult, however, to understand how a peripheral neuritis can be started in both lower extremities except by some underlying diathetic cause, while a very small focus of disturbance in the spinal cord itself or its meninges might be ample enough to affect bilateral strands. In the syphilitic cases this probability is even stronger of a focus whence the secondary degenerations proceed, the more especially if we may pin our faith to the microscopical descriptions given by Rumpf in his classical work upon "Syphilis of the Nervous System." Nor, in this study of locomotor ataxia, must we forget that the characteristic symptoms have been produced by the poisons of ergotine, lead, and arsenic, and in many of these cases lesions have been found in the posterior columns of the cord,

and, finally—most startling of all—cases have been reported where the cord and peripheral nerves have been found unaltered.

From this review, necessarily cursory and imperfect in a paper of this kind, it is evident that the symptom-group to which the name of locomotor ataxia has been given may be of spinal or of peripheral nerve origin, possibly sometimes without any organic changes. But little advance has been made, however, in the exact localization of the individual symptoms; indeed, the only results in this direction have been the *analgesia tract* described by Spitzka, and the opinion advanced by some authors that the ataxia is due to a loss of the muscular sense; but the former of these two lacks confirmation, while the latter is refuted by two cases of my own, whose history is herewith subjoined. Yet I can safely prophesy, I think, that we stand at the threshold of an era when the individual nerve fibers will be accurately delimited in the cord, when their functions will be thoroughly understood, when central or peripheral lesions of them will be diagnosticated by certain symptoms, and when the designation of locomotor ataxia or tabes dorsalis or posterior sclerosis will give way to the more scientific names that shall be based upon the central or peripheral localization—when, in a word, we shall map out the functions of areas in the cord as we have so brilliantly begun to do in the cortex of the cerebrum.

With this understanding of our present knowledge of the pathology and pathological anatomy of locomotor ataxia we may proceed to consider the question of the curability of cases presenting this symptom-group. It will be found that the patients who are alleged to have been cured, or whose symptoms have been seemingly arrested, are of the following kinds:

1. The syphilitic cases.
2. Cases associated with general paresis of the insane.
3. The non-syphilitic cases.

1. *The Syphilitic Cases.*—I do not need to remind you how the doctrine of the syphilitic causation of locomotor ataxia, first maintained by Fournier in 1875, in the face of the most furious opposition, has now come to be generally accepted, the percentage of some authors even running up to 90 per cent. The most remarkable confirmation of this view is to be found in the recent observation of Dr. L. Minor, of Moscow, showing the infrequency of locomotor ataxia among the Jews, who are singularly free from syphilitic affections. I may say in passing that this present belief in the frequent specific origin of tabes is a rare posthumous tribute to the clinical genius of Duchenne (of Boulogne), to whom we owe our first accurate description of the symptoms, and who specially remarked the occasional efficacy of iodide of potassium. These syphilitic cases may be subdivided into those in which the locomotor ataxia is developed after a specific infection, those in which the symptoms are associated with symptoms of intracranial syphilis, and those in which the lesion has been found to be a syphilitic spinal meningitis. The first group is illustrated by the following cases:

Dr. L. Lahmann ("Deutsche medicinische Wochenschrift"): Male, aged thirty-one, came under observation September 15, 1884. Twelve years before (1872) had had a hard chancre; was treated with inunction, and cured. He had never had any throat trouble, roseola, or any other symptom of constitutional disease. But somewhat later pains appeared in the skin bone, relieved by iodine. Patient is married, father of a healthy child. During summer of 1884 slight weariness of feet, worse in August, and gradually and steadily grew to the present degree of difficulty. Iodine was ordered in large doses up to fifty grammes, but the symptoms increased. The patient thought the cause of his trouble was the disappearance of the sweating of the feet, which had been present since taking cold in the summer of 1883. He complained of formication, numbness, feeling of stiffness and coldness in the feet and legs, weakness in walking, tottering gait, and uncertainty in walking, which was impossible in the dark. In urination, weakness, long tardiness, many interruptions.

Examination made evident great swaying with eyes closed; eyes and other sensory organs normal; no strabismus; no pupillary abnormity; vision normal; even with eyes open, standing was difficult, impossible upon one foot; the muscular bellies were everywhere strong, firm, and well nourished, possessed of normal strength while patient was sitting, but if the eyes were closed in sitting, the limbs were lifted above the point determined beforehand. When lying down with eyes closed the limb could not hit an object placed beforehand. Rising from a sitting position was done with the aid of the arms. Walking is uncertain to a high degree, swaying, ataxic; the legs are slung around; the gaze fixed upon the floor. Patient twice fell headlong in going out of the room. Painful going from house to house was forbidden and a rolling chair was recommended. The electro-muscular excitability to both currents was normal. Sensibility was faulty on the thorax anteriorly and posteriorly, on the abdomen and the os sacrum. Island-shaped areas of anæsthesia alternating with surfaces of greater sensibility. Æsthesiometer points at ten centimetres distance are not separately felt with certainty. The sense of location is also lessened in the legs. Sensation of pain with a needle lessened and retarded. The direction of the limbs is imperfectly felt when the eyes are closed. Passive movements of the toes imperfectly recognized when the eyes are closed. Sense of pressure and temperature are correctly appreciated to some degree when the differences are great. No painful points along the vertebral column on the outer surface of the iliac bone, or at the points of exit of the larger nerves. Patellar reflex gone on both sides. The movement of the fingers clumsy, as in counting money, the fingers clinging to one another. The treatment lasted a month, and consisted of warm baths, at 31·5° C., of twenty minutes' duration, and at irregular intervals; constant electrical current, from the angle of the lower jaw to the spinal cord, two minutes' duration, four to six milliampères; current to the spinal cord stabile, descending, three to five minutes, eight to ten milliampères, determined by Hirschmann's galvanometer; internally, iodide of potassium, seven grammes and a half, divided into one hundred and twenty pills, three or four times daily. When patient left the hospital in the middle of October he was advised to continue the iodide, and after two months to use cold rubbing with water in the mornings. In May, 1885—that is, about eight months afterward—patient was heard from as being perfectly cured. Shortly afterward it was reported that the patient could descend a deep stairs backward, carrying a cradle with a child in it. On the 30th of July, 1885, Dr. Alfred Hoppe stated that the only abnormal symptom was the loss of the patellar reflex, and that the patient had done military service for twelve days in the beginning of June, at a time of great heat, without any ill consequences. In November, 1885, patient was still well, but the sweating of the feet had returned, while the patellar re-

flex was still absent, although a prickling is still left in the soles of the feet when he stands at work a whole day.

Danos ("L'Union medicale," September 29, 1883): Male, aged twenty-four, fatigued with intellectual work and sexual excesses. Had had syphilis several years before, according to his own statement and a letter of his physician. Had had mucous patches and a specific roseola. Entering the hospital in May, he complained of pains in the calf muscles, present in bed, but becoming of such intensity as to render him motionless when he attempted to rise or in walking only around the room. There were no cephalic symptoms. Pressure or the passage of a sponge wet with warm water along the vertebral column caused no pain. The sensibility of the skin in the inferior extremities was intact to the extent that it was present in its various degrees, but the patient felt frequent rapid shocks, very painful, instantaneous in the calves or the thighs, at the same time that he felt a very painful permanent constriction in the calves. In walking, the functional troubles became characteristic. He walked throwing forward the stiffened extremities, tapping the floor lightly with the toe, and, when deprived of the aid of sight, throwing his legs from one side to another, crossing them one on the other, walking titubatingly, and certainly falling unless care were taken to place a person at his side. In attempting to hold himself upright, in a stationary position with the eyes closed, he swayed, and it became immediately necessary to support him. He was gradually but rapidly subjected to a mixed treatment of five centigrammes of protoiodide of mercury, four to five grammes of iodide of potassium, and an equal dose of bromide of potassium administered daily. This treatment was interrupted occasionally during several days, because of the diarrhœa provoked. It was several weeks before any favorable result was visible, but toward the 18th of June—that is, about six weeks after beginning treatment—the pains began to disappear while he was in bed, and he could walk somewhat longer without difficulty; the upright station in walking again became possible without the eyes being fixed on the lower extremities. On the 23d of June he suddenly declared that he had no more pain, and that he could close his eyes without experiencing the least obstacle to locomotion, which we found to be true. On the 28th he was completely cured, walked quite normally, and desired to go out. Since this time Dr. Danos has twice seen the patient, who stated that he remained quite well, could attend to his affairs, and could run without inconvenience. He often closed the eyes in walking to assure himself that so doing was no inconvenience.

Dr. G. M. Hammond ("New York Medical Journal," August 30, 1884): Male, age not stated; ten years ago he came under the observation of Dr. James Anderson, of this city, for syphilitic lesion of the glans penis. Dr. Anderson is unable to say at this date whether it was a chancre or a chancroid. The secondary symptoms were never apparent. He has two perfectly healthy children. Not intemperate, but a steady drinker. In the winter of 1882 went on a spree, culminating in delirium tremens. Following this the prominent symptoms of ataxia appeared, though for the previous six months he had complained of sharp, shooting pains in the legs and slight difficulty in walking. He was now unable to stand without support. When assisted, his walk was characteristic of ataxia; there was a loss of the tendon reflex, a difficulty in retaining the urine, and anæsthesia of the lower limbs. The arms were somewhat affected, and there was partial loss of sight. Dr. Anderson prescribed iodide of potassium and bichloride of mercury, and referred him to Dr. Hammond for further treatment, who applied the actual cautery several times to the spine, together with dry cups, the ether spray, and static and galvanic electricity. From this time the patient began to improve, and a year ago he was apparently perfectly well. He walked correctly, could stand with his eyes closed, could jump on and off a car while it was in motion. The tendon reflex returned. On this latter point he was tested by several members of the society. He has had no treatment whatever since then. He is stouter and seems to be in better condition now than he has been any time for several years. During the winter he frequently ran over the ice and snow drawing one of his children —a feat which any person afflicted with ataxia would find it impossible to accomplish.

Male, age not stated, consulted Dr. William A. Hammond about two years ago. He exhibited all the symptoms of locomotor ataxia, was unable to stand with the eyes closed, the tendon reflex was absent, he was unable to hold urine for any length of time, having to pass it as often as forty-five times a day, anæsthesia was present, and the passage of sensory impressions through the cord was considerably prolonged. A specific history was admitted. Dr. Hammond treated him with iodide of potassium and bichloride of mercury, alternating occasionally with nitrate of silver. The actual cautery was applied to the spine, together with dry cups, ether spray, and galvanism. Improvement in his symptoms was gradual but steady. The anæsthesia disappeared, he began to stand and walk better, and his urinary symptoms improved, but the tendon reflex did not return. Not having been seen for nearly a year, he was written to, and in reply stated that, as far as he was able to judge, he was completely cured of locomotor ataxia, having no difficulty in walking or standing in any position, and was free from vesical trouble.

Landsberg ("Berlin. klin. Woch.," 85, No. 33): Male, aged thirty-nine; nine years before had syphilis; was treated for six weeks with pills. Two and three years afterward cutaneous eruptions, bony growths and ulcerations, all treated successfully with iodide. Five years after, patient married; one child died in second year; no other children. Ten years after, paresis of left abducens, with a normal left pupil, while right one was myotic and reacted badly to light. Paresis disappeared. One year after this gastric crises appeared; later, lancinating pains in the extremities, creeping and furriness in the soles of the feet and the lower limbs. Impotence and then decrease of visual acuity. Objectively: Decrease of sensibility and retardation of pain sense in lower extremities; loss of patellar reflexes; ataxia; swaying marked in standing, increased with closed eyes; myosis and reflex pupillary immobility; optic-nerve atrophy; diminution of hearing. Inunctions of mercury, later iodide of potassium employed, and all symptoms disappeared, and for a year and a half patient has been perfectly well.

Rumpf, p. 437: Male, aged fifty-three. Chancre fifteen years before; secondary symptoms; treated with mercury. Patient then perfectly well till about two years before, when ulcers appeared on the arms and lower limbs; cured by inunction. Lancinating pains in the limbs and loins one year after; although patient had rheumatism for a long time, Rumpf thinks the pains in the lower extremities were too intense to be rheumatic. About a month later, furriness and numbness of the feet and toes and paresis of the lower limbs and trunk. Twenty-five inunctions, each of about three grammes, were used during four weeks, and the patient was so improved that standing and walking were again possible in a slight degree. With the administration of iodide of potassium the pains returned, gait became uncertain, and occasional diplopia appeared. Four weeks later, gait and all other movements were highly ataxic, but motor strength good; standing was possible with aid—without latter, marked swaying increased by closing eyes; cutaneous sensibility apparently not altered; point and head of a needle are well differentiated. Muscular sense apparently normal; patellar reflex

and Achilles reflex entirely wanting; ataxia present and tendon reflexes absent in the upper extremities; intense cincture feeling between the lower ribs and umbilicus; micturition difficult, with great effort. No sexual desire, headache, vertigo, or reflex pupillary immobility, although the left pupil is somewhat larger than the right. Treatment by inunction so improved the condition that, after eighty-five inunctions, the patient was discharged as entirely cured, and has for years been working as an engine-driver. Rumpf remarks of this case, as he had stated three years before, that the anti-syphilitic treatment had never given him another result like this.

Rumpf, Case IV, p. 379: Male, aged thirty-five. Four years before, chancre, cutaneous eruption, throat ulcer; four weeks and a half cure in Aix-la-Chapelle. Four months before, ulcers on rectum and cutaneous eruption on the scrotum and surrounding portion of the thigh. For one month and a half tickling and furriness in the feet and hands. Difficult micturition and uncertainty of gait in the dark. Objectively: Can stand well; distinct swaying with eyes shut; gait and free movements distinctly ataxic; motor strength good. Tact normal; pain-sense diminished. Sense of location of limbs good; tendon reflexes absent. Arms slightly ataxic; sense of location diminished; tendon reflexes wanting. No myosis or reflex pupillary immobility. On the upper thigh and scrotum a syphilide. No other cause of tabes. The patient is a merchant; had never had any particular hardship or fatiguing journeys. After two months' treatment with mercury and the faradaic brush all symptoms of the disease had disappeared, excepting that the tendon reflexes were still absent. Two years afterward the patient was reported to be well, but Rumpf does not know the condition of tendon reflexes.

Rumpf, Case XXXVIII, p. 397: Male, aged forty. Chancre twenty years before; cutaneous eruption; internal mercurial treatment. No symptoms since. For years lancinating pains in lower limbs; for one year itching and formication. Diminution of sensation in the limbs and unsteadiness of gait. Writing difficult, micturition also. Impotence. Iodide without effect. Objectively: Stands well; distinct swaying with closed eyes. Gait and fine movements distinctly ataxic, although strength well preserved. Tact diminished; pain-sense retarded. Sense of position of legs diminished. Tendon reflexes quite strong. In the arms slight ataxia, with retardation of pain-sense and tendon reflexes preserved. Rumpf states that this patient was treated with mercury and with the faradaic brush and that the pains disappeared, sensation became normal, the vesical functions re-established, and the ataxia disappeared; only the impotence remained. The patient resumed his usual occupation, and five years and a half afterward the cure had been maintained.

Rumpf, Case XXXIV, p. 444: Male, aged forty-six. Eighteen years before, chancre and cutaneous eruption; cure in one month. Married in thirty-first year; healthy children. Onset seven years before, with lancinating pains in lower limbs and difficult micturition. Then cincture feeling around the lower abdomen, and formication in limbs and back. For one year impotence. Objectively: Standing somewhat unsteady; marked swaying with closed eyes. Gait and fine movements distinctly ataxic; excellent motor strength. Tact not perceptibly disturbed. Pain-sense absent. Sense of location of lower limbs very much diminished; tendon reflexes absent. Arms normal; tendon reflexes lacking. Myosis and reflex pupillary immobility. After administration of twenty-eight inunctions of mercury, application of faradaic brush and galvanism, the abnormal sensations and the cincture feeling disappeared and the pain-sense returned. Then the sense of location of lower limbs became better. In the middle of February the treatment was interrupted, and renewed in April. After six weeks further the ataxia had disappeared, and the patient could walk for hours. He was then discharged. Three months afterward he reported that the impotence had also disappeared, and again, a year and a half afterward, abnormal symptoms are said to have disappeared, with the exception that the tendon reflexes are still absent.

Rumpf, Case XXVIII, page 393: Male, aged forty-six. Twenty-one years before, chancre; cutaneous eruption; internal administration of mercury; no syphilitic phenomena since. Since the thirty-sixth year occasional lancinating pains in the lower limbs that became very intense at one time. Since the forty-first year pains in the arms and uncertainty in writing; itching and formication in the limbs and arms; difficult micturition. Since the forty-fourth year uncertainty of gait, greatly increased in the last few weeks; walking alone impossible. Objectively: Standing with feet approximated or closed eyes impossible. Gait and all movements highly ataxic, although motor strength well preserved. Walking alone possible with aid of another man. Tact diminished; pain-sense absent. Sense of location greatly diminished; tendon reflexes wanting. Arms distinctly ataxic; pain-sense and tendon reflexes wanting. Atrophy of the right optic nerve. The patient knows no cause for the trouble. He has not been exposed to catching cold or to any hardship, and has been a very temperate man. After two months' treatment with mercury and the faradaic brush the patient could walk with a cane through the room. After three months he could walk in the garden, and after six months he was dismissed, as his gait was normal and all other symptoms had disappeared, except a slight occasional urinary incontinence and slight tremor of the hand, which latter, however, was of long standing. After six months further, which was spent by the patient in the country, he resumed his occupation, and for two years has been employed in a counting-house, complaining only of a certain weakness of the sphincter vesicæ.

Rumpf refers to three further cases—Cases V, IX, and XXXV—in all of which the lancinating pains had either disappeared or were reduced to a minimum, the ataxia has entirely disappeared or only observable with great tension, the myosis and reflex pupillary mobility had disappeared, but the sensibility, especially the pain sense, had remained diminished. Of these, one has for a year acted as a railroad secretary, the other as a teacher in a high school for two years. Both had come under treatment, as they were not capable of attending to their business, to which they were thus enabled to return.

Rumpf's treatment (page 451) consisted first of an inunction for four or five weeks, followed by iodide of potassium for some length of time. If the patient remained long enough under treatment, inunction was again used, again to be followed by the iodide, the latter being employed in doses of two to two grammes and a half daily. Gingivitis was very seldom observed by this method. Chlorate of potassium was also employed as a gargle, and a trouble of the gums was very seldom observed. The anti-syphilitic treatment was continued for a year or a year and a half. Lately he had employed a new mercurial preparation for subcutaneous injection of Dr. Schuetz.

Erb ("Arch. f. klin. Medicin," 1879, Bd. 24) speaks of quite a severe case, without giving the details, that had resisted the ordinary therapeutic methods, such as galvanism, hydrotherapy, Nauheim baths, nitrate of silver, but

was made to improve so much by mercurial inunction that the patient has for years been able to ply his affairs.

Erb also narrates this case: Male, aged fifty seven, syphilis fourteen years before. For eight years has had gastric catarrh. Duration of tabes three years. Initial symptoms began with lancinating pains of great intensity; slight anæsthesia of the lower limbs; later, uncertainty of the lower limbs. Present condition: Slight ataxia, easily fatigued, general strength good. Slight anæsthesia of the lower limbs; distinct swaying with closed eyes. Skin reflexes very lively. Tendon reflexes wanting. Some vesical weakness. High degree of spinal myosis. Cranial nerves, arms, vertebral column normal. Impairment of memory and intelligence; drowsiness. Signs of syphilis still visible upon the skin and tongue. Erb simply says that this case was as greatly improved as the preceding one, without giving details. In two other cases mercurial treatment was without any effect.

The following cases are those in which the locomotor ataxia was associated with symptoms of intracranial syphilis:

Berger ("Deutsch. med. Woch.," 1885 No. 2): Male, aged thirty, chancre six years before, probably hard, healing under entirely local treatment in about six weeks; no secondary symptoms. Four years after, being chilled, lancinating pains in both lower extremities, then furriness and formication in lower extremities, and especially on soles of feet, formication in different fingers, painful tension in the neck, diplopia, and cephalalgia. After several months of lassitude and inability for exertion, uncertainty of gait began, especially in the dark. Frequent vesical tenesmus, obstructions. Loss of sexual desire and potentiality. Objectively: Great ataxia, swaying with closed eyes, great diminution of tact in the lower extremities, in lesser degree of cutaneous general sensibility. Especially remarkable is disturbance of pressure sense, greatest in the left leg, so that a weight of twenty pounds is not at all perceived when placed on anterior surface of left thigh. Muscular sense and perception of passive movements are highly disturbed, especially in the foot joints and toe joints of the left foot. Frequent pollutions, ischuria, obstructions. Reduced visual acuity of both eyes. Lower inner quadrant of visual field of right eye entirely impaired, also upper inner corresponding portion is not entirely intact; but externally his eye is normal. In left eye the lower outer quadrant is impaired. Optic nerve is somewhat reddish in color, veins somewhat more swollen than normal. After eight weeks of galvanic treatment (back and peripheral nerve trunks of the upper and lower extremity) and use of iodide of potassium, there was improvement of the inco-ordination and the anæsthesia, but cure only after inunction and further use of the iodide. Later there were intense, especially nocturnal, cephalic pains, disappearing after short administration of iodide. Patient remained perfectly able to perform his duties as infantry officer, and after fifteen years no sign was present of the former spinal lesion.

But Berger could detail no other cures.

The following case of Oppenheim's is one of syphilitic spinal meningitis:

Dr. Hermann Oppenheim ("Berlin. klin. Woch.," December 31, 1888): Female, aged thirty-one, syphilitically infected; first seen in May, 1885; former keratitis parenchymatosa and iridochorioiditis syphilitica dating back to 1881. In February, 1885, pains in limbs began, weakness of them, tendon reflex lost, treatment by inunction begun, and decided improvement attained, so that patient was dismissed "cured" in short time. In May same symptoms began again with greater intensity. And the following: Tearing pains, especially in the right arm; hoarseness; spasmodic attacks of coughing (of the character of laryngeal crises); difficulty of deglutition; double ptosis; almost complete paralysis of right motor oculi, a paresis of the left in certain of its branches; double pupillary immobility (iritic synechiæ); paresis of one soft palate; attacks of vomiting; paralysis of the right vocal cord; galvanic reaction lost in right recurrent laryngeal, while that of the left was normal; paresis of the right trapezius and sterno cleido-mastoid, with partial reaction of degeneration; constant increase in pulse frequency; patellar tendon reflex on both sides; sensory impairment in legs; vesical difficulties; Romberg symptom. Decided improvement with inunction. In September, 1885, the mobility of both ocular bulbs had been restored, the reaction of the left pupil to light was again present, the pulse had a normal beat, while the attacks of vomiting and difficulty of deglutition and the disturbances of distribution of the right vago-accessorius had been reduced to the paralysis of the vocal cord. Patient left the hospital, but entered again in January, 1886, when she had a paralysis of the left motor oculi and paresis of the right internal rectus, paresis of the legs, patellar tendon reflex lost, sensory impairment, especially a feeling of felt under the soles of the feet, swaying with closed eyes, vesical difficulty, attacks of vomiting, laryngeal crises, etc.

At this time, however, while knee-jerk was gone, tremor of the foot was present. Further treatment by inunction was without effect, although nearly five hundred grammes of unguentum hydrarg. cinereum were used, and in February, 1887, case was regarded as incurable. In July of the same year patient was again examined, when, to the narrator's great astonishment, there was great exaggeration of the tendon reflex, with foot clonus and general spastic paresis of the lower extremities. For these reasons the diagnosis of tabes was abandoned, and no definite one made in its stead. In April, 1888, patient died of carcinoma uteri. Autopsy made by Dr. Ewald. Macroscopically there was found a focus of softening in the left corpus striatum, but pathologically in the vessels and membranes of the brain and in the middle and lower cervical and upper and lower lumbar regions the membranes were greatly thickened, adherent to one another and to the cord, and imbedded in them was a grayish fatty tissue, here and there fibrous, developed in varying degree in the different localities. These now embraced the nerve roots. Where these alterations were the greatest the spinal outlines were entirely obliterated and the substance soft. The pathological process was an internal pachymeningitis and a chronic arachnitis. On the inner surface of the dura was a deposit of fibrous tissue of many layers. The arachnoid and the pia were infiltrated with a strongly developed granular tissue, very cellular, and containing numerous newly formed vessels. These also embraced the nerve-roots and sent prolongations into them both toward the periphery and the spinal substance. There was secondary degeneration of the cord upward and backward in some places; in others the peripheral portions of the cord were alone affected. The spinal vessels, and also the larger arteries, present the lesions of endarteritis, and especially of chronic peri-arteritis. A slight degree of arachnitis also existed in the upper spinal regions, together with a moderate ependymitis on the floor of the fourth ventricle. Lesions were also found in the medulla oblongata, pons, corpora quadrigemina, mainly about the region of the vagus, accessorius, glosso-pharyngeal, and the nuclei of the ocular muscles. There was marked atrophy of the right solitary bundle, very complete throughout the whole length, and evident macroscopically. Two small foci of softening were found in the region of the tegmentum and the crus cerebri. The cerebral arteries, seemingly normal to the naked eye, were found

microscopically markedly altered, with specially great proliferation of the intima.

The connection of general paresis and locomotor ataxia is too well known to be disputed, and the following case of my own illustrates this connection:

Male, age forty, hard chancre thirteen years ago, secondary sequelæ, treated by a well-known syphilographer. Has been suffering for several years with stabbing pains, severe, sudden, and wandering, about lower limbs, with difficulty of micturition and with difficulty of walking, which had been first noticed at night. First examined in May, 1886. Loss of both patellar reflexes. Optic-nerve atrophy. Swaying with the feet closely approximated and almost unable to stand with eyes closed, doing it imperfectly with eyes open; upper extremities also slightly ataxic. Argyll-Robertson pupil. Tactile sense greatly impaired in the feet; muscular sense imperfect; great retardation of pain sense. Considerable distress and difficulty in micturition. Gastric crises of great intensity every few months. This patient improved greatly under treatment with the iodide in large doses, mercurial inunctions, and galvanism, so that at the end of four months, when he discontinued the treatment, he was suffering but very little from his pains, his ataxia was considerably improved, his vesical symptoms had almost entirely disappeared, but the sensory impairments and the patellar reflexes were essentially unaltered. This patient was able to undertake a most fatiguing journey in the winter time into the mountains of Oregon, where he was snow-bound for several weeks in a mountain camp, and yet claims to have grown no worse. Two years afterward he returned to New York, maintaining that he was much better. A careful examination showed that the optic-nerve atrophy was still unaltered, the patellar reflex was still absent; the tactile anæsthesia and the conduction of pain were seemingly much improved. His bladder symptoms and his lancinating pains were said to have disappeared. But, observing him at different times through a period of several weeks, I found that there was an occasional inequality of the pupil, that his ataxia was still very evident, that there was a marked fibrillary tremor of the tongue present every time I examined him, an occasional fibrillary tremor of the facial muscles, and occasional difficulty of articulation. His friends and business associates also confirmed what was evident to me in my short interviews with him in my office—viz., that he was absent-minded, undecided, and confused about business matters, and occasionally so apathetic as to excite remark from those with whom he was doing business. I have since had this patient under observation through the last winter, and it is very evident that his mental symptoms are slowly and steadily progressing.

The so-called cures have been almost entirely confined to the syphilitic cases, while non-syphilitic cases have ordinarily been improved by treatment. The famous case of Schultze and Erb belongs to this category.

Friedrich Schultze ("Arch. f. Psychiatrie," 1882, p. 232): The patient came under Erb's observation in April, 1871. He was then forty-three years old, had had for two or three years continuous lancinating pains in the lower extremities, and for one year unsteadiness of the legs, commencing vesical symptoms, and a feeling of numbness in the left ulna. These phenomena increased, and a feeling of uncertainty in walking in the dark became stronger, nocturnal enuresis appeared, and even by day it became difficult to retain the urine. With nitrate of silver the condition was improved, so that the patient did not sway so much in standing with closed eyes, and the irregular movements of the limbs almost disappeared. The patient was treated from April, 1871, with the galvanic current. At this time there was only a slight uncertainty in walking, barely perceptible to the eye. There were no sensory disturbances in the lower extremities. On the ulnar side of the left hand and in the fourth and fifth finger there was a feeling of numbness. Sexual desire greatly diminished. Nocturnal enuresis. In the middle of May this nocturnal enuresis disappeared for the first time, and the patient could take long tramps in the mountains without especial weariness. The lancinating pains present at the beginning of the electrical treatment had entirely disappeared, but the vesical weakness still remained in slight degree, as well as the feeling of numbness in the left ulnar region. In February, 1872, the improvement had persisted, the lancinating pains were almost entirely gone, the numbness in the left ulna much less, but the feeling of fatigue in the lower extremities is still abnormally great, and after an hour's walk the patient feels himself fatigued till the next day. Vesical difficulty unaltered. During the summer of 1872 and 1873 the patient was treated several times weekly with galvanism. In 1873 and later there were no more lancinating pains, the abnormal feeling in the left ulnar region had almost disappeared, the general health was good, no ataxic walk, occasionally only nocturnal enuresis and urinary dribbling. In this condition the patient remained to the end of January, 1880—*i. e.*, about twelve years after the beginning of the first phenomena. At this time Dr. Schultze saw and examined him. His walk was perfectly normal. Upper eyelids sunken, although a paralytic ptosis could not be assumed, as the patient had had this peculiarity in youth, and the mobility of the lids had not been re-established. No demonstrable sensory disturbances. Patellar reflex gone on both sides. Vesical paralysis of moderate degree, with nocturnal enuresis and urinary dribbling by day, vesical catarrh, urine with non-alkaline reaction. Pupils small, reacting feebly to light. In the electric treatment the bladder was especially treated, without any particular effect after twelve sittings. The patient was strong, and took daily walks of an hour without finding himself unusually fatigued. Death resulted from poisoning, and the autopsy was made nine hours after death. Spinal cord was found abnormally thin and soft, the lumbar enlargement being ill-defined. Dura and pia were normal. Posterior columns were somewhat shrunken in the lumbar portion, and in the upper portion of the lumbar enlargement showed a distinctly gray-colored portion about in the middle of the area of the posterior columns, and not touching either the posterior commissure or the posterior periphery. This focus was smaller below. In the lumbar and cervical cord there was nothing abnormal macroscopically. The cerebral pia was thickened on the anterior half of the convexity, but the convolutions were normal. The ependyma was not granular, and the large arteries not atheromatous. There were also pyelitis and cystitis. The hardened preparation showed microscopically that the cord was of abnormally small volume in the dorsal and lumbar portions, less so in the cervical. With glycerin preparations the degeneration of the posterior columns could be seen extending in the lower third of the lumbar enlargement over almost the whole surface between both posterior horns in the one direction, and between the posterior commissure and posterior periphery in the other. The portions bordering immediately upon the posterior commissure were richer in nerve tubules, the other portions being equally diseased to a high degree. In the middle and upper portion of the lumbar enlargement the posterior columns immediately adjoining the posterior horns were somewhat richer in nerve tubules. Microscopically, in the greatest portion of the posterior column there was a rarefaction of the nerve fibers. There was a degeneration of the posterior column adjoining the posterior

horns, which was indistinct in the lowest third of the dorsal region and distinct in the upper portions, representing the entry of the inner nerve roots and reaching to the point of the posterior horns, while the anterior third of the posterior horns was bounded on the inner side by intact nerve fibers. In the cervical region the columns of Goll were intact. But the boundary line between the columns of Goll and the columns of Burdach was marked by a very small zone of degenerated substance, club shaped anteriorly in the upper portion of the cervical region, near the posterior commissure, in such a manner that the larger portion of the anterior region of the Burdach column was most degenerated. In the upper two thirds of the cervical enlargement this zone is widened toward the pia mater, so that a complete triangle of degenerated substance resulted, with the basis to the gray substance of the Burdach column, the apex toward the aforesaid small zone. Throughout the cervical enlargement the region of the inner nerve roots was degenerated, as has been described in the dorsal region, more so upon the left side, so that here, in places, half of the substance of the Burdach column was implicated. Farther toward the medulla the degeneration limited itself to the boundary between the columns of Burdach and the columns of Goll, decreasing in extent and intensity. The other white strands, especially the lateral columns and the gray substance, were normal. With carmine preparations the abnormal areas described in the posterior columns were found to be in a condition of reduction and atrophy of the nerve fibers and an increase of connective-tissue substance. Granular cells were lacking, even in fresh glycerin preparation; but corpora amylacea were present in small number. The anterior ganglion cells were intact. There was, therefore, in general, a diffuse degeneration of moderate intensity of the posterior columns in the lumbar region; a degeneration of the outer portions of the column of Burdach in the dorsal region, least marked in the lower fourth of the same; partial degeneration of the columns of Burdach, especially in the outer portions, but more extended in the cervical than in the lumbar region; moderate implication of the columns of Goll.

This case demonstrates the almost incredible fact that almost all the symptoms of the disease may disappear while the spinal lesion persists unabated.

There can be no question whatsoever but that the improvement in many of the syphilitic cases has been such as would have warranted the term "cure," did we not know of this remarkable case of Schultze's; even in the face of it we are perfectly justified in saying that these syphilitic cases have been practically cured. The best results seem to have been attained by the use of mercury, usually in the form of inunction, in conjunction with large doses of the iodide of potassium. I have not been able to obtain such brilliant results in these syphilitic cases as have been described by such reliable authors as those whom I have quoted, and especially by such men as Fournier and Rumpf, for the best that I have been able to effect in my cases has been an improvement in some such symptoms as the pains and other sensory affections, less often in the ataxia, and never in such phenomena as the Argyll-Robertson pupil and the lost patellar reflex. A great many cases of so-called cures will not bear rigid analysis, and are very often cases of ordinary myelitis of subacute or chronic nature, recovering readily under proper treatment, as such cases often do, and as they generally do when they are of specific causation. In my experience the non-syphilitic cases of ataxia have been very intractable. I have found, to be sure, that galvanism, rest, iodide of potassium, nitrate of silver, and the faradaic brush would effect a certain amount of improvement in some of these cases, but only in certain symptoms. The ataxia has been a singularly obstinate symptom in this class of cases. The lancinating pains have been best treated by absolute rest for several weeks at the outset of treatment, and great attention to this point for a varying time afterward; indeed, so well known was this fact in my hospital wards that it became the routine treatment for those cases in which the pains were severe. I was somewhat chagrined, as I had flattered myself that this treatment was original with me, to learn from Dr. Weir Mitchell, in a casual conversation with him last year, that he had advocated this treatment as far back as 1873, in a contribution to the "American Journal of the Medical Sciences," and had frequently mentioned it to M. Charcot without being able to overcome the incredulity of the latter gentleman. It is impossible to ascertain how many of the older cases of the so-called cures or improvement were without specific infection, and this casts the more confusion into our estimate of the results, as it is undoubtedly true that many of the syphilitic cases are absolutely unimprovable, as any one may satisfy himself by reading the histories given by Fournier and Rumpf and as all of us have probably seen in our own experience. Nerve stretching has not, as a rule, been successful, although Benedikt has reported some great successes, but the fact remains that several patients have died after the operation. The results of the latest neurological fad, suspension—first really introduced, I am sorry to say, into this country by the sensationalism of the New York "Herald"—have been gathered and sifted very completely by Dr. C. Eugene Riggs, of St. Paul, in a recent article in which he points out that "the most brilliant successes have been obtained by French and American experimenters, while the Germans are lacking at the same time in enthusiasm and results." Certain it is that these startlingly brilliant effects that have been described by the French and German physicians are not exaggerated, if I may infer from my own limited experience in a few cases, and my own results were the more surprising to me as I was greatly prejudiced against the method at the start, although my patients have been treated too recently to permit of a report as yet. Dr. Motchoutkouski, of Moscow, to whose publication in 1883 we owe our first suggestion of the method, speaks of one patient whose only remaining symptoms at the end of five years were myosis and absence of patellar reflex. One great advantage of the suspension treatment, should it prove to be permanent in its effect, is the marked improvement that it effects in the ataxia, a singularly intractable symptom except in certain of the syphilitic cases. Rumpf speaks with great positiveness of the beneficial effects of the faradaic brush in diminishing the anæsthesia, and I can bear him out in this assertion.

As Schultze's patient lost most of his characteristic symptoms during a period of some twelve years, notwithstanding that the posterior columns were found to be in the usual diseased condition, the question inevitably arises as to whether this may not also have been the case in the so-called cures. We are therefore forced to the conclusion

that there is no record of a really authentic cure of locomotor ataxia. We may furthermore affirm that the cases of syphilitic locomotor ataxia have yielded the best results, and that they have done best the earlier the treatment has been begun; while many of the non-syphilitic cases have been improved by the various methods of treatment that have been enumerated, although there is a doubt as to what proportion of this improvement may have been due to the inhibitory effects of a supervening general paresis.

But this scientific doubt should not blind us to the immense practical advantage of such improvement as has been described in so terrible a disease as locomotor ataxia, and it would be a great boon to us to be able to differentiate the cases of favorable prognosis from the hopeless ones. In this regard it should be borne in mind that many of the cases which I have narrated have been associated with an intracranial syphilis, and that others have been in the early stage of locomotor ataxia. Fournier expressly states that the prognosis is much better in what he calls the pre-ataxic stage. If the spinal lesion of this disease be a secondary degeneration starting from a primary focus of inflammation or cellular alteration in the lower dorsal or lumbar cord, it would seem reasonable to assume that this primary focus would be the lesion that could be treated best, especially in the syphilitic cases, and that the secondary degenerations resulting therefrom would be as hopeless as they are in other portions of the cord. We should therefore vigorously treat our syphilitic cases of locomotor ataxia, at as early a stage as possible, with large doses of mercury and the iodide of potassium. Nor should this treatment be any the less vigorous when an accompanying intracranial syphilis can be diagnosticated. As I pointed out some two years and a half ago, the pathognomonic symptoms of some forms of intracranial syphilis are these:

1. A quasi-periodical cephalalgia, generally nocturnal, but occurring at certain other times of the day—especially in the afternoon.

2. A hemiplegia under forty years of age, with or without preceding cephalalgia of the foregoing type.

3. Cephalalgia followed by hemiplegia, which bear a singular relationship to one another in that the cephalalgia ceases immediately upon the supervention of the hemiplegia and seldom recurs.

4. Convulsions in the adult, which have not been preceded by convulsions in infancy, and are not of traumatic or nephritic origin, or due to pregnancy, or in an individual subject to migraine.

5. Symptoms indicative of a lesion at the base of the brain.

6. A comatose condition extending over days or weeks, not traumatic, diabetic, meningitic, nephritic, or from typhoid fever.

As I said at that time, these symptoms may be regarded as proof of the kind to which lawyers give the name of "prima facie"—*i. e.*, proof amounting to a presumption, which may, however, be rebutted by adequate testimony to the contrary. I should be extremely suspicious of any case of locomotor ataxia in which these symptoms were present in larger or smaller combination, even though I could not obtain a certain history of syphilitic infection. I know of no certain signs by which we can recognize the cases of peripheral origin or the pseudo-tabes.

Appendix.

Developing of Symptoms of Locomotor Ataxia Twelve Years after Chancre; Rapid Loss of Sight; no Loss of Muscular Sense; Abatement of General Symptoms.—Age fifty, merchant. Soldier during the war, 1861 to 1865. Had dysentery. About twelve years ago had chancre; does not think it was followed by any secondary symptoms. Was never treated. Always been healthy. About four years ago had sudden attacks of dizziness and sharp pains through the temples. Six months after, noticed he did not walk as firmly as before. "While I did not exactly stagger, I always felt when these spells were on as if I swayed." About this time, every few weeks, would have sharp piercing pains in legs and back. About a year after the onset of these symptoms he fell off a stoop (at night) and struck the back of his head and spine. The parts were sore for a few days, when all symptoms passed away. Five months after, noticed his sight was not so good; consulted oculists, who did not remark any ophthalmoscopic changes. Eight months later had pronounced atrophy (white) of both optic nerves, with bare perception of light.

Examined May 6, 1889. Well-nourished man with fixed expression and dilated pupils. No loss of power, but he complains of being easily fatigued and then he staggers. Has attacks of dizziness and paroxysms of pains in buttocks and back. So sudden and sharp are the attacks that he can not sleep. These pains are decidedly vagabond. Never had any evidences of visceral crises. No rectal or vesical impairment. No plantar anæsthesia. Muscular sense not impaired. Sexual power about as usual. Knee-jerks absent. His loss of vision prevents many tests. Has typical motor ataxia in the lower limbs.

Treatment by massage, galvanism, nitrate of silver, pilocarpine, and strychnine. All symptoms have disappeared, and, as he remarks, "If it were not for my blindness I would be a well man."

Male, aged thirty-five, car-driver, twelve years ago had chancre; was followed by full secondaries; did not undergo treatment. Says he was perfectly well until two years ago, when he noticed a feeling of tightness about his body and a sense of numbness over left side. These symptoms continued until five months ago, when he became constipated; had difficulty in making water; left hand and forearm became numb (ulnar distribution). Began to be uncertain in walking and staggered badly in the dark. His feet became so numb that he could not tell where they were. About that time he suffered greatly from "neuralgic pains" of sudden onset. Two months ago total paresis of left third nerve came on. Loss of sexual power for past two years. Is markedly ataxic, static and locomotor. Walks heavily, heels well down, feet well apart. Tactile sense over toes impaired, diminished on outer side of both legs, on right of outer thigh, on left of inner thigh. Muscular sense not impaired in feet, not impaired in right hand. Left over ulnar distribution absent. Reflexes—plantar, patellar, cremasteric, epigastric—absent. Left ptosis. Paresis of iris and recti (recovering). Some weakness of left facial muscles. No electrical changes. No facial anæsthesia. No ophthalmoscopic changes.

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THE TREATMENT OF ACUTE GASTRO-ENTERITIS OCCURRING AMONG INFANTS AND CHILDREN,

WITH SOME REMARKS ON

THE USE OF PEROXIDE OF HYDROGEN.

By ROBERT H. GREENE, A. M., M. D.

My apology for writing at this season concerning a disease which is confined so closely to the hottest days of summer is a desire to arouse what interest I can, before hot weather comes again, in the search for some more effective methods of home treatment, or for some better combination of remedial measures that we already have, than are at present in use. And it is fair to suppose that the same treatment which would be most effective in this would be of use in diseases closely allied to it. During the summers of 1887 and 1888, as attending physician to the Floating Hospital of St. John's Guild, I had an opportunity to examine the effects of air from the open sea on this disease in many thousand cases. That the air from the open sea is of great benefit to children suffering from this and diseases resembling it is a fact generally known to the profession. That it is an almost absolute specific can be vouched for by the large number of physicians who have visited this institution since its commencement, myself included. Would it, therefore, not be wise to try and analyze the methods which Nature teaches us, and might we not expect good results from imitating her methods as far as practicable? We find as positive factors that Nature uses in her treatment of this disease—

First. A generally lowered temperature.

Second. The sodium chloride present in the atmosphere.

Third. The destructive action of the oxidizing constituents of the atmosphere on the products of decomposition. And, as a negative factor, the absence from the atmosphere of any infective material.

1. That the air from the open sea must be of great purity would seem evident to every one, and the absence of microbes has also been demonstrated, according to von Ziemssen, by the experiments of Mireau and Miquel.

2. It is not easy to understand definitely how the beneficial results derived from the lower temperature are obtained. We may, however, conceive that by stimulating the nerve centers it slows the action of the heart, that by increasing the absorption of heat from the body it reduces the fever, and that some benefit is derived from a preventive action exercised upon the further continuance of decomposition.

3. It is probable that the ultimate effect of the salt in the atmosphere is similar to its effect when taken in solution. It is generally conceded that part of the action of chloride of sodium is its stimulating effect upon all the properties of secretion and excretion. Professor A. Jacobi says, speaking of the action of salt in solution: "It is chiefly chloride of sodium, other solutions not excepted, which renders the generation and disintegration of tissue possible." Although late experiments would seem to show that the action of a solution of sodium chloride in itself is not destructive to bacilli, we may presume that, entering as it does into the formation of hydrochloric acid in the stomach, and also as sodium salts are among the constituents of the bile, through assisting in the formation of these, it exerts an antiseptic influence on the results of fermentation in the stomach and intestines. 4. It is evident that, owing to the absence of microbes and decomposing material from the air, nature has the opportunity through the oxidizing constituents—such as ozone, etc.—to more rapidly and thoroughly destroy any morbific products present. How, then, can we most closely imitate Nature in her successful treatment of this and allied diseases when we are unable to place our patients in the best hygienic atmosphere?

First. By insisting on as thorough ventilation as possible, we can, to a certain extent, dilute the poisonous material present in the air.

Second. When practicable, "we may succeed, to some

extent, in cooling the air of the sick-room artificially by the use of large pieces of ice." By frequent sponging with cool water, and by its application with cloths to various parts of the body, through its evaporation, aided probably "by some stimulant action on the central nervous system," we may reduce the fever. Bearing in mind the extreme sensibility of the nerve centers in children, and remembering that Nature does nothing violent in her treatment of this disease, it would seem well to refrain from the shock of powerful douches, or the abstraction of heat from the body by conduction through immersion in the cold bath itself.

Third. We should be able to get the physiological effects of the sodium chloride by the addition of salt to the cold applications and by giving small quantities internally in solution, taking care that the solution is so well diluted as not to have too irritating an effect on the intestinal canal.

Fourth. We must increase the oxidizing power of the atmosphere by the use—either through the mouth, by rectal injections, or possibly by inhalations—of some substance which would assist in the more rapid oxidation of the various products of fermentation present. What clinical reports we have had of the use of oxygen gas itself offer us little encouragement to look there confidently for means of relief. But, from the use of peroxide of hydrogen,* from the decomposition of which ozone is formed, or the discovery of some remedy chemically resembling it, I think we may find useful aid to the other methods stated. In fact, peroxide of hydrogen has been shown to be present as a constituent of the atmosphere, according to Fox,† by the experiments of Frémy, Schönbein, Meissner, and Corup Besanez. I have been able to obtain reports from one source only where this remedy has been used for this disease. I am informed by Dr. J. Mount Bleyer that in 1886, at the Eastern Dispensary and in private practice, he used this remedy in forty cases of acute gastro-enteritis, his practice being to give first some alkaline solution, such as one of sodium bicarbonate, to remove excess of mucus, etc., and then give a teaspoonful, three times a day, of glycozone, the glycozone being a twenty-five-per-cent. solution of peroxide of hydrogen in glycerin (the glycerin being used to prevent the formation of gas, which, when a solution of peroxide of hydrogen in water is swallowed, it is liable to give rise to too rapidly), ordering the rectal injection twice daily of a solution consisting of one ounce of Ch. Marchand's solution of peroxide of hydrogen and nine ounces of water, at the temperature of 70° F. He reports "very gratifying results in about ninety per cent. of the cases treated."‡ It is generally considered to be harmless, when free from impurities, when taken internally in solution of such strength as to be of great antiseptic value. It would certainly seem that, through close observation and careful experimentation, aided, perhaps, by the discovery of better methods in its manufacture, we may be able to prescribe this remedy intelligently and with gratifying results in some intestinal diseases, especially among children, where the products of fermentation are so abundant and complex, as well as in many other diseases to its action in which our attention has been more generally called.

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* See E. R. Squibb, "Hydrogen Peroxide," Squibb's "Ephemeris," July, 1889. J. Mount Bleyer, "Peroxide of Hydrogen in Whooping-cough"; "Practical Hints in Connection with the Intubation of the Larynx"; "Dioxide of Hydrogen in Diphtheria, Diseases of Nose, Throat, and Chest."

† "Ozone and Antozone," by Cornelius B. Fox, M. D., London.

‡ Dr. Bleyer did not publish his reports, from the fact of having been more particularly interested in observing the effects of this remedial agent in diseases of the respiratory organs.

A CASE OF ADENITIS CALCULOSA.

By W. C. KLOMAN, M. D.,
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F. D., a boy of thirteen years, had scarlet fever in February, 1889. As far as I could ascertain (not having been the attendant physician), it was a case of the anginose variety, and of moderate severity. After convalescence, an enlargement of one of the left submaxillary glands began, which gradually increased until the mass was of the size of a hen's egg. I first saw him in the beginning of April, 1889. The tumor was then of the size mentioned, smooth to the touch, having no lobulations or irregularities of the surface. It was dense and firm, feeling very much like a subcutaneous fibroid; it was not painful, but firm pressure elicited sensibility. The boy was somewhat anæmic, but there were no other evidences of scrofula about him. I put him upon cod-liver oil with fifteen drops of syrup iodide of iron after each meal. Locally I applied compound iodine ointment made with lanolin. Under this treatment, after some weeks there was a slight diminution in the size of the tumor and the general condition of the patient was considerably improved. The hardness of the tumor remained the same. I then injected into the substance of the gland five drops of compound tincture of iodine on two separate occasions at the interval of a week, but without any apparent effect upon the size or hardness of the tumor. I administered internally two grains of iodoform three times daily for several weeks, locally also using oleate of mercury, ten per cent., but without any result. I then injected the gland with three drops of Clemen's solution of bromide of arsenic. This caused some pain, which, however, soon ceased, and in about ten days I found evidences of suppuration, as in a cold abscess, without pain, redness, or swelling. I then carefully made a small puncture with a tenotomy knife and discharged about three drachms of healthy-looking pus, after which the cavity was injected with a solution of iodoform in oil until it was thoroughly distended, when what would was allowed to flow out. No poultices were applied; only a piece of absorbent cotton. The next day the opening was found closed, and, as there was some fluctuation, it was opened with the point of the hypodermic needle and a small amount of pus pressed out; the cavity was then again injected with the iodoform oil. This was done daily until the part finally healed, the discharge of pus becoming less day by day. On the third day of dressing in this manner, together with the pus, small granules of a calcareous nature were discharged. There were thirty to forty; these continued to be discharged in decreasing numbers for six or seven days, when they ceased. By this time the tumor was well-nigh gone, and there was only a slight discharge of pus. The injection of iodoform in oil was continued as long as there was a cavity to receive it, and in about three weeks from the time of opening the abscess it was healed.

The calcareous particles discharged were of various sizes and

irregular forms. The largest measured about one sixteenth of an inch in length; some of them would stick in the opening, requiring some little effort to disengage them. The greater number did not exceed one half this size. I have preserved a number of them in a phial. Several of them were thrown into dilute hydrochloric acid to dissolve out the lime, and the residue, now soft but of undiminished size, was examined under the microscope with a lens of one fifth, but no formed elements were distinguished; only an aggregation of granules, possibly the *débris* of lymph-cells, etc. There was nothing like a stroma. Neither could I discover any bacilli. After soaking in hydrochloric acid and removing the lime, I threw the specimen into a solution of carbonate of sodium to saturate the free acid; then into a solution of picrocarmin. I regret not having examined with the microscope the pus discharged in the first place for the presence of bacilli.

I would call attention to the gradual formation of the abscess, unattended with any signs of inflammation, after the arsenical injection, and to the small opening made to discharge the pus. In consequence there is scarcely any cicatrix to be observed. The daily discharge of the pus and the injection with iodoform in oil prevented the long-continued suppuration which so generally attends these cases. I had seen an ethereal solution of iodoform recommended for this purpose by French authorities, but preferred using the oil, as being less painful.

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A USEFUL GALACTAGOGUE; "NUTROLACTIS."

By ROBERT J. MILLBANK, M. D.,
VISITING PHYSICIAN TO THE NEW YORK INFANT ASYLUM.

A little over a year ago my attention was called to a combination of drugs said to be *Galega officinalis*, *Galega apolinea*, *Tephrosia virginica*, and sold under the name of "nutrolactis." The recommendations from some of those who had used it gave ground for believing that, notwithstanding my skepticism on the subject, it ought to have a fair trial. I offered to give it such a test during my service at the New York Infant Asylum, provided a sufficient quantity should be sent to the asylum at the expense of the makers, to settle the question as to its practical use.

Having had occasion to try about every galactagogue used by the profession, and having often been disappointed in the results, as many of my friends have been disappointed, I am glad to report that after more than a year's use it has been more satisfactory than any galactagogue I have hitherto employed.

I have thought it might be of interest to quote from the history books of the asylum a few cases taken in order without selection.

Lottie G., aged one year, gained half a pound in eight weeks, during which the mother took nutrolactis. The child had previously been losing weight.

Bernard R., aged eight months, wet-nursed. Nurse has been taking nutrolactis; no gain.

Edward E., aged eight months. Mother took nutrolactis for eight weeks; gain, four ounces. Has had in the mean time a severe attack of enterocolitis.

Josephine C., aged five months. Mother on nutrolactis six weeks, during which time the child gained one pound twelve ounces.

Edith C., aged five months. Mother on nutrolactis eight weeks; gain, one pound.

The following women are recorded among others as nursing two children:

Mary McM., on nutrolactis six weeks. Francis McM., aged eight months, her own child, during the above time gained twelve ounces. John S. (nurse child), aged eight months, gained two pounds twelve ounces.

Mary D., on nutrolactis eight weeks. John D., aged ten months, her own child, gained one pound eight ounces. Howard B., aged six months (nurse child), gained one pound and a half.

We have had several women whose supply of milk was insufficient, but after taking nutrolactis they have been able to nurse two children.

The women who take it all say that it positively adds to their flow of milk. As it is not particularly agreeable to take, containing little alcohol, I believe that their praise of it is not due to bias on account of palatability, and, as the facts in our tests seem to bear them out, I believe their statements. The class of mothers and children which come under our care is one to which such a medicine is peculiarly valuable, and after a year's use I am much pleased with the results.

We are now using about a dozen bottles a week. The dose is a tablespoonful two or three times daily. I hope that its use will be of benefit in the hands of some of my brethren who may be tempted to try it from what I have said about it.

154 West Forty-eighth Street.

Uterine Tuberculosis.—"An interesting case of primary tubercular disease of the Falloppian tubes has occurred in Professor Lebedeff's wards. The patient, who was the widow of a man who had died of phthisis, was of a cachectic appearance and suffered from amenorrhœa. On examination, a firm, nodulated, intra-abdominal tumor was made out, situate in the space of Douglas. An attempt was made to remove the tumor, but had to be given up, as disseminated miliary tubercle was found affecting the peritonæum. The intestines and the uterine appendages, too, were all matted together. Six weeks after the attempted operation the patient died with symptoms of general tuberculosis. At the post-mortem examination miliary tuberculosis was found affecting the peritonæum, the lungs, the pleuræ, the colon, and the mucous membrane of the uterus. Both the Falloppian tubes were dilated and filled with pus, the epithelium in parts being absent. The intensity of the destructive process was greatest in the tubes, and became less marked toward the periphery. In sections, tubercle bacilli were found; there was no tuberculosis, however, in the ovaries, and only the mucous membrane of the uterus was affected."—*Lancet.*

The Ill Effects of Mouth-Breathing.—S. C. G. Watkins, in the "Ohio Journal of Dental Science," says: "I know the case of a child that has been under my care from birth. At birth and up to the third year the child had a perfectly formed and normal arch; but it acquired the habit of breathing through its mouth. The result has been that the muscles, in the effort of holding the mouth open in that way, are drawn down over the teeth, and the arch is decreasing in width and becoming narrow—so much so that you can not do more than place your finger in the center of the arch; the child is now nine years of age. There has been a radical change in the shape of the mouth, and from no other reasons than mouth-breathing and the force of these muscles on the side of the mouth."

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THE ANATOMY OF THE FUTURE.

SOME years ago an elderly professor of anatomy expressed his thankfulness that in the branch he taught there was no harassing progress. Physiology and chemistry, he said, were undergoing changes from one day to another, but anatomy was always anatomy, a bone was always a bone, and there was no wearisome struggle to keep up with the rushing progress of the times. And such is the view of anatomy entertained by many of the profession. Not a few of us think, when we look back over a number of years spent in active practice, that we started on our journey with much more baggage than was necessary in the way of memorized anatomical truths, that we could have done with a smaller quantity, but that that smaller quantity should have been better selected. We question whether the anatomy taught in our colleges to-day is the anatomy of the future. Is it not rather a result of the labor of successive generations of book-writers, each showing more eagerness to add new facts to the mass than to examine into and verify the old ones?

The anatomy of the future will not resemble that taught now. The scope of the subject requires enlarging, and for the narrowing memory work done to-day a broad view of the whole must be substituted. In other words, the student should first acquire a knowledge of general and comparative anatomy, and subsequently study its application to the human body. To begin work with the descriptive anatomy of man is working backward. Such a course has been likened to the study of an ultimate twig of a tree by a person who is ignorant of the character of the larger branches, of the trunk, and of the soil on which the tree grew.

Embryology urgently demands attention as a necessary introduction to the study of the parts of the body and as a subject the knowledge of which is of direct practical advantage in daily professional life. Observe how important has become the anatomy of the embryo in connection with the study of disease. The disposition of the layers of the embryo must be clearly understood to enable one to understand the structures of the body and the diseases developing in those structures. Studies such as these lighten the student's task. Take, for instance, the arrangement of the great vessels in the root of the neck. The disposition of these structures is learned commonly by the study of a scheme or diagram, perhaps by the friendly aid of a cunningly devised "tip." The relations of these vessels could, by the study of development, be so impressed upon the student's mind as never to be forgotten. Can any of our readers forget what a bugbear the peritonæum was? Can you put your hands on your hearts and say that you thoroughly understand all about it now? And yet when the peritonæum is studied from its early and simple state there will be no longer any difficulty either in comprehending or in remembering the arrangements of its folds.

The very great advance made of late years in the study of nervous disease renders a change in anatomical teaching very necessary. In our day the anatomy of the arteries was paramount, and the nervous system occupied a position of secondary importance. Yet the nerves, their cutaneous distribution, their communications with central ganglia and with one another, are matters of daily, almost hourly, consideration in the round of a doctor's visits, while of the arteries, over which we spent such time and such labor, there is rarely occasion to think. The practitioner is constantly meeting with nervous manifestations the correct interpretation of which renders a clear knowledge of nerve distribution necessary, while it is possible for him to practice for the whole course of his natural existence without ever being called upon to tie an artery. Should such a demand be made, he will seize the bleeding point in the wound, secure it, save his patient, and then go home to study the vascular system afterward. The statement has been made, we think by the late Dr. Fothergill, that the chances of an ordinary practitioner being called upon to tie the subclavian are almost equal to those of his meeting his death by lightning stroke.

To render the study of anatomy attractive and at the same time thoroughly useful, a complete change in our present system is called for, and teachers will soon have to consider the importance of comparative anatomy and of embryology as introductory studies, and the necessity of putting the nervous system in its proper place as the most important department of the human body, and not waste their energies in teaching the relations of arteries with which the student is unlikely ever to have anything to do.

ACUTE ABSCESS OF THE TONGUE.

THIS affection is quite infrequent, yet it is worthy of consideration on account of the occasional rapidity of its progress and the need of prompt and intelligent treatment. In the "University Medical Magazine" for July Dr. Wharton relates the history of a case that occurred in his own practice, and appends a short account of the complaint.

A patient who had been smoking to excess asked advice concerning a painful and somewhat rigid condition of the tongue, which had come on a few days before. The organ was of normal size, covered with a whitish-yellow fur, and a little indurated, especially on the right side near the median line. He was advised to quit smoking, and a mild wash was ordered. Three days later he was suffering great pain, the tongue being swollen so that it nearly filled the mouth. Its tissues were greatly thickened, and it projected beyond the line of the teeth. There was profuse salivation, and the patient could hardly make himself understood. The sudden increase in size of the tongue had begun twenty-four hours before. Salivation was increased and difficulty of breathing occurred when he lay

down. Finding upon the indurated dorsum a spot to the right of the median line at which he thought he could feel deep fluctuation, Dr. Wharton made an incision an inch and a half long, and, thrusting in a director, struck an abscess cavity containing several drachms of thick pus. There was little bleeding, and the pain, difficulty in breathing, and obstruction to deglutition diminished at once. The slight discharge of pus ceased in a day, the induration quickly vanished, and only a little denseness about the incision remained.

Acute abscess of the tongue generally results from acute glossitis, which is said to be caused by exposure to damp and cold, to injury, and to septic inoculation, by bites or stings, by the undue use of mercury or iodine, by caustics, by eruptive diseases and fevers, by excessive smoking, and by abuse of alcoholic drinks. Dr. Wharton has himself seen it occur in delirium tremens. In one case fatal acute abscess resulted from penetration of the lower surface of the tongue by a beard of barley, which was found post mortem in a pus cavity of the size of a turkey's egg, at the root of the tongue. Acute abscess is accompanied by symptoms such as occurred in the case above described. There may be also swelling of the salivary and lymphatic glands. The abscess may open of itself or there may be sloughing of the adjacent tissues. A number of fatal cases have been reported, death coming on from dyspnœa, septicæmia, or pneumonia.

The treatment is like that for acute glossitis, consisting in free incisions into the organ to let out the pus. It may probably be prevented by incisions, when inflammation has set in and before suppuration has begun. If incision fails to relieve the dyspnœa, tracheotomy may be required, or, in very urgent cases, laryngotomy, as the easier and more rapid operation, may be done instead of tracheotomy. Bryant recommends the application of leeches to the organ when it is swollen so as to project from the mouth. He agrees that, when the swelling becomes dangerous by pressure, the œdema may be dispersed by puncture or incision, but the surgeon need not be in haste to incise unless he detects an abscess, as such incisions may lead to dangerous hæmorrhage. In case the abscess presses dangerously upon the glottis, producing suffocation, Druitt recommends an incision into it beneath the chin through the mylohyoid muscle.

MINOR PARAGRAPHS.

THE ANTHROPOLOGY OF THE GYPSIES.

In a recent number of the "Wiener klinische Wochenschrift" Dr. Hinterstoisser gives a brief notice of a monograph entitled "Die Zigeuner," by Dr. A. Weisbach, of the medical corps of the Austrian army. Dr. Weisbach has made a careful study of the peculiarities of the bodily development of fifty-two Gypsies, all soldiers in a Hungarian regiment. He refers in the beginning to the great resemblance of the Gypsies to the ancient Egyptians (from whom they profess to be descended), although their cranial formation places them closer to the very dolichocephalous Hindu. The bodily formation of these fifty-two men had been prematurely developed and exercised, as demonstrated by the employment of the measurement system. They were of the average weight and height that appertain to the pure dark type of the Indo-European stem. The mesocephalic projection of the head was small, diminishing moderately toward the base; of the 52 men, 11 were dolichocephalous, 28 mesocephalous, and 13 brachycephalous. They had low foreheads, moderately high cheek-bones, and projecting jaws; the nose was of considerable length, well formed, with a straight dorsum, the upper portion being very small; the neck was short and thick; the thorax was of moderate depth, of slight circumference, and slightly flat; the pelvis was small, especially between the anterior superior spines of the ilia. The arms were very short. The legs were longer than the arms. The feet were broad and high, with moderate length and thickness. The precise results of the measurements are recorded in tables in the monograph.

DEATH FROM SULPHONAL.

A death has been reported following the use of two fifteen-grain doses of sulphonal, the doses being given an hour and a quarter apart. The fatal result occurred forty hours after the first dose. The patient was a woman with melancholia, aged twenty-eight years. The mode of death was by apnœa. Artificial respiration was resorted to for several hours, the pulse having been good for some time after extreme cyanosis had set in. As antidotes there were used the faradaic current, atropine, strychnine, ammonia, and alcohol. The case is reported in the "Medical News" for August 10th, by Dr. R. R. Pettit, of Dayton, Ohio.

THE ABERDEEN CHAIR OF ANATOMY.

The "British Medical Journal" states that the generous action of Professor Struthers at the Aberdeen University on the opening day of the anatomical course, in offering to continue his lectures until his successor should appear, was a fortunate concession to the school, for otherwise "chaos must have reigned." The delay since the resignation of Professor Struthers, on the part of the governors of the corporation, to name his successor has not been on account of any lack of candidates for the position, but rather by reason of a difficulty in deciding between many of nearly equal eligibility.

ANTIPYRINE IN WHOOPING-COUGH.

The efficacy of antipyrine in whooping-cough has been denied of late by a number of observers. Its use has even been found to be attended with more or less danger. The "Montreal Medical Journal" sums up a careful review of a number of articles with the conclusion that the drug is practically inoperative and even injurious in this affection; and that it should always be given with caution, especially to children, when a continuous action is desired. In twenty-eight cases treated by physicians of Vienna, the duration averaged fifty days, the drug being given in doses ranging from five to thirty grains per diem.

SPECTACLES AND EYE-GLASSES.

Dr. Charles George Bull, formerly a practitioner of New York, but now one of the faculty of the McGill Medical College, Montreal, has quite recently taken a supplementary degree at Paris. His inaugural thesis has been published in book form, with an introduction by Dr. Javal. His subject was the choice of means for the correction of visual errors, and the title of his book is "Spectacles and Eye-glasses." The Paris correspondent of the "Lancet" speaks of Dr. Bull as having been an especially favored pupil of Javal's at the Sorbonne. Myopia, according to Dr. Bull, is seldom congenital, but is developed dur-

ing early life because of an uncorrected astigmatism which leads to the habit of reading and writing at too short a distance.

A SUIT BY A PHYSICIAN AGAINST A BOARD OF HEALTH.

Dr. Duncan, of Brooklyn, formerly surgeon to the steamship Colon, has brought suit against that city for an alleged causeless removal from his home to the Quarantine Hospital by order of the Health Commissioner. He demands $60,000 damages. He accuses the health officials of incompetency, harshness, and cruelty in affecting his removal when he was sick with remittent fever, whereas the disease was reported by the said officials to be yellow fever.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending November 12, 1889:

DISEASES.	Week ending Nov. 4.		Week ending Nov. 12.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	32	9	40	6
Scarlet fever	35	1	60	2
Cerebro-spinal meningitis	2	2	3	3
Measles	13	1	46	6
Diphtheria	74	16	89	26

Leprosy in Kings County.—A leprous Chinaman, who has for some time been an inmate of the Kings County Hospital, has been discharged in order that he may be returned to China.

A Grant to the International Medical Congress of 1890.—The Imperial Ministry of Germany has made a grant of 80,000 marks ($20,000) in aid of the Tenth International Medical Congress, to be held in Berlin next year.

A New Brooklyn Dispensary.—A new dispensary was opened in Brooklyn on November 11th, at the corner of Prospect and Sixth Avenues.

The Johns Hopkins Hospital "Bulletin."—The Trustees of the Johns Hopkins Hospital have authorized the issue of a monthly publication to be known as the "Hospital Bulletin." The first number will be dated November of this year. Nine numbers will appear each year.

The New York Academy of Medicine.—At the annual meeting, to be held on the 21st inst., the annual address will be read by Dr. William M. Polk, on "The Relation of Medicine to Some of the Questions of the Day." The meeting will be open to the general public.

The College of Physicians and Surgeons.—We learn that Dr. T. Gaillard Thomas has resigned his clinical chair, and that he will be succeeded by Dr. George M. Tuttle. It is stated that Dr. Thomas will give six didactic lectures a year. A chair of nervous diseases has been established, with Dr. M. Allen Starr as the incumbent.

Changes of Address.—Mr. Reginald Harrison (London, England), to No. 6 Lower Berkeley Street, West; Dr. Charles A. Powers, to No. 35 West Thirty-fifth Street.

The late Dr. Isaac E. Taylor.—The faculty of the Bellevue Hospital Medical College has taken action expressed as follows:

"The faculty of the Bellevue Hospital Medical College have the peculiarly painful duty of directing a record in their minutes of the death of their first and only president, the late Dr. Isaac E. Taylor. His invaluable services in the organization of the college and his unflagging interest in its progress and success need not be recorded here. The same may be said of his contributions to medical science and of his labors in the various medical organizations of this city and State. His refined, gentle, and kindly nature endeared him to all, and especially to those associated with him in the Bellevue Hospital Medical College; while his lovable personal qualities protected him from the enmities which too often attend professional success."

[Signed.] Austin Flint, *Secretary.*

At a meeting of the New York Obstetrical Society, held November 5th, the following was unanimously adopted:

"*Resolved*, That the members of this society have learned with deep regret of the death of Dr. Isaac E. Taylor, one of its most distinguished fellows. It is their wish to express here their high appreciation of his purity of character, his enthusiasm in promoting obstetric science, his lofty ideals, the kindness of his nature, his self-sacrificing disposition, and his warm-hearted benevolence. In recalling his life and character, it is pleasant to remember that the deeds of good men live after them."

[Signed.] Fordyce Barker, M. D., William T. Lusk, M. D., William M. Polk, M. D., } *Committee.*

The Council of the New York State Medical Association sadly records its unfeigned sorrow for the loss of a valued founder, fellow, and late president, endeared by his personal qualities as he was admired for his scientific attainments.

An illustrious name is transferred from the active list to the roll of honor of those who have bravely borne themselves in the foremost rank, and fallen triumphant.

Untiring in industry, wise in counsel, affectionate in friendship, steadfast in religious faith, beloved by his associates, and revered by the profession which acknowledged him as one of its leaders, Isaac E. Taylor lived an example for emulation by his survivors and successors, and rests from his labor, leaving a reputation unassailed by enmity and beyond the reach of jealousy.

By the Council, { John G. Orton, M. D., *President*, E. D. Ferguson, M. D., *Secretary.*

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from November 3 to November 9, 1889:*

O'Reilly, Robert M., Major and Surgeon, will, by direction of the Secretary of War, at the expiration of his present leave of absence, proceed to Fort Logan, Colorado, and report in person to the commanding officer of that post for duty. Par. 6, S. O. 256, A. G. O., November 2, 1889.

Merrill, James C., Captain and Assistant Surgeon, is relieved from duty at Frankford Arsenal, Pa., and ordered to duty at Fort Reno, Indian Territory. Par. 6, S. O. 256, A. G. O., November 2, 1889.

Black, Charles S., Captain and Assistant Surgeon, is relieved from duty at Fort Sidney, Nebraska, to take effect upon the expiration of his present leave of absence, and will report in person to the commanding officer, Fort Du Chesne, Utah. Par. 6, S. O. 256, A. G. O., Washington, November 2, 1889.

Johnson, R. W., Captain and Assistant Surgeon, is granted leave of absence for one month, to take effect on or about November 10th proximo. Par. 4, S. O. 110, Department of Arizona, Los Angeles, Cal., October 29, 1889.

Powell, Junius L., Captain and Assistant Surgeon, is granted leave of absence for two months on account of sickness, by direction of the Secretary of War, with permission to leave the Division of the Missouri. Par. 2, S. O. 258, A. G. O., Washington, November 5, 1889.

Ives, F. J., First Lieutenant and Assistant Surgeon, is granted two months' leave of absence. Par. 3, S. O. 256, A. G. O., November 2, 1889.

By direction of the Secretary of War, the following assignments of officers of the Medical Department (recently appointed) are ordered:

Willcox, Charles, First Lieutenant and Assistant Surgeon, will report to the commanding officer at Fort Columbus, N. Y., for duty at that station.

McVay, Harlan E., First Lieutenant and Assistant Surgeon, now at Fort Mackinaw, Michigan, will report in person to the commanding officer of that post for duty.

Frick, Euclid B., First Lieutenant and Assistant Surgeon, will proceed from Philadelphia, Pa., to Fort Keogh, Montana, for duty at that station.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending November 9, 1889:*

Mackie, B. F., Surgeon, and Pickrell, George McC., Assistant Surgeon. Detached from the U. S. Steamer Ossipee, and placed on waiting orders.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the three weeks ending November 9, 1889:*

Purviance, George, Surgeon. Granted leave of absence for twenty-one days. November 8, 1889.

Austin, H. W., Surgeon. To inspect unserviceable property at St. Louis Marine Hospital. November 4, 1889.

Gassaway, J. M., Surgeon. Relieved from duty at New Orleans, La.; to rejoin station at Cairo, Ill. October 23, 1889.

Banks, C. E., Passed Assistant Surgeon. Granted leave of absence for thirty days. October 28, 1889.

Stoner, J. B., Assistant Surgeon. Ordered to Vineyard Haven, Mass., for temporary duty. November 6, 1889.

Condict, A. W., Assistant Surgeon. Ordered to Cairo, Ill., for temporary duty. November 4, 1889.

Guitéras, G. M., Assistant Surgeon. Ordered to Washington, D. C., for temporary duty. November 8, 1889.

Groenevelt, J. F., Assistant Surgeon. Ordered to New York, N. Y., for temporary duty. November 5, 1889.

Society Meetings for the Coming Week:

Monday, *November 18th:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Hartford, Conn., City Medical Association; Chicago Medical Society.

Tuesday, *November 19th:* New York Academy of Medicine (Section in Theory and Practice of Medicine); New York Obstetrical Society (private); Medical Association of Central New York (semi-annual, Syracuse); Medical Societies of the Counties of Kings and Westchester, N. Y.; Ogdensburgh, N. Y., Medical Association; Baltimore Academy of Medicine.

Wednesday, *November 20th:* Harlem Medical Association of the City of New York; Northwestern Medical and Surgical Society of New York (private); New Jersey Academy of Medicine (Newark).

Thursday, *November 21st:* New York Academy of Medicine (annual); Brooklyn Surgical Society; New Bedford, Mass., Society for Medical Improvement (private).

Friday, *November 22d:* Yorkville Medical Association (private); New York Society of German Physicians; New York Clinical Society (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

Saturday, *November 23d:* New York Medical and Surgical Society (private).

Letters to the Editor.

VAGUE CAUSES OF INFANT MORTALITY.

New York, *November 4, 1889.*

To the Editor of the New York Medical Journal:

Sir: In the Journal of November 2d you seem to be a little severe toward the physicians of this city as regards the certification of causes of death in children. It is often impossible to state, even after a careful autopsy, why a child should have wasted away and died. In many cases there are probably congenital defects of a very obscure kind, not at present discernible by us, which render it impossible for the infant to maintain life independently, for children will simply waste away, notwithstanding the best of care and food, including mother's milk. In some cases the wasting may be due to tuberculosis, but I have been informed that in the New York Foundling Asylum, where 500 babies die every year, and autopsies are frequent, the cases of so-called marasmus seldom show any evident cause of death other than the lack of nutrition, which was just as plain before the autopsy as after. What better cause can be given in such cases than marasmus, atrophy, or inanition?

It seems to me that to return a certificate of an infant's death, when the cause has been given as marasmus, would only exasperate the doctor, and procure no additional information. If such a course were persisted in, marasmus, atrophy, etc., would undoubtedly disappear from our mortality reports, but the causes given in place of them would be mere guesswork, and would vitiate the figures of other diseases to which they were referred. It is much better, if the doctor does not know the cause of death, to have him say so plainly, using terms that other doctors understand. To a statistician, a precise mortality report, in which there were no ill-defined causes of death, would be, on its face, suspicious.

To show that our physicians are not more liable than others to report causes of this kind, I subjoin corresponding figures from other large cities. In Berlin all physicians are presumed (by us here) to be thoroughly educated and competent to make a diagnosis in any case.

In Berlin, in 1885, (the latest full report at hand), out of 16,828 deaths of children under five years of age, there were due to *Lebensschwäche* (lack of vitality), 1,688; *Kinderschwindsucht* (marasmus), 181; *Erschöpfung* (debility), 894; and to *unbestimmte Todesursachen* (ill-defined causes of death), 133. Total, 2,896, or 17·21 per cent. of the whole number.

In Paris, in 1888, out of 14,909 deaths of children under five years of age, there were due to *débilité congénitale, ictère* et sclérème** (congenital debility, icterus, and sclerema), 1,303; to *mort subite* (sudden death), 14; to *épuisement, cachexie* (exhaustion, cachexia), 3; and to *causes inconnues ou non-spécifiées* (unknown or not specified causes), 80. Total, 1,400, or 9·39 per cent. of the whole.

In London, out of 34,426 deaths of children under five years of age, there were due to premature birth, 2,025; to debility, atrophy, inanition, 2,809; and to other ill-defined and not specified causes, 45. Total, 4,879, or 14·17 per cent. of total.

In New York, in 1888, out of 17,358 deaths of children under five years of age, there were due to premature birth, 670; to debility, 114; and to inanition, marasmus, atrophy, 1,134. Total, 1,918, or 11·05 per cent. of the whole.

If deaths from *Lebensschwäche* and premature birth are omitted from the totals, we have for Berlin, London, and New

* Generally a very small number.

York, respectively, 1,208, 2,854, and 1,248 deaths from indeterminate causes, or 7·18, 8·29, and 7·19 per cent. of the respective totals. Very respectfully,

ROGER S. TRACY, M. D.

ARSENIC IN WAR-PAINT.

NEW YORK, *November 4, 1889.*

To the Editor of the New York Medical Journal:

SIR: As an illustration of the manner in which some of our old wheel-horses will sometimes kick over the traces, permit me to cite the case of a patient with chronic eczema that came to my office September 14, 1889. I prescribed—

℞ Acidi arseniosi..... gr. j;
Ferri redacti, }
Mangani oxidi, } .....āā gr. xij.

Misce et fiat massa in pilulas duodecem dividenda et sig.: One pill after each meal.

This treatment was continued with most happy results for four weeks, at the end of which time my patient was practically cured. He had a few pills left, and I advised him to finish them, and dismissed the case. The next evening, at ten, I was hurriedly sent for, and, hastening to the house, found my patient suffering from severe gastric spasms, without any other concomitant symptoms of arsenical poisoning. On the plea of stomach derangement I prescribed again, and ordered a discontinuance of the pills for two days, at the end of which time another one was taken with precisely similar results. I was surprised, not daring to impeach the compounder, who was an exceptionally careful pharmacist, and, abstracting a few of the pills, took one myself without any subjective symptom. In an hour I took two of the pills, without any apparent result, and, in the light of this experience as well as others before, have come to conclude that arsenic in each case of exhibition makes its own clinical therapeutic history. J. R. PARKE, M. D.

Proceedings of Societies.

AMERICAN DERMATOLOGICAL ASSOCIATION.

Thirteenth Annual Meeting, held at Boston, on Tuesday, Wednesday, and Thursday, September 17, 18, and 19, 1889.

The President, Dr. I. E. GRAHAM, of Toronto, in the Chair.

(*Concluded from page 502.*)

Dermatitis Papillaris.—Dr. L. HEITZMAN, of New York, read a paper on this subject in which he said that benign tumors would not recur after extirpation; but there were many cases where tumors which were proved both clinically and microscopically to be non-malignant began to recur after their removal, sometimes assuming a larger size than the original. Such tumors were known to the surgeon as recurrent fibroids. A simple fibroma might gradually change into sarcoma during the course of a series of operations for its removal. Sometimes the growths commonly called moles would recur after their removal in the shape of scars, which were generally called spurious keloid. In a patient of Dr. Nicolai's, the application of green soap had caused the growth of large, branching hard scars over the chest. On some people every wound of the skin would be followed by such a growth. Such a condition might follow an eruption of acne pustules; and such growths had been termed by Kaposi dermatitis papillaris. A negro, who had slept on a pillow filled with horse-hair, had developed such growths upon the neck and occiput. In another case, that of a Hebrew gentleman, constant picking of a few acne pustules had been the starting point of the disease. Kaposi considered the disease a primary one, but the author thought it secondary to the irritation arising either from an acne or from a sycosis. This view agreed with the opinion of Hebra, who had called it sycosis frambœsiiformis.

What the cause was we did not know. Von Recklinghausen thought it followed the distribution of the nerves. In the experience of the author this had not been true. It seemed to depend on a peculiar activity of the skin which enabled it to respond to moderate irritation. It was most common in negroes, in whom pricking of the lobes of the ears might be followed by such a growth. The Hebrew race was also prone to the formation of this recurrent fibroma. It was composed of interlacing bundles of fibrous tissue, with a large amount of protoplasm or medullary corpuscles between the bundles. Sometimes the latter became so great that it was called myxo-fibroma. The larger the amount of this free substance, the more rapid the growth of the tumor. We also met with indifferent corpuscles or medullary corpuscles, which pointed to rapid growth of tissue. From a pathological standpoint the recurrent fibromata were allied to keloid and dermatitis papillaris. The papillary character was of secondary importance, depending on the regular distribution of the blood-vessels in the superficial layers of the cutis. Treatment was tedious. Caustics, cutting, and the hot iron were forbidden; they would aggravate the disease. Nitric acid might be applied cautiously. The history of one case, in which an operation had been done in Vienna, was related; the result had been a great increase in the size and number of the growths. A three-per-cent. solution of salicylic acid seemed to promise as well as anything.

Dr. Fox had seen one of the cases of which Dr. Heitzman had spoken. The patient had refused operation, and electrolysis had been tried, great care being taken not to produce ulceration. Progress had been very slow, but a portion of the growth had been reduced to a level with the skin. Then the patient had disappeared until last spring, when he had appeared with the story that he had been operated upon in Vienna, and at that time he presented tumors considerably larger than when he had been under treatment before. Since that time the speaker had treated an almost identical case occurring in a colored man. A study of this case had led him to believe that, with the exception of its occurrence in the follicles, its occurrence in this particular locality, and perhaps its greater vascularity and tendency to suppuration, there was no difference clinically between this disease and keloid. It had occurred to him that the occurrence of keloid on the sternum might have had something to do with the hair-follicles there. He would question the exactness of making a distinction between true and false keloid; the history of the presence or absence of injury could not always be depended upon. In cases of spurious keloid the speaker had seen excellent results from scarification and the application of acetic acid.

Dr. ZEISLER protested against the view that the disease as described by Kaposi was not a distinct affection. In the case mentioned, even though there had been a resemblance to keloid, which he would not admit, there had been such prominent clinical features, such as the occurrence upon the occiput and the peculiar growths of the tufts of hair, that we had no right to throw over the diagnosis of Kaposi. Pure nitric acid in one case of keloid upon the cheek had caused its entire disappearance without disfigurement.

Dr. GREENOUGH mentioned a case where a number of keloidal growths had appeared upon the sternum after the application of croton-oil in the treatment of a cough.

Dr. Klotz would use salicylic acid in strength as high as ten per cent.; with it he had caused the disappearance of keloid in one case.

Dr. Jackson, in a case of keloid upon the cheek, had tried salicylic acid, hydronaphthol plaster, mercurial plaster, and finally scraping. The hypertrophic scar which followed had not been removed by the use of scarification and acetic acid.

Dr. Denslow had tried electrolysis for a period of several months in one of these cases, but without result.

The President had watched with much interest for several years a case where he had observed from time to time keloidal growths appear upon the face, following a sycosis. The same patient had had a keloidal growth upon the leg, at the scar of an old bullet wound. He had not dared to operate in the face of the emphatic advice of Kaposi.

Dr. Heitzman said that pathologically there was not much difference between the lesions of dermatitis papillaris and those of keloid, although clinically they might differ.

Dr. Fox protested against the great multiplication of names in dermatology. It seemed to him that the term keloid of the occiput answered the purpose perfectly well.

Clinical Notes on Sycosis Capillitii.—Dr. Zeisler read a paper on this subject. He had found very little said about the disease in the different text-books. In a case reported by Hebra, in the "Vierteljahrschrift" in 1876, it had been said that the skin had been somewhat elevated and sclerotic, so that a fold of it could not be pinched up. There were small nodules and pustules, perforated by hairs, generally in bunches of ten or twenty, and the epilation of these hairs was almost impossible. Two cases that he had seen were of especial interest in relation to the last paper read on dermatitis papillaris. In one of the cases there had been abscesses on the scalp for six months. The sores left after the healing of these abscesses, which had been opened, had not been linear, but raised and thickened on each side. Tufts of hair had been very prominent, and at these points the patient had complained of an itching sensation. Depilation, with shaving of the head and antiseptic lotions, had been used, and the scalp had been entirely free in about three months, although there had been slight recurrences. A second case presented similar features. In each one of these patients he had noticed that the hair upon the scalp had been very thick. This recalled Wirtheim's explanation of the cause of sycosis—viz., that it was a disproportion between the diameter of the hair and the follicle, resulting in pressure. Although this might be a predisposing cause, yet the reader believed that it was the entrance of the *Staphylococcus aureus* and *albus* which caused the affection. It was therefore a local disease, and constitutional remedies were not indicated.

Dr. Robinson explained the meager literature that had been found by the reader by the fact that the name had been stricken from the list at the first meeting of the association and had not been put back until three or four years ago. He did not agree at all with Wirtheim's view. When we had pustules form they were, of course, due to organisms, but many lesions occurred which were not pustules. In the pustules of acne you got the same organisms. In every case there was a predisposing cause. The best treatment was to render the soil uncomfortable for the organisms by the use of constitutional remedies.

Dr. Bulkley had seen cases in young men which he had put down as folliculitis of the scalp, where papules or pustules were formed. In these cases a permanent baldness of the spot affected had remained. One case had been cured finally; in a second case the treatment had been neglected, and the patient seemed to be growing worse. In both these cases he was sure there was a constitutional cause.

Dr Fox referred to the case that he had published in the first edition of his photographic illustrations, where the hair grew in large tufts upon the surface of a keloid in a colored man.

Dr. Denslow reported a case where small nodules had appeared deep in the scalp very much like those which were seen in deep-seated acne, and accompanied with burning and itching; they had been opened, a small sore had been formed, and the hair had been lost. As a young man this patient had had a very severe attack of acne, especially upon the shoulders. In this patient it was noticed that the mouths of the follicles upon the face were patent. It was discovered afterward that he had a stricture at the meatus, and the urethra was in a highly sensitive condition. Under the combined treatment there had been no recurrence.

Dr. Heitzman thought the diseases which had been mentioned could all be classed together, and he preferred the name folliculitis, as used by Dr. Bulkley. In some of the cases we had atrophy and sometimes we had hypertrophy.

Dr. Robinson thought the names were used according to the location, and the fact that the cause was the same had nothing to do with it. The case was comparable to that of broncho-pneumonia and bronchitis, which were separate diseases, although the cause was undoubtedly the same. In sycosis, or eczema, or acne the cause was the same, but the seat was different and the clinical history was different.

The President had had an experience in one case which had led him to believe that the disease was not local simply. The case had been one of sycosis. A typhoid fever had come on, and during its run the sycosis had disappeared, only to return again after the fever had abated.

Dr. Zeisler replied that it had long since been established by Hebra that during fevers many local diseases were arrested temporarily.

Relapse of Pemphigus Foliaceus after Eleven Years' Quiescence.—Dr. Sherwell reported an instance of this sort. The case had been reported in the "Archives of Dermatology" for 1877, and also in 1878 before the American Dermatological Association. The treatment in the first instance and in the relapse had been mildly protective. The patient had recovered, and had been entirely well until March of the present year. She was now twenty years of age and healthy. At the beginning of the attack there had been general febrile disturbance, anorexia, chill, and irregularity of the bowels. The eruption had commenced as an erythema over the front of the chest and arms, followed by the appearance of vesicles with the peculiar sour-milk-like contents. The temperature had been 102·7°; pulse, 115. The eruption had spread rapidly over the entire body. She had recovered entirely within three weeks. Dr. Fox, who had seen the case at one stage, had remarked that it looked like a case of pityriasis rubra.

Impetigo Herpetiformis.—Dr. Sherwell also reported the history of a case of this disease. The patient was Miss K., aged thirty-two, under the care of Dr. Risch, of Brooklyn. She had had five living children and several miscarriages. In 1884 she had had a slight eruption, consisting of small bullæ, which had become puriform. In the summer of 1888, when three months pregnant, she had suffered with gastric disturbances, and about October 1st she had first noticed an eruption similar to the one she had had before. At that time it had resembled scabies very much, but did not get well under treatment. Crusts, looking like impetiginous eczema, had formed, and the nervous system had become a good deal affected, there being a constant tremor of the limbs. Dilute hydrocyanic acid had been used as a dressing with benefit, but in November another relapse had occurred. When seen on November 23d she was in a pitiable condition, moving the limbs with uncertainty

and difficulty. Pulse weak; temperature elevated. The eruption was of the small impetiginous variety, apparently spreading in somewhat of a wavy line, and the diagnosis of impetigo herpetiformis was made upon that observation. Arsenic was administered. On December 23d she gave birth to a non-viable child. After this numerous relapses of the eruption occurred until the middle of June, at which time she was free, and had remained so ever since. The writer believed that all these cases were due to absorption of suppurating and effete matter. One case had occurred during an attack of diphtheria, and, if it had been chronic, would have been considered a case of this kind. It had been reported that Dr. Duhring had given up his idea that this disease belonged to the group of dermatitis herpetiformis, and if it were so the reader was sorry, for he believed that that view was the correct one.

Dr. HEITZMAN said that Kaposi had criticised him for reporting a case of this disease because the woman in whom it had occurred had not been pregnant; but it happened afterward that a man came to the clinic in whom Kaposi himself had been obliged to make the same diagnosis.

Dr. BULKLEY, referring to a remark made by the speaker, said that this disease was not at all like the cases which he had reported under the name of herpes gestationis, differing in the character of the lesions, in the absence of lines or gyri, and in the fact that it was never fatal. It seemed to him that this was a disease *sui generis*.

Dr. ROBINSON preferred the term hydroa for this class of diseases.

Dr. HARDAWAY reported a case of pemphigus foliaceus in a gentleman sixty years of age, beginning on the chest, making slow progress for the first few months, and then progressing rapidly until the whole cutaneous surface was invaded. The speaker had had at the same time under observation a case of pityriasis rubra, and there had been a period in the history of the two cases when they had looked absolutely alike—a fact which, to his mind, gave a good deal of color to the idea that they were one and the same disease, representing different processes of the same trouble.

A Rare Form of Skin Disease.—Dr. BRONSON, of New York, read an account of a case. The patient was a boy of fourteen, seen at Charity Hospital. He had had a swelling of the forehead, eyes, and mouth, with the formation of scales and crusts over the cheeks. There had been papules, tubercles, pustules, and incrusted ulcerations over the face, and also rounded or irregular cicatrices on various portions of the face, the scalp being free. The cervical glands had been slightly enlarged. Scattered over the trunk and extremities had been lesions similar to those upon the face, while between the patches the skin had remained for the most part normal. Considerable pus could be obtained from the ulcers. The primary lesion had seemed to be a pustule or papule, the disease first affecting the hair-follicles. This might undergo ulceration, leaving a slight papule, or a pustule might form. A year and a half ago a sore had come upon the right ear, and about the same time an abscess had come upon the neck, resulting from a suppurating lymph-gland. He had been working at that time in a paper manufactory. General health good; urine negative. After two months the ulcers had been healed, and the swelling of the face had been less. He had been discharged from the hospital, but a little later had been looked up, and had been found to be in St. Francis Hospital in Jersey City. At this time the eyelids had been enormously swollen, forming a fold above the eyebrows. Primarily the disease seemed to have been an acne, and the only diagnosis that the reader could make was acne cachecticorum. It had been at first thought that there might have been arsenic in the paper in which he had been working, but on investigation that view had to be given up. But, even if it had been so, we would suppose that the eruption would have disappeared after the removal of the exciting cause. There was no appearance or history of syphilis. The œdema of the face was hard to account for, but probably there was a local cause, perhaps the presence of confined pus in the deeper parts of the skin.

Dr. SHERWELL thought that dermatitis necrogenica would be a good title, on account of the absorption of necrobiotic elements, which were having an action upon the nervous system.

Dr. MORROW had seen the case, and thought it resembled most nearly cases of arsenic poisoning that he had seen. While not entirely satisfied with Dr. Bronson's diagnosis, he could not suggest a better one.

Dr. BRONSON was willing to accept the diagnosis of dermatitis herpetiformis if there was such a disease. One of the important features was the distribution of the eruption, which was similar to that of dermatitis herpetiformis, showing that the same pathological motive was present, and yet the clinical disease ran a very different course from that of Duhring. It seemed to him that the fact of the relapse occurring was sufficient to indicate that it was not arsenical.

A Case of Urticaria Pigmentosa.—The secretary read a paper by Dr. H. W. STELWAGON, of Philadelphia, on this subject. The objective symptoms were almost always the same in the cases classed under this head, and midway cases between this type and the ordinary urticaria were rarely seen. It would almost appear that this was a peculiar disease by itself. The case reported had occurred in a boy of six, who had had a good personal and family history. The disease had begun at eight months, after two unsuccessful attempts at vaccination. The eruptions had been most abundant upon the covered portions of the body at first, but later there had been a disposition for them to appear upon the face. The disease had been present constantly since its first appearance, the older lesions disappearing without leaving a trace. The eruption had consisted of rounded, elongated, reddish papules, sometimes surmounted by a small vesicle, varying from the size of a pin-head to that of a large pea; there had been also small, flattened, yellowish lesions, of the size of a pea, and of a salmon-color, and other spots, where recovery had seemed to be taking place, with nearly normal skin, slightly atrophied and pigmented. The first appearance of the lesion had been not unlike that of the wheal of urticaria, but smaller and less inflamed. The itching had been slight. No other lesions than these had been found at any time. The changes from the beginning of the eruption until the disappearance of the lesion would require weeks or months. The treatment had been without influence.

Dr. FOX had an impression that the disease was not correctly named, although he could not suggest a suitable term for it at the present time. It seemed to him that the pigmented lesions were the essential features of the disease, and that the urticarial element was secondary. It would be interesting in these cases to note the condition of the skin after a series of years, in adult life.

Dr. HEITZMAN did not agree with the last speaker. He thought we should not lay too much stress upon the presence of pigment. He would admit that there was a trophic neurosis leading to the œdema, which went deep down to the subcutaneous tissue. In the ordinary cases there was œdematous infiltration, without extravasation, and then we had the whitish color. But if there was stagnation, with exudation of blood, then we had blood-corpuscles mixed with the œdematous liquids. It seemed to be the same as ordinary urticaria, plus hæmorrhage into the wheals.

Dr. FOX did not mean that the pigment was characteristic, but that the lesions were not of the nature of an urticaria. The

pigment was a fact of minor importance. There was simply an urticarial element associated with the lesions.

Dr. Taylor had seen a child, twelve years of age, who had suffered with this disease until the sixth year. At the time of the observation she had had the appearance as though she had an intense erythematous syphilide.

Dermatological Hints.—Dr. Hardaway, of St. Louis, read a paper thus entitled.

1. *Spontaneous Involution of Sarcoma.*—He had reported the case in 1882; it had been an alveolar pigmented sarcoma of the skin. The face, hands, and feet had been affected, and there had been swelling of the lymphatic glands. At that time the disease had existed eight or ten years. In 1881 a number of deposits had occurred on the hands and feet. A recent inspection, fifteen years after the beginning of the process, had shown that the disease was arrested. The tumors had all gone, leaving an atrophic condition of the skin. The patient had never received treatment. At about the same time another case of fibro-sarcoma had been reported, the patient had been put upon arsenic, and had died within six months, having been sick two years.

2. *Disappearance of an Extensive Eruption of Xanthoma.*—A paper had been read in relation to the case in 1884. All parts of the body had been affected. Since that time there had been a gradual involution of the disorder. In four years from the time of the observation the lesions had undergone complete involution, though the bronzed hue still remained. The patient had received no treatment whatever.

3. *Case of Bullous Eruption in a Child.*—The patient, eleven years old, had had measles four years before, and the present eruption had come on a month after recovery from that disease. The skin had been elevated and reddened. Often whole areas of sound skin would be surrounded by the bullæ. Under the use of arsenic the intervals between the attacks had been materially increased, and such lesions as made their appearance had been more or less aborted.

Dr. Heitzman remembered the case of sarcoma. He recollected that he had predicted that the course of the disease would be a slow one, on the ground that the pigment had been diffused and not granular. He had read of one case of sarcoma in the tonsil of a child where recovery had taken place spontaneously.

Dr. Greenough asked how Dr. Hardaway would exclude chronic relapsing urticaria.

Dr. Hardaway replied that there had been no pruritus in the case.

Dr. Taylor spoke of a case where bullæ had appeared in large numbers and in the shape of most perfect rhombs and parallelograms. At first it had been thought the patient must have caused them herself, but that source had been excluded.

Dr. Bronson called attention to the instances of intense neuralgic pain sometimes accompanying sarcoma of the skin. In one case the lesions had been upon the face and extremities especially, and had occurred in the form of very superficial, somewhat tough lesions, the largest having an area of an inch and varying in color from reddish to deep purple. The pain had been the most prominent feature. There had been no evidence of the growth of tumors in the inside of the body. The patient had finally died, apparently of exhaustion. No autopsy had been permitted. The observation had been made that these cases of pigmented sarcoma of the skin were most common in Hebrews. It would be an interesting point to settle.

Dr. Bulkley thought this would be a proper subject for one of the regular meetings of the association. He thought, with Dr. Greenough, that a good name for these cases of hydroa and dermatitis herpetiformis would be chronic urticaria, with tendency to vesication.

The President here read the histological report of the case of herpes zoster that he had reported on the first day of the meeting, and exhibited specimens under the microscope. It was found that the ganglia were extensively invaded by leucocytes, some of the latter having taken the place of the destroyed nerve-cells. In this case it seemed as if the diplococcus was the irritant element. No inflammatory processes were found in the pons, medulla, or cerebellum from the same subject.

Dr. Heitzman said that the fact that the ganglion cells were affected in this disease had been known for twenty-five years, but now it was interesting to find micrococci in the ganglia, and perhaps that meant that we should find the real cause of the disease. It seemed to him that the bacteria shown were a new variety. He hoped the next opportunity for such study would be improved, and, if possible, cultivations made from the tissues.

On the Alleged Tolerance of the Iodides in Syphilis.—A paper with this title was read by the secretary, in the absence of the author, Dr. Stelwagon. The author would deny the statement made by Dr. H. C. Wood, that there was a toleration of the iodides in the case of patients who were affected with syphilitic lesions. Perhaps there might be a certain ground for the belief in the case of those who had cerebral syphilis, but if it were so it was not on account of the specific effect of the disease, but because the central nervous system was the part affected, and a similar lesion from any other cause would have a similar result. The writer gave briefly the history of five cases of syphilitic skin disease, in which the assertion was certainly not true. Moreover, in investigating the influence of the iodides in psoriasis he had found cases that had borne the remedy quite as well as any cases of syphilis could have done.

Dr. Taylor thought the statement of Dr. Wood had been thoroughly disproved by Dr. White. There was no difference in this respect between the syphilitics and non-syphilitics. The speaker thought that we were inclined often to weaken in giving the drug in the cutaneous cases, whereas we pushed it more strongly in the nervous cases, under the view that the case was a desperate one. Sometimes there would be a toxic effect at one time, and none at all at another. It seemed to him that many of the cases that Dr. Wood had treated had gone through the stage of acclimatization, so to speak.

Dr. Greenough referred to the fact that sometimes patients who could not take small doses would bear larger ones perfectly well.

Dr. Taylor, in reference to this point, recalled the case that he had reported a year ago, and said that the eruption had been brought on at the very beginning of the treatment, but the iodide had had to be continued, on account of the patient's general condition, and after a time he could take two or three drachms without any influence upon his eruption, or any inconvenience.

Dr. Denslow mentioned the case of a man who had had undoubted syphilis, and who had been laid up sick in bed every time the smallest amount of iodide had been given him.

Dr. Bulkley spoke of the value of giving arsenic in connection with the iodide. He had reached as high as ten drops of Fowler's solution.

Dr. Taylor did not believe the arsenic did any good where the iodide caused coryza; but where there was a disturbance in the skin, with a tendency to form dermal lesions, the arsenic, he thought, would hold the inflammatory condition in check. And yet it would fail utterly in some cases.

Dr. Fox asked the effect upon the action of the bromides.

Dr. Hardaway had seen it tried in a good many cases, and had never seen good effects.

Dr. Fox believed that the bromine and iodine might produce lesions one week and be taken without trouble the next,

so that he was coming to believe that all supposed effects of arsenic, at least in the case of bromine, were simple cases of coincidence.

Dr. Bronson spoke of the fact that the acne in bromism was more aggravated than in iodism, as perhaps having a bearing in the case.

Dr. Tilden exhibited a boy, of whom mention had been made in reference to prurigo, and he was examined by the members of the association.

Dr. Bronson was fully convinced of the diagnosis. In his mind the essential feature was the neurosis affecting the particular portions of the skin.

Dr. Fox agreed to the diagnosis. In his mind there was a doubt as to the propriety of separating the disease prurigo from chronic papular eczema. The history of the case, however, separated it from eczema, since the latter tended to get well sooner or later without treatment.

Dr. Allen remarked that the diagnosis might almost be made from the peculiar pallor of the face which was present in this case. In a patient that he had under observation the body had been covered with molluscum tumors, which seemed to have developed upon the prurigo base from the scratching.

Dr. Bulkley was ready to admit that perhaps American dermatologists had been too prone to place some of these cases under the head of eczema. It would be better, perhaps, to call some of them by this name.

Dr. Taylor thought the cases had sometimes been presented to the society in the evening, and the light had interfered with correct ideas of the lesions.

Dr. Zeisler considered the case a typical case. The cases in Vienna were not so very frequent. They were brought into the clinics again and again. The difference between the papular eczema and this case was striking. The joints, hands, and face would be most affected, and in this disease were free. Even though we had too many terms in dermatology, don't let us throw away distinct pictures of disease. If we called this a papular eczema we produced a terrible confusion.

Dr. Fox would base his opinion as to the entity of the disease on its occurrence in early life, its neurotic origin, and its duration, but not upon the fact that certain parts of the body were affected, or upon the deep-seated character of the lesions.

Resolutions of Thanks.—Dr. Taylor returned the thanks of the members for the hospitality that had been accorded them at the hands of the Boston members. A fitting response was made by Dr. Greenough in behalf of the Boston members.

On a motion of Dr. Fox, the association voted to extend the thanks of the association for the use of their rooms to the Boston Medical Library Association.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN OPHTHALMOLOGY AND OTOLOGY.

Meeting of October 21, 1889.

Dr. Oren D. Pomeroy in the Chair.

Cataract Extraction.—Dr. Herman Knapp said that he had hoped to present to the meeting a case of cataract extraction. One of the patient's eyes had been operated upon about three years ago by the ordinary method. Upon the other eye the operation had lately been done without iridectomy. He wanted to show a peripheric opening. Unfortunately, the patient had disappointed him and he would have to defer his remarks.

The Chairman said that several cases of cataract extraction recently operated on at the Manhattan Hospital had resulted in loss of the vitreous. This had been evidently caused by the use of the spring speculum. The operations had been performed under cocaine and upon patients known to be of the unreliable class, and therefore every precaution had been taken to avoid accidents. After the lens had been removed the patients had in several instances given a spasmodic contraction of the orbicularis, and, though the assistant had at once depressed the speculum, still, in spite of this, a large portion of the vitreous had been extruded. He had decided that it was better to operate without a speculum or forceps, and simply use either a lid elevator or the fingers.

Opening the Auditory Meatus.—The Chairman then introduced a patient upon whom the operation of opening the auditory meatus had been done, resulting in improved hearing. He felt a little uncertain about the case as yet, because a positive cure had not been effected. But he had made up his mind to succeed. It would be seen that the patient showed deformity of both auricles. The hearing distance was one inch, by the watch. After opening the canal the hearing distance had become two inches. He inferred that there was a tolerably normal drum membrane. There appeared to be an accumulation of superfluous tissue occupying the position of the normal canal. He had made an incision, thrusting the scalpel through about a quarter of an inch of sound tissue, when the knife had seemed to enter a cavity just where he had supposed the meatus should be. He had then made another incision, forming a V-shaped flap which he had cut off. He had then been able to pass a probe in three quarters of an inch. A rubber catheter had then been introduced which had been cut off to a suitable length for drainage. A good deal of suppuration resulted. The drainage-tube was removed and the cavity stuffed with boric acid, which would have been very good if it could have been kept dry. Then packing with iodoform gauze was suggested and tried. This was not satisfactory, for when removed it was a long, purulent, stringy mass. It had been next decided to let the cavity alone, simply syringing it with water. At the present time the discharge had almost ceased, but the canal was somewhat narrowed. He had ordered a silver tube made which he proposed to use until a permanent opening was secured. So far the hearing power had doubled. Whether there was anything like a reasonably good drum-membrane or not, he could not say. He had tried to use a rubber tube, but it would not stay in place. He intended to keep the canal open somehow.

Dr. Knapp said it was exceedingly rare for such cases to be cured. Out of twenty-four or thirty such operations only one had been successful.

Dr. T. R. Pooley thought the attempt to keep the canal patent by probes, plugs, and so on, was a procedure of very doubtful utility. He remembered a case which had come under his notice last winter of an exostosis of the auditory canal which had been removed by the electro-osteotome. This part of the operation had been successful enough, but the difficulty had been in keeping the canal from entirely closing. As long as he had kept using pieces of catheter or tubes and perforated plugs, he had not succeeded. But, after abandoning all these and treating the case as one of ordinary inflammation, syringing with hot water, and otherwise letting things alone, the patient had begun to improve, and now had a medium-sized canal large enough to admit of a view of the drum-head. The hearing also was very good. It must be admitted, however, that all these cases were attended with a great deal of difficulty.

The Chairman said that he had got far enough along to appreciate the uselessness of all tubes in such cases; at least, he would leave them out as much as possible. Still he felt that they had their analogue in the instruments used for piercing the ears for pendants.

Dr. H. S. Oppenheimer stated that his experience was limited to one case with very indifferent result. He suggested the

possible utility of a mild constant current of electricity kept up by means of an arrangement similar to that in use in hospitals for the healing of ulcers.

Coloboma of the Chorioid.—Dr. Weeks reported a case which he said had had conditions making it somewhat rare. The case was one of microphthalmia with nystagmus. The cornea in the left eye had measured 8 mm., and in the right eye 9¾ mm. The pupils had been 3 mm. in diameter by medium illumination. Irides normal. R. V. = $\frac{20}{200}$; hyperopia 3 D.; L. V. = $\frac{20}{200}$; myopia; at the bottom of the disc hypermetropia in the normal parts, 16 D. The defects in the field of vision had been rather peculiar. The speaker had found a marked coloboma in the chorioid of the left eye taking in the optic nerve sheath. The defect in the field of vision had a little more than corresponded with the coloboma. In the right eye there had been a coloboma of the sheath extending upward and outward about a disc and a half in diameter. In the right eye the defect in the field of vision had corresponded with that of the left eye, although no corresponding coloboma had existed. The defect in the field for white had been much greater than that for light. The patient could distinguish the flame of the candle in a portion of the field encroaching considerably on that part of the field corresponding to the coloboma in the left eye. A similar condition existed in the right eye with no visible coloboma. For white the defect was very excessive. It was interesting, as Manz had shown by sections from cases of coloboma, to observe that the rods and cones disappeared at the margin of the defect. In two cases reported where the coloboma had been small, and had not reached the optic nerve, perception of light had been present over the whole field corresponding to the coloboma. If the perception of light were present in these cases where the rods and cones were absent, it went to show that their integrity was not necessary to the perception of light. The peculiar defect in the field of vision in the right eye, where no coloboma could be discovered with the ophthalmoscope, was unique.

A Perimeter.—Dr. Knapp exhibited a perimeter which he had been using and which for ingenious simplicity he considered the best he had seen. On account of the intricate construction and complication connected with their manipulations, these instruments were not used so often as they should be. This instrument had the advantage of always being ready for use. The speaker thought that the present method of examining and recording astigmatic cases was a faulty one and might be improved.

The Treatment of Obstinate Deafness.—Dr. N. J. Hepburn made some suggestions as to the treatment of obstinate deafness. He was instigated by the unsatisfactory nature of the results attending treatment of this condition. The class of cases to which he referred, or at least one of the varieties of it, was that of people who heard better in a noise. These answered all the tests for middle-ear deafness, but did not improve under treatment. The chairman had suggested multiple paracentesis, and the speaker had found that some of the cases behaved well under this treatment, but that others did not improve; indeed, that in some the hearing got worse. And in some it had even developed otitis. The use of the syringe would not infrequently cause vertigo. The idea had occurred to him that if he could inject through the small nozzle of a Davidson's syringe he could so regulate the flow as to limit the pressure on the labyrinth. By adopting this plan he had found that he got rid of much of the suppuration, and hearing was improved and the drum-membrane became somewhat more transparent. A case had come for treatment in which the patient, who had been the rounds, was so deaf that the speaker had thought that his hearing could not very well be made worse. He therefore made a large perforation in the drum-membrane and fastened a Davidson's syringe to a Eustachian catheter, washing out the ear through the tube. The fluid escaped through the auditory meatus. The patient improved after three repetitions of this treatment so that from only hearing a watch at contact, he could hear it at eight inches distance. This maximum hearing had not been maintained, though hearing was still good at four inches. He had since pursued this plan in eighteen cases. When he found the end of the Eustachian catheter thoroughly engaged he allowed the other end of the syringe to fall into a weak solution of chloride of sodium, with a temperature of from 60° to 90° F. If it was found that the fluid was not flowing, an incision must be made in the posterior inferior quadrant. He found that the solution would come through very readily without any special leakage into the throat.

Dr. Pooley said that the method used by Dr. Hepburn was not new. The Eustachian catheter had been used by Schwartze for the purpose of removing purulent secretions in acute processes, but whether with puncture of the drum-head or not he could not say; but he thought that the method had considerable merit in it. These cases always presented an accumulation in the cavity of the middle ear, and if this could be washed out the hearing would improve, and this was probably the explanation of the benefit obtained.

Cataract Extraction.—Dr. Knapp then made some remarks on cataract extraction. He did not think simple extraction offered any better results than extraction with iridectomy. Whenever the capsule was left behind, it was sure to wrinkle and become clouded and probably agglutinated to the iris. The instrument he used was a specially made captotome, with a very delicate fine point. In operating he made his section follow the line of the transparent cornea as nearly as possible, as with this flap prolapse of the iris and inflammation were less likely to follow. He then endeavored to dislodge the lens by passing the instrument carefully under the iris and rupturing the capsule at its periphery. This method he considered better than to incise in the center, which left a scar which was detrimental to good vision. Patients for operation were fully cocainized, which caused slight dilatation of the pupil. After the operation he used a one-per-cent. solution of eserine. Before bandaging the eye a one-per-cent. ointment of eserine was put into the conjunctival sac. He considered eserine the main factor in preventing prolapse of the iris.

Dr. Pooley asked if adhesion of the capsule to the iris took place without inflammation.

Dr. Knapp said it did; where the iris had been bruised or abraded, adhesion took place by first intention. He had seen an uneven notched iris heal perfectly round. He did not think a clean cut in the iris had so much chance of reacting as those which were only bruised. The speaker was not satisfied with vision of $\frac{20}{40}$ after cataract extraction; he wanted to get $\frac{20}{20}$. This was his aim in doing capsulotomy. He never attempted an operation without good light, and used an artificial light if necessary.

The Chairman said that he had seen posterior synechiæ take place where there had been no apparent iritis and where the symptoms had been slight.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN.

Meeting of October 24, 1889.

Dr. J. E. Janvrin in the Chair.

The Management of Abortion.—Dr. R. A. Murray read a paper with this title. He deplored the fact that no fixed prin-

nourishment and stimulants freely, but her pulse had remained at 120, and her temperature had risen every evening to 101° to 102° F. At one time an exhausting diarrhœa had threatened her life. She complained of no pain, but suppuration of the hæmatocele which had formed in the left broad ligament was feared. Early in the second week the urine began to escape *per vaginam*, although the patient could retain it to some extent. A careful examination with the finger and speculum showed that a cervico-vesico-vaginal fistula had been established, and that there was considerable sloughing of the upper portion of the vagina. All the necrosed tissue at the bottom of the abdominal wound was picked away, until nothing remained of the cervix but the portio vaginalis. The wound granulated satisfactorily, but there was a free communication with the vagina through which urine and the douche water sometimes welled up. She was allowed to get up at the end of the fourth week. The fistula was still patent, as the urine still dribbled away, but not so freely as at first. At the end of the fifth week the abdominal wound had entirely closed. It was hardly necessary to add that the after-treatment of such a serious case in a dirty tenement-house had required constant vigilance or the patient would certainly have succumbed to the operation or the subsequent complications. Before commenting on the case it was important to classify it. Dr. Robert Harris, of Philadelphia, had clearly pointed out that it was neither a Porro nor a Cæsarean section proper, but an operation *sui generis*. Prevôt, of Moscow, had reported the first case, an unsuccessful one, in which the ruptured uterus had been excised after removal of the child through the rent without previously incising the organ. There had been ten true Porro-Cæsarean sections for rupture of the uterus in this country, four of the women having been saved. Dr. M. Price had reported a case in which an operation very similar to the speaker's had been performed last April, but with a fatal result. In conclusion, the speaker said that, given the same conditions, he would adopt precisely the same method of procedure in another case of rupture of the uterus, because he believed that it offered the best chance of saving the patient, for the following reasons: 1. That this operation could be performed in the shortest possible time. 2. That it was impossible to properly suture such an extensive rent, with contused edges, as the one described. There was also imminent risk of hæmorrhage after removal of the temporary constriction. 3. Where prolonged use of instruments without antiseptic precautions had occurred, the interior of the uterus was sure to be so badly contused that subsequent danger of sepsis was great. The additional shock to the patient from removal of the lacerated uterus was preferable to the exposure of septicæmia, which would certainly follow by leaving it. 4. The objection made by Dr. Harris that a cervix split by laceration could not be very well fitted for constriction, as the part below the wire might discharge septic matter into the abdominal cavity through the rent, was a good one. But the writer thought, if the tear in the peritonæum was carefully closed and the stump properly constricted and shut off from the peritoneal cavity, that there was less danger than in trusting to the suture alone without constriction. Finally, with due respect for the opinion of such a weighty authority as Dr. Harris, who believed that it "would hardly be admissible" to subject a woman with a normal pelvis to "the unsexing operation of removing the lacerated uterus with the ovaries, as was done by Prevôt," it should be borne in mind that the surgeon was sometimes called upon to do, and to do at once, what he believed was the best thing for the patient without regard to established precedent or even to the ordinary rules of surgery.

Carcinoma of the Uterus and Ovary.—Dr. A. Palmer Dudley read a paper with this title, and presented some pathological specimens. He said the growth had been removed from a patient fifty-one years of age, of Irish birth, whose occupation had been that of a domestic servant. Her family history was good. She had been married twenty-eight years, and was now a widow. She had borne two children and had suffered one miscarriage since, due, she had said, to lifting a heavy weight. She had been operated upon several years before for some form of uterine trouble; just what it had been could not be learned. From that operation up to within three years she had been perfectly well. The patient had said that within the last three years, the exact time she could not remember, some sort of tumor had broken in the pelvis, and that a large amount of blood had come away. This had been followed by repeated floodings which generally had yielded to treatment. She was admitted to Randall's Island Hospital on November 13, 1888, into the service of Dr. McLean. Digital examination showed the uterus to be large and the os patulous. Quite a large tumor of firm consistence, probably fibroid, was found to lie above and to the right of the uterus; the growth moved with the uterus. A curette was used and a large amount of villous tissue removed, which had the appearance of a cast of the uterine mucous membrane. The speaker could not learn whether there had been a microscopical examination of this tissue. The possibility of malignancy had been noted and recorded in the history book. The hospital service had changed and she had come under the speaker's care on February 1, 1889. He proposed to operate for removal of the growth, but the patient would not entertain the idea, and left the hospital February 3d. She had not been seen again until September 23d, when she reappeared at the hospital and begged for the operation for her relief. During her absence she had suffered from repeated hæmorrhage. Further examination revealed an increase in the growth to the right of the uterus, but the latter seemed to have remained of about the same size. The passage of the finger through the external os revealed a growth presenting, which had the feel of a submucous fibroid. There was no odor about the parts that was unnatural. Pain was absent, there was no cachexia, and, in fact, there were no objective symptoms of malignant disease. The speaker made a diagnosis of subperitoneal and submucous fibroid, and proposed suprapubic hysterectomy, as the growth was too large to remove *per vaginam*. On October 4, 1889, he performed a modification of Schroeder and Bantock's operation, which he had designated previously as the intrapelvic, but extraperitoneal, method of treating the stump in hysterectomy. After the uterus and such of the structures as had been involved by the morbid growth, including the vermiform appendix, had been removed, the mass was submitted to a pathologist for microscopical examination, and a diagnosis returned of epithelioma of both uterus and ovary.

Dr. Coe, by means of a black-board illustration, depicted the steps of the operation he had performed, demonstrating thereby the all-important factor that the completed closure of the various incisions left no ligatures in the pelvic cavity, that if pus formed it would be outside the cavity of the pelvis, and that perfect drainage could be effected through the os uteri externum.

NEW YORK CLINICAL SOCIETY.

Meeting of October 25, 1889.

Dr. W. H. Flint in the Chair.

Operation for Tubercular Peritonitis.—Dr. F. H. Markoe presented a patient upon whom he had operated for tubercular peritonitis. The diagnosis in the case had been by no means clear, but when the peritoneal cavity was opened it had been

found to be occupied by a large tumor, comprised of agglutinated intestines and thickened omentum. The fact that the morbid material contained quantities of tubercle bacilli had settled the question of diagnosis. The patient had made a good recovery.

Removal of a Kidney for Pyelo-nephritis with Calculus.—Dr. Markoe then presented another patient from whom he had removed a kidney a few weeks before. The diagnosis in this case had been that of pyelo-nephritis with calculus. The kidney was also shown to the meeting. It was greatly enlarged, and contained a calculus of about the size of a walnut in its pelvis.

A Laryngeal Illuminator.—Dr. D. B. Delavan exhibited an arrangement by which illumination of the interior of the throat could be effected by means of a strong light, preferably electric, transmitted through a glass rod suitably curved, and fitted with an opaque disc, to prevent the distribution of the rays, and applied externally to the patient's neck.

A Large Intubation Instrument.—Dr. Delavan then showed a large intubation instrument, the use of which he urged for treating certain conditions of the upper air-passages in the adult. Its applicability was manifest in acute as well as chronic cases, such as acute œdema involving the larynx or any condition of stenosis of the larynx. It had been maintained that, in order to successfully deal with chronic stenosis of the larynx, it was necessary to rupture the bands which caused the stenosis, and that by inserting one of these intubation tubes no good was done. He thought that if the bands were divided by incision and then dilated by the instrument the desired result would be obtained, as the cut surfaces would be kept apart till they healed, while the tube was worn. He wished that surgeons would give the instrument a thorough trial.

Dr. L. E. Holt inquired whether these instruments had ever been employed for hysterical spasm, in which women frequently suffered with marked and alarming dyspnœa.

Dr. Delavan replied that he had never heard of its use in that condition. He thought that a little galvanism in those cases would be more effective.

A Pulmonary Click due, possibly, to Separation of the Costo-sternal Articulation produced by Vomiting.—The Chairman reported the history of a case of a man, twenty-three years of age, in such perfect health that he could only be designated as a patient by a considerable stretch of courtesy and enthusiasm. Yet he had presented a physical sign which was susceptible of diverse interpretations, and which the writer had neither heard described nor encountered until this case had come under his observation. The patient's father had died with pulmonary tuberculosis in 1883, but there had been no other cases in the immediate family of the patient except in a cousin of remote degree. The physical sign in question had consisted of a distinct clicking sound, such as was often heard in incipient phthisis; this had been heard with maximum intensity at the junction of the fourth rib with its corresponding costal cartilage on the right side. It had been occasionally so loud as to be heard at a distance of some feet from the patient. The click had been generally noticed at the end of inspiration, but frequently during expiration or forced abduction and eversion of the arms. The click, when first heard by the patient in September, 1887, had been preceded the previous year by a depreciation of his general health without evident cause. There had been lancinating thoracic pains, which, in view of the recent death of his father from tuberculosis, had caused the patient considerable concern. These pains had been bilateral and chiefly confined to the supra-clavicular and infra-clavicular regions. In the summer of 1887 the pains had ceased in all other parts of the chest, and had become strictly localized at the junction of the fourth rib with its costal cartilage, in the exact position where the click had subsequently appeared. At the time when the lancinating pains had become localized at this point, and indeed up to September, 1887, repeated physical examinations made by the writer had failed to detect any other thoracic sounds. In the autumn of 1887 the pains at the fourth costal cartilage had disappeared and had never returned. Shooting pains at the apices of the lungs had still recurred at long intervals. About this time the patient had sailed for Europe. During the voyage he had vomited profusely several times. The acts of emesis had been devoid of pain. Toward the end of the voyage the click had made its appearance. At first the sound had been so faint as to be almost imperceptible and of inconstant occurrence. It had gradually grown more frequent and more intense. The sound at that time had appeared only at the end of inspiration and had not been produced by any motions or changes of posture other than those incident to the act of respiration. After the patient's arrival in Europe the click had recurred with diminishing frequency, and in a few weeks had entirely disappeared. In May, 1888, during the patient's homeward voyage, the click had reappeared under precisely the same circumstances which had attended its first development. This time, however, the sound had not disappeared, but had remained up to the present date. After its reappearance it had at first occurred only at the end of inspiration, and had been independent of movements other than those of the respiratory muscles. A few months later, however, the patient had noticed that it was also caused by forced abduction and external rotation of the humerus, the pectoral muscles being thus put upon the stretch. A few months ago it had been noted that the sound was occasionally reduplicated, occurring both with inspiration and expiration. Quite recently a single expiratory click had been heard by the patient. There had been no cough at any time. A remarkable immunity from so called "colds" had existed for the last three years. A reliable spirometer had shown the patient's breathing capacity to be 310 cubic inches. There had been no tenderness over the seat of the click, either on percussion or on firm pressure. There had been no abnormal mobility of the rib or of the cartilage. The writer was inclined to the belief that the click proceeded from the fourth costo-sternal articulation, or from that of the fourth rib with the fourth costal cartilage. He had submitted the case to the meeting in the hope that some of its members might have met with analogous cases which would throw some light on the subject. He thought he was justified in calling attention to the case because of the difficulty which, in similar ones, might attend the exclusion of pulmonary tuberculosis.

The reading of this history was followed by a few remarks, the substance of which went to show that the condition described was probably the result of the exertion of vomiting, which might have produced separation of the ligaments of the costo-sternal articulation.

Miscellany.

Ectopic Gestation.—At a meeting of the Philadelphia County Medical Society, held on October 23d, Dr. Mordecai Price read the following paper:

In bringing to the notice of this society the much-discussed subject of ectopic gestation, my hope is not so much to advance anything new as to make plain our duty and manner of procedure in these desperate conditions. Bernutz and Goupil, of France, and Parry, of our own country, did much to advance our knowledge on this subject, but it remained for Mr. Hallwright to bring it forcibly to Mr. Tait's notice in

one of his patients, in whom he had diagnosticated ectopic gestation, and urged operation. "The suggestion staggered me," says Mr. Tait, "and I am ashamed to have to say I did not receive it favorably." A second hæmorrhage killed the patient. A post-mortem examination revealed the fact to this great leader in abdominal surgery that Mr. Hallwright was correct in his conclusion, and that the patient could have been saved. An opportunity was soon offered in Dr. Dolan's case, of Halifax. Dr. Dolan had also diagnosticated ectopic gestation, and given as his opinion to the husband that nothing but an operation would save the patient's life. He telegraphed for Mr. Tait, who not only agreed with him, but had the requisite daring to operate, save the patient, and revolutionize the whole treatment of extra-uterine pregnancy. I leave it to you, gentlemen, to judge to whom the greater amount of credit is due —to the practitioner who urged it, or to the illustrious surgeon who performed it.

A pregnancy, as we all know, should be within the uterine cavity, and the only other place is primarily in the tube. That this condition may be possible, the tube must be diseased, its lining membrane removed, its ciliated epithelium no longer urging the product of conception onward to its natural abiding place nor retarding in the least the spermatozoa from intruding on dangerous and forbidden ground. This condition is brought about, I believe, in fifty per cent. of the cases by gonorrhœa, and in the remainder by cold, septic conditions following childbed, and catarrhal affections from other causes. That the pregnancy in the beginning is always tubal, I think is well proved, from the fact that the tube is the only portion outside the uterine cavity offering the conditions favorable for impregnation. The product of conception thrown into the peritoneal cavity either at the time of impregnation or during the first few weeks of gestation would undoubtedly be digested. We have the best proof of this in the fact that in early ruptures into the peritonæum of only a few weeks no fœtus can be found; only the blood clot, the diseased tube, and membrane remaining. Those cases that have advanced to maturity in the peritoneal cavity have, without doubt, been those first developed in the tube, and then ruptured into the broad ligament, and, when able to resist the digestive fluids of the peritonæum, the secondary rupture has taken place.

We may pass over the other forms of so-called ectopic gestation, for, if they ever occur, it is so rarely that they do not deserve our consideration. Tubal pregnancy would be of but little moment to us if it were not for the fact that most patients are not aware there is anything wrong. If they suspect pregnancy at all, they have no reason to doubt that it is of the usual old-fashioned kind, and the first warning, alike to patient and doctor, is rupture of the tube, with symptoms of internal hæmorrhage—often so serious that the patient lives but a few hours. These cases are far more numerous than you would suppose—in our city alone, from all sources, about twenty-five a year; and when you remember that five years ago the mortality was one hundred per cent., and now at least ninety per cent. are saved, we have much to be thankful for to Mr. Tait and his adviser, Mr. Hallwright.

The symptoms of ectopic gestation before rupture are of a vague and uncertain character. Those best qualified to properly interpret them, whose experience in such conditions has been greater than any other investigators', have yet to see one and recognize it before rupture. The only reported cases said to have been recognized and treated before rupture have been in the hands of our electrical friends and enthusiastically dwelt upon, and the man who would treat them with a knife has been given a back seat and denounced in unmeasured terms for his mutilation of the poor woman when it was so easy to get rid of the product of conception by so safe a plan as the electrical current. But we find by investigation that in many of these reported cases there was little foundation for the belief that the women were pregnant. Some of them have fallen into the hands of other men and been operated on, and no pregnancy existed. And I can not but think the others could not bear investigation requisite to a proper diagnosis.

The symptoms after rupture are sufficiently plain and urgent to warn any earnest medical man of the patient's condition. They are as plain as any other surgical affection and more imperative than most. In a woman who has been sterile for a length of time, it may be for years, whose period has been delayed for two or three weeks or longer, after slight exertion or lifting some heavy object, there occur agonizing pelvic pain and collapse, followed by all the symptoms of loss of blood. If the patient reacts, this is followed by recurring pain and collapse, constant uterine hæmorrhage, it may be with small loss of blood, discharges loaded with shreds of decidua, leaving the impression in the patient's mind that she has had a miscarriage. There are pain and fullness on the side of rupture, with a mass of a boggy, fluctuating consistence in the pelvis. No one case being a repetition of any other, there is nothing fixed and unchangeable, save the termination—death, almost without exception, unless prompt surgical aid is given. I know no better place than just here to call your attention to the terrible mortality of the past. All of Bernutz's reported cases ended fatally. Dr. Formad, the coroner's physician, in a letter to my brother, reports nineteen cases of death from hæmorrhage from rupture of tubal gestation sacs. All ended fatally in six hours but one. How differently this list compares with that of many operators! All have recovered, save a very small percentage, from the surgical treatment in the hands of these operators.

There are many conditions that may be confounded with extra-uterine pregnancy. In fact, any mass in the pelvis, such as tubal trouble, a small ovarian or dermoid tumor, hæmatocele from traumatism, an abscess of the tube or ovary, gonorrhœal pyosalpinx, all have been mistaken for extra-uterine pregnancy. Even our electrical friends have mistaken tubal trouble for extra-uterine pregnancy, and wasted many valuable sittings to kill the fœtus, where none existed, and, strange to say, they did not cure the diseased tube. How, then, Mr. President, can we ordinary mortals come to a positive diagnosis? But these mistakes of diagnosis are of small moment, as the conditions which could be mistaken for extra-uterine pregnancy should all be removed by the knife. I have seen the abdomen opened several times when a positive diagnosis had been made, where no pregnancy existed, and a small pus tube or dermoid tumor instead. I am sure the operator was not greatly disconcerted by the conditions found. No one need give himself anxiety; he should feel sure before operating that whatever the mass is, it must come away. In most cases of ectopic gestation in our own hands the diagnosis was made before operation. Rupture had taken place in every case. Diagnosis of tubal pregnancy before rupture would simply be a happy guess. Hæmatoceles, that have given our predecessors so much trouble, I think can be credited in great measure to ectopic gestation, and the remaining small number to traumatism.

We have come to that period where experimental treatment of ectopic gestation is a disgrace to our profession. Electricity, with all its barbarous instruments and murderous delays, will, I hope, ere long be forever thrown aside as a means of treatment for this condition. Its history certainly does not offer to any thinking mind any proof of its value, while, on the contrary, its record of death is truly appalling. Puncture, or injections into the sac of morphine or any substance, with the hope of killing the fœtus, is attended with greater risk to the mother than an immediate operation for its removal. I can find no language strong enough to express my condemnation of these experimental methods.

Operation.—Where there is time, the room should be thoroughly cleaned, and all needless articles of furniture removed. A most efficient cleansing of the body with soap and water and brush is necessary, and the bowels should be thoroughly evacuated. No antiseptic should be used. If possible, a trained nurse should be obtained—one who is accustomed to the work of the operator, able to cleanse and take care of a drainage-tube and encourage the patient to bear patiently with the discomforts necessarily following an operation of this kind. Opium must be positively forbidden in all abdominal work; it interferes with the secretions, sickens the patient, makes her irritable and hard to manage, and conceals the symptoms of danger and otherwise complicates the recovery. A good light is needed. Every instrument and ligature and suture should be carefully scalded and placed in trays of warm water, handy to the operator or his assistant, so that in case of any emergency there will be no delay, for time is a material factor in these operations. The shorter the operation the less the shock. It should be minimized in every detail; short incision, careful enucleation, perfect tying, most thorough irrigation with warm distilled water. No antiseptic whatever has any place or purpose in this operation. Antiseptics

have done bad work for good operators. We see this admission in the journals almost daily: "Perhaps the antiseptic was too strong." Chemical antiseptics of any kind in the peritoneum do murderous work, and should be abolished by law, if our surgeons have not sense enough to discard them in this department of surgery. The after treatment in these cases is of great importance. The drainage tube should be cleansed every half hour for the first day or two, until the discharge becomes small in quantity and serous in character, when it should be removed. The contents of the bowel should be kept in a soluble condition; and it should be purged with Epsom salts upon the slightest indication of peritonitis, when the symptoms will disappear like magic. The patient should be kept in bed from three to four weeks in the most favorable cases, and longer if deemed advisable. Any member of this society may be called to do this operation without preparation, instruments, or nurses, and I have no doubt you would meet all the requirements of the case possible under the circumstances. With a patient bleeding to death, you can not wait for anything. Where the surroundings and the condition of the patient will admit, an operator of known skill and courage should be procured.

The Invasion of the "Masseur."—We must beg our readers to keep a close eye upon the *masseur*. He is bearing down upon unhinged humanity with a steady and relentless stride. He develops in the midst of us, he sails over from Germany and England to us, while, if there are any graduates of Heilgymnastik still left in Denmark, Sweden, or Norway, we should like to know it; for it has appeared to us, after some busy morning, that they have all called. Truly, the *masseur* is among us. He is a man of great resources. As his fraternity increases, he does not lose heart, or complain of competition, or seek protection from the State—he simply enlarges his field. In olden times the rubbing of a stiff knee with officinal linimentum saponis was the center and circumference of massage; soon, however, we learned how soothing was the emollient and theobromated hand upon the hyperæsthetic skin and diseased muscle. The *masseur* became firmly established as the resourceful prop of hysteria and unfailing staff of morbid locomotion. But then the sinewy and insidious hand began to gather adventitious aids, and seek new worlds to conquer. Having organized its movements into a company of Gallic polysyllables, so that its manœuvres of *tapotiment* and *pétrissage* and *effleurage* should not be mistaken for plain, every-day slap-slap, jab-jab, and thump-thump, it proceeded to attack all the several diseases and organs of the body. Adipose tissue in excess was made to disappear, while glandular tissue, if mammary, was rubbed to make it grow. Massage has now applied itself to diseases of the eye, and granular lids are, *quoad* the granulations, artistically rubbed off; it has invaded the mouth and throat, reducing hypertrophied tonsils, opening the Eustachian tubes, and curing catarrh and deafness. The abdominal viscera were the early and easy subjects for this now illustrious science. The colon's lax vermicular waves are tempestuously hastened, and the modest stream from the smaller bowel has scarcely babbled through the ileo-cæcal valve before it is rushed madly into the rectum. The pelvic organs have of late received the devoirs of this new art; and the uterus has been rubbed and stroked and pommeled, all in pure French terminology, until this martyr-viscus could not help but free itself from adhesions and congestions, and pillow itself gently on its original vesical cushion. Lastly, we learn that the heart is to have massage. The heart has been, we are told by poets, torn and bruised, and bled and broken; but it remains for modern science to see that it shall have *effleurage* and lomi-lomi. There are still a few things left for the *masseur*. Can he not apply *tapotiment* to the brain, or, at least, to the cerebellum? Has he done justice to the kidneys? Might not the ovary receive a course of artistic jabbing before it is removed and bottled? When all fields are conquered, and every viscus springs responsive into blooming juvenescence beneath his learned touch, we recommend the *masseur* to Christian science.—*Med. Record.*

ANSWERS TO CORRESPONDENTS.

No. 297.—There are many excellent methods of embalming. The best are by injections into a large artery twenty-four hours after death, when muscular rigidity has disappeared. For temporary preservation, Sucquet's injection of sodium hyposulphite will answer; the preservative action lasts until all the hyposulphite has been converted into the sulphate. For permanent preservation, the method employed by Bonnetti, of Padua, is perhaps to be preferred. Cold water is first injected until it returns perfectly clear (in from two to fifteen hours); alcohol is then injected for fifteen minutes; commercial sulphuric ether is then injected and allowed to remain from two to ten hours; a tepid watery solution (supposed to be from 15 to 20 per cent.) of tannin is then injected; finally, in from two to five hours more, the body is dried with a current of air at about 90° F., the drying process taking from an hour and a half to five hours. A less troublesome and reasonably satisfactory method is by injecting a mixture of a pint of alcohol and three quarts of a saturated solution of zinc chloride, the thoracic and abdominal cavities being treated with a solution of zinc chloride in styptic colloid.

No. 298.—Exalgine is a methyl derivative of acetanilide. It is freely soluble in water and in alcohol. It is closely allied to antipyrine in its physiological action, and is used as an anodyne, from six to twelve grains being generally given in the course of twenty-four hours. Single doses of seven grains and a half are said to have produced toxic symptoms.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

EXHIBITION OF AN IMPROVED APPARATUS FOR THE THERAPEUTIC USE OF COMPRESSED AND RAREFIED AIR,

WITH REMARKS ON THE HOME-TREATMENT OF PULMONARY AFFECTIONS.*

By SOLOMON SOLIS-COHEN, A. M., M. D.,

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The apparatus which I have the honor to exhibit to the fellows of the college is primarily designed for use at the home of the patient, though the same features of construction which enable it to fulfill this purpose likewise recommend it for use at the physician's office; and by multiplying the number of delivery-tubes and introducing a motor and reservoir, it may be adapted for use in hospitals. In the "New York Medical Journal" for February 23, 1889, I have illustrated the arrangement of an apparatus for hospitals, permitting the treatment of seventy patients in the course of about two hours. The apparatus for inhalation of compressed air has been exhibited previously, though not before this body. But the apparatus for expiration into rarefied air has not yet been publicly described.

My attention had been called to the value of modifications of respiratory pressures in the treatment of pulmonary affections, and especially of phthisis, even before I became a student of medicine, by some rather remarkable recoveries ensuing upon such treatment in the practice of my brother. The apparatus which he employed was that of Waldenburg. A description of this instrument, by Dr. Pepper, and remarks upon its therapeutic employment by Dr. J. Solis-Cohen, may be found in the proceedings of the college (Feb. 2, 1876), "Transactions," third series, vol. ii.

Much of the success of this therapeutic measure depends upon its regular and continuous use. To insure this at such times as visits to the physician's office are impracticable, the apparatus must be placed in the patient's home. Waldenburg's apparatus is large and cumbersome. It is not continuous in action, its adjustment is troublesome, and its cost, fifteen years ago, was excessive. These considerations induced my brother to undertake some experiments with the view of providing a substitute which should be small, cheap, easily managed by a patient or nurse, and reliable as well as cleanly. He, however, abandoned the gasometer plan, and his efforts were not entirely successful. Taking the matter up where he had left off, I soon realized that the only available method of securing a certain, regular, and continuous pressure was to return to the gasometer; but I found that the desired reduction in size could be accomplished by using the gasometer as a regulator only, and not as a reservoir. This necessitated the introduction of another source of air supply; and as the simplest, cheapest, and most practicable, I chose the foot-bellows of the dentist's blow-pipe. Any form of pump available under the particular conditions, or even city water pressure, might also be adapted; but the bellows is preferable under ordinary circumstances. This combination of foot-bellows and small gasometer solved the problem so far as the inhalation of compressed air is concerned. With the assistance of Mr. Charles Richardson an apparatus was constructed in 1883 which has been in continuous use ever since by others as well as by myself, and has given complete satisfaction. Though it has already been described in print,* I may be pardoned for again exhibiting its construction, as several mechanical improvements have been introduced that have not yet been published.

It consists of a gasometer ("Compressed air," Fig. 1), of which the air chamber is eight inches in diameter and twenty-four inches high. The water chamber is pierced at the level of the base of the overflow tank (seven inches from the top) with a row of perforations, allowing the water to escape into the tank under pressure of air in the air cylinder. The air cylinder carries, two inches † from its open base, two shelves, one on each side, on which are placed ballast-weights for the purpose of lowering the center of gravity, and thus maintaining the steadiness of the apparatus. Both shelves and weights are perforated to avoid resistance of water. As the area of the top of the air chamber is just fifty square inches, atmospheric pressure upon it equals, in round numbers, 750 pounds. With the ballast upon its shelves, the cylinder weighs ten pounds, giving an excess pressure of $\frac{1}{75}$ atmosphere. Weights are furnished in two sizes, in the shape of rectangular blocks of iron $4\frac{1}{2}$ by 2 inches surface, and about $\frac{1}{2}$ inch and 1 inch thick, respectively. The smaller ones are bored out to weigh $1\frac{1}{4}$ pound each; the larger ones to weigh $2\frac{1}{2}$ pounds each.

Being placed on top of the air chamber in successive pairs (one on each side, to preserve balance), they bring the pressure up to any desired amount not exceeding + $\frac{1}{30}$ atmosphere. Thus:

Cylinder and bottom weights = 10 lbs. = + $\frac{1}{75}$ atmosphere.
$2\frac{1}{2}$ lbs. (two small weights) additional = $12\frac{1}{2}$ lbs. = + $\frac{1}{60}$ atmosphere.
$2\frac{1}{2}$ lbs. (two small weights) additional = 15 lbs. = + $\frac{1}{60}$ atmosphere.
$3\frac{3}{4}$ lbs. (one small weight and one large weight) additional = $18\frac{3}{4}$ lbs. = + $\frac{1}{40}$ atmosphere.
$6\frac{1}{4}$ lbs. (one small weight and two large weights) additional = 25 lbs. = + $\frac{1}{30}$ atmosphere.

The air cylinder is furnished with two goose-necks, one (8) for the attachment of the tube (6, 7) from the bellows, conveying compressed air; the other (9) for attachment of the tube (10, 11) connected with the stop-cock (12, 13) and face-mask (14) or mouth-piece, through which the patient inhales. A perforation two inches in diameter is fitted with a screw cap carrying a hook on which a sponge may be placed, which is to be saturated with any volatile medicament (*e. g.*, terebene) that may be desired. The cap likewise contains a smaller perforation, into which an air-gauge may be fitted.

* Remarks made before the College of Physicians of Philadelphia, October 2, 1889.

* "N. Y. Med. Jour.," Oct. 18, 1884, and other places.

† The shelves have been raised to avoid catching the weight of the escape-valve.

When the gauge is not in use this is closed with a rubber plug. Still another perforation in the top of the air chamber is fitted with a valve, which permits escape of air should too much be sent over from the bellows. This valve, which is superior to my own arrangement for the same purpose, is the ingenious device of Mr. F. Metzger, of this city, who now makes the apparatus in every respect according to my instructions, and who has devoted much time and care to the details of construction in order to secure both strength and lightness. The escape valve is composed of two flat plates of brass, the upper perforated, the lower unperforated. They are held in apposition by a spring, and when in apposition no air escapes. The lower plate carries a chain, thirty-five inches long, which is attached to a weight which rests upon the floor of the water chamber. Should too much air enter the cylinder, lifting it too high, the plates are pulled apart, the air escapes through the perforated plate, and the cylinder falls to the proper level. This obviates any liability to splashing of water, which, before this attachment was made, would occur if attention was not paid to a line painted on the cylinder to indicate cessation of pumping. By means of the automatic escape-valve we are enabled to introduce a continuously acting pump if desired.

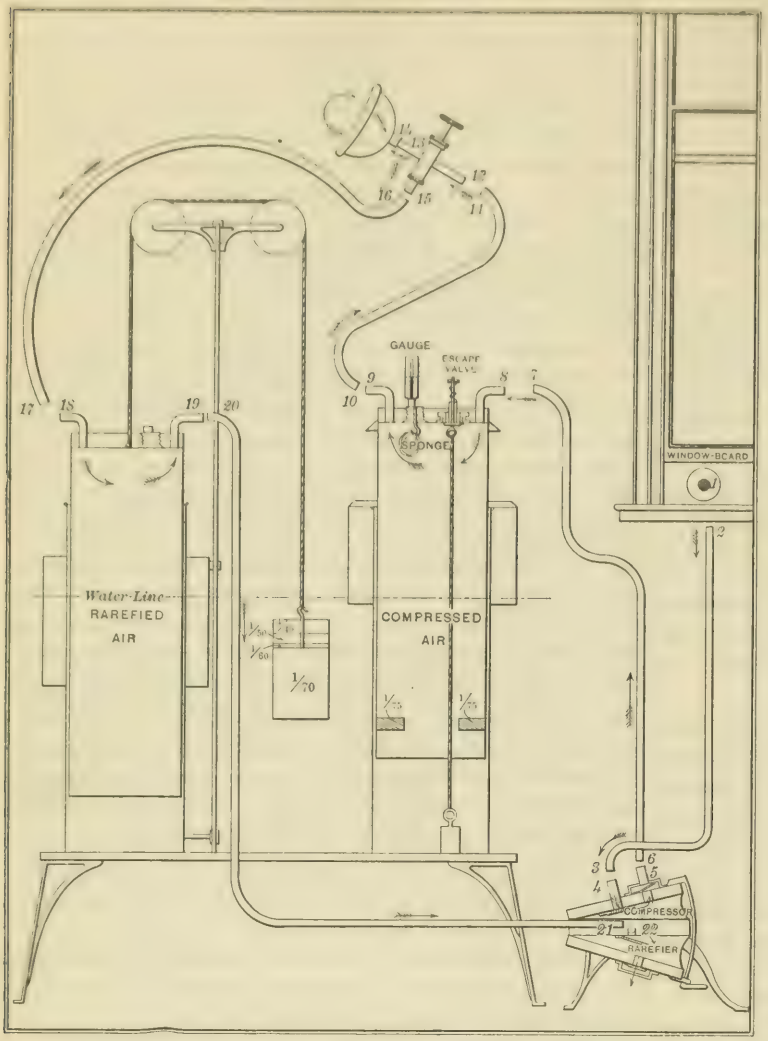


Fig. 1.—Explanation of figure. The parts are numbered in order of attachment, and in the direction of air-current; from the window to the mask through the compressed-air gasometer; and from the mask to the discharge pipe of the rarefying bellows through the rarefied-air gasometer. The discharge-pipe may also be connected with window if desired. The direction of air-current is indicated by the arrows.

As an additional precaution against splashing, the air chamber and overflow tank are each provided with a deflecting hood about an inch and a half wide, and inclined at an angle of forty-five degrees.

With these improvements over its original construction, being the gradual suggestions of six years' experience, the compressed-air apparatus is felt to be complete. There is no particular in which I find it deficient, or can now think of a change which would increase its mechanical convenience or therapeutic efficiency.*

I have for some time been endeavoring to combine with it an apparatus for expiration into rarefied air—a procedure which has a certain limited degree of applicability, being sometimes employed alone, sometimes in combination with the inhalation of compressed air. There was no difficulty in constructing an apparatus merely for expiration into rarefied air. All that was necessary was to reverse the connection with the bellows, so that the latter would take air from the gasometer and deliver it into the room or the street, and to suspend the air chamber from a small pulley, counterpoising it with weights varied according to the desired negative pressure. The mechanical arrangement of pulleys and weights, the devices for adjusting the weights, the lowering of the outer water-tank (now a reservoir, and not for overflow), etc., are so obvious and so easily understood by looking at the instrument before us ("Rarefied air," Fig. 1) that description in detail is unnecessary. Mr. Metzger has made the various parts with his accustomed care, and has used a wire rope in preference to one of hemp. The difficulty lay in the combination of the two gasometers into one instrument by means of a bellows which should, at the same stroke, compress air for delivery into one cylinder and rarefy air in order to exhaust the other cylinder. As we could not get any bellows manufacturer to construct this, Mr. Metzger at last made an experimental one with his own hands (see Fig. 1), and it answers the purpose perfectly. It is in reality two bellows, mounted back to back, on the same frame. The downward stroke of the lever compresses the upper bellows and expands the lower one. The recoil of the spring in the upper bellows expands that one and compresses the other. There is no communication between the two bellows. By means of a tube (2, 3) passing out of a window-board (1), the external opening being protected by wire gauze, the supply of air for inhalation is drawn from out of doors.

* My friend, Dr. D. D. Stewart, suggests that care be taken that the rubber tubes employed are not of the variety weighted with lead.

When both instruments are used together, as I show now, being brought into communication through the lungs of a patient by means of a double stop-cock connected with the face-mask or mouth-piece, the route for the air is as follows:

(*a*) From the street, (*b*) through the upper bellows, (*c*) to the compression gasometer, (*d*) thence to the lungs; (*e*) from the lungs (*f*) through the rarefaction gasometer (*g*) to the lower bellows, (*h*) which expels it into the room or into the street.

Apparatus for warming, drying, or moistening the inhaled air may be interposed at any desired point between the window and the patient.

The compression and rarefaction are made in the respective bellows. The gasometers act, to a certain extent, as reservoirs, but chiefly as intermediate regulating chambers, rising and falling to maintain a constant pressure in exact accordance with the weight placed upon them, and independent of the volume of air inhaled or exhaled, their available capacity being a little more than eight hundred cubic inches.

For purposes of observation, sufficiently accurate for clinical comparisons, though not for physiological data, the air chambers carry a scale of cubic inches, enabling us to see the approximate volume of air inhaled or exhaled at each respiration.

I have yet to describe the stop-cock by which the ingress or egress of air to or from the face-mask or mouth-piece is governed. It is modeled on the cornet-piston, and consists of a central barrel, carrying a hollow cylinder, controlled by a spring, and a horizontal tube, communicating freely with the central barrel. The face-mask or mouth-piece (14, Fig. 1) is connected with the proximal extremity (13) of the horizontal tube; the delivery tube of the compression gasometer (10, 11) with the distal extremity (12). The inner central cylinder contains two, or rather three, perforations. Two of these are opposite to each other, and, when brought in line with the horizontal tube, form with it a continuous channel. In this position air is allowed to pass from the compression apparatus through the mouth-piece or face-mask to the air-passages of the patient. The other perforation has no opposite fellow, and is on the side facing the mask or mouth-piece, so that when it is brought opposite the horizontal tube the air enters from the patient's lungs, and escapes through the inferior opening (15) in the central barrel. If it is desired to have exhalation made into rarefied air, this inferior extremity of the central barrel is connected (16, 17, 18) with the rarefaction gasometer. If the rarefaction apparatus only is to be used, the attachments to the compression gasometer are, of course, omitted.

If it is desired to have the patient exhale into compressed air, instead of connecting the stop-cock with the rarefaction gasometer, we can insert into this lower opening (15) an expiration resistance valve, as made for me by Messrs. Codman and Shurtleff, of Boston, and described in the "New York Medical Journal" for December 3, 1887.

If it is desired to have him inhale rarefied air, instead of connecting the stop-cock with the compressed-air apparatus, we insert into the horizontal tube (12) an inspiration resistance valve.

The "resistance valves," which I have called by that name because they offer a resistance to the passage of air, are simply little cylinders containing ebonite valves controlled by spiral springs. The tension of the spring is regulated by screwing the cap of the cylinder, and a scale engraved upon the side gives its value in fractions of an atmosphere. The expiration valve is arranged to move *toward* the perforated distal end of the cylinder, thus allowing the expiration current to escape whenever the pressure of the expired air reaches the indicated figure. The valve of the inspiration cylinder is arranged to move *from* the perforated top of the cylinder, thus allowing the inspiration current to pass toward the patient whenever the rarefaction within the lung reaches the indicated figure. The two valves, suitably mounted in one instrument, may be used independently of the gasometers (Fig. 2).

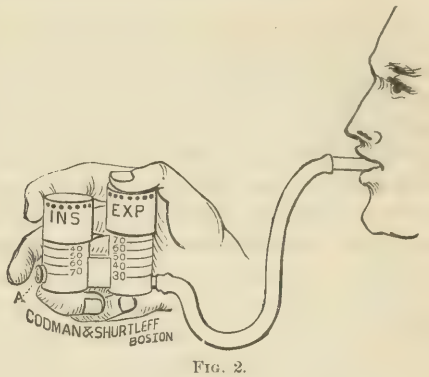


Fig. 2.

Thus, with these two gasometers, the double bellows, and a pair of resistance valves, we are able to obtain the mechanical satisfaction of all the conditions required for any of the following therapeutical expedients:

1. Inhalation of compressed air.
2. Inhalation of rarefied air.
3. Exhalation into compressed air.
4. Exhalation into rarefied air.
5. Inhalation of compressed air with exhalation into compressed air.
6. Inhalation of rarefied air with exhalation into rarefied air.
7. Inhalation of compressed air with exhalation into rarefied air.
8. Inhalation of rarefied air with exhalation into compressed air.

If a pump and motor are substituted for the foot-bellows, the only inconvenience connected with office use of the apparatus can be obviated. The additional cost is not excessive, and it leaves the apparatus still well within the price of any other capable of doing the same work.*

* Mr. Metzger sells either the compression or rarefaction apparatus singly, with all necessary attachments, for $30, and the double apparatus for $50. With pump and electric motor, the cost would be increased from $25 to $35 additional. Codman & Shurtleff sell the resistance valves for $5 a pair. Both manufacturers inform me that the time necessary to secure accurate adjustment of all parts of the appa-

My endeavor has been throughout to use the simplest and least expensive methods and mechanical devices, and I have tried to induce the manufacturers to reduce their prices to the lowest point, in order to secure the widest possible and freest possible diffusion of the method, which I look upon as one of the most valuable within the reach of the therapeutist. The therapeutic expedients most generally employed are inhalation of compressed air and exhalation into rarefied air, and I shall speak of these only and briefly.

In using the apparatus the patient should preferably stand, but he may sit if necessary. If a face-mask is used, it should be accurately adjusted over the nose and mouth, and made to lie close to the cheeks to prevent escape of air. A glass mouth-piece may be used instead of a face-mask in many cases; and it is unnecessary to close the nostrils, as the nose and mouth can not be conveniently employed together for forced respiration, and there will be no interference. Each patient should have his own mask or mouth-piece.

At first the smallest pressures only should be employed ($\frac{1}{70}$ or $\frac{1}{60}$ atmosphere), and these may be gradually increased according to indications. It is never advisable to exceed $\frac{1}{30}$ atmosphere. From ten to fifty or even one hundred respirations, occupying from five to twenty minutes, are made continuously, beginning with the smallest number and gradually increasing. After inhaling for a while, say ten minutes, a rest of ten minutes or more is taken, after which the process is repeated. This may be gone through with once, twice, or three times daily, according to indications. Where the patient has an instrument at his home, it is employed more frequently than when it is necessary to visit the physician's office in order to obtain the facilities.

The physiological effects of these expedients are very apparent. The effect upon the circulation of increasing the pressure within the thorax, as compared with the pressure upon the periphery, by inhalation of compressed air, is, in brief, to drive the blood toward the point of least pressure —that is, out of the thorax. On the other hand, the effect of exhaling into rarefied air, thus increasing the pressure upon the periphery, as compared with that within the thorax, is to drive the blood into the heart and lungs.

The effect upon the respiratory act is equally obvious. If the pressure within the thorax be made greater than that without, expansion will be effected with less muscular effort. The air-cells are fully dilated, and occluded areas of lung tissue are forced open where the pathological process is not of such a nature as to prevent this result. There is also pressure upon the inflammatory congeries of new cells and upon congested blood-vessels, tending still further to increase the amount of available lung tissue, and to a certain extent to relieve congestion and promote resolution of inflammation. It acts as pressure by means of the bandage acts in external inflammations. The activity of the pulmonary circulation being increased, as well as the activity of the systemic circulation, a greater volume of blood passes through the pulmonary capillaries in a given time, and is exposed to a greater amount of oxygen under pressure—conditions which slightly favor the absorption of oxygen. As the increased volume of blood carries a greater number of corpuscles, theoretically it would seem that there should be a greater activity of oxygenation, and this has been confirmed by exact investigations conducted by Waldenburg, Speck, and others, and of which a full summary is given by Oertel in his admirable treatise. Subsequent expirations are freer and longer, and a greater amount of carbonic acid is given out, thus increasing pulmonary ventilation. Masses of desiccated secretion, desquamated epithelium, etc., are mechanically dislodged and their expulsion by cough facilitated, so that at first cough is increased. It is afterward lessened by correction of the conditions producing it. In the light of our present knowledge of auto-intoxications, the cleansing of the lungs from these decomposing masses of effete material must be considered of no little advantage.

Expiration into rarefied air facilitates emptying of the lungs, and, consequently, contraction of the chest is more complete. Subsequent inspirations are deeper.

By exhaling into rarefied air after inhaling compressed air we emphasize the difference between the two processes, and make an alternation of pressure-effects upon the vessels. All the effects before noted are thus heightened. An improved respiratory habit—that is to say, a fuller, freer, and more regular habitual respiration—is brought about, and the gain in vital capacity is very great. Not only is the exhalation of carbonic acid favored, but the subsequent absorption of oxygen is augmented on account of the greater extent to which emptying of the lungs has been secured. The alternating effects upon the alveoli increase the elasticity of the lung tissue. The alternate filling and emptying of the vessels stimulates circulation, increasing both rapidity and volume.

I am aware that doubts have been cast on the possibility of increasing the absorption of oxygen. Be this as it may, the effect clinically is to vastly stimulate and increase the nutrition of the patient. By careful observation I have been led to attribute this increase of nutrition to the ease with which the patient is able to dispose of the greater amount of nutriment which we administer. A patient overfed but not taking inhalations of compressed air, will not increase so rapidly in weight as one who is overfed and at the same time taking these inhalations. A patient taking inhalations of compressed air and not overfed will not increase in weight. I have thought that the great gain was due to the stimulation afforded to the secondary assimilation and to the general metabolism. Tissue respiration and the activity of the chylopoietic processes are increased by the increased activity of circulation, the heightened blood pressure, the augmented pulmonary gaseous exchange, and also by the pressure transmitted from the diaphragm upon the abdominal organs. Patients with pulmonary troubles who are taking iron will take larger quantities and bear it better. This is also the case in anæmia and chlorosis. One of the earliest manifestations of improvement is promotion of sleep, due partly to relief of cough and improvement of respiration; partly, perhaps, to improvement of metabolic processes and consequent elaboration of physiological hyp-

ratus in order to insure uniformity of pressures, and the present limited demand for the instruments, render it impossible for them to reduce these figures still further, as I have requested.

notics. There is also an obvious gain afforded by the exercise to the chest muscles, to which a portion of the augmentation in vital capacity must be attributed. Some four or five years ago I published a number of personal observations on the increase in the chest capacity from inhalation of compressed air. The results were not so remarkable as some of those published by European observers, but they indicated a gain of from twenty to thirty cubic inches in respiratory capacity, and from half an inch to an inch and a half in chest expansion. This was in patients in whom chest expansion and respiratory activity had been impaired by condensation of the lung from phthisical or pneumonitic processes, or from the presence of pleuritic effusion. Pressure stimulates absorption of pleural effusions, and after the effusion has been absorbed the inhalation of compressed air tends to hasten the re-establishment of the normal action of the lung.

In two cases of asthma I have overcome the spasmodic dyspnœa of the acute attacks by the inhalation of compressed air at rather great pressure ($+\frac{1}{30}$ to $+\frac{1}{20}$ atm.). I suppose that the rationale of the effect is, in part, the paralyzing of the spasmodically contracted muscles of the bronchioles by the increased pressure of the air, and in part the relief of fluxionary congestion by direct pressure upon the engorged vessels, acting somewhat upon the principle of Monell's method of fixing the feet against the foot-board of the bed, taking a deep inspiration and holding it as long as possible.

The pneumatic expedient which has afforded the best permanent relief in asthma, especially when dependent upon emphysema, is, I think, expiration into rarefied air. This promotes collapse of the distended air vesicles and tends to relieve the lungs of the accumulation within them and, to a certain extent, to obviate paralytic distension in consequence of the presence of a greater amount of air than they should normally contain. It can not, of course, restore destroyed septa.

I have also thought, in common with those observers of largest experience in pneumotherapy, that the inhalation of compressed air had some good effect in the treatment of dilated heart from the pressure exerted upon the pulmonary vessels and cardiac chambers. Latterly I have employed in this condition expiration against pressure by means of the resistance valve, an expedient still more physiological. I have not used expiration into rarefied air in these cases, believing it to be counter-indicated, although it has been recommended by some.

There are many other obvious clinical applications of this method of treatment, but my object in bringing the subject before the college has been more particularly to show what can be done mechanically by a simple apparatus which may be placed in the patient's home, and not to refer especially to therapeutic uses. These would depend upon the views of the physician, and the experience which he obtains in the management of the method. The greater that experience, the more confidently will he extend it.

The effects are purely physical and mechanical, and easily deducible from a knowledge of the physical and mechanical effects upon normal circulation and respiration.

The one great advantage of the compressed-air machine is that it will enable us to treat at home patients with phthisis or threatened phthisis; and especially to prevent the development of tuberculosis in patients having—perhaps with an apical catarrh as well—insufficient expansion, insufficient aeration of blood, insufficient nutrition, sluggishness of circulation, and impairment of the muscular apparatus of the thorax. These patients are often sent chasing around the world in the vain search for a restorative climate, but very few receive benefit, except, of course, such good as may be incidental to an outdoor life. There are, however, a very great majority of persons whose circumstances preclude the possibility of leaving home. I have elsewhere indicated how we may by a few simple expedients imitate many of the features of special climates.*

I have not had a wonderful number of cases under my care, so that I can not give any extended statistics. But every year I see several cases of phthisis benefited and three or four cases improved in a remarkable manner. There is one case in particular which is in my mind, because I received a letter from the patient to-day:

It is that of a Bostonian, thirty-two years of age, who spent last winter in Philadelphia and, although the weather was unfavorable and she had an intercurrent pleurisy, made a good recovery. She had a large cavity in the right lung and a smaller cavity in the left lung. All of her father's family except her father, and many of her mother's family, died of consumption. Her mother was said to have had consumption, but recovered under open-air life, forty years ago, and is hale and hearty. The father, who is some sixty-five years old, has fibroid phthisis, and is now breaking down. She was seen by Professor Da Costa at the beginning of the treatment and at the end, and he was able to verify both the pulmonary conditions and the great gain. When she began treatment her weight was 107 pounds; when she left Philadelphia in May it was 135 pounds, and in a letter received to-day she states that she now weighs 152 pounds. She had an evening temperature of 100·5° F., and all the troublesome symptoms of phthisis in the stage of softening. She went home with normal temperature and troubled only by more or less coughing, which has steadily decreased. The treatment was simply that of nutrition, overfeeding with nitrogenous and fatty aliments, whisky and hot water, aided by inhalation of compressed air, which enabled the increased quantities of food to be disposed of. The patient was kept out of doors as much as possible, and instructed to take deep and slow respirations continuously. Medication was principally symptomatic, for relief of cough, for disinfection of the alimentary tract, or for stimulation of digestion. She was given at different times creasote, iodoform, arsenic, amyl nitrite, and compound spirits of ether, with inhalations of terebene, chloroform, or ethyl iodide from the Yeo (perforated zinc) respirator, or from the Oliver nebulizer. I must not forget to add, in defense of a method of treatment now abused in neglect, as formerly in extravagant use, that the Bergeon injections of hydrogen sulphide and carbon dioxide served a useful temporary purpose in controlling a recurrent suppuration in the partially healed cavity of the right lung, following the pleurisy.

This woman evidently inherits a consumptive diathesis—but also a good recuperative force, which only required to be put under favorable conditions. She had a machine at her hotel, and she obeyed orders as to diet with religious exactitude.

* "Artificial Climatic Effects for 'Stay-at-Homes,'" "Philadelphia Med. Times," Feb. 6, 1886.

Patients who recover like this, stay recovered. I have two patients treated in 1883 and reported in 1885, who are still well; and some of my brother's cases referred to at the opening of these remarks have been well for twelve and thirteen years. Even patients that do not recover can be greatly improved. Life is not only prolonged, but it is made much more comfortable. And to return to what I deem the most important considerations, the treatment is essentially a home treatment, and it is within reach of those of moderate means.

ON THE PRINCIPLES OF THE MECHANICAL TREATMENT OF HIP-JOINT DISEASE.*

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Hip-joint disease, especially in childhood, may be described as a chronic tubercular lesion of the coxo-femoral articulation, with the major signs and symptoms in the initial stage suggesting a primary osteitis rather than a synovitis. The clinical history and the course of the disease, and the pathological conditions found both after excision of the head of the femur and after death, all tend to emphasize this statement. In discussing the principles which should govern us in the treatment of this lesion, I shall accept this as my text, for without some generally understood pathological basis it would be difficult to formulate any definite principles of treatment, either mechanical or otherwise.

Nor can we proceed intelligently without a glance, at least, at some of the more important of the signs and symptoms of the disease. And we will briefly consider some of them.

As is well known, an insidious and generally unexplained limp is almost always the first sign that claims our attention. And this very suggestive evidence of the change that is going on in the articulation is always, I think, accompanied by a still more suggestive and important indication—viz., an instinctive and involuntary muscular protection of the articulation. Long before pain or any apparent deformity appears these two important indices of hip-joint disease are present; and it is now, I think, generally accepted that the condition which accompanies these two signs, when typically expressed, is that of the first apparent stage of hip disease. My own experience has proved, and every year the proof has grown stronger and stronger, that this limp and this instinctive and involuntary muscular joint protection are necessary to establish a diagnosis of hip disease in the earliest stage. We all recognize that many other conditions may produce a limp and the muscular signs which simulate hip disease, but the differential diagnosis is not on the whole difficult, owing to the peculiar and expressive character of the involuntary muscular protection of the joint.

* Read before the American Orthopædic Association at its third annual meeting, in Boston, September, 1889.

It is not assuming too much, I am sure, to say that these two signs—the limp and the instinctive muscular protection of the joint—have a peculiar significance. The limp may be interpreted as an instinctive effort on the part of the patient to avoid the increased inter-articular pressure produced by the simplest act of locomotion; and the second, the muscular protection, indicates that the muscles, acting upon the affected articulation, guard the joint when the joint lesion is exposed to even the slight traumatism of passive motion.

The whole expression of the articulation in the first apparent stage of hip disease is, if I may be allowed the expression, one of joint apprehension under certain tests and in certain conditions. It is very like the apprehension which accompanies the more advanced and painful stage of the disease, when any and every movement of the joint produces an agonizing pain—only the acute pain is absent, and the apprehension is less marked. In short, it is the first stage of a chronic disease, unmarked by pain or fever, and the whole expression of the affected joint under examination is that of a protest against traumatism, both the limp and the acute but slight muscular resistance crying out against the simplest functions of the normal joint—viz., gentle locomotion and a natural degree of articular mobility.

It is well known that this first stage of hip-joint disease—the stage of vulnerability—where the trouble has not fully developed, but where Nature has kindly given us ample evidence of the extensive mischief that is impending, the limp referred to as occurring in this first stage may disappear. The rest and protection which the patient instinctively gives the affected joint are sufficient in some cases to remove the limp and to modify the involuntary muscular protection. But the joint still remains vulnerable, and a major traumatism, like a fall or a blow, or even the constant repetition of the minor traumatism caused by locomotion, re-excites the latent pathological condition, and the limp returns and muscular protection again becomes pronounced. I have known this to occur seven times in one patient before the symptoms became so pronounced that a diagnosis was made, the surgeon in attendance being unfamiliar with the fact that a remission of the limp was likely to occur in the early stage. It has happened several times in my experience that the limp has disappeared without active treatment while the patient was under observation. I have watched these cases with much interest, and I have found that *the muscular protection of the joint did not wholly disappear, as the limp did.* It may be worth while to say that temporizing in these cases proved a mistake, for in every case, after a lapse of weeks or months, and in one case of two years, the symptoms reappeared with redoubled energy, and the lost time was not always wholly regained. In short, so long as there is a true pathological and involuntary muscular protection of a joint in the first stage of tubercular hip-joint disease (and also, I feel sure, in the second and third stages as well), we must imitate Nature's method and place the joint under conditions where it can receive no major or even minor traumatism.

And this, it seems to me, must be the fundamental prin-

ciple of mechanical treatment—viz., to protect the affected joint—and to secure for it that which Nature from the very beginning of the lesion attempts to secure—relief from traumatism. In the first apparent stage, that of the initial vulnerability of the joint, where the limp is slight and the muscular protection is only, perhaps, just perceptible, adequate mechanical protection of the affected articulation is just as imperative, in my experience, as it is when the disease is well defined and fully developed. All of the cases that I have watched where rest—simple rest in bed—has been pursued as the only treatment, have failed to obtain permanent relief. I have watched cases of this kind long enough to know that those which I have thought were cured, and if I had been writing an essay at the time they passed from active observation I should have reported as cured, have all, after a longer or shorter time, relapsed, if prompt relief from traumatism was not given by apparatus efficiently applied.

From a mechanical standpoint, therefore, the first object of treatment should be to modify or to absolutely remove, if possible, traumatic contact of the opposing joint surfaces in hip-joint disease; for, however much the medical profession may differ regarding the influence of traumatism as applied to the ætiology of this disease, I think none will deny its baneful influence after the lesion is once established in the joint. The second object, having placed the patient under the best possible local (joint) conditions for repair, is to surround the patient by those hygienic influences and to administer those remedies which will aid Nature in eliminating a tubercular disease. On this point I need not dwell. I think this association as a unit will agree that a patient with tubercular disease in any part of the body will do better, for example, in the pure air of the Adirondacks than in the wards of a hospital. And if the patient has hip-joint disease he will do better walking about in the fresh air in an efficient protective apparatus properly applied than if he be confined to bed with or without a protective splint.

To return to the first object—that of securing a modification of the traumatic contact between the surfaces of a tubercular hip joint. We have seen how Nature instinctively protects the diseased joint in the first stage. In dealing with the more difficult problems of the second stage (that of deformity) it will be well if we again look to Nature's methods and see what she attempts to do; and we will be wise if we imitate, if we can not always accurately follow, her example.

The first apparent stage of hip disease has been referred to. This early initial stage is one where, in my experience, it is comparatively easy to secure a perfect cure of the disease without deformity or without any serious modification of joint mobility. If the first stage, however, be permitted to go unchecked, as it usually does in the absence of any urgent symptom, the second stage, that of deformity, appears sooner or later. The signs rather than the symptoms of the stage of vulnerability have passed unheeded, and Nature has narrowed day after day, week after week, perhaps even month after month or year after year, the arc of femoral movement in all directions, until in many cases the results are apparent ankylosis of the articulation with a marked deformity. This deformity is apparent first as a flexion; then, as a rule, follows abduction, and this is usually accompanied by a rotation outward of the femur. After a time adduction and rotation in the opposite direction may ensue, but flexion is always present.

It is not only possible, and in many cases more than probable, that a good result may be obtained with free joint motion in the second or deformity stage. But the golden opportunity has passed when the limping gait becomes emphasized by a deformity, or, in other words, when the muscles, having placed the joint in the position of the least traumatism and of the greatest ease, instinctively and involuntarily protect, to the best of their ability, the diseased part or parts.

In the early part of the disease, and oftentimes in the second stage (before true adhesions have formed), if we administer an anæsthetic and pursue its effects until a profound narcotism is produced, we find there is little or no resistance to full and free joint motion. As soon as we temporarily interrupt the reflex arc, and relieve the muscles of their duty, we find the muscular evidence of hip-joint disease absent—*i. e.*, there is no resistance to free joint movement and there is no deformity.

Nature, in short, in hip-joint disease is producing in her own way an involuntary muscular splinting of the joint—the tense and shortened muscles, in a typical case, making an almost perfect coaptation splint. But there is this difference between the conventional coaptation splint of surgery and the involuntary muscular splint of hip disease: The force of the former is exerted, as in the treatment of a fractured thigh bone, for example, *laterally*, or in a direction which lessens the circumference of the splint. On the other hand, in hip disease the force of the muscular splint is exerted *longitudinally—i. e.*, in the direction of the long diameter of the contracted muscles, or in that direction which throws the head of the femur against its socket. This muscular splint in hip-joint disease simply avoids the major joint injury of motion and pressure combined by substituting for it another form of articular injury—viz., an inter-articular pressure which limits motion and retains the joint by means of this inter-articular pressure in that position which, unaided by art, inflicts the least injury to the diseased joint. The limitation of motion in the joint is accomplished only at the expense of an intensified joint pressure—a pressure which is much further increased by any form of mechanism which uses the femur as the long arm of a lever to correct the deformity.

When the second stage is reached, locomotion becomes very difficult, the whole body swaying around a deformed joint, and each successive traumatism—even that of walking with the aid of crutches, and surely that of an unscientifically applied apparatus—produces a fresh grazing field for the tubercular bacilli. The transition from the second to the third stage (that of joint disintegration) is so gradual that it is difficult to draw the line. But, sooner or later, if the disease be not arrested, a more or less rapid joint disintegration ensues. The femoral head becomes smaller and

smaller, the acetabulum becomes concentrically enlarged, perhaps perforated, abscesses may form, and finally, after the disease has run its course, the ultimate deformity and disability with which we are all familiar appear. Even in this last stage the muscles are tenacious of articular control and refuse to grant the full movement the altered joint surfaces permit. The muscles are only quiescent when in those exceptional cases, and after years of struggle, actual ankylosis occurs, or the tubercular process is wholly ended.

It seems perfectly apparent to me that the deformity of the second stage is due to an involuntary muscular action, and that the deformity of joint disease, irrespective of the question of whether there is a synovial effusion or pus within the joint capsule, represents Nature's position of greatest ease. This muscular coaptation splint is Nature's only way of modifying traumatic contact of the opposing joint surfaces, and this modification is secured by a change of position. It would seem that this muscular effort or splinting is more apparent in some cases than in others.

At the clinic of the New York Orthopædic Dispensary and Hospital we see quite often cases of very considerable and sometimes very tense accumulation of pus and tubercular material within the capsule of the knee and ankle joints where there is little or no interference with articular mobility. The deformity in these cases exists only in joint outline. The mechanical relations of the opposing joint surfaces are not interfered with and there is little or no muscular effort, either voluntary or involuntary, to control or limit the movements of the affected articulation, and pain is wholly absent. The signs of disease (there are no symptoms present at all) which present in this class of cases at the knee and ankle do not seem to indicate an osteitis; on the contrary, the synovial membrane is distinctly diseased and the lesion is probably confined to this membrane, and perhaps superficially to the cartilage also.

In this class of cases, where the synovial membrane is apparently much affected and the osseous tissues have escaped major injury, Nature makes no effort to limit joint motion by muscular action. I have attempted elsewhere to explain why this is so.* I merely desire on this occasion to call attention to these two classes of chronic tubercular joint disease—the synovial and osteitic—and to say that where the synovial membrane is primarily and solely affected at the knee and ankle, the mechanical treatment should be different from that which will be mentioned in this paper on tubercular disease of the hip.† And I also wish to call attention to the fact that in hip-joint disease we are always met by the initial symptoms of a bone lesion rather than those of a simple synovial disease. Whether we have chronic synovial disease at the hip in the early stage of the trouble, it is impossible, from a clinical standpoint, to say. In the well-marked cases of uncomplicated synovial disease at the knee and ankle, the only evidence of the lesion, as already remarked, is an objective one—a synovial swelling—a sign that for anatomical reasons is not always available at the hip.

The cases of synovial disease at the knee and ankle are, however, much less frequent than those which at the same articulations from a muscular standpoint are the perfect analogue of the muscular and deformity conditions found in hip disease. In these latter cases there is no essential change in joint outline, no evidence of a distended or swollen capsule or synovial change, but rather a spurious ankylosis induced by the same muscular conditions which produce the second stage of hip-joint disease. Here, in this latter or osteitic class of cases at the knee and ankle, it is easy to interpret Nature's effort to modify the traumatic contact of the opposing joint surfaces, and to understand that in the osteitic condition Nature abhors motion and uses every effort to restrain it, and to restrict it within certain limits. Within the limit set by Nature, motion I believe to be harmless, and hence it is that it seems wrong to immobilize a knee joint, for instance, with simple, uncomplicated synovial disease of the tubercular variety. But if we attempt, in the osteitic form of the disease, to pass beyond the limit set by Nature, or if we try by unscientific means to secure a better position for the distal half of the joint when Nature by her every expression says "No," we ignore the valuable lesson which she teaches us and inflict more injury, in many cases, upon the diseased articulation than all our boasted orthopædic science can relieve. And a very wide difference of opinion among both orthopædic and general surgeons would be bridged, I think, if the fact were recognized that where there is some or even a little motion at a diseased joint, true immobilization is not necessary. But motion under these circumstances should be controlled within the limit set by Nature. A joint that is practically immobilized by the muscular coaptation splint will recover motion under the absolute fixation of traction, as has been proved very many times.

I have seen on many occasions, especially in the large general hospitals of this and other countries, irreparable injury inflicted upon a slightly diseased hip joint by useless manipulations and tests, both with and without anæsthesia. I have known apparently curable cases to be rendered hopelessly incurable by an ill-advised attempt to rectify the deformity of hip disease in the second stage, when there was little or no thought bestowed upon the plain expressions, muscular and otherwise, of the pathological condition. The absence of pain is too often made the criterion of whether a patient with hip disease should be subjected to certain tests and certain forcible methods of treatment, the decision generally being that if there is no oral expression of pain the joint would stand almost any desired force without injury. My own experience leads me to say that very frequently the patient in whom there is an entire absence of the oral expression of pain is the one who should be the most carefully and conservatively treated, and about whom should be thrown the most careful safeguards against traumatism. No one, for example, would be likely to advise the use of forcible measures to remove deformity in a case of hip disease when the patient was in the exquisitely sensitive stage; and yet many patients, where this acutely

* "The Ætiology and Pathology of Chronic Joint Disease." "A Series of American Clinical Lectures," vol. iii, No. 6.

† "A Lecture on the Prognosis and Treatment of Ankle-joint Disease." "Annals of Anatomy and Surgery," May, 1882.

sensitive stage is but a step removed, are subjected to unnecessary and in many cases to unscientific measures of treatment. My experience leads me to say that if there is a condition where preventive measures can be applied, where much mischief can be prevented, where it is our duty to anticipate the next bad phase of the disease and to avoid it, it is in hip-joint disease and allied affections; and he who passes by unheeded the plain indications, or he who with a limited experience maintains that operative surgery can accomplish in the treatment of chronic joint disease more than Nature, conservatively assisted and protected, has yet to learn the pleasure that can be derived from a patient and diligent conservative treatment of a diseased joint.

If, then, we are to aid and imitate Nature, rather than to force her, in the treatment of hip-joint disease, and we have interpreted aright the various phases of this condition, there need be no hesitation as to the course to be pursued.

In the first stage—that of the earliest noticeable vulnerability of the disease—when there is a slight limp and an almost normal arc of motion, it is comparatively easy to protect the articulation from traumatism, because nature affords a wide range of movement within which, with scientific mechanical protection, it would be difficult to apply any traumatism to the joint. There is no articular deformity present and the muscles are not tense and irritable, except as the vulnerable parts are exposed to contact or pressure. While it would seem that the mechanical treatment of these cases is simple, it is best to take no risk, but to make the artificial joint protection as complete as possible. The major difference in the detail of treatment between the first and second stage is that while in the second stage we must overcome or greatly modify the deformity before permitting locomotion—and a shorter or longer period of recumbency is necessary to accomplish this—in the first stage we have no deformity and the patient can at once assume the upright position and walk about in a properly constructed apparatus. When the deformity of the second stage is removed, locomotion—also with the aid of proper apparatus—is to be advised, and within certain limits encouraged.

It is therefore the second stage of hip-joint disease that demands our principal attention, for in this stage we are met by the most expressive evidence of the disease and the most important problems of treatment, and it is in this stage that a single error may undo the work of previous weeks or months.

Let us, for example, take a case of hip-joint disease in the second stage, where there is a marked deformity and where there is a very considerable modification of articular mobility, and attempt to determine the indications for the mechanical protection of the joint. We need not stop to consider whether pain or abscess are present. The indications from a mechanical standpoint are the same whether these conditions are present or absent.

The principal apparent expression of the joint lesion is the deformity. It is so important, both to the mind of the patient and his friends and, in many instances, to the surgeon himself, that the grave lesion of which it is the simple index is lost sight of, and the mistake is very frequently made of hastening the reduction of the deformity at the expense of the articular disease itself. It is here that errors are most frequently made, and it is here that we should be prepared to use, with all patience and diligence, the most scientific and efficient means at our disposal. I have often remarked that if hip-joint disease was unaccompanied by its expressive deformity it would lose its principal terrors for both the surgeon and patient; and he who would strive for the best attainable result in this formidable complaint must always remember that hip-joint disease is no trifling affair, and that it were better—far better—to use no mechanical treatment at all than to attack the disease by an immature and unscientific effort, by apparatus or otherwise, simply to modify one of its signs. I have no doubt at all that much irreparable mischief and that many avoidable abscesses and death itself have been occasioned by meddlesome mechanics in the treatment of hip-joint disease, and I know of no problem in orthopædic surgery, unless it be that involved in the mechanical treatment of true lateral curvature of the spine, which requires the expenditure of more thought and effort than that which claims our attention in the treatment of hip-joint disease in the second stage.

Whatever may be the primary cause of the deformity in the second stage, no one, I think, doubts the important part assumed by the muscles in the production of the malposition, as well as in maintaining it after it has once been produced. And no one who has examined many cases of hip-joint disease in the deformity stage can doubt that the principal resistance to the reduction of the deformity lies in the muscles, which are on guard all the time to protect the joint from undue movement, which, in joint language, is synonymous with the slightest traumatism. The first and the most important step in the treatment of the disease is to remove this element of trauma from the joint. This simple statement underlies the whole problem of the value and of the necessity of mechanical treatment, and I have no hesitation in predicting that that method which best subserves this indication is the one which will outlive all the others.

If in the second stage the thigh is flexed and abducted and we attempt by manual effort to overcome either deformity, even if guided by the intelligent hand of the most experienced orthopædic surgeon, we find that the muscular resistance can not be overcome by any ordinary effort, and that nothing but an extreme degree of force, which inflicts intense pain, will modify the acquired position of the femur and bring it into the so-called straight position. There can be no disputing that this resistance to the reduction of the deformity, and the pain which we inflict while doing so forcibly, mean that the joint, in its sensitive and apprehensive condition, demands adequate protection, and they mean as well, also, that he who would afford his patient the most complete relief and the best attainable result will study these and other things which the joint almost talks to us about, and make available the lessons which they convey.

It seems perfectly apparent to me that a joint in the condition above described needs, as a first step toward recovery, an essential modification of the traumatic contact

between the opposing articular surfaces *—not in the position we wish it to be in, but in the position which Nature has selected.

No one who has seen a child suffering with the agonizing pains of hip joint disease, who has been crying night after night with the lancinating neuralgia of an inflamed hip joint, go to sleep soon after the thigh has been held quietly but firmly in the chosen position of the disease, can doubt the value of the relief afforded by manual support and protection intelligently applied to these cases. The certainty of the relief afforded by this simple test is in no way diminished by suddenly or even gently relaxing the support given by the hands of the operator. The quick and apprehensive cry that follows, and the shiver that runs through the frame of the little sufferer, give positive evidence of the value of properly applied protection in these conditions. It is, I think, our uniform experience that when pain is present in these cases it affords an infallible guide and an unerring indication as to treatment. My own experience goes still further, and I am prepared to say that if pain were present uniformly in the second (or even the first) stage of hip-joint disease, our results would be better and sooner attained. My experience further demonstrates that those who aim for the best attainable results are those who treat their patients as if there were a slight pain present all the time, and who follow them up with the same careful attention they would bestow upon a joint that is slightly sensitive; for the less sensitive joints are none the less removed from the dangers that threaten the painful ones, and the feeling of false security that comes to both the patient and the surgeon, when pain is not present, leads to many errors of treatment and to many bad results. In a well-applied portative apparatus, embodying correct principles, the patient is apt to forget that he has any joint disease, and the surgeon is prone to hope, if not to think, after a while, that the worst is over and that a favorable end of the disease is very near. It is under these circumstances when the symptoms are latent only, and when the disease, though either stationary or progressing toward recovery, is far from the desired end, that it is the duty of the surgeon to in no way relax his attention, for the period of convalescence in hip-joint disease is in many respects the most perilous.

I think I am wholly warranted in saying that, whether pain is present or absent, we should adopt from a mechanical standpoint the best-known means of modifying, as a first and as the most important of all considerations, the traumatic contact of the affected joint surfaces.

In the experiment referred to above, when manual support is given to a painful joint, it is found that simply supporting or fixing it by the hand or hands gives little or no relief. If the lever principle is added and it is attempted to fix the joint in that way, the pain is increased. But as soon as a traction force is applied—the body forming a counter-traction—relief is almost instantaneous. And it is found, in typical cases, that the pain returns just as soon as the traction is relaxed or modified. This experiment has been made by us all, in many cases and under all kinds of circumstances, and it is among the well-demonstrated facts of orthopædic surgery. If, now, continuing our tests, we attempt to alter the relation of the joint surfaces to each other—*i. e.*, attempt to correct the deformity even while exerting this traction or pulling force—we find that the pelvis moves with the femur, so strong, so active, and so incessant is the muscular splinting of the joint. We also find that when the change of position involving the use of a lever is attempted the pain at once returns, and the more force used in making traction, save in the position which gives the patient comfort, the more the patient complains and the greater is the pain inflicted.

Let us pursue our experiments with manual traction still further. Let us keep up the traction for an hour or two, or even longer, in the direction which brings relief, as I have done on many occasions when, with no apparatus attainable, sleep could only be purchased by manual traction. What happens? Little by little, as the trauma, which has been exerted upon the joint surfaces for the preceding weeks or months, is relieved, the muscles relax their tension and it becomes possible to obtain an increase in the joint motion without inflicting pain. After traction has been kept up persistently and intelligently for an hour or two under these circumstances, the patient will even sleep for a short time without any traction at all. But if we desist entirely and allow the limb to again resume its chosen position, the muscular tension soon returns and the joint will become as rigid and as painful as before, under the influence of the muscular splinting which is so characteristic of both the painful and non-painful conditions.

These experiments have doubtless been unconsciously made by us all, not only with the hand, but by properly constructed and applied traction apparatus. It is an almost daily experience for us all to reproduce with traction apparatus the effects of manual traction, and when traction apparatus is properly applied the joint, supported and protected in Nature's indicated position and relieved from the constant traumatism of its own effort, begins to mend. The muscles, relieved of their duty of splinting the joint, relax their grasp. The deformity soon becomes modified, and after a few days or a few weeks the deformity is removed or sufficiently modified so that the patient can walk about in the open air and gain that great advantage which properly applied portative traction apparatus gives—viz., gentle exercise and locomotion in the open air, with a minimum of restraint as applied to the general functions of the body.

We may now formulate some of the conclusions applicable to the conditions found in hip disease, and its mechanical treatment.

1. The initial signs of the first stage of hip-joint disease are, as a rule, a limp and an involuntary muscular protection of the articulation.

2. The involuntary muscular protection frequently, if not always, precedes the limp. It also precedes the pain, which is generally a very late symptom, occurring almost always in the second stage.

3. The more insidious the approach of the disease, the greater, as a rule, is the necessity for ample protection and

* Dr. E. G. Brackett, of Boston, has proved that in childhood distraction of the hip joint is an evident fact. *Vide* "Boston Medical and Surgical Journal," vol. cxxi, No. 17, October 24, 1889.

prolonged observation. This is particularly true of an insidious and inveterate muscular protection of long duration which scarcely varies from month to month, and, while limiting the joint motions only slightly in all directions, is unaccompanied by any evidence of pain, except as the femur is used as a lever to overcome the muscular resistance.

4. The first indication from a standpoint of mechanical treatment is to remove as far as possible all traumatic influences from the diseased articulation.

5. This can best be accomplished by some form of apparatus which possesses the power to directly modify, or to wholly remove, interarticular pressure.

6. Our efforts to relieve the pain of the acute stage are abortive until a traction force is used.

7. The deformity of hip-joint disease is due to an instinctive and involuntary muscular splinting of the articulation, which muscular protection becomes modified after efficient traction is applied.

8. The presence of the muscular splinting of hip disease necessarily indicates the existence of a greater or a less degree of interarticular pressure in those positions where muscular contraction resists the reduction of the deformity.

9. This muscular splinting exists very often to a very great degree without any pain at all, and in these cases, as well as in those where pain is present, traction is necessary to adequately protect the diseased articulation.

10. The muscular signs of hip disease, especially the instinctive and involuntary muscular protection, are by far the most important, both as applied to diagnosis and prognosis in hip disease, taking precedence over pain.

11. Clinical experience proves that all the important signs and symptoms of hip disease are at once modified by intelligently and scientifically applied traction, the modification of the symptoms and signs being in almost direct ratio to the efficiency of the protection thus afforded the affected articulation.

12. Where there is no deformity present, a portative traction apparatus may be applied, and the patient may at once assume the erect position (ample protection being afforded the diseased joint) and walk about in the open air almost without restraint.

13. If the disease permits a certain amount of motion at the affected articulation, motion within the limit set by Nature is not harmful. It is only the cases that Nature attempts to immobilize by an emphasized muscular splinting that require artificial immobilization, and these latter cases acquire motion under the immobilization produced by traction applied with this end in view.

14. Where deformity is present, the patient should be placed in the recumbent position, with the affected member at rest upon an inclined plane in a proper traction apparatus. Both the traction apparatus and the inclined plane should be so constructed that any desired position may be obtained without disturbing the patient or the affected joint.

15. The deformity assumed by the involuntary muscular action indicates approximately the position in which we should make our initial mechanical traction.

16. Clinical experience proves that to make traction "in the line of the deformity" is an error. We should rather say that traction is to be made *in the line of comfort*, and this means that the angle of traction should be less than that of the deformity—*i. e.*, the joint should be placed in a position of greater flexion than that which is the exponent of the disease. By doing this we make traction wholly in a direction which modifies interarticular pressure, and we avoid the error of the lever apparatus, which makes a fulcrum of the diseased articulation to overcome the deformity.

17. The time necessary to overcome the deformity should always be given with the patient recumbent, as above described, and the line or angle of traction should be changed, not arbitrarily from day to day, but as the relaxation of the muscular splinting allows a change of position without any injury to the joint.

18. As soon as the deformity is reduced or sufficiently modified, the traction apparatus arranged for locomotion should be applied, and the patient should be allowed to have the benefit of gentle exercise in the open air, without interfering by crutches or other unnecessary apparatus with the normal functions of the rest of the body and the unaffected members.

19. Traction during recumbency with an apparatus that has a strong pelvic band and double perineal pads is superior to the weight-and-pulley traction, inasmuch as the former gives us complete control over the pelvis as a point of counter-traction.

20. If the joint is very painful and sensitive—even if there be no deformity—the joint should be given the extra rest which recumbency, traction, and a relaxed ilio-psoas muscle bring. The presence of a cold abscess is not a contra-indication for locomotion in a proper portative traction apparatus, nor are several sinuses a bar to outdoor treatment with a proper protection splint. The only contra-indications to locomotion and outdoor life are a very sensitive joint, an acute phase of the abscess, and the existence of a considerable deformity.

21. Any apparatus embodying the lever principle alone—that form or those forms of apparatus which make the femur the long arm of a lever to "pry" the joint straight—are, I believe, very strongly contra-indicated, except in those cases where the articular adhesions prevent the reduction of the deformity by traction. Luckily, these cases are rare. When met with, however, I believe that it is better to reduce the deformity at once under ether, and then to apply efficient traction, rather than to subject the diseased joint to the prolonged and irritating traumatism of a powerful and constant leverage.

After reviewing the whole field, it seems to me that we can not avoid the conclusion that we should use traction as a means of relieving the self-imposed muscular traumatism of the joint, not only to meet the very evident general mechanical conditions, but to relieve the muscles as well. The muscles were long ago tired out before the painful stage appears, and we should appreciate the constant strain the muscular tension imposes upon the central nervous system. It has been taught that we should make traction to "antagonize the muscular spasm." I think this is an error. It

seems rather that we should rest the joint by giving it immunity from the traumatism of inter-articular pressure, and then await the gradual yielding of the muscles. This will soon permit us to place the distal part of the joint in the desired position, and we need not inflict the slightest injury to the joint if we proceed carefully. I am quite sure that this object can be secured by the intelligent use of traction and counter-traction.

And the mechanism of this traction apparatus should be so arranged that it can be adjusted to any desired position without removing it from the patient. We can then cause the apparatus to follow the thigh as it falls into position and not force the thigh to follow the apparatus, as we must always do if we use the lever apparatus without the traction attachment.

The objections to any form of apparatus which embodies the principle of the lever alone are very great. It seems to me that this principle as applied to the treatment of tubercular joint disease in the light of the pathology of the disease, in the light of the muscular conditions which accompany it, and the unerring certainty with which the lever aggravates the already existing traumatism, is crude and unscientific.

Those who favor and use the lever apparatus always insist upon the necessity of removing the superincumbent weight of the body from the diseased joint. They forget or ignore the fact that the underlying articular pressure produced by the muscular splinting of the joint is just as injurious, if not more so, than the superincumbent weight. It is easy enough to remove the superincumbent weight with crutches (but this alone will not cure the disease), and it is also easy to gain position by making the femur the long arm of a lever. The muscles must yield if the lever force is sufficient, but the joint already disabled will suffer. It will be interesting in the future to see the results produced by this lever plan of treatment.*

But if, on the other hand, we can successfully give the affected joint not a fictitious "rest," not a pseudo-"immobilization," not a fallacious "fixation," but by supplementing the artificial joint protection, be it what it may, with an additional apparatus or attachment which will imitate the action of manual traction, we shall accomplish the end that Nature seeks by her ceaseless and involuntary muscular protection in an osteitic joint disease. We must do more than "rest," "immobilization," or "fixation," as described by some writers who use these terms, can produce, because all these "methods" have for their aim, not so much the avoidance of traumatic contact between the opposing joint surfaces as the maintenance of a traumatic contact which already exists and which must necessarily be emphasized by the application of the lever principle or of any of the so-called "fixation" splints. As long as the muscles guarding a diseased hip-joint are in a state of ceaseless contraction, as long as they are actively and instinctively engaged in securing for the diseased articulation the best protection they can give, our mechanism for the relief of the joint should embody some means of successfully combating the effects of their incessant action. And we should always be prepared to produce true physiological rest for the over-tired muscles and the vulnerable articulation; we should be able to secure real immobilization of the joint when it is indicated, and we should always be ready to give the joint absolute fixation when it seems necessary, just as we should permit and even encourage motion when the joint condition does not contra-indicate it.

And, as I look over the entire armament of orthopædy, I know of no mechanical method of accomplishing all that we desire in these difficult and tedious cases of hip-joint disease except that which imitates the simplest method of relieving an inflamed joint—viz., manual traction.

And I feel that if this principle of traction be scientifically utilized and adapted to the needs of each individual case there is no doubt that we shall give to our patients suffering from hip-joint disease and allied articular affections the most perfect mechanical protection available, which is, after all, the *sine qua non* in the treatment of chronic joint disease.

* In "An Analysis of Twenty-one Cases of Hip Disease treated by the Thomas Splint," by Mr. John H. Huddleston ("Boston Medical and Surgical Journal," Oct. 24, 1889), it was found (the Thomas splint being a typical "lever-fixation" splint) that the general results were as follows: "Good position with little flexion and adduction, but great shortening, great atrophy, and very constant elevation of the trochanter above Nélaton's line with a remarkable percentage of abscesses."

A CASE OF TUBAL PREGNANCY.

By E. D. FERGUSON, M. D.,
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The following case presents some points of interest:

The patient, a woman, thirty-two years of age, nullipara, married over three years, was first seen by me in consultation with Dr. Van Vranken, of West Troy, on October 5, 1889. The following are among the facts then determined: The last menstruation was on July 12th; there had been some slight bloody discharge from the vagina recently; she regarded herself as pregnant; she was and had been without fever or notable constitutional disturbance; she had suffered somewhat from nausea; on September 15th she was suddenly seized with pain to the right of the hypogastrium, and the pain had continued with varying intensity up to the time of the examination, so that she had practically been confined to her bed; at no time had there been a condition which could properly be called *shock*.

Examination showed a tumor of about the size of a small orange in the right broad ligament; the uterus seemed by palpation to be about twice its normal dimensions, but was not notably displaced toward the left; there was moderate tenderness over the uterus and over the tumor in the right broad ligament. The diagnosis was right tubal pregnancy with probable rupture downward between the layers of the broad ligament, and proper explanations were made to the husband with a view to an operation. In the mean time electricity (galvanism) was directed.

I did not see the patient again until October 11th. I found but little change, though the tumor in the broad ligament was apparently somewhat larger and quite as firm. There had been two or three paroxysms of severe pain in the region of the tumor, but still no shock or collapse, and no retro-uterine mass. The patient was now informed as to her condition, and, as she accepted the advice for the removal of the tube, arrangements were accordingly made, and the operation took place on the fol-

lowing day, Saturday, October 12th, at 11 A. M. On opening the abdomen, exit was given to a large amount of very dark clots and fluid blood. The amount could only be estimated, but there was more than two pints, probably not more than three pints, of fluid blood and clots.

The layers of the right broad ligament were separated and the space occupied by blood clots and placenta. Apparently the final rupture into the peritoneal cavity had occurred through the upper and posterior portion of the tumor. There was a broad pedicle and the cobbler's stitch was used. The fœtus, which had escaped from the sac, was advanced three months in gestation.

There was considerable shock following the operation, which lasted one hour from taking her to the table till she was again in bed, but reaction was prompt, and when I saw her at 3 P. M. she was comfortable and cheerful, and everything promised a favorable progress. I had requested Dr. Rulison, who was caring for her during the absence of Dr. Van Vranken, to draw her urine at 6 P. M., and his report that he got less than a tablespoonful of urine had an ominous significance. It having been an operation of necessity, no examination of the urine had been made, but, had I known of pre-existing renal trouble, I should probably have proceeded with the operation. I saw her again at 9.30 P. M., and the catheter brought only a teaspoonful of bloody urine. Though she was free from any evidence of shock or collapse, still there was a manifest tendency to somnolence that suggested uræmia, and in fact that supervened soon after midnight, and she died about 4 A. M., about sixteen hours after the operation. An autopsy was made about eight hours after death, and some points then noted deserve attention. The peritoneal coats of the intestines were quite congested at the time of the operation, presumably from the irritating effect of the intraperitoneal blood, but at the autopsy they presented a normal color and smoothness. The stump was already covered in by firm adhesions to contiguous parts through means of plastic lymph, and the peritoneal surfaces of the incision were so adherent as to require notable force in their separation. During the operation care had been taken to avoid bringing the right ureter into the field of the ligatures, and it was found undisturbed. Both kidneys were in the congestive stage of acute nephritis and presented no evidence of chronic disease. The urine showed "blood casts" and a large amount of albumin. Whether the use of chloroform instead of ether will lessen the mortality from renal changes following abdominal operations seems to me an open question as yet. This case lacks in having no record of the state of the urine before the operation. The death was due to uræmia, more rapidly fatal, doubtless, on account of the depression due to the operation.

The points of special interest to me were the large amount of blood (and clots) in the abdominal and pelvic cavities which must have been there two or more days before the operation, and yet there was no history of notable shock, and no physical signs of its presence in Douglas's *cul-de-sac*. There was sufficient tympanites the day preceding the operation to obscure the diagnosis of its presence by abdominal palpation or percussion.

In addition, the speed with which the pedicle may be covered up and closed in by plastic material was very striking. Though the patient survived the operation only sixteen hours, the stump was so firmly closed over and shut in as to preclude any probability of hæmorrhage from that source. This result, however, may have been hastened in this instance by the pre-existing state of irritation due to the intraperitoneal blood. Fortunately, recent experience in laparotomy affords a smaller percentage of opportunities for such examinations.

The uterine walls were found over an inch in thickness.

TWENTY-THREE CASES OF TYROTOXICON POISONING.

By D. M. CAMMANN, B. A., M. D.

On March 14, 1889, seven children in a large institution in this city were taken ill. In the following five days sixteen more became ill with the same symptoms. One of the children was four years old, two about six, and the others from seven to thirteen or fourteen. The cases varied in severity, but were all similar in character. The symptoms were frontal headache, nausea and vomiting, diarrhœa, and high temperature. The children were ill for two or three days and then recovered, with the exception of pallor, lasting for a variable time. Several, whose temperature was high, had four or five grains of the sulphate of quinine, but the others had no further treatment than rest.

The headache in some of the cases was severe, lasting for a day or two and then slowly passing away; others had little or no headache. With none was the vomiting severe. Some vomited once or twice and then not again; others two or three times within twelve or fifteen hours; others had nausea but no vomiting; a few had neither nausea nor vomiting. Nearly all had slight diarrhœa—from two to five or six passages within twenty-four hours. In no case did the vomiting or diarrhœa last for a longer time. The highest temperature was 105° F. in the mouth. The temperature in most of the cases ranged between 102° and 104°. It gradually declined in two or three days, being higher at night than in the morning. Two of the patients complained of pain over the stomach, but it was not severe, was not increased by pressure, and soon passed away. The pulse was rapid, small, and compressible. The skin felt as usual—neither moist nor dry. The tongue was slightly coated, and in some cases clean at the tip and sides. None of the patients showed marked prostration, and some, after lying still a few hours, were up and moving about.

The highest range of temperature was in the older children, of eleven or twelve years of age, the temperature of the younger ones not usually running quite so high. The relation between the height of the temperature and the vomiting and diarrhœa was not very evident, but, as a general rule, those who had most vomiting and diarrhœa did not have the highest temperature, and *vice versa*. In several of the cases in which an examination was made the spleen was not enlarged. At the time there were two adults in the institution with symptoms of malarial fever. One of the boys, aged twelve, who was taken with the symptoms described, developed double pleuro-pneumonia.

The system of drainage and water supply was of the most perfect description, the plumbing having been thoroughly renewed within a couple of years, and repeated examinations by experts had failed to reveal any defect. The dietary was of the simplest kind, and was nearly the

same as had been used for the last twenty-five years. During that entire period the institution had been remarkably free from diseases of the gastro-intestinal tract, and even during the summer months such cases had been extremely rare. No change in the diet had lately been made.

About one hundred and fifty children were in the institution. Those that were attacked were scattered pretty equally through the different dormitories. The attacks did not, in the majority of cases, commence immediately after a meal, but some commenced in the morning before breakfast, the patients having eaten nothing since supper the previous evening; others commenced in the middle of the night; others immediately before supper, the patients having eaten nothing since a midday dinner; others commenced almost immediately after a meal.

An examination was made by Dr. Edson, of the Board of Health, who recognized the milkman's name as one with whom the board had formerly had trouble. Thirty-six persons who received milk from the same farm had been poisoned. These cases were reported in a paper read before the Ninth International Medical Congress. Tyrotoxicon was not found in the milk at that time, but there was ample reason to infer that this substance or some other ptomaine was the cause of the poisoning. The symptoms were the same as those of the cases in our institution. After the milkman was changed no new cases occurred.

Specimens of the milk used in the institution were examined by the Board of Health, and two per cent. of water was reported in one and five per cent. in another. No tyrotoxicon was discovered. After a careful investigation no other cause for the trouble except the milk could be found. The molasses was suspected; but, besides its having been in use from the same barrel some time before the trouble began, cases occurred several days after it was stopped. On analysis, it was found to contain only a trace of copper. Other articles of diet were in a like manner excluded as a cause.

We can fairly say, I think, that these cases were caused by tyrotoxicon or some other ptomaine, although the poison was not found. It is not my purpose in this paper to consider how tyrotoxicon and other ptomaines are generated or the precautions necessary to prevent their production, but rather to glance at the clinical aspect of the cases that have come under my notice.

Many cases have been reported, both in this country and abroad, of poisoning from ice-cream, pies, puddings, etc., in which the symptoms were intense gastro-intestinal irritation, and in which elaborate chemical investigations have demonstrated the absence of metallic poisons. It was not, however, until 1885 that Dr. Vaughan found in cheese a poisonous ptomaine, tyrotoxicon, and subsequently he isolated the same substance from milk and from ice-cream which had produced poisoning in eighteen persons. Only within the past few years have compounds known as ptomaines been investigated by Bence Jones, Dupré, Marquardt, Selmé, and Briger. They are alkaloid-like bases obtained from animal matter after decomposition. They are found during the earlier stages of decay, but, as putrefaction continues, rapidly disappear. The ptomaines are powerful poisons. The poisonous effects sometimes produced by lobsters and other feeders on carrion are probably due to them.

The action of tyrotoxicon on the lower animals has been studied by Vaughan,* and been found to produce symptoms closely resembling those of cholera infantum; indeed, he believes it to be often the cause of this disease. Ten to twenty-five milligrammes given to a cat produce in a few minutes nausea, retching, vomiting and purging, an irritable stomach, and a rapid, feeble pulse. With larger doses the severity of the symptoms is increased, and the breathing becomes shallow and labored. With doses of from seventy-five to one hundred milligrammes violent retching occurred, with a rapid and feeble pulse, but neither vomiting nor purging, and death took place within a half to three hours. The post-mortem appearances corresponded exactly with those of children after death from cholera infantum.

Carefully recorded cases of poisoning in man are lacking. It is probable that, with a fuller knowledge, we shall be able to distinguish between poisoning by ptomaines and other substances, as well as between the ptomaines themselves. In the majority of cases the usual symptoms are violent gastro-intestinal irritation, retching, vomiting, purging, rapid and feeble pulse, redness of the throat, and elevation of temperature. In fatal cases the temperature is commonly below normal. Besides these more common symptoms, in some cases have been reported dizziness, momentary loss of consciousness, constriction of the throat, a rash resembling that of scarlatina, convulsive movements of the limbs, dilatation of the pupils, and constipation. Death seems to result from heart failure.

None of my cases were severe. Evidently only a small quantity of the poison had been taken by each person. The attacks came on quite suddenly, and sometimes apparently several hours after any milk had been taken. The temperature seemed to have the highest range in those who had the least vomiting and purging. In the majority of cases prostration was not marked; the pulse was increased in frequency, small, and compressible; the skin felt as usual, or warmer; the tongue was slightly coated and in some cases red at the tip and sides; there were headache, nausea, vomiting, and purging. Some had redness of the throat. A few had a rash resembling that of scarlatina. Two had pain in the stomach, but it was not increased by pressure, and soon passed away. One was attacked with double pleuro-pneumonia, from which he recovered.

A CASE OF
RECURRENT FIBRO-SARCOMA OF THE THIGH.

AMPUTATION AT THE HIP JOINT. RECOVERY.

By JOHN A. WELLS, M. D.,
ENGLEWOOD, N. J.

The history of this case is submitted both as a contribution to the literature of amputation at the hip joint and as illustrating the possibility of obtaining entire asepsis under the most unfavorable surroundings.

* "Transactions of the Ninth International Medical Congress," p. 485.

J. F., colored, aged thirty-two, single, denied syphilis and injury. He had been most intemperate in the use of alcohol, but entirely free from sickness of any kind until January, 1887, when he noticed for the first time the presence of a painless new growth on the dorsum of the right foot. This growth within four months had increased to the size of an orange. It was removed at that time by dissection and found to be non-adherent to the bony structures. A microscopical examination of the tumor confirmed the impression that the growth was a simple fibroma. Contrary to expectation, however, the tumor reappeared within a few weeks in the unhealed wound, and rapidly increased to double or triple its original size, with the ultimate supervention of gangrene and septic symptoms. Amputation at the middle third of the leg was performed two months after the primary operation, and by strict antiseptic precautions the wound healed throughout the greater portion of its extent by primary union. The recurred growth was then found to be adherent to the metatarsal bones. The patient's temperature fell on the following day from 103·5° to 100° F., and rapidly sank to normal. After an interval of two years, during which he enjoyed excellent health, in spite of his intemperance, he sought my advice, and I found a dense fibrous-feeling mass measuring 16 ctm. in circumference at the junction of the middle with the upper third of the right thigh on the internal aspect. He had first noticed the mass three months before. During the two weeks following his visit to me it had increased nearly one third in size. Ablation of the entire extremity was advised on account of the previous unsatisfactory attempts at excision, and was performed by the writer, with the kind assistance of Dr. Clarke, Dr. Banks, and Dr. Haring, on the 21st of August, 1889. The surroundings were so extremely unfavorable for operating that the writer may be pardoned for mentioning briefly the well-known measures for securing asepsis which were employed. All unnecessary furniture was removed and the necessary articles were covered with clean sheets. The walls and the floors were well scrubbed with soap and water, and on the morning of the operation the patient was given a warm bath and dressed in clean under-clothes. All the water used in the operation, necessarily taken from a notably contaminated well, was boiled for one hour before using. One sixth of a grain of morphine with one ninety-sixth of a grain of atropine was administered hypodermically a few minutes before commencing the ether. The latter was administered with an Allis inhaler, with little difficulty in obtaining and continuing its effects, after some preliminary excitement. This fact is only mentioned because in the previous amputation, where no morphine or atropine had been given prior to the ether, it had been found impossible to bring the patient under the influence of the anæsthetic, and it was finally necessary to substitute chloroform. During the latter half of the present operation, on the contrary, no ether whatever was necessary. The integument involved in the incisions and the adjoining portions were shaved, scrubbed with green soap, and irrigated with a solution of bichloride of mercury, 1 to 1,000. Towels soaked in a solution of the same strength covered the exposed integument contiguous to the field of operation. The instruments employed had been previously boiled and placed in a solution of carbolic acid, 1 to 30. After thorough cleansing and disinfection of the surgeon's hands, the joint was exposed by the usual incision on the outer aspect of the femur, disarticulation was effected, and the femur was stripped of its muscular attachments for about six inches down the shaft. The method of Marshall Jordan for preventing hæmorrhage was found entirely effectual. A disinfected Martin's elastic bandage was doubled twice and passed around the groin above the tuber ischii posteriorly, thereby preventing downward slipping in that direction. A roller bandage was placed over the superficial femoral as a compress, and the crossed ends of the Martin bandage were tightened over it by forcible traction on them by the hands of an assistant pulling in the direction to obtain the greatest pressure on the compress. The skin and fasciæ were divided circularly, opposite the point to which the femur had been stripped, and allowed to retract. Instead of dividing the muscles at this point, as recommended by some authorities—as it was believed that the flaps so formed would be insufficient to cover the large amount of muscular tissue—the cuff was dissected upward for three inches or more, and the muscles were divided at that point circularly with a catlin. The wisdom of this procedure was demonstrated, as, on bringing the flaps together, there was no tissue to spare. There was no hæmorrhage whatever on completing the section. The vessels were ligated with aseptic catgut, a drainage-tube was inserted into each of the three angles, and the wound was irrigated with bichloride of mercury, 1 to 5,000. The flaps were sutured by alternate catgut and aseptically-prepared silk sutures, the lines of incision were dusted with iodoform, and a generous dressing of creolin gauze and borated cotton was applied. At the completion of the operation there was little if any evidence of shock, the pulse being 100 and the extremities warm. On the following morning the pulse was still 100 and the temperature 99° F. The patient reported several hours of sleep, and desired permission to smoke his pipe. Whisky, in half-ounce doses, was given several times daily; the bowels were kept constipated for five days for fear of disturbing the dressings, in view of the unskilled nursing at his command, and were then moved by a laxative. On the fifth day the temperature rose to 99·4° F., falling to normal after the evacuation of the bowels. This was the highest point reached at any time, and at no other time after the first twenty-four hours did it exceed the normal. On the seventh day it was thought best to remove the drainage-tubes, one of which, that to the acetabulum, was necessarily a long one. The drainage-tubes were accordingly removed and shortened two thirds. The dressings were entirely free from pus, and there was apparent primary union throughout. Three days later the tubes were removed entirely. On the sixteenth day, at the next dressing, the silk sutures were removed, being perfectly dry. There was complete primary union throughout the long incisions. The patient was up on the twenty-first day, and out on the twenty-eighth.

It has seemed to the writer that perhaps this case deserved reporting with some detail for several reasons: For the apparent effect of the atropine in preventing the shock naturally incident to so extensive a wound, and for the assistance rendered by the morphine to the anæsthetic, as demonstrated by the previous difficulty of securing anæsthesia in the same case; for the efficiency of the Marshall Jordan method in preventing hæmorrhage; for the necessity of an upward dissection of the cuff to obtain sufficient flaps; and, more important than anything else, as illustrating the fact that the surroundings of a filthy negro shanty are not insuperable obstacles to the attainment of complete asepsis.

Sense of Taste in Criminals.—"Dr. S. Ottolenghi, a pupil of Professor Lombroso, has studied the sense of taste in criminals compared with that of other individuals. He says that in criminals the sense of taste is manifestly weak relatively to that of ordinary individuals; there is, again, a difference less marked between occasional delinquents and those who are habitual or born delinquents. Female criminals have the sense of taste still more obtuse than men of the same category. The author concludes from these remarks that this diminution in the sense of taste in criminals depends on a defect in the cerebral cortex."—*Medical and Surgical Reporter.*

THE
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MEDICAL STUDENTS AND MEDICAL MINDS.

An address to medical students, recently published in the "Lancet," speaks of certain personal qualifications essential to success in the practice of medicine. The successful practitioner must have the sympathetic temperament, tact, common sense, and the tenacity and diligence necessary to develop and improve these qualities by the discipline of constant and progressive study. The proper habit of thought is the first thing for the student to cultivate. Thinking out problems and discovering a reason for everything are the true basis of rational knowledge, and constitute the difference between the real student and the mere laborious, painstaking reader of books. Scientific discourses are valuable aids to the learner at every stage of his career. A good lecturer impresses upon the mind facts of importance that the casual student, however earnest, might easily overlook. The experience of others working along specified definite lines, yet much in advance, is of incalculable benefit to him who runs and reads. To be one of an army marching toward truth in any given direction is both a moral and an intellectual stimulus. A well-made abstract of the good things that fall from the master's table is invaluable as an exercise for the mind. Notes concerning main facts, the headings recorded in brief, and the conclusions leading up to them more fully written out, form an admirable nucleus for a medical library and an excellent guide for original investigation. Methods of study, companionship, and the choice of books have a powerful influence on any career, that of medicine not excepted. They are largely a matter of temperament, sometimes acting as cause, sometimes as effect. Good methods, good companions, and good books will discipline even a crude mind. On the other hand, a bright student secures them as a matter of course. There are books and books. It goes without saying that, if professors write books, students should have sufficient *esprit de corps* to possess them. At the same time, the real value of a book consists in its power to help and inspire the reader, to put him in a working mood. A very little book often does great things, and sometimes an old work will throw a very window of light upon a perfectly new subject. This is an affair of individuality, of temperament, of mental make-up.

While there are many things that must be dug out alone in medicine, because the mental bread of each must be eaten with his own tears, yet there are but few occasions where two heads are not better than one. Much in the way of investigation and the acquisition of knowledge is best when shared. Together, each studies for the good of all, and, because one is indispensable to the other or others, perfect individual equilibrium and independence are secured. Companions teach as well as schools. The quizzes of Brown, Jones, and Robinson may leave an impression when that of the pure unadulterated excellence of authorities has quite faded out. Learning how to ask questions of patients as well as of medical men, and how to answer them, is an important means of getting into an exact and direct mental attitude. The best talker—*i. e.*, the one who makes the plainest and most direct statement in the fewest words—is considered the best officer, other things being equal, in large business corporations. This, in a general way, applies equally well to physicians and the practice of medicine. Exact expression—verbal, literary, graphic, or of bodily action—is an unmistakable evidence of exact thought. Still, when all preachment is done and everlasting truth has been reiterated for the hundredth time, the simple fact remains that, if the medical man has not the quality of success, he does not succeed. Men of science are born, then trained. They are not made. Methods, companionship, books, training, and all the rest, are of no avail without this subtle something that makes for success and is inherent in the individual. It is possible to be honest, industrious, faithful, and conscientious, and still miss many of the prizes of life. Industry, personal magnetism, exactness, elasticity, a good manner, and grit are the chief factors in that abstruse process known as getting on in the world of medicine. In broader terms, industry, tenacity, and imagination are the natural and chief mental endowments needed. Without these characteristics there is no such thing possible as the scientific mind.

THE TREATMENT OF PNEUMONIA.

Walter Hayle Walshe, in the first edition of his "Practical Treatise of the Diseases of the Lungs and Heart," published some forty years ago, speaks of pneumonia as standing high among those diseases of which "the fitting treatment has been established by scientific experience," and then he goes on to say that that treatment consists of bloodletting and the administration of tartarized antimony, and the latter he thinks the more efficacious agent. Yet how few of those who read this page have ever seen a patient bled or antimony prescribed! The mean amount of blood M. Bouillaud took from his patients was four pounds five ounces, and antimony was recommended by Walshe in doses of half a grain every hour for the first three or four hours, increasing to two grains every two hours. Since those days many fashions have come and gone, and who can say that the fitting treatment of pneumonia has been established? The administration of stimulants in large doses recommended by Todd, the nihilism of Bennett, and the antipyretic and antiseptic plans, all have had their innings, and a recent battle of statistics has shown that the mortality has at all events not undergone any appreciable reduction during the last half century.

The treatment of pneumonia by the application of the ice-bag has recently been under discussion at the Harveian Society in London. Dr. Lees, of St. Mary's Hospital, brought forward the record of eighteen cases of pneumonia in which a satisfactory result had followed this treatment in all but two. We

have looked into these histories, and there is no doubt that the results are very good, but we must bear in mind in pneumonia that there are cases and cases—that some cases will end in recovery in spite of any treatment, while there are others in which no treatment will save the patient. To the former class belong the large majority of the cases brought forward by Dr. Lees, if not all of them. Age and an alcoholic history are the most important factors in the prognosis of pneumonia, and it is very remarkable in connection with these cases that, of the whole number, none of the patients were older than forty. Can the cases have been taken haphazard from the last that fell to the lot of Dr. Lees as a physician to a hospital, or were they picked out from a number presenting themselves for treatment as being the most suitable for bringing out the superior advantages of a newly advocated remedy? There were no alcoholics among Dr. Lees's patients, nor were there more than three cases in which really grave symptoms were present. In two of the cases the writer acknowledges that no benefit was evident, and in two others the diagnosis of pneumonia was very doubtful.

The suggestion of a new treatment for any disease should always be favorably received and attempts made to give it a fair trial. In the case of the ice-bag treatment of pneumonia this will be done, but we venture to assert that, if any hospital physician were allowed to pick out of his case-book eighteen cases of pneumonia treated by ordinary methods, he would be able to put together quite as good a record as that published in the "Lancet" and discussed at the Harveian Society.

MINOR PARAGRAPHS.

THE PHONOGRAPH AS A UNIVERSAL ACOUMETER.

According to the "Deutsche Medizinal-Zeitung," Lichtwitz maintains that Edison's phonograph fills the requirements for an acoumeter. It is possible, he asserts, to arrange phonogrammes by means of which the hearing can be accurately measured. The phonograph can reproduce every sound and tone perceptible to the normal ear, including the inflexions of the voice; it repeats the sound without noticeable change, so that the acuteness of the hearing of different patients, and of the same patient at different times, can be accurately compared; it will reproduce with the same intensity and quality of sound the uniform phonogramme, so that aural surgeons of all lands can compare their observations.

The operation of the apparatus is simple. The ear-piece is applied to the ear which is to be tested, and a phonogramme which is audible to the patient is sounded. The acoumetric scale is then descended until a phonogramme is reached which can not be heard. This marks the limit of hearing for that ear. In this manner the source of sound remains always at the same distance from the ear, and only the intensity of the tone differs. If the phonograph will do all that Lichtwitz alleges, and if it is practicable to create such a graduated series of fixed phonogrammes as he suggests—and we do not now see why such a plan may not be feasible—we may look forward to a great improvement on the present rather crude means of testing the hearing. All of the methods at present employed for this purpose are objectionable in that they do not furnish a fixed volume of sound in every case. The tone and intensity of the "tick" of various watches differ, and sometimes they vary even in the same watch. Still more unreliable for purposes of comparison is the use of the human voice, but the plan suggested is intended to furnish the same tone and intensity of sound in each case, and so to render observations more exact and permit of comparisons of observations in a manner not at present possible.

ANÆMIA CURED BY HYDROTHERAPY.

"La Médecine contemporaine" records the following case of Dr. Good's: The patient, a girl of twenty, was affected with pallor, with a coppery hue, heaviness in the head, troubled sleep, bad dreams, poor appetite, painful digestion, constipation, cardiac and carotid murmurs, constant weariness, disinclination to walk, and painful menstruation, the menses being scanty and too light in color. There were also great depression of spirits, pronounced ennui, and an absence of interest in life. The treatment consisted in applying the cold douche to all parts of the body in turn, beginning and ending with the feet, and for a few seconds only, the temperature of the water being at 54° F. After the first day the douching was administered morning and evening for thirty seconds, the water being at 50° F., a shower-bath preceding the douche. Cold food and cold water as a drink constituted the diet prescribed. In three weeks the complexion had improved, digestion was less difficult, but walking was still an effort. Two weeks later the patient's condition was much improved in every way. Menstruation was absolutely painless, she had good sleep, there was less repugnance to walking, she was in better spirits, and the circulatory bruits were less pronounced. In a little over two months from the beginning of the treatment the patient began to grow stout and to walk, eat, and sleep well. The circulatory bruits were then almost imperceptible, the mental depression had disappeared, and the character of the menses was normal. After three months' treatment with the douche twice daily, from twenty to forty seconds, the patient left in perfect health. During that time there was no change in the diet, which proves that water as a drink does not retard recovery, as Fleury has affirmed. On the contrary, wine is said to impair the good effects of hydrotherapy.

MANIA FOLLOWING AN OPERATION FOR ENTROPION.

A case of this kind is mentioned in the "China Medical Missionary Journal." The patient was a woman, about thirty years of age, who had suffered from an attack of insanity eight years before. No anæsthetic, general or local, was given. The day after the operation she became restless, refused food, and was irritable on being spoken to. In a few days she had gradually become wildly maniacal and violent. A month later her mental condition, though better, was still far from satisfactory. It is going too far to say that this attack of mania was due to the operation, as it might have appeared even if nothing had been done, but it is very suggestive that the operation, through the nervous strain on the part of the patient, was the exciting cause. Frequently the occurrence of insanity after operations has been accredited to the effects of the anæsthetics employed. But in a case where there is a predisposing tendency to insanity it may be gravely considered whether the nervous expectation and excitement attendant upon an operation may not serve as an exciting cause.

FATAL POISONING WITH CALOMEL.

The "Deutsche Medizinal-Zeitung" quotes from a Finnish journal an account, by Dr. Runeberg, of a most interesting case of the fatal termination of subcutaneous calomel injections in

a syphilitic and anæmic woman. The injections were three in number, and their administration extended over a month. Three weeks after the last injection the woman died. At the post-mortem examination an incision of the buttocks exposed two morbid foci: a smaller one, consisting of fibrous tissue, inclosing a solid, yellow, caseous mass; a larger one, containing about two tablespoonfuls of a grayish-white, thick liquid resembling pus. A comparatively large quantity of mercury was found by chemical analysis in the liquid of the second collection, while not a trace of it was to be found in the first. The poisoning was, of course, complicated by the anæmia, but was continued by the constant absorption of the injected calomel. This difficulty could only have been met by excision of the morbid mass, but an operation was contra-indicated by the patient's enfeebled condition. It seems, therefore, that, in so far as a patient's tolerance of mercury is unknown, it would be advisable to administer it either by the stomach or, if subcutaneously, in smaller doses more frequently repeated and more readily controlled.

PROTECTIVE INOCULATION WITH AN ANTHRAX ALBUMOSE.

According to the "British Medical Journal," Mr. E. H. Hanbin has experimented on over a hundred mice and about fifty rabbits with an albumose that he has isolated from ordinary cultivations of anthrax. The albumose is precipitated from the cultivation liquid by the addition of a large quantity of absolute alcohol, and the washing in this liquid frees it from the soluble ptomaines; it is filtered, dried, redissolved, and filtered through a Chamberlain's filter. From one five millionth to one ten millionth of the weight of the animal was injected. If an animal was inoculated with anthrax after a large dose of the albumose, there was apparently a hastening of the fatal termination; but after inoculating a small dose of albumose, immunity seemed to be conferred; with a medium inoculation, the anthrax bacilli were able to live and produce more albumose, at length overcoming the resisting powers of the animal. The albumose seemed to be slowly excreted, and to be capable of suppressing the germicidal power of the animal. The experiments were made in Koch's laboratory, and he personally inoculated with anthrax some animals protected by the albumose, and the animals lived.

THE PARASITES OF THE HEALTHY SKIN.

According to the "Journal d'hygiène," Dr. Arnaldo Maggiora has come to the following conclusions as the result of numerous experiments: Micro-organisms that may also be isolated in the ground or atmospheric air live constantly on the normal human skin. In the various parts of the body the same forms of micro-organisms are almost always found. The fœtid perspiration of the feet is not due to the presence of a special form of micro-organism, but to the fact that the micro-organisms develop under special conditions of temperature and humidity presented by the feet when covered with boots. The complications of an infectious character that may present themselves in wounds of the feet probably depend on the greater or lesser facility with which such wounds may be infected by pathological organisms that are present in the soil or in the atmospheric dust deposited on the pavement.

TOTAL BLINDNESS AFTER EATING MUSHROOMS.

In a recent number of the "Gazette des hôpitaux," M. Fougeray and M. Fouchard report a case of total blindness in a primipara, aged thirty-one years, who had gastro-intestinal trouble, uncontrollable vomiting, and migraine, after eating mushrooms. For thirty-six hours she was absolutely blind, and homonymous hemiopia followed. Ophthalmoscopic examination showed slight contraction of the field of vision, but no scotoma. A painful perception of blue persisted for five or six days. Twelve days after the attack the patient aborted, the fœtus, of seven months, being well formed. Complete recovery followed. The authors believe the amaurosis to be hysterical, and they say that, while cases of hysterical amblyopia are not rare, only one other case of hysterical total amaurosis without ocular lesion has been reported.

STEAMSHIP SANITATION.

The "British Medical Journal" makes a very pungent criticism of the ordinary methods of examining emigrants at British ports. The writer applies the word "farcical" to the work, drawing a picture of the huddling crowd, encumbered with their baggage, as they pass over the gang-plank. Suspicious cases can not be isolated or put under observation. On board the steamer there are, on crowded passages, no hospital accommodations just at the time when they are apt to be the most needed, the space belonging to the sick being absorbed by the agents for bunk-room. If the ship's surgeon makes any complaint in regard to these matters, he may expect to be snubbed or repulsed in some unpleasant way.

MEDICAL MATTERS IN PRINCE EDWARD ISLAND.

From the "Maritime Medical News" we learn that an association was organized, on October 2d, among the medical men on Prince Edward Island. There were present twenty-five registered physicians at this initial meeting. Officers were elected, Dr. R. Johnson being chosen president and Dr. S. R. Jenkins secretary, both of Charlottetown. Resolutions were adopted empowering a committee to endeavor to procure the passage of a medical act for the province, in order to "insure a high standard of professional education and of social dignity and estimation."

URBAN CLEANLINESS.

Commissioner J. S. Coleman, of the New York Street-cleaning Department, will lecture, under the auspices of the American Public Health Exhibition, on the 29th inst., at the Brooklyn Institute, at eight o'clock in the evening. His subject will be "Civic Cleanliness," and he is fitted to treat clearly concerning the gradual building up of the largest plant, on this side of the Atlantic, for the collection and disposal of civic refuse.

THE NEW YORK ORTHOPÆDIC DISPENSARY AND HOSPITAL.

At a recent meeting of the board of trustees it was resolved either to enlarge the present building on Fifty-ninth Street or erect a new one elsewhere. The institution, as we have before stated, has long felt the need of more extensive accommodations, and it is to be hoped that the sum now required, $100,000, will be subscribed before the winter is over. Several large subscriptions have already been made.

ITEMS, ETC.

The Red Cross at Johnstown.—Miss Clara Barton left the field in the Conemaugh Valley on October 25th, on the termination of the greatest campaign that the Red Cross Society has hitherto enlisted in. A public reception was given Miss Barton on the evening before she left, which was attended by people of

every class, out of respect to the noble lady who had befriended them in their great calamity.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending November 19, 1889:

DISEASES.	Week ending Nov. 12.		Week ending Nov. 19.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	40	6	31	11
Scarlet fever	60	2	27	4
Cerebro-spinal meningitis	3	3	2	2
Measles	46	6	40	3
Diphtheria	89	26	84	18

The New York Post-graduate Medical School and Hospital.—A clinic for diseases of the rectum has been established, to be under the care of Dr. Charles B. Kelsey, who will also give clinical instruction in the school. Dr. Kelsey will be assisted by Dr. J. Blair Gibbs.

Medical Registration in North Carolina.—The October issue of the "Bulletin" of the State Board of Health of North Carolina contains the following semi-official announcement: "All physicians in this State must register with the Clerk of the Superior Court of their county before January 1, 1890, if they intend to practice thereafter and collect their fees for services rendered. There will be no subterfuge allowed. The law must be enforced."

The Woman's Hospital.—Dr. Bache McE. Emmet and Dr. Horace T. Hanks have been appointed surgeons to the hospital, to succeed Dr. James B. Hunter, deceased, and Dr. C. C. Lee, resigned.

Trained Nurses at Bethlehem.—The graduation of a class of four trained nurses was the occasion of a special celebration at St. Luke's Hospital, Bethlehem, Pa., on October 18th. Dr. Arpad G. Gerster, of New York, was present and delivered the address to the class.

The Kings County Medical Association met on November 8th, at the new rooms over the Brooklyn Post-Office. The subject before the meeting was the "Ocular Symptoms referable to Renal Disease," introduced by a paper by Dr. L. A. W. Alleman, with a discussion by Dr. Rushmore, Dr. H. R. Price, and Dr. Waterworth. The annual committee on nominations was appointed.

The Guild of St. Luke.—An association in London, composed entirely of medical men, whose banding together has for its object their mutual support in looking after the religious welfare of their patients, is known by the name of the Guild of Saint Luke. At a recent public meeting, held at St. Paul's Cathedral, there were present, according to the "British Medical Journal," two to three thousand persons interested in the work of the guild.

The Middleton Goldsmith Lecture.—Professor William Pepper, provost of the University of Pennsylvania, will deliver the Middleton Goldsmith Lecture before the New York Pathological Society in the hall of the New York Academy of Medicine on Wednesday evening, January 15, 1890. The subject of the lecture will be "Hepatic Fever."

The New York Polyclinic.—Dr. Francis J. Quinlan has been appointed lecturer on diseases of the throat and nose.

Bromidia.—Seven Kansas City druggists were lately fined $500 each, with costs, for counterfeiting this preparation.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from November 10 to November 16, 1889:*

MACAULAY, C. N. B., Captain and Assistant Surgeon, is granted leave of absence for one month, to take effect about the 29th instant. Par. 2, S. O. 166, Department of the Missouri, Fort Leavenworth, Kansas, November 8, 1889.

MAUS, LOUIS M., Captain and Assistant Surgeon, having relinquished the leave of absence on surgeon's certificate of disability granted him in S. O. 249, October 25, 1889, from this office, will, by direction of the Secretary of War, upon being relieved from duty at Fort Porter, N. Y., as directed in S. O. 242, October 17, 1889, from this office, proceed without delay to Fort Stanton, N. M., and report in person to the commanding officer, Department of Arizona. Par. 8, S. O. 261, Headquarters of the Army, A. G. O., Washington, November 8, 1889.

The following changes in the stations of medical officers serving in this department are hereby made, viz.: CRAMPTON, L. W., Captain and Assistant Surgeon, from Fort Lyon, Col., to Fort Sheridan, Ill.; CORBUSIER, W. H., Captain and Assistant Surgeon, from Fort Hays, Kansas, to Fort Lewis, Col.; IVES, F. J., First Lieutenant and Assistant Surgeon, from Fort Lyon, Col., to Fort Sill, Indian Territory. Par. 3, S. O. 167, Headquarters Department of the Missouri, Fort Leavenworth, Kansas, November 9, 1889.

Society Meetings for the Coming Week:

MONDAY, *November 25th:* Medical Society of the County of New York; Boston Society for Medical Improvement; Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement; Baltimore Medical Association.

TUESDAY, *November 26th:* New York Academy of Medicine (Section in Laryngology and Rhinology); New York Dermatological Society (private); Buffalo Obstetrical Society (private); Boston Society of Medical Sciences (private).

WEDNESDAY, *November 27th:* New York Surgical Society; New York Pathological Society; New York Academy of Medicine (Section in Obstetrics and Diseases of Women and Children); American Microscopical Society of the City of New York; Medical Society of the County of Albany; Auburn, N. Y., City Medical Association; Berkshire, Mass., District Medical Society (Pittsfield); Philadelphia County Medical Society.

THURSDAY, *November 28th:* New York Orthopædic Society; Brooklyn Pathological Society; Roxbury, Mass., Society for Medical Improvement (private).

Proceedings of Societies.

NEW YORK SURGICAL SOCIETY.

Meeting of October 23, 1889.

The President, Dr. LEWIS A. STIMSON, in the Chair.

Chopart's Amputation.—Dr. CHARLES MCBURNEY showed a patient on whom he had performed Chopart's amputation, suturing the extensor tendons to the plantar flap and keeping the foot in a state of dorsal flexion during the after-treatment, with the idea of securing better power of flexion when the foot came to be used. The result had justified his expectation, and the movements of dorsal flexion were remarkably good.

Fracture of the Pelvis. Dr. McBurney also showed a patient who had been brought to the hospital with this injury, together with extraperitoneal hæmorrhage filling the prevesical space and infiltration of urine in the same region. An incision was made exposing the prevesical space, and, as rupture of the bladder was strongly suspected, the peritoneal cavity was opened, but no intraperitoneal rupture was found. Additional drainage was provided for by way of the perinæum, and the patient had made a good recovery.

Dr. C. K. Briddon said, in reply to a question by Dr. McBurney, that he had reported several cases of rupture of the bladder; that about two years before he had read the histories of three cases, two of which were associated with bad fractures of the pelvis; that in both cases the fragments were so interlocked as to be immovable. One was treated by incision of the prevesical space and perineal section, but the injury was complicated by others of a severe character, and the man died. The other was treated by suprapubic section alone; the drainage was perfect, and the patient recovered. The third was an intraperitoneal rupture not associated with fracture; the operation of suturing the bladder was done late, and the patient died. When an extraperitoneal rupture had been made out by opening the prevesical space, even with the strictest antiseptic surroundings, he did not regard it as a trivial matter to open and explore the cavity of the peritonæum in search of other suspected injuries; he would not do so without what he might regard as very sufficient reasons. He thought that in operations for extravasation of urine due to rupture of the bladder perineal drainage should not be employed.

Dr. McBurney thought that in extravasation of urine perineal drainage at least should be used in all cases.

Dr. J. A. Wyeth thought that the question could be settled only by considering the conditions present. Perineal drainage was useful in ruptures about the urethra and the neck of the bladder, and might safely be supplemented by suprapubic drainage. In all these accidents, where the symptoms suggested intraperitoneal rupture of the bladder, it was imperative to open the peritoneal cavity to ascertain the exact condition, and necessary to disinfect that cavity.

Wound of the Abdomen.—Dr. Frank Hartley presented a case of lacerated wound of the abdomen with protrusion of intestine and symptoms of internal hæmorrhage. The patient was a boy who had fallen six feet, impaling himself on a picket of an iron fence. Laparotomy was performed, and the intestines were replaced. The peritoneal cavity was found to contain a large quantity of blood coming from a perforation of the deep epigastric artery at a point about an inch from the external iliac. The fascia had been torn from the iliac fossa except over the line of the external iliac artery. The artery having been tied, the contused intestine was placed in such a position that an artificial anus might form with safety if the intestine sloughed; the iliac fascia was sutured into position; and the lacerated portions of the muscles in the upper portion of the wound were excised and their ends brought into apposition, but in the lower half the laceration was so extensive as to render this impossible, and that part of the wound was packed with gauze. The patient had made a good recovery, and left the hospital in five weeks. At present there was no hernia, and there was no sign of weakness indicating a probability of its occurrence.

Habitual Dislocation of the Sternal End of the Clavicle.—The President presented a youth, nineteen years old, who a few months before had gradually been affected with such laxity of the ligaments of his left sterno clavicular joint that the clavicle became dislocated forward whenever he raised his elbow above his shoulder, and returned to its place when the arm was lowered. On the right side the bone moved forward in like manner, but not to the extent of dislocation. The condition was very annoying to the patient, and he applied for treatment in the early part of August. As retention by molded splints or bandages was usually not only ineffective but also very troublesome, the president had sought to produce by subcutaneous injections of alcohol such a thickening and condensation of the circumarticular tissues as would prevent recurrence of the dislocation. He had made four injections, at intervals of a week or two, and the patient had refrained from raising the elbow during the whole time, but had worn no apparatus. He could now raise his hand high above his head without causing the bone to slip forward. To the touch the surrounding tissues seemed denser and thicker. The parts had been quite tender for a day or two after each injection. In making the injections he had thrown the alcohol, not into the joint, but into the circumarticular tissues, pushing the point of the needle close to the bone.

Suprapubic Cystotomy.—Dr. Wyeth presented several specimens of tumors and calculi from three cases in which he had recently operated. The first case was that of a man, forty-eight years old, who had had symptoms of cystitis, with impediment to the outflow of urine, for seven or eight years. These symptoms had gradually increased until the retention of urine had rendered the constant use of the catheter necessary. A diagnosis of obstruction within the bladder having been made, suprapubic cystotomy was performed in the usual way. The bladder contained a uric-acid calculus measuring an inch by an inch and a half. This was readily removed by the wound, giving the exploring finger complete command of the bladder. A tumor, projecting about three quarters of an inch, was found situated immediately behind the outlet into the urethra. This was twisted from its base with Spencer Wells's ovarian-sac forceps, and there was little or no hæmorrhage. Retractors were then introduced so as to protect the soft parts, and the surface from which the tumor had been removed was seared with the actual cautery. The ordinary Trendelenburg T-drainage-tube was introduced, iodoform gauze was packed around it, and the usual dressing was applied. The tube was removed on the fourth day, when the symptoms of obstruction and cystitis had entirely disappeared. The sinus closed in three weeks, and the patient was discharged cured, being able to pass his water without the catheter.

Another case was that of a man, forty-five years old, whose symptoms were analogous to those in the case just described. A similar operation was performed, and a tumor measuring half an inch antero-posteriorly and a quarter of an inch from side to side, with an elevation of about three quarters of an inch, was removed. The drainage-tube was taken out on the fifth day, and the sinus had closed by the end of the fourth week, a perfect cure resulting.

The third case was somewhat unusual, being one of acute cystitis and urethritis in a boy of four years, with paralysis of the bladder due to compression-myelitis. The inflammation had resulted from infection by the use of a catheter that had been employed on a patient suffering with non-specific urethritis. The boy's temperature rose as high as 103° F., and his suffering was intense. Suprapubic cystotomy was done in order to clear out the bladder and establish effectual drainage. Relief followed immediately, and now, three weeks after the operation, the tube had been removed and the sinus was closing.

Dr. McBurney remarked that the objection to suprapubic cystotomy was the persistent sinus in the track of the tube.

Dr. Wyeth said that his experience had led him to believe that the sinuses could be healed readily. In many cases there

was no cystitis and drainage was not important. Then the wound in the bladder could be closed at once with catgut sutures, and a catheter introduced through the urethra for permanent drainage for five or six days. This allowed the bladder to be at rest and the wound in its walls to close. In other cases, where drainage was essential, the tube should be removed at the earliest possible moment, to prevent the tendency to the formation of a fistula.

Intestinal Anastomosis.—Dr. F. Kammerer related the histories of two cases of gastro-enterostomy in which he had lately performed end-to-end anastomosis with catgut rings. The first was that of a woman, about sixty years old, with a tumor of the pylorus and dilatation of the stomach. After making the incision, from the ensiform cartilage to the umbilicus, the speaker divided both the upper part of the jejunum and the pyloric end of the stomach transversely to the course of the organ, and then applied Abbe's rings. The patient got along very well for the first two days, but then peritonitis developed, of which she died on the fourth day.

The second case was that of a man, twenty-nine years old, who had suffered for many years with pyloric obstruction, and came into the German Hospital in a very low condition. As a preliminary measure his stomach was washed out daily for two weeks, but even then the contents had not been entirely withdrawn, and he began to fail so rapidly that, if anything was to be done, it had to be done immediately. Gastro-enterostomy was performed. The speaker incised the viscera in the direction of their course and introduced catgut rings. In this, as well as in the first case, the Lembert suture was added as a precaution. The patient died on the second day, from shock. The speaker had not had the difficulty in finding the upper part of the jejunum that had been met with by some authors. Holding up the lower angle of the abdominal incision and drawing the gut through his fingers, he had easily recognized the duodenum by its attachment to the vertebral column. He had secured each ring with six sutures, two of which were passed laterally on both sides of the incision into the viscus. He thought it would be a good plan to pass the suture lying in the angle of the incision through the walls of the gut, for he had found a tendency of the gut to recede over the ring at that point. This had caused him a great deal of trouble. The specimen from the first case showed clearly the digestive power of the stomach, for the ring was entirely gone. In the second case, however, the ring was completely intact. This he attributed to the patient's low condition. The speaker had had no experience in the use of Senn's plates, but he thought he should use them in his next case, although he must admit that in his second case, in which water had been forced into the jejunum as a test, not a drop escaped at the line of sutures. The sutures were of silk.

Dr. B. F. Curtis thought it was customary to use six threads with the catgut rings, and always to pass the end threads through the wall of the bowel, and not through the incision. Six Lembert sutures should be added for greater security.

The President said that the use of catgut rings in end-to-end union was not novel; French surgeons had so employed them for over three years.

Dr. McBurney said he always passed the end suture through the wall of the bowel, about a quarter of an inch beyond the end of the incision. This he considered safer than to pass it through the angle of the incision itself. He thought there was not much danger of infection through the tissue of the wall of the gut, and silk had the advantage of not being liable to slip and was always soft, whereas catgut was taken out of a liquid that had of necessity rendered it hard and unyielding.

Dr. McBurney thought there was very little likelihood of harm being done if the rings were well applied. Peritoneal adhesion would take place and cover the sutures in. He would ask why Dr. Kammerer had concluded to use Senn's plates in any future case.

Dr. Kammerer would do so in the hope of avoiding every chance of infection. When catgut rings were employed, many sutures were necessary—at least six or eight or more, for he believed that, when only four were used, there was no absolute guarantee that the parts of the rings between the sutures were in close approximation. Only very little fæcal matter would have to find its way between the sutures to cause peritonitis. And any hard material would always make a better approximation of the two surfaces. In his second case the result had been good, however, so far as the anastomosis was concerned.

Dr. Briddon said that one of the gentlemen of the house staff of the Presbyterian Hospital, Dr. Shively, had been experimenting with chromicized gelatin as a substitute for the catgut rings. It could be molded into any shape, and could thus be placed in accurate position.

Dr. Wyeth asked what the size of the aperture in Dr. Kammerer's specimen had been when it was fresh.

Dr. Kammerer said that the openings had measured about an inch in length. As to its being the usual practice to pass the end sutures through the wall of the gut, he had not been able to gather from Dr. Abbe's address, in Philadelphia, that he invariably did so. It was known that, when Senn's plates were used, two sutures lay in the angles of the intestinal wound. When the gut was transfixed with sutures in the entire circumference of the catgut rings, the tension on the different parts of the gut lying between the individual sutures after they were tied was probably often unequal. On this account also he believed that the ideal ring was one of unyielding material and armed with few sutures.

Dr. Curtis repeated that the suture at each end of the oval catgut ring should always be passed through the wall of the intestine in exactly the same manner as those at the side. Unless this was done there was nothing to hinder the intestinal wall at the end of the wound from slipping over the ring.

The President believed that a fatal issue in these cases was due to the escape of the contents of the bowel along the side of the silk ligatures. He thought there would be a manifest advantage in using catgut for sutures as well as rings.

Dr. Wyeth thought the greatest danger lay in the possibility of failure to establish thorough communication. The openings always seemed smaller than they ought to be in order to avoid stenosis after the operation.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN LARYNGOLOGY AND RHINOLOGY.

Dr. Clarence C. Rice in the Chair.

Meeting of October 22, 1889.

A Year's Work in the Section.—The Chairman opened the meeting with an address to the Section giving a brief *résumé* of the work done since his election last February. It had seemed to him that the Laryngological Section would fill a larger field of usefulness if the topics of the papers and the discussions treated of subjects which were of interest not alone to the rhinologist and laryngologist, but to those working in other special lines of medical study, and to the general practitioner also, for there were many medical subjects which were pertinent to this Section and at the same time perhaps of special interest to the neurologist or the dermatologist, to the general surgeon, and the family physician. It was therefore thought desirable to select such papers and arrange such discussions as would bring together these different classes of physicians, and

thus secure a respectable attendance at the meetings. No one cared to read a carefully prepared paper to empty seats, and the most enthusiastic rhinologist would fail to find any comfort in his latest ingenious instrument if it could be demonstrated only to the faithful few and the janitor. To the rhinologist, the consideration of medical subjects a little way removed from those directly relating to the nose and throat was of great value. In the daily routine office work it was almost impossible to get beyond the limitations of thought and experience which were closely identified with the class of patients they treated, and broadening medical influences were needed by no class of medical practitioners more than themselves. It was refreshing to hear the ætiology of a cold in the head described by the old-time practitioner. They liked to know how the general surgeon removed a growth or foreign body from the larynx. They were apt to get some new ideas when they closed their text-books and listened to the neurologist's opinion of the pathology and ætiology of some of the neurotic disorders of the upper air-passages. The physician, too, who spent his time listening to the heart's action, percussing the chest, and making out the borders of the liver and spleen, could suggest causes of congestion and hypertrophy of nose, pharynx, and larynx which seemed indisputable. One other reason for avoiding the consideration of subjects of interest only to the exclusive specialist in laryngology was to be found in the fact that a number of New York's most prominent specialists had seldom favored the Section with their presence. The speaker said that if the members of the Section had lost much by their absence, they had missed hearing some very scientific and instructive papers and discussions. The "New York Medical Journal" and the "Medical Record" had both published the papers of the Section, and he believed would continue to do so. The speaker then briefly reviewed the work of the past season. He tendered his thanks to the gentlemen who had contributed so largely to the success of this Section by their active co-operation, and earnestly requested their continued assistance.

A Laryngeal Growth.—Dr. J. H. Billings presented a male patient, about forty-five years of age, suffering from a laryngeal growth. This man, he said, had come to the hospital last spring, when the diagnosis of laryngeal growth had been arrived at, and an unsuccessful attempt had been made to remove it. Then the patient had disappeared and had not been seen again until very recently. The growth had increased in size until the stenosis was almost complete, the patient only having a space of the size of a crow's quill through which to breathe, and the condition had appeared such as to demand immediate attention. It was difficult to give any opinion as to the character of the growth. Some portions of it were as yet quite movable, but there was considerable œdema. The growth might be a papilloma.

Dr. G. B. Hope said that the growth had hardly been under observation long enough to test the character of it. After an ineffectual effort had been made to remove a portion of the tumor it had been proposed to temporize with the case, or to obtain a small portion of the growth for microscopical examination. There had been some history of syphilis, but not a definite one. The patient had, however, been given iodide of potassium in fifteen-grain doses, and had already reported some mucous-membrane irritation. It was not desirable to interfere at the present juncture, unless the question of saving the man's life came up for immediate consideration. Opinions upon the nature of the case were divided, as to whether the tumor was of a gummatous form or something intrinsically more serious.

Dr. R. P. Lincoln thought it better to wait and test the effect of the anti-syphilitic treatment before any radical operation was attempted. The general appearance of the parts, and the absence of any involvement of the surrounding structures, suggested syphilitic rather than malignant trouble. The treatment which had been already instituted might demonstrate something as to the real nature of the case.

A Foreign Body in the Bronchus.—Dr. W. K. Simpson reported the history of a case of a tooth in a bronchus. This foreign body had remained in the tube more than six months and had then been expelled. The patient, after having fourteen upper teeth extracted at one sitting, under nitrous-oxide gas, had gone two days after this and had one more tooth extracted, again taking gas. On recovering this last time she had experienced a slight tickling in the throat, followed by cough. About a month after this, severe pain had been felt on the right side of the chest, in the axillary line. This pain had lasted a week and had been succeeded by a whistling sound on breathing. The cough had remained. When she was seen, on March 10, 1889, her tongue was excessively hyperæmic, the tissue was denuded, and the general appearance was that of follicular amygdalitis. The speaker had considered the cough due to the condition at the base of the tongue. The case had remained under his care until May 25th, with little change in the cough. Various forms of routine treatment, in the way of application and cauterization, had been adopted. On the above-given date pain in the right lung had been felt, and percussion had demonstrated a well-marked area of dullness. The patient was removed to a hospital, where she rapidly became worse, her temperature running as high as 105° F., and the pulse rising to 120. Light râles were detected over the area of dullness. The patient had become cyanotic, and her death was apparently imminent. She was much relieved by the inhalation of oxygen. Two days later, during a severe attack of coughing, she expectorated a thick mass of material tinged with blood, in which was imbedded the large root of a tooth. Her subsequent history had been one of rapid improvement. The hyperæmia at the base of the tongue still existed, and the question had suggested itself whether this was of itself sufficient to cause the paroxysmal cough.

Dr. R. C. Myles, in reply to a question, said that he had always found the galvano-cautery efficient in treating such conditions at the base of the tongue. He had tried chromic acid, but it was far from satisfactory. Not infrequently it ran down upon the edges of the epiglottis and on to the hyoid bone.

The Chairman thought it most important to recognize this pathological condition, for it was one which, in addition to keeping up a distressing cough, might eventually produce catarrh of the larynx. In the majority of cases it would be necessary to use a mirror, and then the diagnosis was readily made. The enlarged papillæ were to be seen overlying the epiglottis, the latter being inflamed and congested.

A Tooth-plate in the Laryngo-pharynx (?) for Sixteen Days.—Dr. C. H. Knight read a paper with this title. He said that the case was somewhat extraordinary in view of the shape and size of the foreign body and its prolonged retention.

Mary O'C., aged twenty-six, married, was confined with twins on July 19, 1889. After delivery she had a convulsion. Several more occurred on succeeding days. On the sixth day she had become sufficiently conscious to be aware of having considerable difficulty and pain in swallowing. The voice had gone and there was some dyspnœa. The cause seemed not to have been suspected. Matters went on in this way for some time with no attempt to take solid food, until the sixteenth day, when a violent attack of coughing and vomiting occurred. The patient had been conscious of a mass of some kind which had come partially into her mouth and dropped back again. Her dyspnœa and other symptoms had become much intensified. Her physician, who had been summoned, had failed to remove

the foreign body with instruments, but finally had succeeded in withdrawing it by means of his finger. The speaker had first seen the patient at the Vanderbilt Clinic on August 26, 1889—more than a month after the accident. She had then complained of pain on the right side of the larynx radiating upward and backward toward the ear, and aggravated by swallowing. A dysphagia had at times been so marked that she had refrained from trying to eat solid food, and in consequence her general condition was bad. The voice had been completely lost, and attempts at phonation were fatiguing and painful. Breathing was stridulous, and under exercise or excitement quite labored. There was an almost constant hacking cough, with profuse expectoration of frothy, muco-purulent sputa. Dr. James examined the lungs and found no pulmonary disease. Laryngoscopic examination showed the larynx to be very hyperæmic and distorted. The image was obscured by the abundant secretion which was present. The left side of the larynx was chiefly affected and was immovable. The epiglottis was of nearly twice the normal thickness; the left aryteno-epiglottic fold was enormously swollen and œdematous. The left ventricular band was swollen nearly to the median line and entirely concealed the left vocal cord. The middle third of the right vocal cord was visible and intensely congested. The swelling of the tissues was less on the right side. At no point could any indication of ulceration or laceration be seen. Narrowing of the chink of the glottis was so extreme as to suggest the necessity of intubation or tracheotomy. The appearance of the parts indicated serious damage to the laryngeal cartilages. The speaker was quite prepared for necrosis with its unhappy consequences.

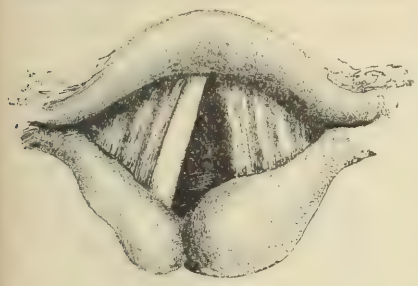


Fig. 1.

To his surprise, however, improvement began and steadily progressed. The left vocal cord became exposed as the swelling subsided. The left side gradually resumed its share in the respiratory and phonatory functions of the larynx. Still the voice had not been restored and the reason had become evident as the parts had approached their normal proportions. The posterior third of either vocal cord was missing; it looked as though it had been cut out with a sharp curette. Such a lesion would, of course, be permanent. In contraction of the laryngeal adductors the anterior portions approximated, leaving a wide gap at the posterior commissure. The ventricular bands appeared to assist the true cords in their attempts at phonation, but without succeeding in raising the voice above a whisper. The foreign body which had caused this condition was a hard rubber plate with the fragment of its single tooth still attached. This plate measured three inches in length and three eighths of an inch in width, its greatest thickness being less than a third of an inch. The distance between its two extremities was a little more than an inch. On one side it was smooth, on the other was the roughness for adaptation to the alveolar processes. Projecting from its anterior margin were seven or eight sharp points, which fitted in between the teeth. The character of the lesion as it appeared suggested the position possibly assumed by the foreign body. Although any theory on that point would have to be purely speculative, it had seemed to the speaker that one arm of the plate had rested in the laryngo-pharynx, while the other had occupied the posterior commissure of the larynx, impinging upon and finally eroding the vocal bands. Had it been swallowed reversed, with the ends of the plate looking upward, it would probably have been carried farther down, and its spontaneous expulsion have been hardly possible. Having been wedged in the position surmised, it had been firmly held by muscular spasm, and swelling and œdema had quickly supervened. Finally it had been loosened by an ulcerative process and dislodged by a violent expulsive effort. The remarkable tolerance of the parts might be explained by the fact that the patient lay in a semi-conscious state for six days after the accident. The present condition of the patient showed much general improvement. She still complained of pain on swallowing and constant soreness, also of deep-seated pain in the right ear, for which the aurists could find no local cause. The larynx had nearly recovered its normal condition with the exception of each vocal cord. The parts still continued red, with more or less thin purulent secretion, which seemed to ooze from the posterior wall of the larynx. The latter fact, together with the offensive breath and persistent pain on deglutition, the speaker thought pointed to the existence of necrosis. The chronicity of these cases was well known, and it might be many months before positive proof of the suspicion appeared. The treatment in this case had consisted of the use of general tonics and local sedative applications, steam inhalations, and, externally, water fomentations. The question of treatment in such cases was always one of importance. In the event of urgent dyspnœa the foreign body must be removed or a new air-passage provided by opening the trachea. The speaker thought that his case was a most eloquent argument in favor of conservatism. In conclusion he offered the following query: In a case of firmly impacted foreign body of large size and irregular shape, would it not be wiser to defer forcible attempts at removal until it had become in a measure loosened by natural processes, provided there seemed to be danger of causing extensive laceration in the act of dragging it from its bed, and provided no urgent symptoms were present?



Fig. 2.



Fig. 3.

Dr. Mavert said that the patient whose case had been reported by Dr. Knight had been delivered of twins in his service at the hospital. He had, however, seen her some time before this, and she was at that time somewhat œdematous in the lower extremities; her urine was albuminous and of high specific gravity, but contained no casts. She had given birth to a child three years before without any complications. He had restricted her to appropriate diet, under which the condition of the urine had improved. When she next reported at the hospital she was in labor and was delivered of twins. No chloroform was administered. During the afternoon, a few hours after delivery, a violent headache set in, for which she was given morphine, potassium bromide, and chloral. Soon after this he was told that she had had a convulsion. When he arrived at the patient's bedside she was in the stage of stupor, but soon after went into a well-marked eclamptic condition, during which she

bit her tongue, and the speaker observed that she had no artificial teeth. She had at intervals several more seizures, which eventually yielded to treatment. During the first twenty-four hours after delivery the patient had first complained of soreness in the throat, and considerable mucus seemed to be accumulating, with some slight cough attending. He made an ordinary examination with a tongue depressor, but, knowing nothing of the existence of any foreign body in the mouth, suspected no complication of that kind. She was treated on general principles as having uræmia and acute Bright's disease, being given nothing but liquid diet, which she was able to swallow readily. About a day or so after her delivery he was told that the patient had missed her artificial dental plate, the size of which she had described. Then her throat was examined, but without using a mirror, and nothing was seen. Four days later she sent for him to say that the plate was in her throat. Then the laryngoscope was used, the partially broken tooth and dental plate were seen, and an attempt was made to remove them with a light dressing forceps. These did not answer, and he introduced his finger, and, after several trials, removed the plate.

Dr. S. D. Powell said that he had not had very extensive experience with foreign bodies in the air-passages. The first case had been that of a colored man, who, while laughing with his mouth full at dinner, had got a piece of meat with bone attached into his windpipe. The meat had entered between the vocal cords, the bone remaining free. The speaker was sent for, and succeeded with his fingers in pulling away the bone only, breaking it away from the meat, which was firmly fixed between the vocal cords. He then at once did laryngotomy, and with a probe pushed the meat out of the larynx, whence it was removed with a forceps. Another instance had been that of a child, five years of age, who was brought to his office on account of painful deglutition and loss of voice. Examination revealed a foreign body lodged below the vocal cords, which were very œdematous, the body having been in the trachea several days. He attempted to get hold of it with forceps, but failed, and performed thyreotomy and succeeded in removing a small shell of about half an inch in diameter. Frequently these cases were not seen until all the spasmodic symptoms had passed off. It was at all times well to endeavor to quiet the patient. If much spasm existed, the throat should be swabbed out with a brush soaked in a 15-per-cent. to 20-per-cent. solution of cocaine. Then it was well to find whether reasonably strong evidence could be urged that something had really been swallowed which demanded attention. He deprecated the plan of suddenly inverting a child supposed or known to have swallowed something. The method of at once throwing the child down and then inverting it was apt to produce spasm and cause death. It was better to let the child remain perfectly quiet until the spasm had subsided. It was not well to rely on the absence of acute symptoms. The trachea would become more or less tolerant of a foreign body after a few hours. Delay in this event was much more dangerous than an operation. Tracheotomy and laryngotomy were not difficult or dangerous operations, and it was much more satisfactory to have made some effort. The question of probing should be determined by the character of the foreign body. If this was perfectly round and smooth, like a pea or bean, its use was of very questionable utility. He disputed the judgment which urged the use of probes and forceps in the trachea.

Dr. Lincoln remarked that there could be no law laid down *ex cathedra;* each case must be a case *sui generis*, and must throw the practitioner upon his own resources. It was necessary first to know what one had to deal with and determine what should be done. As to the propriety of inverting patients, which practice had been deprecated by Dr. Powell, he thought that the expedient had saved many lives. He should be sorry if any one were deterred from trying it. It was a simple procedure when the emergency was so great as to allow of no delay for anæsthetics of any kind. Among several cases illustrative of the vagaries to which foreign bodies in the air-passages were liable, he narrated one to show that the foreign body was not always there. He had received a summons to go at once to a gentleman's house. On arriving there, he learned that two surgeons, well known and able men, had already been sent for, they having been notified that the patient had insisted upon it that he had swallowed his false teeth. They came prepared to make an examination and passed bougies into the stomach, but failed to discover anything. The patient was very much depressed, as he had been notified of the seriousness of a contemplated operation. The speaker urged that it was utterly impossible for the teeth to have been swallowed, the size of the plate making it mechanically impracticable. While they were still in consultation a messenger arrived with a package containing the missing teeth.

The discussion then became general, many members relating interesting experiences within their knowledge of foreign bodies in the upper air-passages, and the various means adopted for their removal.

The Chairman said that cocaine had so revolutionized the work of examining the laryngo-pharynx that it could now be done with a minimum of discomfort to the patient. The parts could be quieted to such an extent that any one accustomed to the manipulation of the necessary instruments would have no difficulty. The cases should, however, without doubt, be sent to experts. He had been called in consultation to a case in the country. The doctor in attendance showed him a foreign body in the patient's throat. It was the epiglottis. The doctor, who had been working at it for some hours, had not succeeded in entirely removing it.

Book Notices.

A Manual of Minor Surgery and Bandaging, for the Use of House-Surgeons, Dressers, and Junior Practitioners. By Christopher Heath, F. R. C. S., Surgeon to University College Hospital and Holme Professor of Clinical Surgery in University College, London, etc. Ninth Edition. Philadelphia: P. Blakiston, Son, & Co., 1889. Pp. xvi–361. [Price $2.]

We should be glad if this book could be placed in the hands of every student after he has passed his examinations and is waiting for the day to come when he is to enter upon his duties on the hospital staff. All through his hospital life, indeed, he could profitably keep it within reach. It is practical, and there is no need for the author to tell us that he has been a house surgeon; the book could not have been written by one who had not been one. The mutual relations between the house staff and the powers that be could not have been treated of so delicately and reasonably, neither could such sound advice have been given, by any but one who had borne his part in the battles between these two great powers.

The work differs from most books on surgery in that it deals more with those minor points the knowledge of which is usually acquired by oral instruction or simply by imitation, but which to a considerable degree conduce to success in surgical practice. It is written in the author's well-known clear style, and is creditably got up by the publishers.

BOOKS AND PAMPHLETS RECEIVED.

The Principles and Practice of Surgery. By John Ashhurst, Jr., M. D., Boston, Professor of Surgery and of Clinical Surgery in the University of Pennsylvania; Surgeon to the Pennsylvania Hospital, etc. Fifth Edition, enlarged and thoroughly revised. With Six Hundred and Forty-two Illustrations. Philadelphia: Lea Brothers & Co., 1889. Pp. xxviii–33 to 1148. [Price, $6.]

Guide médical à l'exposition universelle internationale de 1889 à Paris. Par Marcel Baudouin, secrétaire de la redaction du Progrès médical. Avec la collaboration de MM. P. Achalme, G. Capus, P. Keraval, L. Lamotte, A. Raoult, L. Regnier, A. Rousselet. 1er fascicule—Instruments de chirurgie et de précision. Avec nombreuses figures dans le texte. Paris: E. Lecrosnier et Babé, 1889. [Prix, 3fr. 50.] [Publications du "Progrès médical."]

La pertosse e le sue vicende scientifiche. Valore ed efficacia di un metodo curativo speciale. Por Dott. G. Guidi. Firenze: G. Civelli, 1889. Pp. 99.

Disturbed Equilibrium of the Muscles of the Eye as a Factor in the Causation of Nervous Diseases. By A. Friedenwald, M. D., Baltimore. [Reprinted from the "Transactions of the Medical and Chirurgical Faculty of Maryland."]

Periostitis of the Ribs after Typhoid Fever, and its Probable Dependence on Medication. By S. O. Lewis Potter, M. D., San Francisco, Cal. [Reprinted from the "Pacific Medical Journal."]

On a General System of reporting Autopsies in American Asylums for the Insane. By H. E. Allison, M. D., Auburn, N. Y.

Il calomelano nella febbre tifoide. Per il Dott. Umberto Dieci. [Estratto dalla "Rassegna di scienze mediche."]

Biennial Report of Medical Examiner in Chief, American Legion of Honor, 1887–'84, J. Foster Bush, M. D.

The Value of the Electrical Methods employed for the Resuscitation of Persons who have ceased breathing. By H. A. Hare, M. D., and Edward Martin, M. D. [Reprinted from the "University Medical Magazine."]

Experiments to determine the Value of Oxygen in the Resuscitation of Animals poisoned by CO or Ordinary Coal Gas. By H. A. Hare, M. D., and Edward Martin, M. D. [Reprinted from the "University Medical Magazine."]

The Proposed New Lunacy Law. By Frederick Peterson, M. D. [Reprinted from the "Medical Record."]

On Unusual Methods of acquiring Syphilis, with Reports of Cases. By L. Duncan Bulkley, A. M., M. D. [Reprinted from the "Medical News."]

The Education of Girls from a Medical Standpoint. By Edward W. Jenks, M. D., LL. D., Detroit. [Reprinted from the "Transactions of the Michigan State Medical Society."]

The Ship's Surgeon of To-day. By Charles Henry Leet, Fellow of the Royal College of Surgeons, England, etc.

Contributo allo studio delle nefriti. Nota del Dott. Giuseppe Bassi. [Estratto dalla "Rivista clinica archivio italiano di clinica medica."]

Ricerche sul soffio sottoclavicolare, del Dott. Carlo Borsari. [Estratto dalla "Rivista clinica archivio italiano di clinica medica."]

Un caso di atassia locomotrice curato con la sospensione e seguito da morte. Pel Dott. Carlo Borsari. [Estratto dalla "Riforma medica."]

Un caso di attossicamento carbonico con paralisi del trigemino. Pel Dott. Carlo Borsari. [Estratto dalla "Riforma medica."]

Esiste una peritonite cronica essudativa idiopatica? Pel Dott. Giuseppe Molinari. [Estratto dalla "Riforma medica."]

A Manual of Obstetrics. By A. F. A. King, A. M., M. D., Professor of Obstetrics and Diseases of Women and Children in the Medical Department of the Columbian University, Washington, D. C., and in the University of Vermont, etc. With One Hundred and Forty-one Illustrations. Fourth Edition. Philadelphia: Lea Brothers & Co., 1889. Pp. xxiv–25 to 431. [Price, $2.50.]

A Reference Hand-book of the Medical Sciences, embracing the Entire Range of Scientific and Practical Medicine and Allied Science. By Various Writers. Illustrated by Chromolithographs and Fine Wood Engravings. Edited by Albert H. Buck, M. D., New York city. Volume VIII. New York: William Wood & Company, 1889. Pp. vi–801.

Ninth Annual Report of the State Board of Health of New York. Transmitted to the Legislature February 26, 1889.

The Medical News Visiting-List, 1890. Philadelphia: Lea Brothers & Co, 1889.

Papillome et tuberculose du larynx. Par le Dr. A. Gouguenheim, médecin de l'hôpital Lariboisière. [Extrait des "Annales des maladies de l'oreille, du larynx, du nez et du pharynx."]

On Subluxation of the Head of the Radius in Children; with a Résumé of One Hundred Consecutive Cases. By W. W. Van Arsdale, M. D., New York. [Reprinted from the "Annals of Surgery."]

The Education of Girls from a Medical Standpoint. By Edward W. Jenks, M. D., LL. D., Detroit, Mich. [Reprinted from the "Transactions of the Michigan State Medical Society."]

Transactions of the Tenth Annual Meeting of the American Laryngological Association, held in the city of Washington, September 18, 19, and 20, 1888.

Report on a Second Series of One Hundred Successive Cataract Extractions without Iridectomy. By H. Knapp. [Reprinted from the "Archives of Ophthalmology."]

Constitution and By-laws of the Association of the Alumni of the College of Physicians and Surgeons in the City of New York. Incorporated May 12, 1873.

Transactions of the Medical and Chirurgical Faculty of the State of Maryland at its Ninety-first Annual Session, held at Baltimore, Md., April, 1889.

A Contribution to the Surgery of the Spinal Cord. By William Thorburn, B. S., B. Sc., M. D. (Lond.), Fellow of the Royal College of Surgeons of England, etc. With Diagrams, Illustrations, and Tables. Philadelphia: Blakiston, Son, & Co., 1889. Pp. vii–230. [Price, $4.50.]

An Introduction to the Study of Organic Chemistry. By Adolph Pinner, Ph. D., Professor of Chemistry in the University of Berlin. Translated and revised from the Fifth German Edition by Peter T. Austen, Ph. D., F. C. S., Professor of Analytical and Applied Chemistry in Rutgers College and the New Jersey State Scientific School. Second Revised Edition. New York: John Wiley & Sons, 1889. Pp. xxi–403.

Chemical Lecture Notes. By Peter T. Austen, Ph. D., F. C. S., etc. New York: John Wiley & Sons, 1888. Pp. ii–98.

A Hand-book of Physical Diagnosis of Diseases of the Organs of Respiration and the Heart, and of Aortic Aneurysm. By R. C. M. Page, M. D., Professor of General Medicine and Diseases of the Chest in the New York Polyclinic, etc. New York: J. H. Vail & Co., 1889. Pp. viii–291.

Reports on the Progress of Medicine.

OBSTETRICS.

By ANDREW F. CURRIER, M. D.

Intra-uterine Fractures ("Gaz. méd.," March 2, 1889).—All writers now admit the possibility of accidents of this kind. Traumatic fractures now excite very little discussion with regard to their ætiology. Whatever be the manner by which the traumatism is applied, it appears to be the sole cause in such cases. Such a traumatism is usually experienced in the second half of pregnancy. It is not necessarily followed by abortion; on the contrary, the pregnancy usually continues to term. The possibility of intra-uterine fractures of the cranium is one which may involve legal questions of great importance. In fractures with any form of arrest of development or fault of conformation there is usually a history of traumatism in connection with the mother. The relations between such a traumatism and different malformations of the fœtus give rise to numerous hypotheses. There seems to be no such thing as syphilitic fracture. What has been described as such is probably of the nature of an epiphyseal displacement. Fractures of rhachitic origin, fractures due to fragility or softness of the fœtal skeleton, might be referred to the class of spontaneous fractures. The former of these constitute a distinct nosological type; as to the latter,

histological examinations are not sufficiently numerous, as yet, to make of them a special type. The congenital fractures which occur most frequently are those of the leg. They are often associated with deformities of different kinds, which are located mainly in the limb which has sustained injury. A striking peculiarity in some cases is the complete or partial absence of the fibula. As to the variety in the complications, it seems to be about the same as in adults. Complete cure during intra-uterine life is an unquestionable fact. Treatment by osteoclasis, osteotomy, or tenotomy diminishes the importance of deformities resulting from intra-uterine fracture. Surgical intervention should be instituted at a time when there are no malformations which are incompatible with the life of the child.

Acute Meningitis during Pregnancy (Le Page, *ibid.*, March 9, 1889).—If an acute disorder occurs to a woman who has reached the latter months of pregnancy the question often arises whether it is desirable to terminate the pregnancy artificially. Obstetricians are now almost unanimous in advising, in such cases, an expectant line of treatment—(1) because the acute disease, if severe, almost always causes spontaneous interruption of the pregnancy; (2) because the prognosis of the disease in the mother would be aggravated by operative interference; (3) because the fœtus usually participates in the disease of the mother, and its existence would be compromised by such interference.

Though these are good reasons for the greater number of grave acute diseases, and especially for the eruptive fevers, they may not serve as guides for all acute diseases. Each pathological group brings its own particular indications, and this is eminently true concerning meningitis. Whether tuberculous in character or simply inflammatory, it is not rare in adult life, and may occur in pregnant women. Of seven cases which have been analyzed by Chambrelent, in six delivery did not take place spontaneously; in the seventh it occurred a few hours before the death of the mother. In all the cases in which no attempt at extraction was made, the autopsy showed that no pathological changes had taken place in the fœtus. In all the cases in which the child was extracted it was born alive. From these cases it might be concluded that if a woman had reached the seventh month of pregnancy and meningitis should then supervene, premature labor should be instituted prior to the death of the mother, as one would then be able, in all probability, to extract a living child. Such a course would not affect the prognosis in the mother's case, since that is almost absolutely fatal. The objection might be made, in case of tuberculous meningitis, that it would be useless to extract a child which would probably be infected by the disease and would die a few days after birth. But the reply to this would be that it is often very difficult to decide before death whether a meningitis is of a tuberculous character, and also that the transmission of the tuberculous infection from the mother to the child may not be fatal. Furthermore, a physician has no right to anticipate the future in such a way, his first duty being to save life whenever it is possible.

The Microbic Origin of Puerperal Fever (Smith, "Trans. of the Royal Medical and Surgical Society").—The author has made cultivations in gelatin with blood taken from the heart of a woman who died from puerperal fever, and after an interval of two or three days many colonies of a micrococcus were evident. Rats inoculated with the microbe died after three or four days, the micrococcus being found in their blood. Inoculations were also made in the ears of rabbits, and at the end of twenty-four hours a circumscribed redness, without tendency to diffusion, was apparent, differing in that respect from the redness of erysipelas. The redness disappeared after two or three days. A new series of cultivations and inoculations with blood taken from the finger of a woman sick with puerperal fever gave similar results. The following conclusions were reached:

1. There exists in the blood of women suffering with puerperal fever a particular micro-organism.

2. This micro-organism is a streptococcus which differs much from others, as shown by cultivation and inoculation.

3. The action of this micro-organism upon rats and rabbits is very definite.

4. It differs decidedly from the *Streptococcus erysipelatosus* of Fehleisen and the streptococcus of Rosenbach.

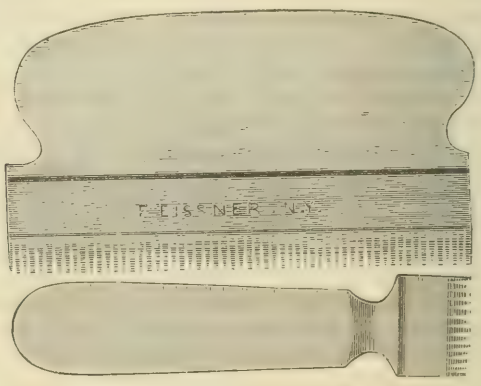
Rupture and Suppuration of the Pelvic Joints during Labor and the Puerperal Period (Dührssen, "Arch. f. Gyn.," xxxv, 1).—The unqualified statement of the text books that the prognosis in suppuration of the symphysis is unfavorable is not strictly correct. One should not include in this class the cases in which there is general septicæmia or pyæmia, in which the prognosis is always bad. The prognosis will depend upon the treatment which is followed, and it will be unfavorable only in cases in which no incision is made. If an incision is not made, a cure will result only when there is an open rupture of the symphysis with free discharge of the pus, or when the pus is discharged from a spontaneous opening. After the pus has been discharged there is usually healing by bony callus. The causes of suppuration of the symphysis are pyæmia from metastatic inflammation of the joint; infection of a non-septic nature through a vaginal wound, which may not occur until the puerperal period; and tuberculosis. A rupture of the symphysis having occurred, the presence of fever for the first seven days does not necessarily imply suppuration. It may be dependent upon the absorption of extravasated blood. Should the fever continue, with constant pain and increased swelling in the joint, the evidence is that the extravasated blood has undergone suppuration. Suppuration in the symphysis when the latter has not ruptured may easily be overlooked. Hence, when puerperal fever without apparent cause occurs, the symphyses of the pelvis must not be overlooked in one's examinations. Incisions should be made early in order to anticipate the burrowing of pus. Extraction of the after-coming shoulders, even though difficult and requiring the use of some force, will not cause rupture of the symphyses unless there are pathological changes in the latter.

New Inventions, etc.

TWO SCARIFICATORS FOR THE SURGICAL TREATMENT OF ERYSIPELAS.

By A. Seibert, M. D.,
NEW YORK.

The accompanying cut represents the scarificators designed by me as best adapted for making the surgical "fence" in the healthy skin surrounding the inflamed cutis in erysipelas. The smaller instrument is used for drawing the long bloody line, and the comb-like, larger one for crossing this at right angles. The cut shows the instruments of their right size.



The scarificators are made of steel and each of one piece, have no nooks or corners, and may be easily sterilized by boiling.

In reference to the three cases of erysipelas in children successfully treated by me by my modification of the Riedel-Kraske method ("New York Medical Journal," October 19, 1889), I can now report a case of severe facial erysipelas in an anæmic woman aged fifty-eight years, which had existed for five days and had spread from ear to ear and from the chin to the scalp. The "fence" made encroached about an inch above the forehead upon the capilitium, the hair being first cut off with scissors.

The temperature fell in six hours after the little operation (executed without anæsthesia) from 104·5° to 99° F., the erysipelas came up to the "fence," but never crossed it, and the patient was practically well the next day and was up and about in forty-eight hours after the treatment was instituted.* Two weeks after, no trace of the work of the scarificators could be detected. The points of the intruments being partly blunt and partly sharpened, the incisions can necessarily only be made superficially and only deep enough to draw blood, thus preventing any possible future scar.

Miscellany.

Retention of Urine from Enlarged Prostate.—This condition of advanced life is met with very often both in city and country practice, and is generally easy of diagnosis, yet every consulting surgeon has seen cases where the exact condition was not made out. There are many causes of retention, but hypertrophy of the prostate gland is by far the most common. At the recent meeting of the British Medical Association held at Leeds, Dr. McGill opened the discussion on the subject, which was reported in full in the "British Medical Journal." He laid down several propositions:

1. Prostatic enlargements which give rise to urinary symptoms are intravesical and not rectal. The severity of the symptoms bears no relation to the apparent size of the enlarged gland as felt through the rectum. Nearly every man above the age of fifty-five has this enlargement, yet only about 50 per cent. have any urinary troubles. This is owing to the direction in which the gland is enlarged. An enormous gland may project toward the perinæum or rectum, and give no urinary symptoms, while severe symptoms may be produced by a normal-sized gland as felt through the rectum. The enlargement may extend toward the rectum so as nearly to fill the lower aperture of the pelvis, causing complete intestinal obstruction. He mentions several varieties of intravesical enlargement: (1) a projecting middle lobe; (2) a middle lobe with the lateral lobes forming three distinct projections; (3) the lateral lobes alone; (4) a pedunculated growth springing from the lateral lobe alone; (5) a uniform circular projection surrounding the internal orifice of the urethra. This latter variety is quite common, but has to be seen *in situ*.

2. Retention is caused by a valve-like action of the intravesical prostate, the urethral orifice being closed more or less completely by the contraction of the bladder on its contents. A patient, finding himself unable to void his urine, soon ceases the violent efforts, the pressure on the valve is lessened, the urethral orifice is released, and a small amount of urine passes away. If he attempts to expel it more quickly, the flow is again stopped and it requires several trials of this kind to get relief. The time comes when he can not get any relief, although the bladder contains urine to the amount of a pint or more. The pressure, with the consequent desire of micturition, is accounted for by the fact that a more violent contraction of the wall is required to completely than to partially empty the organ, and that its muscular coat acts to greater advantage, and consequently with greater force, in its partially contracted than in its distended condition.

3. In many cases self-catheterism is the only treatment required. Under this head we desire to speak of the careless way in which many physicians cleanse their instruments. Dipping into water and wiping with a rag is not at all sufficient to render them antiseptic. The way catheters are made makes it almost impossible to keep them clean, for in the space below the eye there is the best chance for filth to collect. The end should be solid instead of hollow. After use, the metal instruments should be put into boiling water and allowed to remain a few minutes and then passed through an alcohol flame until all organic matter within is volatilized by burning, and this should be continued until all smoke and steam have ceased to escape. Occasionally catheters should be put into boiling water and allowed to remain an hour or two.

4. When the catheter treatment fails or is unavailable, non-radical measures are necessary. It is the writer's belief that, sooner or later, in the cases treated with the catheter the prostatic enlargement causes death. The urine becomes thick and ammoniacal, the desire to micturate becomes continuous, the passage of a catheter relieves for but a few minutes, and the suffering and discomfort are constant. The greatest care can not always prevent them, or the grossest carelessness induce them. Some patients, especially if of a nervous temperament, can not learn to use the instrument themselves. The constant attendance of a surgeon is impossible, and thus the catheter treatment fails.

5. This treatment, to be effectual, should for a time thoroughly drain the bladder and permanently remove the cause of the obstruction. Perineal drainage was introduced for the purpose of giving relief in cystitis. This relief is only temporary. Either the patient must always wear a urinal or else the urinary fistula be allowed to close with the probable recurrence of the symptoms.

6. These indications can best be fulfilled by a suprapubic rather than by a urethral or perineal operation. Dr. McGill prefers the suprapubic for the following reasons: It is more generally applicable. It can be performed with greater precision and completed with greater certainty. It insures complete and most efficient drainage. It is equally safe. He goes on to speak of the *technique* founded on an experience of thirty-seven suprapubic operations. A table of twenty-four cases is given, which includes seven cases of lithotomy. Out of this number three patients died from the operation and one from pneumonia while he was convalescent, two were under treatment when the discussion took place, and one had been lost sight of. Of the remaining ten, eight have continued well. In six of the recorded cases the prostatic retention was of long standing, and in all of them the bladder had expelled its contents since the operation. Two of the men operated upon were under the age of fifty-five. The author gives Dr. Belfield, of Chicago, the credit of first performing this operation, which he did in 1886. The discussion was participated in by ten of the leading surgeons, and it was generally conceded that this operation was justifiable in cases of prostatic retention, and would occupy a permanent place in operative surgery.

Physicians as Financiers.—The "Cincinnati Medical News" says: "Physicians are generally admitted to be exceedingly poor financiers. There is probably no class of men who realize so little financially from their labors. Persons are often astonished in how straitened circumstances many physicians, who were known during life to have had large practices, on dying, leave their families. They lived moderately; indulged in no luxuries; yet, after all debts have been paid, there will be left to the families of each one probably only a very unostentatious dwelling. For the last twenty-five or thirty years efforts have been made to simplify the business books of physicians, so that as little time as possible would be required for a medical man to enter his charges and keep something like a systematic account of his business. It has been found impossible for one engaged in the active practice of medicine to keep what is called a day-book, a cash-book, and a ledger, for with such a set of books, oftentimes not having time to enter any charges for two or three days, he will frequently forget many items. Then, again, frequently he will let his ledger go unposted for weeks and months, and when called upon to make out a bill he will in consequence not be able, and will be under the necessity of asking the applicant to call again. Visiting lists have been constructed to enable physicians more easily to keep account of their services; and they have certainly been of great use. We feel sure that through them we have saved many dollars which, without them, we should have lost. The very best book that we know of for a physician in which he can keep an account of his services to all his patrons is 'Bernd's Physician's Register.' For a physician to keep one of these requires no skill, no knowledge of book-keeping. A ten-year-old child can master it; and yet a more methodical, a better adapted method of keeping a physician's accounts could not be devised. If a doctor can not with one of these register all his business, so that he can know at any time who owes him and who does not, there will be no hope of being able to

* This patient was also demonstrated to my class at the New York Polyclinic four days after the operation.

devise anything for him so that he can keep an account of his business. We consider that the members of the medical profession are under great obligation to Messrs. Henry Bernd & Co. for their 'Register.' We hope they will have a large sale, not for the sake of the Bernds merely, but for the sake of the families of physicians."

Mortality in Cities in the United States.—The following table represents the mortality in the cities named, as reported to Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, and published in the abstract of sanitary reports received by him during the week ending November 15th:

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—									
				Cholera.	Yellow fever.	Small-pox.	Varicella.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y.....	Nov. 9.	1,588,363	615	..	..	..	..	..	..	8	2	15	4	5
Philadelphia, Pa.....	Nov. 2.	1,040,245	399	..	..	..	..	..	..	16	..	10	1	....
Philadelphia, Pa.....	Nov. 9.	1,040,245	359	..	..	..	..	..	..	8	3	8	..	....
Brooklyn, N. Y.....	Nov. 9.	843,602	267	..	..	..	..	1	..	6	4	21	..	6
Baltimore, Md.....	Nov. 9.	500,343	143	..	..	..	..	..	..	1	1	6	..	....
St. Louis, Mo	Nov. 9.	450,000	135	..	..	..	..	..	..	3	1	7	..	....
Boston, Mass	Nov. 9.	420,000	177	..	..	..	..	..	..	6	..	10	..	2
San Francisco, Cal...	Nov. 1.	330,000	117	..	..	..	..	..	..	9	2	1	..	1
Cincinnati, Ohio.....	Nov. 9.	325,000	108	..	..	..	..	..	..	3	..	8	1	1
New Orleans, La.....	Nov. 2.	254,000	110	..	..	..	..	..	..	1	1	5	..	....
Detroit, Mich.....	Nov. 2.	250,000	.....	..	..	..	..	..	..	..	..	4	..	....
Minneapolis, Minn...	Nov. 9.	200,000	44	..	..	..	..	..	..	6	..	8	..	....
Kansas City, Mo.....	Nov. 2.	180,000	38	..	..	..	..	..	..	3	..	3	..	....
Kansas City, Mo.....	Nov. 9.	180,000	31	..	..	..	..	..	..	1	..	..	..	....
Denver, Col.....	Nov. 1.	135,000	39	..	..	..	..	..	..	10	..	2	..	....
Denver, Col.....	Nov. 8.	135,000	43	..	..	..	..	..	..	9	..	4	..	....
Rochester, N. Y.....	Nov. 2.	130,000	34	..	..	..	..	..	..	2	..	2	..	....
Rochester, N. Y.....	Nov. 9.	130,000	29	..	..	..	..	..	..	4	..	..	..	....
Providence, R. I.....	Nov. 9.	127,000	48	..	..	..	..	..	..	4	..	..	1	....
Indianapolis, Ind....	Nov. 8.	124,450	27	..	..	..	..	..	..	..	..	2	..	....
Richmond, Va.....	Nov. 2.	100,000	31	..	..	..	..	..	..	3	..	..	..	....
Richmond, Va.	Nov. 9.	100,000	36	..	..	..	..	..	..	2	..	..	..	..
Toledo, Ohio	Nov. 8.	89,000	27	..	..	..	..	..	..	..	..	5	..	....
Fall River, Mass.....	Nov. 9.	69,000	19	..	..	..	..	..	..	3	..	..	..	....
Nashville, Tenn.....	Nov. 9.	65,153	19	..	..	..	..	..	..	1	..	1	..	1
Lynn, Mass.....	Nov. 9.	53,000	11	..	..	..	..	..	..	..	..	..	..	....
Portland, Me	Nov. 9.	42,000	13	..	..	..	..	..	..	..	..	..	..	....
Manchester, N. H....	Nov. 2.	42,000	12	..	..	..	..	..	..	..	..	2	..	....
Galveston, Texas....	Nov. 1.	40,000	10	..	..	..	..	..	..	..	..	..	..	....
San Diego, Cal.....	Oct. 30.	32,000	2	..	..	..	..	..	..	..	..	..	..	....
San Diego, Cal.....	Nov. 6.	32,000	3	..	..	..	..	..	..	..	..	..	..	....
Yonkers, N. Y.....	Nov. 8.	31,000	5	..	..	..	..	..	..	..	..	..	..	....
Binghamton, N. Y...	Nov. 9.	30,000	5	..	..	..	..	..	..	..	..	..	..	....
Altoona, Pa.....	Sept. 14.	30,000	8	..	..	..	..	..	..	1	..	..	..	....
Altoona, Pa.....	Sept. 21.	30,000	10	..	..	..	..	..	..	1	..	..	..	....
Altoona, Pa.....	Sept. 28.	30,000	5	..	..	..	..	..	..	..	..	1	..	....
Altoona, Pa.....	Oct. 5.	30,000	13	..	..	..	..	..	..	..	..	2	..	....
Altoona, Pa.....	Oct. 12.	30,000	8	..	..	..	..	..	..	1	..	1	..	....
Altoona, Pa.....	Oct. 19.	30,000	2	..	..	..	..	..	..	..	..	1	..	....
Altoona, Pa.....	Oct. 26.	30,000	5	..	..	..	..	..	..	..	..	1	..	....
Altoona, Pa.....	Nov. 2.	30,000	8	..	..	..	..	..	..	1	..	1	..	....
Altoona, Pa.....	Nov. 9.	30,000	8	..	..	..	..	..	..	..	..	..	..	....
Haverhill, Mass.....	Nov. 9.	25,000	11	..	..	..	..	..	..	..	..	..	..	....
Newport, R. I.....	Nov. 7.	22,000	4	..	..	..	..	..	..	..	..	..	..	....
Newton, Mass.....	Nov. 9.	21,553	9	..	..	..	..	..	..	..	..	3	..	....
Rock Island, Ill.....	Nov. 3.	16,000	6	..	..	..	..	..	..	..	..	4	..	....
Keokuk, Iowa.....	Nov. 2.	16,000	4	..	..	..	..	..	..	..	..	1	..	....
Keokuk, Iowa.....	Nov. 9.	16,000	4	..	..	..	..	..	..	..	..	1	..	....
Pensacola, Fla.....	Nov. 2.	15,000	5	..	..	..	..	..	..	..	..	..	..	....
Pensacola, Fla.....	Nov. 9.	15,000	7	..	..	..	..	..	..	..	..	1	..	....

The Health of Connecticut.—According to the State Board of Health's "Monthly Bulletin," the total number of deaths reported from 166 towns during the month of October was 1,027, including 7 from scarlet fever, 6 from cerebro-spinal meningitis, 71 from diphtheria and croup, 12 from whooping-cough, 37 from typhoid fever, 10 from malarial fever, and 13 from typho-malarial fever. There were also 148 deaths from consumption, 64 from pneumonia, and 34 from bronchitis.

The Health of San Francisco.—According to the Health Department's "Condensed Statement of Mortality" for October, the whole number of deaths was 507, including 2 from cerebro-spinal meningitis, 14 from cholera infantum, 10 from croup and diphtheria, 3 from erysipelas, 30 from typhoid fever, 2 from whooping-cough, and 3 from scarlet fever.

The New York Academy of Medicine.—At the next meeting of the Section in Laryngology and Rhinology, on Tuesday evening, the 26th inst., Dr. H. Holbrook Curtis will report "A Case of Cocaine Habit, with Remarks on the Dangers of the Use of Cocaine"; Dr. George H. Fox will report "A Case of Erythematous Lupus of the Face and Oral Cavity"; and there will be a discussion (by Dr. G. H. Fox, Dr. S. Sherwell, Dr. E. B. Bronson, Dr. L. D. Bulkley, Dr. R. W. Taylor, and Dr. M. J. Asche) on "Lupus of the Respiratory Mucous Membrane."

The programme for the next meeting of the Section in Obstetrics and Gynæcology, on Wednesday evening, the 27th inst., includes the following titles: "General Observations on the Use of Electricity in Gynæcology," by Dr. A. D. Rockwell; "The Treatment of Certain Pelvic Tumors by Galvano-puncture and Drainage by the Vagina, and Intra-uterine Galvanization," by Dr. A. H. Goelet; "The Galvanic Treatment of Uterine Fibromata," by Dr. E. L. H. McGinnis; "Notes regarding the Treatment of Fibromata by Electricity," by Dr. A. H. Buckmaster; and "The Value of Bipolar Faradization in Gynæcology," by Dr. A. Lapthorn Smith, of Montreal. Dr. P. F. Mundé, Dr. E. H. Grandin, Dr. J. H. Gunning, and others, of New York, Dr. Franklin H. Martin, of Chicago, and Dr. G. Betton Massey, of Philadelphia, will take part in the discussion.

Armour's Beef Extract.—Sir James Grant, of Ottawa, Canada, is reported as having said, after having had this preparation under observation for some months, that it has given great satisfaction as a vigorous restorer of strength in cases where a liquid form of diet was necessary.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Lectures and Addresses.

THE CARTWRIGHT LECTURES
ON
VITAL AND MEDICAL STATISTICS.

DELIVERED BEFORE THE ALUMNI ASSOCIATION OF THE COLLEGE OF PHYSICIANS AND SURGEONS, NEW YORK, November 14, 20, and 22, 1889.

BY JOHN S. BILLINGS, M. D., LL. D.,
U. S. ARMY.

LECTURE I (ABSTRACT).

I PURPOSE in these lectures to speak of vital and medical statistics, and of some of their relations to each other and to scientific and practical medicine and sanitation. The discussion will include such points as character of the data required; methods of obtaining them by the census, by registration, and in other ways; relations of physicians to this kind of work; methods of compilation and forms of publication; the best existing sources of such data; and some of the more common fallacies in drawing conclusions from the data as ordinarily published.

These and other points will be considered in their practical application to certain questions which, I hope, may be of interest to you, both as citizens and as physicians, as for example: Is the average longevity of man in civilized countries increasing? What data are required to practically judge of the relative healthfulness of different localities, or of the same locality at different times? What are the relations of certain forms of disease to race, to climate, to locality, to occupation? What is the relative tendency to increase of population in this country in the white and colored races? What is the statistical evidence with regard to improvement in practical therapeutics as arrived at from hospital data, from death-rates in obstetric practice, etc.?

Statistics and discussions of statistical methods are, as a rule, dry and uninteresting subjects, and it is with very considerable doubt and hesitation that such a topic has been selected for these lectures. I have no new discoveries to announce, and those who are practically familiar with statistical research will find some of my statements rather elementary; but the subject is not one which lies within the ordinary range of medical studies, the data are widely scattered in literature, and I hope, at least, to be able to remind you of some of the numerous points which you may have once known, but which may have been forgotten owing to the pressure of other studies and duties.

Statistics are somewhat like old medical journals, or like revolvers in newly opened mining districts. Most men rarely use them, and find it troublesome to preserve them so as to have them easy of access; but when they do want them they want them badly.

There are many fallacies and errors connected with vital and medical statistics as ordinarily collected and used, and it is highly desirable that the physician should be aware of the more important of these, since he is constantly appealed to for decisions as to their true significance and value. "It is as easy to tell lies with figures as with words, and bigger ones"; but while we occasionally meet with deliberate falsifications of the records, made for the purpose of magnifying or diminishing the apparent mortality or prevalence of a particular disease in a given locality, or to maintain an anti-vaccination thesis, these are not so frequent as are the errors of involuntary misstatement and misinterpretation into which those not familiar with methods of collecting and tabulating statistics are so liable to fall. Those who are not familiar with the methods of obtaining and compiling statistics of this kind are apt to be either unduly credulous or unreasonably skeptical as to their real use and value—to use the first figures which come to hand, and thence derive conclusions which are not warranted, or to reject the plain teaching of carefully compiled statistics in favor of general assertions which have no firm foundation, but which are in accord with preconceived opinions. My experience with those seeking statistical data is that the majority begin by looking for those data which are in favor of some particular conclusion with which they commence, rather than by selecting data with reference to their probable completeness and accuracy, and accepting the conclusions which may be legitimately drawn from them, whatever they may be.

Those who are engaged in the collection and compilation of official mortality and vital statistics are often at first the most skeptical as to their accuracy and utility, for their attention is so frequently and forcibly drawn to errors in the individual data that they conclude that the whole mass is unreliable; and the difficulties in the way of obtaining complete and reliable figures are seen to be so great that they incline to give up the whole matter in despair. Continued study of the subject, however, shows that many valuable conclusions or suggestions can be derived from imperfect data, and that in large masses of figures the errors either tend to neutralize each other, or to produce a constant effect in one direction which can be calculated and allowed for, so that those who have had the greatest experience are most convinced of their value. It is true that, in statistics, the inferences can not be more accurate than the data on which they are founded, but we do not look for scientific exactness from them so much as for an estimate of probabilities.

The methods which we have for advancing our knowledge of the laws of human life, of the causes of abnormity, disease, and death in man, and of means of sanitation or therapeutics, may be grouped into two classes—viz., observation and experiment—which, however, are often combined.

In the experimental method we seek to make a direct test of the variation of one particular condition, or set of conditions, upon the living organism, all other conditions being kept uniform as far as possible. Some such experiments can be made on man, but the greatest number of the problems which we may hope to solve by this method, and among these the most important, can only be approached by experiments on the lower animals. Within the last twenty years experimental physiology and pathology have

made great advances, and these methods, so far as they are applicable, give more definite results, and are more immediately satisfactory, than those derived from comparison of observations in which no definite experimental variations have been made; but so far as regards causes of disease, or the action of supposed methods of prevention, or of remedies, it is unfortunately the case that we can not draw accurate conclusions as to what will happen in man from what is observed to happen in animals. In the first place, there are many forms of disease in man, and those among the most important, as regards the suffering and loss of productive power and of life which they produce, which can not, with our present knowledge, be experimentally produced in animals, and which rarely or never occur in them.

For example: Yellow fever is a disease which, from analogy, we have reason to believe may be due to the action of one or more specific micro-organisms, or, perhaps, I should say, to the products of such organisms. We find a dozen different kinds of bacteria in persons suffering from yellow fever, and, by dint of much labor, these have been isolated and cultivated outside the human body. The problem is to determine positively, and with scientific precision, which, if any, of these is the true, essential cause of the disease. The mode of doing this is by producing the disease in a perfectly healthy person or animal by the inoculation of the suspected organism. But, thus far, we have failed to find any animal in which a disease, which can be considered as specifically identical with yellow fever, can be produced by any method; and I need hardly tell you that inoculations of such a disease as this in a human subject, under conditions which would make the results of such inoculation scientifically trustworthy, are impracticable and unjustifiable.

Those forms of disease which are common to animals and man—such, for instance, as anthrax, tuberculosis, tetanus, hydrophobia, the ordinary forms of suppuration, and also typhoid fever—are being pretty thoroughly worked out by means of such experimental inoculations as I have just referred to; and we are able to say, with a great degree of precision, not only that these diseases are due to specific forms of bacteria, but to determine enough of the characteristics of these forms to be able to identify them wherever they are found.

This method of observation may, for our purposes, be again divided into two categories. The first is that which is used in individual cases, being the form applied by the physician to each case which he has to treat. It also includes the sort of investigation which may be made in a single household, a small community, or a thinly populated district, to determine the course and cause of a particular form of endemic or epidemic disease, where the conditions affecting each family or dwelling can be studied in detail somewhat as the detective of modern fiction follows his clews. By the combination and comparison of detailed studies of this kind the greater part of our present system of diagnosis, prognosis, and therapeutics have been evolved; but it has been and will be a slow process, for each man differs from every other man in structure and mode of function, and the conditions of the environment are so multiform, and so variable in space and time, that "experience is doubtful, and judgment difficult." We must therefore try to supplement the information thus obtained by that derived from the second kind of observation above referred to—namely, that of collecting a few data with regard to great numbers of people, especially where these are accumulated in thickly settled localities, forming what is called the statistical method as applied to different communities. By the first method we compare individual with individual, and do so with considerable minuteness of subdivision of the conditions studied; by the second method we compare the vital phenomena of communities with those of other communities, but only on broad lines and in relation to circumstances easily noted.

The essential data of vital statistics are derived from enumerations of the living population and from records of births, marriages, and deaths. The numbering of the people is effected by a census, a term derived from the Roman Censors, a part of whose duty was to make such counts. Such enumerations were made by Moses (1490 B. C.), David (1017 B. C.); in Greece, 650 B. C.; and in Rome, beginning 566 B. C. They were probably made also in Assyria, but the Assad records have not yet been found. In modern times the first country to make a count was Sweden, in 1749. The first census in the United States was taken in 1790, as a necessary means of carrying out the constitutional provision that the basis of representation for the several States should be the number of the population in each. The first census in England was taken in 1801, and showed the number of persons, with distinction of sex, the number of houses, the number of families, and a rough statement of occupations under the general classification of agriculture, trade, manufactures or handicraft, and all others.

In the first censuses the object was to determine the number liable for military service or qualified to vote, or to fix rates of taxation, and the records were very brief. In the first United States Census the only data called for on the schedules were names of heads of families, free white males over sixteen, free white males under sixteen, free white females, all other free persons, slaves.

One of the most interesting fields of study in vital statistics is the relation of race and color to birth-rate, to certain forms of disease, or to the liability of death at certain ages. This country is, as you know, the great mixing ground for different races of the human family, and, while the mixture is rapidly becoming so intricate as to make it impossible to distinguish the several strains, it is still true that there are in this country large groups of men of quite distinct races, the record of disease and death in which would form valuable material for study upon this point were it possible to collect them.

From the sociological and political point of view this is particularly the case with regard to the negro and to those having a mixture of negro blood; and in the Southern States such questions as the following are of great practical interest: Is the negro population increasing faster than the white? Is the proportion of mixed bloods, such as mulattoes, quadroons, etc., increasing in proportion to the general population? Are the fertility and expectation of life of

mixed bloods greater or less than those of pure whites or pure blacks under the same circumstances of environment? We will return to these questions hereafter; at present I merely refer to them as being the probable reason for the introduction into the law for taking the next census of a special clause providing "that the population schedule shall include an inquiry as to the number of negroes, mulattoes, quadroons, and octoroons," an attempt to obtain information which has not heretofore been sought in this way. In obtaining the records of deaths occurring during the census year beginning June 1, 1889, an effort will be made to have the deaths of colored persons distinguished into those of pure negroes and those of mixed blood. It will probably be impossible to obtain the data for either living population or deaths with the minuteness of subdivision indicated by the words "mulatto," "quadroon," and "octoroon"; but there is reason to hope that in many sections of the country we shall be able to distinguish those of mixed blood from the pure blacks and the pure whites, and to give some opinion with regard to their diseases and death-rates. The results of the last census, although imperfect, show such marked differences as regards the mortality from certain diseases, not only between the whites and the blacks, but between those of English, Irish, and German descent, as to make it certain that it will be worth while to pursue this branch of inquiry more minutely as opportunity is offered to us hereafter.

The influence of race upon mortality is specially manifest in the death-rates of cancer. The number of deaths from cancer per 100,000 population in certain portions of the United States, with distinction of white and colored, was as follows: White, 27·96; colored, 12·67.

In the northern part of the United States the proportion of deaths from cancer in proportion to one thousand deaths from known causes, with distinction of white, colored, Irish, and German parentage, was as follows: White, 19·1; colored, 7·8; Irish parentage, 24·3; German parentage, 25·8.

It will be seen from these that the liability to death from cancer is not half as great among the colored people as it is among the whites, and that there is a greater tendency to death from cancer in persons of German parentage than in all the average white population, especially between the ages of fifteen and sixty-five.

The relation of race to vital phenomena in general, and to disease- and death-rates in particular, form one of the most interesting branches of what Galton calls the "science of heredity," but it is a branch in which little progress has yet been made, and for the study of which the United States offers greater opportunities than any other country. "The question of race influence is not merely an abstract matter fitted only for well-rounded periods in the discussions of the schools, but it profoundly affects vital and national life." It is a force which acts incessantly upon and menaces us, and, so far as we can now see, it is mainly upon the outcome of the distribution and prevalence of race that depend civilization, religion, and the future of man upon this earth. "In so far as the conditions of things tend to preserve the best types, progress is favored. In so far as they tend to destroy or to debase them with inferior types, progress is hindered. Not every mixture of race prevails, or persists, but there has been a certain amount of mixture wherever there has been progress in human affairs. Such mixture appears to have been a consequence rather than a cause, yet it may become an important secondary cause in changing or modifying the course of human events."

The census gives us a view of the population on a certain day, and, if well taken and properly compiled, it gives a general view of the stream of life as it flows on that day, with its variations of breadth and depth, from which it is possible to calculate, within certain limits, the velocity of the current, the rapidity of change, and the probable rate of increase or decrease, especially if comparisons can be made with the results of a previous census taken in the same way. It may also indicate periods of wide-spread disaster or of migration.

In general, we may say that the census indicates the state of the population at a given period. Vital statistics, however, consider both the state and the movement of the population, and therefore for these we must have something more than the census, viz., a record of the deaths and births occurring in successive periods, from which we can compute mortality and natality rates.

Mortality, or mortality rate, refers to a ratio between the number of deaths occurring and the number of living population furnishing those deaths. It is to be distinguished from a statement of the number of deaths, since to determine the mortality in a given population, we must not only know the number of deaths, but also the population furnishing that number. $M = \frac{D}{P}$. In the same way, natality does not mean the number of births, but it means the ratio of the number of births to the population in which they occur. $N = \frac{B}{P}$.

The relations between mortality and natality are very important, as I shall have occasion to explain hereafter. The value of such statistics depends, of course, on the accuracy of the individual data, and the completeness with which these data are gathered for the given locality to which they relate.

Accurate data with regard to deaths can only be obtained by a system of registration of deaths made at the time they occur. Repeated experience has shown that it is utterly impossible to collect, at the end of a year, by any mechanism of enumeration, more than seventy per cent. of the deaths which have occurred during the preceding year, and it is now well recognized that a complete registration of deaths can only be secured by legislation which forbids a burial until a permit has been granted from a central office, which permit is issued only on the certificate of a physician, setting forth the cause of death and other facts connected with it which are of importance, and which will be presently referred to. In the great majority of cases it is comparatively easy to enforce the law, even in thinly settled rural districts, and the community soon learns to consider any attempt at burial without a permit as a suspicious circumstance, indicating a desire to conceal either the death or the cause of death, and justifying a special investigation

by the authorities. When it has been decided to require a burial permit in all cases, it is not usually difficult to require the data for registration as an indispensable preliminary to the issuing of such permit.

Any system which depends upon the returns of undertakers for a record of deaths, gives incomplete and unsatisfactory results. It is only where the permit must be obtained before burial and the certificate must be filed at a central office before the permit is issued, that a complete record of all deaths will be obtained. Any complete system of death registration should include some method of verification of the death and of its cause, which must be certified to by some person having the special knowledge which alone can enable him to give such a certificate.

In the first place, we must have this verification to insure the fact of a death having taken place. In its absence, in a large city, there is little or no difficulty in having recorded the death of a person who may be either alive and well, or non-existent, and the door is thus opened to frauds of various kinds, some of which have actually been attempted and discovered, while others, no doubt, have been successful and remain still unknown. Such verification is also necessary to insure the fact of real as opposed to apparent death in any case, and thus prevent premature burial.

The utility for this latter purpose is, of course, small, for the popular idea as to the frequency of trance or other conditions simulating death, so that the true state of affairs is not detected, is, as you all know, grossly exaggerated. Nevertheless, this consideration may enter as a factor into an argument in favor of such skilled verification. The main reason, however, for the verification of a death by expert testimony as to its cause, is that it is necessary to establish the fact that a death has taken place from what may be called natural causes as opposed to criminal causes.

This verification of death and of the causes of death may be made either by physicians employed for that particular purpose and paid by the state, or by the physician under whose charge the deceased person has been immediately previous to death; in which latter case only those cases which have not been under the treatment of a physician are referred to a public medical officer, or the coroner, for verification and determination of the cause of death.

The first system is that which is employed in France, Austria, and Belgium. The second is the one made use of in England and in this country.

All registration laws include the certificates of physicians as an essential part of their machinery. Some do this directly, requiring that physicians shall keep a list of all deaths occurring in their practice, and shall forward this list at stated times to the registrar. This method has invariably proved to be a failure, as has also the similar attempt to require of clergymen that they shall furnish lists of the marriages which they have solemnized. It is utterly impossible to enforce such laws under penalties, and not fifty per cent. of either clergymen or physicians will carry out their requirements under ordinary circumstances.

Where burial permits are required, a physician may be made responsible for a certificate as to those matters only with regard to which his special professional knowledge is necessary—such as the cause of death, duration of sickness, etc.; or he may be required also to certify as to the age, birthplace, parentage, occupation, etc. The great majority of physicians accept without hesitation the data furnished on these points by some member of the family, or whatever appears set down in the form of certificate brought to them by the undertaker for signature. But there are always physicians who question the propriety of the law and object to certifying to that of which they can have no personal knowledge, while some few may possibly decline.

The requirements of a registration law impose upon medical men who sign certificates as to causes of death a very considerable responsibility—much more considerable, in fact, than many of them probably realize. The physician is to consider whether his knowledge of the case is sufficient to enable him to determine whether or not the death was due to what are called natural causes, whether there is reason to suspect that violence, poisoning, criminal neglect, etc., may have been more or less factors in the result, and whether any certificate as to the nature of the cause is justifiable. The pressure upon the medical man to certify to more, or sometimes less, than he knows, is occasionally very strong, but the only course in doubtful cases is to indicate clearly what one knows, as distinguished from what he merely believes on the faith of statements made by others. In ordinary matters of daily routine occurrence, in which there is no apparent motive for falsification, we constantly do, and must, accept the statements of others; the physician acts as the primary judge of the evidence submitted by relations and friends as to the time of death, the age and race of the decedent, the duration of the disease, etc., and is justified in certifying to his belief in this evidence, very much as he is justified in certifying to the date of his own birth.

There is no good reason why reports of births should be required from medical men. But, as regards reports of deaths, it is to the interest of properly qualified members of the medical profession that such certificates should be demanded from them. Whenever and wherever certificates as to the cause of death are required from physicians, there must also be established some system of determining who are physicians within the intent of the law.

At first it may be necessary to accept certificates from any one and every one who chooses to call him or herself a physician; but the character of some of the documents of this kind which will come in will very soon indicate the necessity for some discrimination. Thus it is that the certification of the causes of death by physicians is the essential foundation, and it is the only essential foundation, of legislation with regard to the qualifications which the state has a right to demand from practitioners of medicine.

The registration of marriages, births, and deaths is important to the individual, because it gives him increased security in his rights to property and to life by enabling him to furnish proof of parentage and legitimacy, by increasing the chance of detection of fraudulent claimants to property of which he is the true heir, and by discouraging criminal attempts to shorten his life, owing to the fact that evidence must be furnished that death was due to natural

causes, or a special legal investigation of the circumstances will be made. Of the importance to the community as a means of protection of health and life, and to scientific men and physicians as a means of investigation of some of their problems, I need give no proof to this audience.

We can hardly be said to have a complete system of registration of births in any State or city in this country. Probably the city of Providence, R. I., has the most complete records of this kind of any of our cities. As regards the registration of deaths, Massachusetts, New Jersey, the greater part of Connecticut and New York, a large part of Alabama and Minnesota, and most of our large cities, have now a fairly satisfactory system and complete record. For the rest of the United States there is either no system of registration, or, if any exists, it is a very imperfect and incomplete one, the results of which can not be depended upon, and which can not be compared with the results obtained in the localities above referred to as having a complete system; and the only means which we have of estimating the mortality of these localities is by the reports of deaths for the preceding year collected by the census enumerators.

It is for this reason that the decennial United States Census is a matter of such great importance to scientific medicine and to practical sanitation—of much greater importance, in fact, than most physicians and health officials seem to fully appreciate. It is true that the death records thus obtained in the large areas of the country in which there is no registration are incomplete and, as regards causes of death especially, inaccurate; but they are the best we have; they are becoming better at each census, and the death records in the registration areas serve to measure their reliability, and to indicate to some extent useful corrections.

As the value of statistics of death depends very largely upon the possibility of comparing them with corresponding statistics of the living population furnishing those deaths, it is evident that the modes and times of obtaining and of publishing the results of the census are matters of great importance to medical and sanitary statisticians. This is especially true as to the frequency with which a census is taken, the units of area made use of in its published tables, and the combinations of age, sex, race, and occupation data given in connection with such units of area.

Let us first consider briefly the time of taking the census.

The conclusions of the various statistical congresses with regard to the methods of the census are summed up by Korosi in his project for a census of the world, published in 1881.

The first of these conclusions was that the census should be taken every ten years, in the month of December and in those years the number of which terminates in zero, recommending, however, that intermediary censuses should be taken at the discretion of different governments.

The taking of the census at the end of December has the advantage that a relatively greater number of population are in their own homes then than at any other time, and that it corresponds to the termination of the calendar year, at which date many State and municipal reports terminate, so that all the figures being for one date are readily comparable with each other. For a very large part of this country it would be quite as easy to take the census at the end of December as on the 1st of June; but there are some sections in which attempts to take the census in the midst of cold and rainy weather for a thinly scattered population would be made under very great difficulties.

While it is not probable that any agreement for an annual census of the whole country will be made in the near future either by the United States or by State Governments, it is certainly quite possible that the desirability for more frequent enumerations in the larger towns and cities will soon become so evident as to lead to systematic arrangements for carrying it out. Even now many cities take what they call a police census, at irregular intervals of from three to five years, for the purpose mainly of making rough subdivisions of the voting populations in the form of precincts, and of obtaining information for the purpose of levying taxes, more especially for school purposes. These police censuses, however, relate only to adult males, and upon them are based estimates of the number of the remaining population, which are used by the sanitary officials in computing death-rates. These estimates, however, are almost invariably too high, as is shown by the next State or national census, and in any case afford no satisfactory basis for computation as to the number of inhabitants in the different wards of the city owing to the great variations in the ratio between the voting population and the rest of the people in different classes of society and in different parts of a town.

The death-rate, or mortality, is the ratio between quantity of life and loss of life. It refers to a definite unit of time, viz., one year's life of one person, and the quantity of life is the sum of the time lived by each of the population expressed in years. Two persons living six months each, or twelve persons living one month each, have one year of life. If the population is assumed to be stationary—that is, one in which the births and deaths, and the emigration and immigration, are exactly equal to each other and similarly distributed throughout the year—then the number of the population multiplied into the time under consideration expressed in years and fractions of years gives the quantity of life.

A population usually, however, increases in geometrical progression, and in such case we must find, by means of a well-known formula, the mean population of the period, which will be less than the arithmetical mean of the populations at the beginning and end of the period and greater than the population living in the middle of the period; but the differences are small, and, in most cases, either figure may be employed.

Various methods are used by statisticians to correct the estimates of population made for a city at periods other than during a census year, as determined by a formula of arithmetical or geometrical proportion, among which may be mentioned the use of the ratios supposed to exist between the number of houses or the number of voters, or the number of school children and the total population. The number of houses is determined from tax records or

by a special count; the number of voters by registration lists or by a police census; the number of school children by a special census; and the ratio which these bear to the whole population is guessed at or is calculated from the data obtained at the last census.

The most useful and reliable of these methods is the use of the average numbers of presumed occupants of inhabited houses, the other ratios being of very little value.

This has been very well shown by Dr. Russell, Medical Officer of Health at Glasgow, in a paper on "The Decennial Census as a Basis for Statistics in Intervening Years," Glasgow, 1881. In the case of Glasgow he considers the estimate of her population based on the number of inhabited houses, and the estimate based on preceding censuses, and finds that both methods give a population above the actually existing one as shown by the next census. The error in the estimates based on the previous census was due to a change in rate of growth. The error in that based on the number of houses was due partly to incorrect data of the number of inhabited houses, and partly to an error in calculation.

It is evident that no value can be placed on estimates of population of a city based upon the number of habitations it contains if a cottage and a tenement-house are to be equally reckoned as a habitation.

Estimates of the population based on police censuses, on the number of school children, or on city directories, are of very little use, being, in almost every case, in excess of the truth. No general rules can be laid down for the estimation of the population of a city at a period between two censuses. It is a special problem in each case, for the solution of which there is needed an acquaintance with the locality, to be sure that boundaries have not changed, the information which can be obtained from special local censuses, from the number of inhabited buildings, from migration statistics, etc., all of which must be applied to the data furnished by the last general enumeration of the people, which, in any case, must be resorted to for the ratios which are to be used.

The shorter the period for which a death-rate is given, the greater is the liability to error. The ordinary forms of weekly death-rates reported for large cities are annual death-rates; that is, they represent what would be the annual death-rate if the proportion of deaths to the population for the week continued for one year. If, for example, a town having a population of 100,000 reports as its weekly death-rate for a given week 25 per 1,000, this does not mean that during the week there occurred 2,500 deaths, but it means that if the population and number of deaths each week are continued the same during the year, 2,500 deaths would have occurred in the course of the year, or that for the week in question the number of deaths was 2,500 divided by 52·17747. A weekly death-rate is useful to show where the greatest variations have been in the year's mortality, but it is no indication of the health of a town for a particular week, and it is useless as a means of comparison of the healthfulness of one town with that of another. This is largely due to the law of probable deviation or error in mortality statistics in relation to the number of instances used as data without reference to their accuracy. This law of probable error in relation to number of data is an exceedingly important one, to be kept in view in all statistical inquiries, and especially in those relating to vital and medical statistics.

What is a fair or normal death-rate? Taking an average healthy rural district in the United States, where there is little migration, the annual gross death-rate for the whole population will be from 13 to 15 per 1,000. In towns of from 10,000 to 15,000 inhabitants, having a good general water-supply and proper sewerage, the gross death-rate should not exceed 16 per 1,000. In cities of from 20,000 to 100,000 inhabitants it should not exceed 17 per 1,000, while in cities of over 100,000 inhabitants it should not exceed 19 per 1,000. The great causes of high death-rates are poverty, overcrowding, intemperance, excess in heat and cold, with moisture, foul air, bad food, impure water, uncleanness, contagion, ignorance, etc.

Births and Birth-rates.—The statistics of births are of much importance in vital statistics, because of the influence of the birth-rate upon the sex and age distribution of the population. Unfortunately, in this country, as I have already explained, hardly any locality possesses such an enforced system of registration of births as to permit of an annual calculation of birth-rates and their comparison with the deaths of children under one year of age, or those born within the year. We can only obtain these data for any large extent of country by referring to the census records.

The usual method of indicating the birth-rate is by giving it as the proportion per one thousand of births to the population of all ages; but a much better and more satisfactory mode of computation is to calculate the number of births to the number of women between the ages of fifteen and fifty or fifty-five living in the community referred to.

The general subject of birth-rates is interesting chiefly, in relation to social statistics, to the fecundity or rate of increase of population or of people of different races; but in relation to mortality statistics, it may also become an important factor in the calculations.

There have been from time to time some controversies between statisticians and health officers with regard to the influence of birth-rates upon death-rates, or as to the precise relations which exist between the two. As the death-rates of infants are much greater than those of the population at higher ages, it has been claimed by some that where there is a high birth-rate there also is a high death-rate; but it can not be said that this will invariably be the case, or that the one is directly the cause of the other, except in certain cases for a comparatively short series of years.

As a rule, high birth-rates occur in cities, and in the crowded parts of cities, among the laboring classes of the population, where the causes of disease and death in infants are especially prevalent. On the other hand, it is to be noted that a high death-rate among infants has some tendency to increase the birth-rate, because the interval between child-bearing is shortened by the early death of the infant; and in the effort made by poor women to avoid frequent child-bearing, a common means is to suckle the infant up to at least two years of age, in order to prolong the

interval between pregnancies—which is a practice injurious both to the mother and to the child.

If we had under consideration a community in which there were no migrations, and in which the population neither increased nor diminished, the relations between birth-rate and death-rate and the average duration of life could be expressed by a simple formula, in such a way that, given either two of these quantities, we could determine the third. If, for example, in a population of one thousand persons, five births and five deaths occur annually, and if we assume that every individual lives to the same mean age, evidently just two hundred years would elapse before the whole of the original one thousand would have died. This two hundred years would be the mean duration of life, and this would be the case also if deaths occurred at different ages, only in such a case many would die below the mean age, when some would greatly exceed it. This subject has been considered by Dr. J. S. Bristowe in a paper "On the Mutual Relations of the Birth-rate and Death-rate."* From the table which he gives I have extracted that part which shows the mean duration of life under certain conditions of birth-rate and death-rate, where the birth-rate varies from three to five and the death-rate from fifteen to thirty-five in a thousand.

Dr. Bristowe says: "There can be no difference in the healthiness of two localities in one of which the death-rate is twice as high as that of the other, provided other conditions are such that in both cases the inhabitants attain the same mean age; or, conversely, supposing different populations to enjoy the same mean duration of life, any differences which may be presented by their respective death-rates are due to other circumstances than differences of health." He also says that the average duration of life can be determined by the birth-rate and death-rate taken together, but not from the death-rate alone. If he means by healthiness mean duration of life, this statement is equivalent to saying that, where the mean duration of life is the same it will be alike—an indisputable proposition, though not a very instructive one. But if by healthiness is meant the sum of the conditions of the locality as to altitude, drainage, cleanliness, etc., which tend to lessen or increase deaths in the people living in it, then the statement is incorrect, for it does not take into account age, sex, or race distribution, occupations, or migrations. Setting the question of migrations entirely aside, it is perfectly possible that two populations, attaining the same mean age and having the same death-rate, may live in two localities, one of which is decidedly healthier than the other; so that, if the two communities exchanged habitations, a marked difference in the death-rates and mean age at death would result.

Putting aside all these purely speculative considerations with regard to what might happen in a stationary population where there is no migration, let us see what the significance of death-rates is in our cities and rural districts as they now exist. We wish to know how much of the death-rate is due to peculiarities in the character and occupation of the population itself, and how much to peculiarities in the locality, and for each of these classes we wish to know how much is necessary and unavoidable, and how much is due to causes which may be modified or done away with. Precise knowledge on these points we can never have, but we can obtain a sufficient degree of probability to guide our action in the premises.

If we wish to study carefully the influence exerted upon health and life by race characteristics, by residence in a given locality, by marriage, occupation, social standing, etc., we must have the means of comparing results given in different localities, or in the same locality at different times, or for different races, occupations, etc., under like circumstances.

To accomplish this we must, as far as possible, estimate the influence of other circumstances not connected with the particular point which we are investigating, but which, notwithstanding, exercise a powerful influence upon sickness and death-rates, and of these the two most important influences are those which differences in proportion of sexes and ages of the population to be compared exert.

The means recognized as best calculated to eliminate the influence of sex and age by, as it were, reducing the population to one uniform scale in these respects is by calculating the expectation of life at each age for all the several conditions of locality, occupation, etc., which we wish to investigate; in other words, by the preparation of what are known as life-tables. A life-table shows what would be the tendency or liability to death at each age in a population in which there is no migration and in which the births and deaths just equal each other if such a population were subjected to the same influences tending to produce diseases and death as have affected the actual population under consideration and from which the data are derived. It is, of course, impossible to prepare life-tables which shall be strictly accurate and exactly comparable one with another, because it is impossible to obtain strictly accurate data. A life-table is intended to answer the question, "Of a million children born, how many of each sex die at each age?" or, "What is the time which a man or woman of a given age may be expected to live?" A strictly accurate answer to this question could be given only if we knew the precise dates of birth and death of each of a million of children born under the circumstances we are investigating, and, strictly speaking, these million children should all be born on the same day. Notwithstanding, by using large masses of data which are more or less attainable and by applying certain well-known corrections, the individual errors tend to neutralize each other, and we can prepare tables which will be quite accurate enough for purposes of comparison.

A vast amount of labor has been expended upon, and study given to, this subject; for immense business interests and important points in the jurisprudence of inheritance depend upon the existence and accuracy of these tables. Hundreds of millions of dollars have been, and now are, invested in life insurance on the faith that certain life-tables truly represent the average course and duration of the

* "St. Thomas's Hospital Reports," New Series, vol. vii, London, 1876, p. 245.

life of a particular class of the community—and the result of more than a hundred years of experience has been applied to their correction under the powerful stimulus of urgent need, from a pecuniary point of view, to have them as accurate and reliable as possible.

In order to prepare a life-table for a given locality or occupation, we must know the number of persons living at each year of age, and the number of deaths at each age which have occurred among these persons for one or more years. We assume that deaths have occurred at regular intervals during the year for each age and proceed to compute the number of persons at each age who were living in the middle of the period for which the deaths are registered.

In using census data, however, we can not directly compare the deaths at each single year of age with the number reported by the census as living at that age, because of the strong tendency of the average man or woman to report ages either of the living or of the dead, but especially the former, in numbers which are multiples of ten or five, or in so-called round numbers.

I do not propose to describe the methods of constructing a life-table. To make one sufficiently accurate to be used for the purposes of life insurance requires elaborate calculations and corrections, and the use of complicated mathematical formulæ; but the construction of an approximate life-table, in which no attempt is made to secure regular gradation, is a comparatively easy matter and has been fully described by Mr. N. H. Humphreys in a paper in the "Journal of the Statistical Society" for 1883, which method was made use of in calculating the approximate tables given in the mortality statistics of the last census.

Original Communications.

THE TYPHOID SPINE.*

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It is with some hesitation that I present this title for your consideration to-day. I regret that I am unable to assign a name to the condition of things which the following cases so well describe. I have often heard patients who had passed through typhoid fever say that they had never felt the same; that there was always a defect somewhere. Practitioners know very well that the sequelæ are legion, and my own attention has been drawn to a group of symptoms pertaining to the spinal column as sequel to this fever. On one or two occasions, when pressed for an anatomical diagnosis, I have used the term perispondylitis, meaning an acute inflammation of the periosteum and the fibrous structures which hold the spinal column together. My reason for the use of this term was the production of acute pain on the slightest movement, whether lateral or forward, and the absence of any marked febrile disturbance or neuralgia. The secretary, I discover, has put me down for spondylitis after typhoid fever. If I could be permitted to use this term in the rheumatic sense and not in the tuberculous sense, I should not object, but whenever one uses the term spondylitis the lesion is regarded as one of osseous tuberculosis; so that I prefer, for the present at least, to speak of the affection as a typhoid spine.

The occurrence of periostitis after typhoid fever in the long bones is not at all uncommon. Dr. Keen, of Philadelphia, in one of the Toner lectures in 1876, published in 1877, gave a full account of all the bone lesions after the continued fevers. He found 69 cases following continued fevers, of which 22 affected the head, 7 the trunk, 6 the upper extremities, 42 the lower. There were 41 cases of disease of the bone, of which number 37 followed typhoid fever. In 47 cases traced as to the date of occurrence, 10 were within two weeks, 27 from three to six weeks, and 10, months after the fever. Keen's explanation was that the earlier cases probably came from clot, and the later from enfeebled nutrition. He found that the periostitis arose spontaneously or as a result of slight injury. In all my own cases a slight injury seemed to be the exciting cause. Sir James Paget, in "St. Bartholomew's Hospital Reports for 1876," vol. xii, p. 2, says: "Periostitis most frequently is seen in the tibia." He has seen it near the femur, the ulna, and the parietal bone. He has found it always circumscribed, always occurs during convalescence, and never attended with delirium or fever or any severe constitutional disturbance. Aitken says that no man can be considered fit for military service for three or four months after an attack of severe typhoid fever.

The best description I have found of periostitis after typhoid is in "Diseases of the Bones," by Thomas Jones, F. R. C. S. Eng., etc., of Manchester, published in 1887. The explanation of periostitis is now generally considered to be a cachexia which a specific fever constitutes, and a traumatism is regarded as an exciting cause.

Case I.—In the fall of 1882 Dr. Beverley Robinson asked me to see with him a case of a lad fifteen years of age who was convalescing from typhoid fever. Toward the end of his convalescence he had begun to complain of severe pain in his back. The lumbar spine seemed to be the portion most affected, and the suffering both night and day, especially after any movement of the body, was such that narcotics were generously employed. We found no real deformity, yet there appeared to be a fullness in this region, which, upon closer examination, disappeared. There was a moderate degree of tenderness on pressure, and very great tenderness on any lateral or forward motion. There was no special pain in the distribution of the sciatic or anterior crural nerves, no infiltration in either ilio-costal space, no psoas contraction, and no rise of temperature. I had not encountered such a case before this, and was at a loss to give an explanation, or even a prognosis. I felt it my duty to protect the spinal column, and applied an apparatus as soon as possible. This seemed to afford relief, and in the course of two or three weeks he was practically well. I did not try to omit the brace, however. This he wore for about a year. I had an opportunity of observing the case from time to time, and find on my records that on June 28, 1884, I discharged him cured. The following note was made: "There is nothing now in the way of a deformity save

* Read before the American Orthopædic Association at its third annual meeting.

a little deepening of the right ilio-costal space. The spinal column seems free from any deformity, either lateral or antero-posterior; no tenderness on concussion, none on movement. At times, on making a misstep, he feels a little muscular soreness in the lumbar region." I examined him in October, 1884, October, 1885, and June, 1886, always with negative results, and found him quite able to play lawn tennis or exercise to any extent. In other words, the cure was perfect, and the diagnosis never made.

I was reminded forcibly of this case in the spring of 1888, when Dr. William M. Polk asked me to see a young lady, eighteen years of age, who was convalescing from a typho-malarial fever. The same acute pain that I found in this case reminded me forcibly of the case I have just reported. In this instance, however, it was the hip that was affected. I do not remember ever to have seen such acute suffering in an adult hip. The date of my first observation was on the 22d of April, 1888. The limb lay parallel with its fellow, and I could not execute any movement without exciting loud shrieks. She was not of an hysterical temperament—that is, had never been considered so; was rather lymphatic in temperament. The limb was not wasted, but the reflex spasm was very great. Weight and pulley and a traction hip-splint succeeded in affording relief in less than a month, and by the 7th of July she was in a fair way to recover. She sailed for Europe on this date, and in October of the same year, on her return, there was no lameness, no pain, no reflex spasm. There was some limit to the free range of motion as compared with the other limb. This case, although not a spinal one, is presented as illustrative of the supposed pathology—namely, a circumarticular lesion, confined to the periosteum and ligaments.

Case II.—On the 26th of December, 1888, I saw, in consultation with Dr. Partridge and Dr. Draper, of New York, a young man, twenty-four years of age, well developed, and always healthy and robust up to September, 1888. He had contracted typhoid fever during that month at a sea-side resort, and the disease pursued a typical course. Early in November, while convalescing, he went to Boston, feeling a little uneasiness after his trip. He complained of pain in his back, which continued for eight or nine days, not severe enough to confine him to bed or to prevent him from playing tennis, which game, in fact, gave him some relief. He then had a week's immunity from pain. An exacerbation came on after a fall while at tennis. The pain next day was very severe, and it was with much difficulty he was transferred from Boston to his home in New York. This was in the latter part of November. On his arrival in the city Dr. Draper was called, and, after one or two thorough examinations, could not discover any evidence of Pott's disease. After each examination, however, he would suffer excruciatingly, and large doses of morphine were required to give any relief. The exacerbations became more frequent, and an examination was not necessary to produce them. The recumbent posture was the only one that gave him any relief, and, on my examination, I found no fullness in either iliac fossa, nothing abnormal in the rectum, nothing in either ilio-costal space, no deformity of spine, no hard or soft tumor over the sacrum or over the ilium, no referred pain on pressure over the sciatic nerves. The hip-joint functions were perfect; no tenderness or pain at the sacro iliac junction (the test was made by direct pressure and by crowding the alæ of the pelvis together). There was no spinal tenderness on pressure; but on deep pressure over the iliac region, especially on the left side, there was decided pain. Lateral and antero-posterior motion of the spine (passive) caused exquisite pain. He moved from the dorsal to the prone decubitus with the greatest care, fearing an exacerbation of pain. The temperature was 103° F., and had ranged from 101° to 103°; pulse, 120.

The result of our consultation was that he had no Pott's disease, no sacro-iliac disease, no neuritis. The question of a deep abscess was discussed, but abscess was not diagnosticated. A diagnosis of a perispondylitis, meaning either a periostitis or a subacute inflammation involving the fascia about the spinal column, was made. I believe now that he had a periostitis.

The treatment employed was with morphine to control pain, the dorsal decubitus, and the Paquelin cautery. From this time until the beginning of February he gradually improved. His exacerbations became less frequent and less severe. Toward the latter part of January he was able to sit up and even stand, but he was obliged to exercise the greatest care in moving about. I attempted early in January to fit a brace, but he was so comfortable in bed that I gave up the idea of mechanical support and decided to rely on expectant treatment purely. I made a note on March 20th that he was getting about and was nearly well. Since that a report has come to me that he has entirely recovered, has resumed business again, and does not show either deformity or awkwardness in gait.

The course pursued by this case was not at all unlike that of a periostitis, and when we consider the anatomy of the lumbar spine, the areas in this locality that are necessarily rendered sensitive by any inflammatory process, it is not at all an improbable diagnosis.

Case III.—On the 13th of April, 1889, Dr. Alfred L. Loomis asked me to see with him a gentleman from London, eighteen years of age, who had but recently come from the northern part of New York State in a very helpless condition. The history was that in November, 1888, he came down with typhoid fever, was confined to his bed for several weeks with no complications, and on December 27th had sufficiently recovered to make a trip to New York. This was from Schenectady. He was then apparently well, remained in the city ten days, and returned in good condition. On January 10th, while skating, he fell and struck his left hip rather sharply. He did not apparently mind the blow, and a week or ten days later came to New York again, remaining here one week, during which time, while in the theatre one evening, experienced for the first time a pretty sharp pain in the region of his lumbar spine, and was quite stiff on getting up from the chair. He saw a physician the next day, who pronounced it lumbago, and a static electrical shock gave relief. He returned to Schenectady a day or two later, and was treated for lumbago with plasters, etc. The stiffness grew more pronounced, and his pains increased in severity. He found it difficult to assume an erect position without great pain. By the 10th of February he went to bed again, and there he remained until seen by a surgeon in Albany two or three weeks later. He regarded the case as one of psoas abscess. This is the report the patient brought to the city with him from his local physician. Neither Dr. Loomis nor myself could find any evidence of psoas abscess, but we found the patient difficult to examine by reason of the pain caused in moving in bed or sitting up. There was no rise of temperature; pulse, about 78; respirations normal. The spinous processes in the lumbar region appeared to be a little prominent, and were tender on pressure. There was no reflex spasm at hip or knee joint, and the movements, if made carefully, could be executed quite easily. He had lost flesh, but his appetite now was good,

and he suffered only from his disability. We decided upon a diagnosis of perispondylitis or, more properly, periostitis by exclusion.

The case was left in my hands, and I employed the Paquelin cautery for a week or ten days, three times a week. At the end of this time I applied a Knight spinal brace, and by the 9th of May he sailed for England, having walked about and traveled on street cars for a week prior to sailing.

In talking with Dr. Loomis at the time of the consultation, he gave me the impression that he had seen very few cases like this as a sequel to typhoid fever. As pertinent to this question I should like to present photographs of a patient, a mere lad, who came to me at the hospital about a year ago, from a town in New Jersey, with a history of these contractions following the wake of typhoid fever. His case was briefly this:

A boy, aged thirteen, admitted to the hospital 25th of June, 1888, with this history: Between four and five months ago patient had typhoid fever. Prior to that time was perfectly healthy. While confined to his bed kept both limbs flexed on abdomen, and during convalescence was unable to straighten them. On examination, he was found to be poorly nourished, quite unable to walk, unable to sit except in the position shown in the photograph—that is, thighs sharply flexed on pelvis, legs on thighs, heels touching buttocks. In dorsal decubitus any attempt at motion of the right thigh caused reflex spasm. The greatest possible extension was 70° for the right side, 135° for the left side. The greatest possible extension for the leg was, right side 60°, left side 100°. All motions at the right hip were

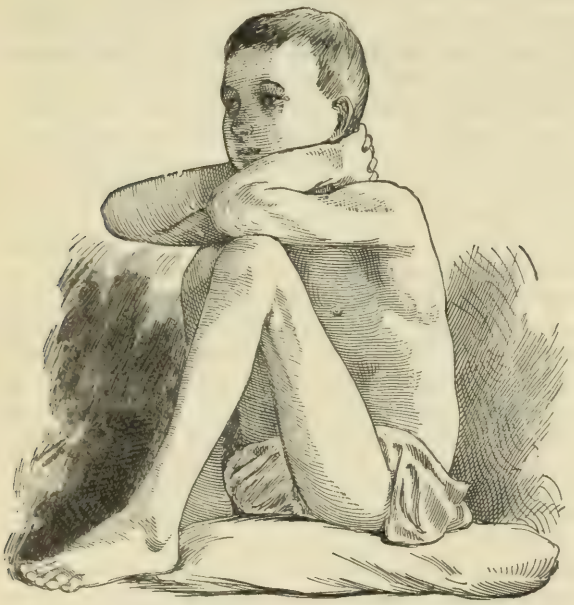


Fig. 1.—Best possible posture on admission into the hospital.

limited. There were several cicatrices of old bed sores over the sacrum and ilia. On July 10th he was etherized and both thighs and legs were forcibly extended, all resisting tissues being divided by the fascia knife. The limbs were very nearly straightened at the first sitting, and put up in plaster of Paris. The subsequent treatment consisted in still further overcoming the deformity by gradual means. Finally a hip splint was applied to the right limb, and at the date of his discharge, August 1st, the functions at the left hip were perfect; those at the right were limited about one half. All disease seemed to be arrested, and the patient was regarded as cured. He left wearing the splint, and is to report a few months later.



Fig. 2.—Best posture on date of discharge.

Such, in brief, is an account of the cases here presented, and a pretty careful search of text-books has failed to reveal any cases of like nature. The reference in some journal articles to periostitis involving the trunk is so vague that I do not care to place them on record. Possibly many cases of obscure spinal injury after typhoid fever have been observed, yet in my own city, at least, I am sure they are uncommon. I wish it distinctly understood that I have not made a thorough search of literature, and make no claim to originality. My desire is simply to place these cases on record, and to call the attention not only of orthopædic surgeons but of physicians in general to a very painful affection of the spinal column following typhoid fever, and to show by my own cases that a grave prognosis need not be given.

ON ELECTRO-DIAGNOSIS.

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Injury to a motor nerve is followed by certain anatomical changes associated with altered function, as well as altered electrical reactions. There is always a very definite correspondence between the two, and in the ability to determine from the electrical conditions the histological state of nerve and muscle consists in the main the art of electro-diagnosis.

When a motor nerve is divided, the muscles which it supplies are immediately paralyzed, and, no longer being in connection with their nutritive center, the spinal cord, both nerve and muscle undergo pathological changes.

Accompanying these changes are marked deviations from the normal electrical reaction of both nerve and muscle. *Immediately* after the section of a nerve there is often a temporary increase of electrical response to both currents when applied to the nerve or the motor point of the muscle.

Subsequently, however, there is a steady decrease in the readiness with which electrical reactions take place, until

finally the excitability to both currents is completely abolished. These, it should be observed, are termed *quantitative* changes. If the applications are made directly to the muscle and not to the nerve, we find quite a different set of phenomena.

The faradaic current applied thus acts very much as when it is applied to the nerve; not so the galvanic. When the latter is applied directly to the muscle there is observed an immediate diminution in the readiness of response, but in a comparatively short time an increase of the electric excitability is developed. This is a sure indication that we have yet healthy muscular fiber, but fiber deprived of its nerve influence.

Soon, however, the muscular fiber itself begins to degenerate, and the galvanic current, instead of being followed by an increased readiness of response, acts upon the muscle less and less effectually, and finally, if regeneration in the nerve structure does not take place, the galvanic irritability to muscle becomes extinct. Accompanying this decreasing readiness of response are other changes in the character of the contractions termed *qualitative*, or, as they have been termed by Erb, the reactions of degeneration. If regeneration of the nerve and muscle should occur, galvanic reaction is also re-established, but fails to reach its normal standard for a long time.

I have seen a number of cases where the response of muscle to galvanism remained below the normal standard long after the complete return of voluntary movements and perfect response of nerve to faradism. A case of facial paralysis that I have recently had illustrates many of the foregoing points:

The patient first came under my observation some six months ago, about a week subsequent to the attack, when I found marked diminution of response to both currents. The paralysis, I may say, came on quite suddenly, following a debauch. On the tenth day or thereabouts there began to be a progressive increase of response to the galvanic current, but no abnormal reactions indicating degeneration of muscular fiber. These phenomena, however, began to appear at a later period, associated with a gradual decrease of galvanic response, and now neither current, when applied to the nerve, produces the slightest effect, while galvanism directly to the muscle causes only feeble and delayed reactions, with currents as strong as can be borne by the patient.

This case illustrates in a very interesting manner the progressive anatomical changes that take place in an injured nerve and the relation these bear to electrical phenomena. The diminished reactions to both currents first observed when applied to the nerve indicated that the nerve tissue itself was structurally altered, but did not necessarily indicate muscular degeneration.

There occurred, on the contrary, increase of response to galvanism applied directly to the muscle, indicating that the muscular fibers were still healthy. This increase of reaction is said to be due to the deprivation of the inhibitory action of the paralyzed nerve as well as the altered nutrition of the muscle itself. The reactions of degeneration which finally appeared and still exist, together with the quantitative changes or decrease of response to both currents, indicate degeneration of the muscular fiber itself, which may go on to a complete extinction of the electrical reactions, which indicates complete destruction of the muscle.

As in the study of auscultation it is necessary to understand the normal action of the heart, so in the study of electro-diagnosis it is necessary to understand the order in which contractions occur in the healthy nerve and muscle when subjected to the "make and break" of the galvanic current.

Bearing in mind that in health the closing contraction is always more vigorous than the opening, whichever pole is used, and that the cathode or negative pole acts more vigorously than the anode or positive pole, it is readily appreciated that there can be but four orders of contractions elicited in health, in the following order:

1. The cathodal closure contraction, indicated by the formula CCC.
2. The anodal closure contraction, ACC.
3. The anodal opening contraction, AOC.
4. The cathodal opening contraction, COC.

When, therefore, we speak of qualitative changes occurring in the electrical response, we mean simply that this order is changed, the ACC being greater than the CCC, or the COC exceeding the AOC. These changes are also referred to as the "reactions of degeneration," and invariably indicate structural disease of muscular as well as of nerve tissue, while quantitative changes indicate degeneration of nerve tissue only. This is an important point, which it is well here to emphasize, for I find there exists a very general misapprehension in regard to it. Qualitative changes in the electrical reactions are generally if not always associated with marked quantitative changes, while quantitative are often entirely independent of qualitative alterations.

The one (quantitative) indicates more especially disease of nerve structure; the other (qualitative) suggests degeneration of muscular tissue. Such diseases as progressive muscular atrophy, pseudo-hypertrophic muscular paralysis, amyotrophic lateral sclerosis, and bulbar paralysis excellently illustrate degeneration of muscle with healthy nerve. In progressive muscular atrophy, for example, the electrical reactions demonstrate a healthy nerve, but a degenerated muscle. Either current applied to the nerve calls forth normal contractions. The faradaic current, applied directly to the muscle, calls forth contractions according to the amount of healthy fiber remaining. The fact that it produces contractions at all demonstrates the integrity of the nerve fiber, while the qualitative changes that are elicited on the application of the galvanic current to the muscle indicate the extent of the muscular degeneration. Similar phenomena are observed in the other diseases that have been mentioned in connection with progressive muscular atrophy.

The diseases, on the other hand, that show healthy muscle, but diseased nerve tissue, are confined altogether to those of central origin. These are paralysis from cerebral disease, and, with few exceptions, all those forms of spinal paralysis in which the gray matter of the spinal cord is not involved. Therefore locomotor ataxia, the various forms of multiple sclerosis without trophic changes, and spastic paralysis are seldom if ever associated with qualitative changes.

Quantitative changes are not infrequently observed in these spinal diseases, as well as in disease from cerebral lesion, but their causation is found in a general excitability due to an irritative lesion, to an absence of inhibitory action, or atrophy of muscle through disease, and not to actual degeneration.

In some nerve-trunk diseases, and also in acute affections of the gray matter of the cord, neither current applied to the nerve calls forth reactions. Faradism to muscle gives no response, but galvanism to muscle is followed by normal or increased response. This indicates that both the nerve trunk and its nerve filaments are diseased, but that the muscle itself is healthy. These phenomena are, of course, observed only in the very earliest stages of the diseases mentioned, and, in the nature of things, must, as a rule, escape observation.

Poliomyelitis anterior, on the contrary, whether occurring in the adult, or in childhood under the name of infantile paralysis, and lead palsy, uniformly yield those quantitative and qualitative changes that indicate degeneration of both nerve and muscle. There are, again, still other forms of paralyses from spinal disease where the character of the reactions varies widely, according to the seat of the lesion. In myelitis, for example, the electrical reactions may be absolutely normal, indicating that the disease is probably confined to the antero-lateral or posterior columns, while in other and the majority of cases there are quantitative and qualitative changes that clearly point to disease of the gray matter of the cord.



An interesting deviation from the ordinary reactions found in diseased nerve and muscle, but one not very frequently met with, I imagine, is where both currents applied to the nerve, or the motor point of the muscle, fail to produce any contraction whatever, while either current applied to the muscle directly calls forth reactions even more vigorous than normal. It is perfectly plain that this phenomenon means a diseased nerve trunk, but a healthy muscle, with healthy intramuscular nerve branches. As these reactions have been observed only in the very earliest stages of a traumatic injury to a nerve and in rheumatic neuritis, they would necessarily, in most cases, escape notice.

The electrode here presented (in two parts) is one that I have used with much satisfaction in eliciting the various abnormal reactions that are associated with the many forms of paralysis. It will be observed that there are three binding posts at the lower extremity. The one marked *P* is to be connected with the positive pole of the apparatus; the other, marked *N*, with the negative. The third post is to be connected with an electrode applied to some indifferent part of the patient's body. The small knob marked *A*, when moved toward *P*, renders the electrode *C* positive; when moved toward *N*, the tip becomes negative. *B* is an interrupting button, which when pressed closes the circuit, and by sliding it slightly forward the circuit can be kept closed, when so desired, without effort of the operator. This form of electrode is exceedingly convenient in electro-diagnosis, from the fact that, by a simple movement of the finger of the hand that holds the electrode, the knob *A* is moved, the direction of the current instantly changed, and anodal or cathodal contraction elicited in quick succession.

STERILIZED MILK.

By WILLIAM B. WOOD, M. D.

The numerous recent experiments with sterilized milk have revolutionized the system of infant dietary. Successive improvements in apparatus and methods indicate an intense and widespread interest in Soxhlet's discovery, and reveal how great was the felt need of some reliable food for children that should approach nearer to nature's nourishment than any of the complicated concoctions known as infants' foods. In the light of these experiments the old maxims—that mother's milk was the best and only safe nourishment for infants, and cow's milk the worst and only really dangerous substitute—must undergo material modification to conform to present facts; for while *good* mother's milk is always the best food for a baby, it is no longer the only safe nourishment, and if it is inferior in quality or deficient in quantity—as is the milk of the majority of city-bred mothers—it is not even the best food.

Cow's milk, on the other hand, although it has justly earned the reputation of collecting and at untimely moments letting loose more evils than issued from Pandora's box, is yet, when it is pressed from the udder, as thoroughly aseptic, and hence quite as innoxious, as breast milk. It absorbs impurities only upon exposure, but absorbs them so promptly and rapidly that ten minutes in foul air or unclean receptacles may render milk poisonous; and, even under the most favorable circumstances, it can not be kept entirely free from germs, more or less noxious.

By the simple process of sterilization, however, milk

may be robbed of all dangerous elements, and then become the very best substitute for mother's milk.

Sterilized milk insures the infants against the calamities that follow in the train of impure food; it eliminates milk poison, the enteric diseases caused by fermentative germs—colic, diarrhœa, and dysentery—and, from the milk at least, the child can not longer absorb germs of whooping-cough, scarlet fever, measles, diphtheria, or tuberculosis. But there are other defects of bottle-feeding that simple sterilization does not touch; a child may be free from acute disease, and yet die of starvation, or fall a prey to the various chronic diseases resulting from malnutrition. An infant may be fed to repletion, and yet be but poorly nourished. Scores of even breast-fed babies are half starved, without ever really suffering from hunger; and the majority of bottle and patent-food infants show signs of malnutrition up to the time they are given a mixed diet—if, indeed, they live so long.

Therefore, while the sterilization of milk robs bottle feeding of its most imminent danger, it is, in infants' feeding, by no means the only requisite to sound health and a vigorous development. Sterilized milk possesses the important negative virtue of being absolutely innoxious, but it too often lacks the necessary positive quality of adequate richness. It is well known to the profession that ordinary cow's milk does not furnish a sufficient proportion of fat properly to nourish an infant; but this knowledge is not, unfortunately, shared by the majority of mothers.

Nurse and mother almost universally consider a baby well fed if its hunger is periodically appeased and its body moderately plump. The ominous signs of malnutrition indicated by late dentition; poor bone formation, tending to rickets; broken sleep at night; general fretfulness by day; a susceptibility to colds, and a tendency to "catch" diseases as the consequence of lowered vitality—these escape the analysis that runs to ultimate causes until the baby is acutely ill, and thus come under the eye of the family physician.

Good breast milk is the ideal by which we should judge our substitutes, and it contains a larger percentage of fat than the milk of any cow, save the pure Jersey, which yields twenty per cent. or more of cream. Milk from tested Jersey cows, diluted for very young children with the due proportion of boiled water, to which has been added a small quantity of sugar and salt, is so nearly like breast milk that the digestive organs themselves can not tell the difference.

It is a great gain if the milk to be used by children, invalids, or travelers can be sterilized in the country as soon as it comes from the cow, and then be transported to town in the sterilizing bottles. As each bottle should contain only enough for one meal, the milk remains sealed until just before it is used, and so is exposed to no possible source of contamination. Where milk can not be sterilized when it is fresh, it may be prepared each morning in the nursery as soon as the day's supply is received.

If the milk is not of a grade to yield at least twenty per cent. of cream, cream should be added to it in the proportion of one ounce to three of milk. This method of enriching thin milk, which is recommended by the leading authorities in infant dietary, provides, it is true, the necessary fats, but at the expense of freshness, since the milk must stand several hours after delivery to accumulate the needed cream.

A convenient apparatus for the domestic sterilization of milk has, upon my suggestion, been manufactured by Fraser & Co., after designs in which I have aimed to lessen the possible number of flaws in the method. Carelessness and stupidity on the part of those who sterilize milk in the household often render the whole process useless. The milk, which should keep fresh at least thirty days, thus turns sour within forty-eight hours. An apparatus, therefore, which simplifies the work and diminishes the chance for mistakes is its own *raison d'être*.

Fig. 1 shows the new sterilizing bottle. It was designed so that it could easily be cleaned, having no corners or curves that would retain particles of sour milk to contaminate the next supply. The corks (rubber and glass) have been adapted from others' designs, as they have already proved all that could be desired.

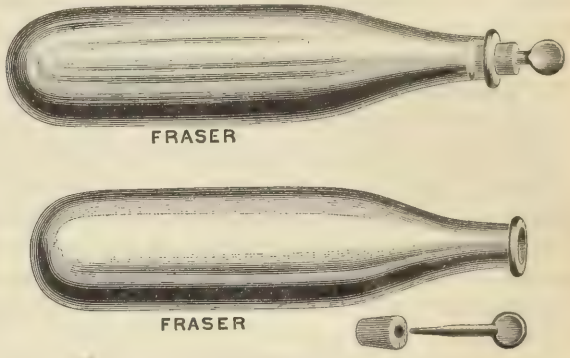


Fig. 1.

Fig. 2 shows the bottles filled, corked, and placed in the rack, which is to be lowered into the tin pan where they are sterilized. This rack will also conveniently serve to hold the bottles of milk in the ice-chest at home, or in the lunch-basket when traveling. It is light in weight, and

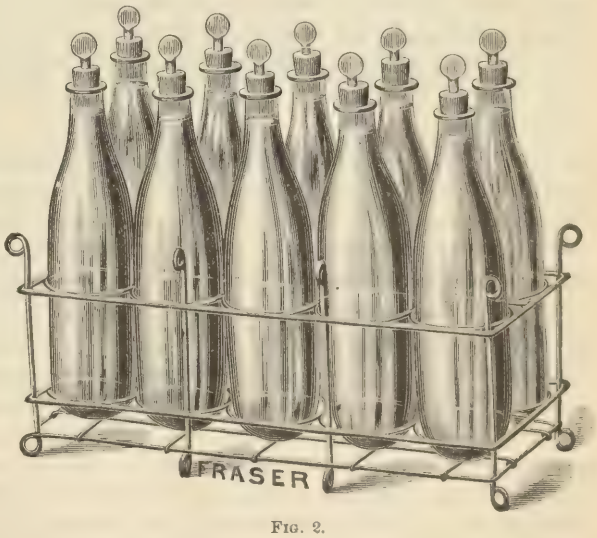


Fig. 2.

economizes room to the last possible degree. The small single rack (Fig. 3) is used to hold a bottle that is warmed for an infant. The bottle and rack are put into a small tin cup of warm water and placed over an alcohol lamp. The apparatus is completed by a square covered tin pan that will just fit outside the rack and bottles. For traveling, a wicker basket of a size to hold one or more dozen bottles is designed to be used.

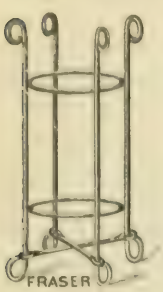


Fig. 3.

The process of sterilizing milk is now so well known that only the briefest review of the method to be used with this apparatus will be necessary.

The bottles are filled with milk to within an inch of the top, the rubber perforated corks are inserted, the bottles placed in the wire rack, and this lowered into the tin dish. Cold water is then poured in around the bottles to within two inches of their mouths. The tin cover having been put on, the temperature of the water is gradually raised until it boils ten minutes. The glass stoppers are then inserted, and the boiling continued for twenty minutes longer. The rack containing the bottles of milk, now sterilized, is lifted out and put away where the bottles may cool gradually. If the changes of temperature are sudden, the glass becomes brittle, and numbers of the bottles are broken. If milk so prepared will not keep from one to three months, there is almost certainly some lack of cleanliness in the apparatus used.

It would seem that as yet sufficient emphasis is not laid upon the necessity of sterilizing all milk used for children and invalids. One well-known writer says: "When milk can not be obtained fresh it is well to sterilize it before using"; another that "in warm weather it is a wise precaution," and a third that, "in case of bowel or stomach trouble, sterilized milk is safer." But it is in this, as in other lines of medical research, the ounce of prevention that is the thing to be desired. Professional men who, a generation since, would have absorbed themselves in the study of disease and its remedies, now more earnestly seek to understand the necessary conditions of health and its preservation.

When all milk which is given to a child is scientifically sterilized it does not suffer from bowel trouble, nor from "sour" stomach, and it forms no indigestible curds, since cow's milk, after it is sterilized, curds in small soft flakes as mother's milk does. An infant with ordinary good heredity, who is thus fed with creamy sterilized milk, will go through with teething and suffer no disturbance or inconvenience greater than the teasing irritation of tender gums.

During the past summer several children who were losing flesh on poor breast milk were, by my advice, given instead rich Jersey milk thoroughly sterilized. In every case there was immediate and continued gain both in weight and strength. In one case the baby gained, from the second to the sixth month, a pound every ten days as regularly as clock-work, and had not a single hour's illness of any kind. At the end of that time the nurse, tired of the "fuss," failed to sterilize the milk. The disturbance of the child's digestive system which resulted caused a loss of three pounds' weight in one week—it being that length of time before the intestinal canal could be cleared of the microbes introduced in one day's supply of unsterilized milk.

Since our scientific men have now so convincingly demonstrated that milk can not, even in the country, remain many minutes free from germs, it certainly never should be given to a baby thus contaminated.

POISONING FROM GASOLINE.

By J. G. BILLER, M. D.,
CORRECTIONVILLE, IOWA.

When we consider the common use of the products of petroleum, it is surprising that medical literature should be so silent about them. In fact, from the silence of our literature upon the subject and from long familiarity with them, we were of the opinion that they were not at all dangerous; but a couple of cases in which children had been drinking kerosene came under our notice and the alarming symptoms, such as depression, etc., were probably as much of a surprise to us as to the friends and neighbors.

A thorough search through the literature at hand revealed but little upon the poisonous effects of kerosene, and nothing at all about gasoline except a meager account in the National Dispensatory. In August, 1888, we suddenly received more information than was pleasant upon the subject of gasoline poisoning, as the following case will show:

Case I.—A baby, eighteen months old, was left alone in a room for a few moments, when it climbed up to a shelf where sat a pint measure one quarter full of gasoline. The child drank part and spilled the rest down the front of its dress, then set the cup down and went into the next room, where it was found by the mother lying unconscious on the floor. The mother had not been absent five minutes.

In ten minutes we saw the child and found it still unconscious, breathing or gasping about eight times a minute, pulse imperceptible at the wrist, the pulsation of the heart scarcely distinguishable, the eyes rolled back, and the face livid. The skin of the neck and chest was a bright red from the spilling of the oil, the jaws were firmly closed, the arms extended and rigid, and the legs limber. The abdomen was terribly distended and tympanitic, and the surface of the body was cold and clammy.

The child was put into a warm bath and an attempt made to give an emetic, but anything in the throat caused strangulation. After being in the warm bath a few minutes the child revived, and its breathing became more natural; the rigidity of the muscles relaxed, and it spoke and seemed to recognize its parents. Its pulse was still imperceptible, and, after remaining in this condition about two minutes, it suddenly dropped over, gasped a few times, and was dead.

The rapidity with which death came was astonishing, as the child did not live more than thirty minutes after drinking the oil. While in the warm bath its bowels moved very copiously. There was little time to think of treatment while the child was alive, but stimulants were what appeared to be required, and that hypodermically, but my syringe was away to be repaired, and there was no time to

send for another. The result might have been better with different treatment, but the lack of a hypodermic syringe and a stomach pump, or any other means of washing out the stomach, threw us entirely back upon external measures. Then, as before stated, we were entirely unprepared for such a case, never having seen or heard of one at that time. In the cases of kerosene drinking already mentioned the symptoms were somewhat similar, but not nearly so serious, and the stimulants could be given by the stomach.

Case II.—November 1, 1889, child, nineteen months old. The mother had filled a small oil-can with gasoline and set it into a closet, closing the door, and turned away to attend to something else, when she heard the door open. Turning around, she saw the child raise the can to his mouth, and screamed at him, causing him to drop the can, but not before some of the gasoline had been swallowed.

We saw the child in less than three minutes. He lay almost comatose in his mother's arms. His breathing was slow and pulse imperceptible; the heart-beating was just perceptible and was so weak that at times it seemed to stop. His face was livid and cold, eyes rolled back, with pupils slightly dilated. The rest of the body was cold, with livid extremities. The mouth was filled with a sticky saliva that the child would occasionally force to the lips but not spit out, and the mouth and fauces were very red. Twenty drops fluid extract of ipecac were given by the mouth, and two drops fluid extract of digitalis and fifteen of brandy hypodermically. Nitrite of amyl was sent for at once. Allen's surgical pump was adjusted, the tube introduced into the stomach, and warm water pumped into it. The tube became stopped by undigested food when we attempted to draw the water back, so we continued to fill the stomach until the distended organ began to overflow, assisted by the continual retching caused by the irritation of the tube in the throat. Large amounts of water and food came up, all smelling strong of gasoline. This was kept up until the stomach had been thoroughly flooded. The amyl having now arrived, two drops were placed on a handkerchief and held to the child's nose. Soon the pulse began to flutter and grew quite strong. Every three or four minutes the child would drop into a half-stupid state and become pale and blue; then the amyl had to be repeated. In an hour and a half after taking the poison he had recovered enough to talk and notice things, and soon began to play with a watch, when he was pronounced out of danger.

In this case the depression came on with alarming rapidity, but, from my experience with the first case, I was at once prepared to act. The administering of an emetic is almost a waste of time, for the stomach generally fails to respond to an emetic in kerosene poisoning, and I do not think it would respond soon enough to be of any use in gasoline poisoning.

The nitrite of amyl undoubtedly was of great benefit, but still the child showed some signs of recovering before it was used.

Chlorate of Potassium.—" Dr. Coghill, in a paper read at the Ninth International Medical Congress, confirmed the results of Wöhler that chlorate of potassium is excreted in the urine unchanged and in the full amount ingested, and hence does not give off oxygen to the tissues. Nevertheless, besides its local uses, he finds it of value in preventing abortion, in all cases of pulmonary insufficiency, as phthisis, chronic pneumonia, and bronchitis, in anæmia, chlorosis, and general malnutrition. In addition it has an antiseptic action in diseases of the genito-urinary tract where there is suppuration or purulent or phosphatic urine."—*British Medical Journal.*

STRANGULATED UMBILICAL HERNIA, WITH LOCALIZED GANGRENE.

RECOVERY.

By WILLIAM HALLOCK PARK, A. B., M. D.,
LATE HOUSE GYNÆCOLOGIST, ROOSEVELT HOSPITAL.

Mary G., aged thirty-nine, was admitted to the Roosevelt Hospital January 8, 1889, for a laceration of the cervix and perinæum. She also gave the following history: In March, 1886, when four months pregnant, she noticed a small tumor at the umbilicus. This was allowed to remain unreduced. In October, 1888, the swelling became painful for the first time. The pain and tenderness increased and the patient soon was seized with severe vomiting. A physician was called, the hernia reduced, and a truss applied. Since that time the patient has worn the truss and has had no further trouble.

On admission, the patient is well nourished. The hernia is reduced and is not forced out by moderate coughing.

On the 9th of January the perinæum and cervix were operated upon by Dr. George M. Tuttle.

On January 16th, after a hearty midday meal of corned beef and cabbage, the patient felt distress in the region of the umbilicus, and on examination found a tender swelling present, but did not call attention to it till four hours later, when she was seized with vomiting. On examining her at 7 P. M., I found a tense, tympanitic, and very tender swelling of the size of a child's fist. Attempts to reduce it were absolutely without effect. How long the hernia had been present before being noticed by the patient is uncertain, as no recent examination had been made. Opium was given and cold applied. At 10 P. M. the vomiting had become frequent. The local conditions remained the same.

Dr. Charles McBurney, who happened to be at the hospital, kindly looked at the case and advised immediate operation. Two hours were unavoidably lost in consulting with Dr. Tuttle and in getting the patient's consent. Owing to the sickness of Dr. Tuttle, I was forced to operate in his place. Dr. Brockway, the house surgeon, kindly assisted me.

The patient at this time was considerably prostrated; the vomiting had become almost constant, and the matter ejected was green and foul-smelling. The operation was begun at 12.30 A. M. with ether narcosis. A three-inch vertical incision was made over the tumor and carefully carried down to the sac, which, when free, proved to be pear-shaped, with its neck constricted by and adherent to a very tight ring. As a fold of the tense sac was pinched up between two forceps and divided, gas and cloudy serum escaped. Within were found rather more than four inches of darkly congested small intestines. At the part farthest removed from the constriction and nearly opposite to the insertion of the mesentery were two gangrenous spots, each half an inch in diameter and about a quarter of an inch apart. In one of these was a perforation from which cloudy, slightly smelling fluid escaped. The loop of intestine was carefully irrigated with warm 1-to-1,000 bichloride-of mercury solution, pinched up between the fingers, and the two gangrenous portions were removed by a single elliptical incision whose long diameter ran diagonal to the length of the bowel. The constriction at the neck of the sac was so tight that the contents of the intestines were absolutely prevented from passing through into the wound. The interior of the loop was thoroughly cleansed with hot water.

The edges of the opening were now carefully approximated by the fingers and united by three continuous sutures of No. 1 catgut. The first united, without tension, the divided surfaces of the mucous membrane. The second united the muscular layers. The third brought narrow surfaces of inverted marginal peri-

tonæum in close apposition—a Lembert suture, modified only in that it was passed continuously. The ring constricting the hernia was now divided on a director. The collapsed intestine expanded and the circulation quickly improved. There being no leakage at the site of the sutured wound, the intestinal loop was returned into the abdomen.

The remains of the sac external to the ring were then excised. Two silver-wire sutures were then passed through the entire thickness of the abdominal wall, including the peritonæum. The peritoneal edges were further united by three heavy catgut sutures. The silver wires were then fastened and the edges of skin carefully united by interrupted sutures of silk-worm gut. The wound was finally cleansed, dusted with iodoform, and covered with bichloride gauze. Time under ether, two hours. The patient passed the first twenty-four hours without any bad symptoms. At 5 P. M. the abdomen was soft, pulse 98, respiration 22, temperature 99° F.

On the afternoon of the second day the patient was given an ounce of beef-tea by the mouth; this was quickly vomited. The vomiting of greenish-colored fluid was repeated some seven or eight times during the next two days. The abdomen became very slightly distended, but the pulse, temperature, and respiration remained the same.

On the fourth day the patient was given a copious injection of warm boric-acid solution. This was followed by four fairly large fæcal movements. The patient also retained small quantities of peptonized milk given by the mouth.

On the tenth day the sutures were removed from the wound, which had healed by primary union. Since the last note she has steadily improved. Bowels move once every day.

February 7th.—Patient is to-day sent to her home, apparently cured.

March 1st.—Patient's physician reports that she has just passed through a sickness giving the symptoms of acute intestinal obstruction. The vomiting and prostration were marked. The symptoms increased for some twelve hours, and then gradually abated.

June 1st.—Since March the patient has been well. To-day, on examination, I find no return of the hernia.

GRATIFICATION OF THE MIND AS A REMEDY FOR STERILITY.

By M. J. BURSTEIN, M. D.

Mrs. B., aged twenty-four, consulted me on October 20, 1888: "Doctor, I am married since three years and have no children. I have been doctoring myself for the past two years, and now I want you to tell me whether I am able to bear any, or I have to give it up for a good job. I am very anxious to have a baby. I have been going around from doctor to doctor with no result." Her history is as follows: She is a native of Russia; has been healthy since her childhood; began to menstruate at the age of fourteen, and was not troubled up to her marriage. At times she had some pains in her back before the flow started, but these pains were insignificant; menstruation lasted about five days, and the loss of blood has been moderate. Since her marriage, however, she feels a heaviness in the abdomen, sometimes pains in the back, pains and weakness in her limbs, dizziness, indigestion, suffers from chronic constipation, indisposed to be in company, no desire for sexual intercourse. She feels something wrong with her womb ("walking of the womb," as she called it). Has lost flesh and strength and become anæmic. She does very little work about the house, and is constantly worrying about her incapability of bearing children. She stated that she would submit to any operation if it would remedy the defects of her body in regard to her being sterile. She had heard different stories from women about various methods of treatment, and, as it seemed to me, the pessary treatment ("ring inside," as she called it) was, in her opinion, the best one of all.

Placing the woman on my operating-table, I found that the uterus was of a normal size and color, no elongation of the cervix (a very slight anteversion, however); I could pass a sound through the cervical canal very easily; no pain on touch in the ovarian region, but a slight tenderness over the whole abdomen.

Giving her a tonic pill and directing her to take some vaginal injections, I assured her that she would become pregnant sooner or later. In about a week she called again, and insisted on being operated upon with this "ring." I promised her that I would do so as soon as she should get more strength to stand the operation (no other treatment was, according to her imagination, of any avail). She came once more and told me that she feared to wait any longer, and that she wanted to stop the "walking of the womb" at once. This was on the 11th of November, 1888. I showed her a "ring" by which I would stop "walking" immediately. I inserted a Hodge pessary, *which I immediately removed* (causing her a little pain), and when she got up I asked her how she felt. "Splendidly; why, I feel that it does not 'walk' any more; I feel much easier." I gave her instructions to give up treatment, but keep on taking good food and sufficient exercise; she was not to fear to walk, as the "ring" would hold everything in position. She left me on that day, and I had almost forgotten about her. On the 25th of July, 1889, the same little woman came in with a smile. "Well, doctor, I believe it is about time to remove the 'ring.' I am already in the family way since five months; I am tired wearing it; eight months is enough!" I examined the woman "to remove the ring," and found that she was right. She is now at full term and is as healthy as "she was always." Did not the satisfaction of her mind cure her?

182 Henry Street, New York, *November, 1889.*

THE SEPARATION OF THE POISON OF THE "LOCO-WEED."

By MARY GAGE DAY, M. D.,
WICHITA, KAN.

In making the separation by the following method, only the plants gathered in the fall were used.

The roots, stems, and leaves were boiled ten hours, strained, and the decoction concentrated to a syrup, poured, while hot, into a hot flask, corked, and set away. At the end of ten days the syrup had separated into two layers—the upper a blackish liquid, the lower a brownish sediment. The liquid was poured into a flask and covered with six times its volume of very dilute alcohol, 30 per cent. (the sediment also was washed with the dilute alcohol, to insure complete removal of the liquid), corked, and let stand three days; agitated occasionally; then filtered, and the filtrate *slowly* evaporated in the air, when crystals formed. It was found important not to hurry the evaporation, for when this took place too rapidly the crystals did not form.

These crystals are microscopic in size, blue-white in color, and of a variety of forms. The most characteristic are slender and pointed, arranged in rosettes or grouped in

various ways. They are soluble in distilled water and very dilute alcohol, very sparingly soluble in strong alcohol, not soluble in chloroform or ether.

The evaporated mass containing the crystals, when dissolved in distilled water, is slightly acid in reaction. A small amount of this fed to a kitten produced the train of characteristic toxic symptoms—sleepiness, loss of appetite, retching, and diarrhœa—that is produced by quite large amounts of the decoction.

I therefore conclude that the substance which separates in the crystalline form by the above-described method is the poison of the "loco-weed," but defer naming it until an ultimate analysis is made, which will be done during the year at the Hygienic Laboratory of the University of Michigan.

After a more extended study I hope to be able to enter more fully into the discussion of the chemistry and the physiological action of this poison.

A FATAL CASE OF CARBOLIC-ACID POISONING.

By S. T. RICHMAN, A. B., M. D.,
PRINCETON, KANSAS.

On July 26, 1889, at the noon hour, a child seven months old received a superficial burn on the left arm and thigh from a cup of hot coffee. A mixture, consisting of equal parts of carbolic acid and sweet oil, was applied by the mother, being a recipe taken from a domestic medical book in her possession. About half an ounce of 95-per-cent. carbolic acid was thus used. In two hours the child passed into a condition of stupor, which, continuing, alarmed the family, and I was summoned.

Arriving at 7 P. M., I found the child lying quietly, with the exception of an occasional movement, made by flexing the legs upon the thighs and these upon the abdomen, and then forcibly extending them. The eyes were fixed, the pupils contracted to the size of a pin's head, the pulse 120, weak, breathing irregular, occasionally sighing, swallowing performed with great difficulty, mucus expectorated rather than vomited, the odor of carbolic acid being plainly perceptible in the breath.

Not having atropine with me, I administered four minims of the fluid extract of belladonna by the mouth, a portion of it being rejected. At the end of an hour the pupils had begun to dilate, a slight blush was barely perceptible, and swallowing less difficult. A small quantity of whisky was then given with two minims of belladonna.

At the end of another hour the pupils were normal, the erythematous blush quite perceptible, swallowing somewhat improved, pulse and respiration the same. Learning that no urine had been passed since noon, and not desiring to substitute belladonna for carbolic-acid poisoning, I discontinued the former and ordered small doses of nitrate of potassium and whisky to be given at intervals during the night.

At eight o'clock next morning the pulse was 160, weaker, temperature 103° F., face blanched, pupils larger than normal, eyes fixed, the child lying quietly. The mother showed me a napkin with a dense smoky stain, three of which had been removed during the night, adding that the stains would not wash out. The child continued to grow weaker, the pulse rising higher, until convulsions set in at five o'clock, and death occurred an hour later—thirty hours from the application of the acid.

No post-mortem was allowed.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
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NEW YORK, SATURDAY, NOVEMBER 30, 1889.

THE CONGRESS OF PSYCHOLOGICAL PHYSIOLOGY AND HYPNOTISM.

Interesting things, according to the "Progrès médical," were discussed last summer by the learned body above mentioned. Among them, hypnotism received serious consideration. Whether the hypnotic sleep and normal sleep were identical in kind, and whether susceptibility to the hypnotic influence existed in greater degree among those deficient in nerve force or among those who possessed nerve force to the natural extent were some of the questions raised. M. Richet inclined to the opinion that persons without any neuropathic defect were hypnotizable, in spite of the prevailing idea that only the nervously weak could be overcome. Bernheim thought that with patience everybody could be put to sleep, and such was the theory of all the Nancy school. At the same time, he said, there must be a certain impressibility, which he hesitated to call a neuropathic impressibility, because it existed, he believed, in inverse ratio to nervous defect. Hypnotic sensibility existed at all ages. Oschorowicz confirmed the idea that nerve deficiency lessened hypnotic susceptibility, especially in neurasthenics. The question of nationality as a factor in susceptibility was raised. The conclusions arrived at were to the effect that the French were no more susceptible than those of other races; and that, generally speaking, all persons of every rank were hypnotizable, except certain peculiar individuals whom nobody could impress under any circumstances, and the victims of hysteria gravior. Richet raised a question concerning the personal influence of the experimenter, remarking that the old magnetizers had considered it highly important. Myers, of London, spoke from definite experiment to the effect that the will of the operator sometimes produced impressions upon the subject and sometimes did not. Richet suggested the following division of conditions characterized by change in the personality of the individual: 1. Spontaneous phenomena, either normal or pathological, such as sleep, somnambulism, etc. 2. Induced nervous states—such as those brought about by suggestion. 3. Actions at a distance, mental suggestion, and telepathy, phenomena not yet irrefutable and belonging to a science still so embryonic as to be outside the pale of discussion. Bernheim spoke of the two theories in regard to hypnotism—*suggestion*, which he himself maintains, and *fluidism*, of which idea Oschorowicz is the apostle and party representative. The theory of fluidism is to the effect that action is produced upon the organism without cerebral intervention. This may be possible, yet up to the present time it has not been proved. Passes, fixing the gaze upon brilliant objects, etc., are said not to belong to suggestion. Surely sug-

gestion plays a part. Fixing the eyes upon a brilliant point, an upward convergence, and raising the eyelids produce fatigue conducive to slumber, and bring about indirect suggestion.

The rôle and action of physical agents may thus be explained on the ground of indirect suggestion. Liebeault's experiments on infants would seem to refute this idea. He cared for sick babies suffering from various digestive disorders, whom he cured by simple laying on of hands. In such little children is suggestion possible? Why not? The journey, the visit, make an impression to which the infant responds. Babies are *suggestible* when a month old, possibly when a day old. Ballet felt himself astray among such distinctions. Up to the present time he had supposed that there could be no suggestion without definite prevision on the part of the experimenter. After some little skirmishing, Richet remarked that words certainly played some part in the discussion. Under the influence of external objects there was always mental reaction. Now, if this was called suggestion, then everything was suggestion. But suggestion in its hypnotic sense meant only an indication of the experimenter's thought or of the thought of the subject. Important as this may be, it is by no means everything. Dalinewsky, of Karkoff, said that hypnotism in general presented an assemblage of psycho-physiological phenomena common to man and animals. To find out the laws of its action, to reach any complete analysis, a careful study of the hypnotic state in animals was essential, their psychic organization being far simpler than man's. He himself had induced the hypnotic state in the crawfish, the crab, the shrimp, the lobster, the cuttle-fish, the electric eel, the brill, the leech, the frog, the tadpole, the triton, the lizard, the crocodile, the serpent, the tortoise, and certain birds. The general picture of the hypnotic state among animals was this: The animal was placed in some abnormal posture. A slight but prolonged effort on the part of the experimenter overcame its resistance, and voluntary movements were paralyzed; the animal was now quiescent. Marked anæsthesia of the skin and mucous surfaces was then developed. Inward excitement, such as that induced by artificial obstruction of the respiratory tract, no longer provoked voluntary movements. Convulsive movements now began, giving to the phenomena present the characteristics of a violent psychical emotion. Repetitions of the hypnotic state diminished the animal's resistance. It became more and more susceptible to the hypnotic influence. Verbal suggestion in man and sense-suggestion, executed in animals by the hands of the hypnotizer, were homologous. Here we were dealing with psychical acts that were unconscious and instinctive.

OCULAR DEFECTS AND THE NEUROSES.

The Commission on the Treatment of Epilepsy and Chorea by the Correction of Ocular Defects presented its report to the Neurological Society on November 5th, as we have already announced. The terms of the original agreement made between the Commission and Dr. Stevens, the changes in the original plan, the difficulties encountered by the Commission, together with a summary of cases, were set forth in due form. Dr. Stevens replied with some spirit, and endeavored to explain certain ambiguities with the same freedom of speech that had characterized criticisms of himself and his methods. The evening was unique in the annals of neurological science, and those who were absent missed much that printed accounts are powerless to convey. An obstreperous chorus chimed in now and then, like the bassi profundi and the tenori robusti of the opera who had forgotten their parts and gave forth notes at the wrong moment. Some fair-minded members, who believed in aiming straight at the target and hitting the bull's-eye every time, suggested that the speaker should not be interrupted, as the reader of the report had been listened to in silence. A good deal of the discussion was controversial and personal, recalling in a measure the "Society upon the Stanislaus" as described by "Truthful James." When all was told—and it took some hours to tell it—the fact remained that six patients out of fourteen had been improved by ocular tenotomy, though none of them had been cured. Now, what does this prove, and does it prove anything? It would seem to prove that Dr. Stevens's method is a therapeutic measure valuable as an adjunct, and that, in certain cases where toxic medication is unwise, it constitutes one more means of alleviating suffering. This fact remains, according to the report of the Commission, and in spite of the frank fencing-match in which adjectives were the weapons used. "Wisdom suggests leaving words for facts, since facts form a more rational basis for theories." Hypnotism is, in a certain sense, a new remedy. It does relieve, though it may not cure. Though its future is difficult to prophesy, shall it be abandoned and ignored? Ocular tenotomy has relieved in certain given cases, but cured in none of them. Is it an utterly despicable method of procedure, without a leg to stand on? Let the fair-minded physician investigate the matter for himself, remembering that science and preconceived opinions are incompatible. Tenets are fixed, while science is progressive. According to Erichsen, in his address at King's College, the real object of medical education is to train the mind to remain open to the reception of truth throughout life, and to meet the varying emergencies of a professional career. The mind ever open to truth is the fair mind, and the verdict of the fair mind is the only one worth having.

MINOR PARAGRAPHS.

THE MEDICAL ASPECTS OF THE WANDERING JEW.

Eugene Sue was a medical man, well trained in the science of his time. According to the "Lancet," he was a surgeon to the royal household, and served also in the army and navy. He was the fourth in direct descent that had been educated in the medical art. His father and grandfather were both graduates of Edinburgh. His father translated into French the principal treatises of the Scottish school. He made some original investigations concerning galvanism and the guillotine, and he served as chief of the medical staff of the Imperial Guard during the campaign into Russia and subsequently became physician to Louis XVIII. On his death he endowed the Academy of Fine Arts with a museum of natural history and comparative anato-

my brought together by four generations of physicians in his family. The great-grandfather of Eugene was one of the prominent physicians of the early part of the eighteenth century. The author of the "Wandering Jew" brings his fine medical training into requisition in those passages that depict the cholera visitation of 1832 and its manifold effects upon the citizens of Paris. Sue inherited a fortune when about twenty-five years of age, and immediately left the naval service to put into exercise his predilection for imaginative composition.

GARROD'S SULPHUR LOZENGE.

In our issue of July 13th reference was made to Sir A. B. Garrod's paper, in the "Lancet," on the usefulness of small doses of sulphur. At that time, so far as we could learn, no "compound sulphur lozenge," such as Dr. Garrod had used, had been in the market in this country. Since that time two drug-houses have announced the preparation of a Garrod's lozenge. One of these closely follows the English physician's formula, which orders five grains of sulphur and one grain of cream of tartar in each compressed lozenge. This is the product of a Baltimore house of high repute. Another large firm, doing business in Philadelphia, has made a similar preparation, but the formula is varied so as to add to the two ingredients named three others, as follows: extract of ipecac, one one-hundredth of a grain; extract of capsicum, one five-hundredth of a grain; and arsenious acid, one one-thousandth of a grain, in each lozenge.

SYPHILIS AND THE SPEAKING-TUBE.

The Paris correspondent of the "American Practitioner" gives an account of a case of syphilis of the mouth with a history of unusual origin. It is from the clinic of Dr. Vidal at the Saint-Louis Hospital. The patient, a girl of twenty years, had for three months had superficial lesions of the lips, which were thought to be eczematous. On her admission to the hospital, however, the diagnosis of chancre became incontrovertible. The subsequent inquiry regarding the method of inoculation showed some unexpected, because unusual, results. The patient was a factory girl, and there was working in the same part of the building a young man who had sores about his lips, and he as well as the girl and several others had frequent occasion to speak through the same speaking-tube. It was by placing his lips, which were sore with secondary symptoms of the disease, on the mouth-piece of the tube and leaving on it virus to be taken up that he infected the others, who also pressed their mouths against it. As the writer of the letter says, "If this is true, this mode of contagion deserves to be brought into notice."

THE NEW YORK SURGEON OF TO-DAY.

The "American Practitioner" has a letter from a Kentucky physician who has been visiting among the surgical leaders of New York. This visitor appears to have formerly had several misconceptions, which have been set aright by ocular demonstration. He expected to see brilliancy in operative methods, but the acme of brilliancy is simply "satisfactory results"; there is no hurry. The value of time is acknowledged, but accuracy is valued even more. He found a carefulness and patience amounting almost to tediousness in operations. There is a rigid observance of antiseptic cleanliness and asepsis, without exception, among those surgeons—seven or eight are named—whose clinics were followed by the visitor, with much attention to surgical details to the end that hæmorrhage, shock, and exposure to cold may be reduced to the minimum. Anæsthesia by ether is preferred, but in the case of children chloroform is used occasionally; in plastic face operations, ether by the rectum has its advocates. To sum up: he found an abundance of rare and classical operations performed with all the courage and authority of the master; the operator occupies the position of one who is beyond criticism, who acknowledges no restraint, except that of his judgment and conscience, and who is strengthened by his position to aim at everything possible to human skill and endurance.

THE CONFORMATION OF THE CHEST AND THE TENDENCY TO CONSUMPTION.

The "Deutsche Medizinal-Zeitung" contains an article on this subject by Dr. Maszkowski. The writer states that it is maintained by many observers that disproportion in the form of the chest is an important factor in the tendency to tuberculosis. The results of a series of investigations have not led him to coincide with the conclusions of others in this respect. He selected 275 healthy individuals and the same number of persons suffering from various stages of pulmonary tuberculosis. These persons were subjected to close and careful comparative anatomical measurements, and from these the following conclusions were deduced: 1. That there existed no characteristic form of the thorax in those predisposed to pulmonary tuberculosis. 2. That changes in the form and diminution in the capacity of the chest, when such took place, appeared as concomitants and developed as the disease progressed. It was a matter for remark that the general form of the chest in some of the tuberculous patients was even more favorable, if irregularity was alleged as a predisposing cause of disease, than was found in some of the perfectly healthy persons.

THE TREATMENT OF PHLEGMASIA DOLENS.

The "Union médicale" attributes to Delore and Poullet the following sketch of the proper treatment of phlegmasia alba dolens:

Absolute rest in the dorsal decubitus, the affected member placed in an attitude of forced extension, and a mixture of oil and chloroform applied; then cotton batting is placed around the limb, which is to be kept warm at an even temperature. Movement and repeated examinations are to be avoided. To combat pain, narcotics by the mouth, subcutaneous injections of morphine, and laxatives are in order. When pain begins to subside, alkaline and diuretic drinks may be given to hasten resolution of the œdema. If there is much œdema, the fluid may be allowed to ooze out through small incisions or through a drainage-tube. The patient should be kept in bed for thirty days after the cessation of pain and until the œdema has almost completely disappeared.

OPHTHALMIA PHOTO-ELECTRICA.

According to the "Deutsche Medizinal-Zeitung," Dr. Lubinski has observed a peculiar form of inflammation of the eyes, usually in persons employed about electric lights, to which he has given the name ophthalmia photo-electrica. It appears to be due to looking at the very bright light from a short distance, without proper protection to the eyes, such as dark glasses. Soon after thus looking at the light a succession of bright spots appears before the eyes, each remaining but a short time and then being replaced by another. During the following night the patient suffers severe ocular pain, with lacrymation and photophobia. The lids are swollen, the movements of the eye are painful, and there is circumcorneal injection, with hyperæmia

of the entire eye. This condition continues from an hour and a half to three hours. Then the patient falls asleep and awakes in the morning apparently well, except for a tired feeling in the eyes. The retinæ are still hyperæmic, and sometimes venous pulsation can be seen. Lubinski recommends cold applications, very frequent instillations of cocaine, and chloral or quinine with morphine.

CARBOLIC ACID IN THE TREATMENT OF NEURALGIA.

Dr. Julius Garst, of the Indian Reservation, Tacoma, Washington Territory, writes that recently a case of severe neuralgia, that had continued about three months, came under his care. The patient had taken the usual tonics, also quinine in large doses, and acetanilide, without relief. The pain was severe in the areas supplied by the infra-orbital, the supra-orbital, the temporo-malar, and the great occipital nerves, also in a spot a little to the left of the seventh cervical vertebra. There was no tenderness along the spine. Complete relief followed the injection of several drops of a fifty-per-cent. solution of carbolic acid at the points from which the pain radiated. Two weeks had passed, at the date of Dr. Garst's letter, without any return of the pain, and during that time trinitrin had been taken.

THE BABIES' HOSPITAL.

Dr. L. Emmett Holt has been appointed attending physician to the hospital in the place of Dr. Sarah J. McNutt and Dr. Julia McNutt, resigned. The hospital is now permanently located in a building of its own on the corner of Fifty-fifth Street and Lexington Avenue, where it has a capacity of thirty-five beds. Any sick children under two years of age are admitted, excepting those with infectious diseases. In connection with this hospital a training school for nurse girls will be opened in December, under the patronage of Mrs. R. W. Chapin. The hospital has been in active operation in its new quarters since the middle of October. It will be formally opened to the profession and the public on December 6th.

ITEMS, ETC.

The New York Society for the Relief of the Widows and Orphans of Medical Men.—At the recent annual meeting, Dr. Henry Tuck, of the New York Life Insurance Company, was elected president. The treasurer's report showed a net increase of receipts to the amount of $4,445.84 during the year, making the total assets $166,163.63.

Change of Address.—Dr. L. H. Dunning, from South Bend, Ind., to No. 19 West Ohio Street, Indianapolis.

Society Meetings for the Coming Week:

Monday, *December 2d:* New York Academy of Sciences (Section in Biology); German Medical Society of the City of New York; Morrisania Medical Society (private); Brooklyn Anatomical and Surgical Society (private); Utica Medical Library Association; Boston Society for Medical Observation; St. Albans, Vt., Medical Association; Providence, R. I., Medical Association; Hartford, Conn., City Medical Association; Chicago Medical Society.

Tuesday, *December 3d:* New York Obstetrical Society (private); New York Neurological Society; Elmira, N. Y., Academy of Medicine; Buffalo Medical and Surgical Association; Ogdensburgh Medical Association; Medical Societies of the Counties of Herkimer (semi-annual—Herkimer) and Saratoga (Ballston Spa), N. Y.; Hudson, N. J., County Medical Society (Jersey City); Androscoggin, Me., County Medical Association (Lewiston); Baltimore Academy of Medicine.

Wednesday, *December 4th:* Society of the Alumni of Bellevue Hospital; Harlem Medical Association of the City of New York; Medical Microscopical Society of Brooklyn; Medical Society of the County of Richmond (Stapleton), N. Y.; Penobscot, Me., County Medical Society (Bangor); Bridgeport, Conn., Medical Association.

Thursday, *December 5th:* New York Academy of Medicine; Brooklyn Surgical Society; Society of Physicians of the Village of Canandaigua; Medical Society of the County of Orleans (annual—Albion), N. Y.; Boston Medico-psychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington).

Friday, *December 6th:* Practitioners' Society of New York (private); Baltimore Clinical Society.

Saturday, *December 7th:* Clinical Society of the New York Post-graduate Medical School and Hospital; Manhattan Medical and Surgical Society (private); Miller's River, Mass., Medical Society.

Letters to the Editor.

A NATIONAL MEDICAL SOCIETY ON AN ELEVATED AND PERMANENT BASIS.

Boston, *November 4, 1889.*

To the Editor of the New York Medical Journal:

Sir: Recently, in conversation, a professional gentleman of experience (teacher in one of our schools) said that there were already too many medical societies in this country, and that the American Medical Association, if wisely conducted, would be quite enough; the various specialties could be arranged as sections or branches of this one general comprehensive body. Very soon afterward I had occasion to examine the renewed appeal for members lately made by an aspiring medical society; the weight of my friend's words became heavier—and yet more heavy as I further thought upon the number of existing social organizations in medicine. The name of any such company of individuals goes for little if not sustained by the character, personal and scholarly, not less than professional, of those in membership and in control; a high-sounding title appears absurd, or pitiful rather, when names of merited eminence are conspicuously absent.

Verily, considering the numerous societies and the evident tendency to the formation of yet more, the well-wishing observer must query what will the outcome be—chaos? disrepute? The very fact of there being so many independent, even rival, bodies, argues (to the disinterested and impartial) that the profession has still to find and *put in action* the elements and means of stability and popularity which attract men of worth—elements and means by which, at the same time, a widespread usefulness may be attained.

Inasmuch as the present seems to be a society-generating epoch, I am emboldened to hope the hour opportune to establish in the United States a national organization on such a basis that good results and permanence will follow. In pursuance of this idea, I venture to bring again before the profession (and the general public) a *plan* (outlined in the "Boston Medical and Surgical Journal" of July 25, 1872) the main points of which are given below. For details the reader is referred to the original paper.

In future, then, let this (one and only) association have a truly representative governing body, elevation to which should be the

reward of scholarly accomplishments, professional ability, usefulness, and eminence. Two delegates from each State would, probably, be a sufficiently large number for all practical purposes. These should constitute the National Council of this American Medical Society. It should meet at least once a year, and continue in session long enough to attend to all legitimate business, scientific and professional, giving advice, editing rules (on ethics), publishing transactions of value, etc.—everything concerning the interests of the profession throughout the Union—being thus a complete senate, as it were. The term of service should be six years, each State electing one delegate or senator every three years. To free them as much as possible from local and temporary influences, they could be chosen by a State council, which, for this and other duties, might be composed in the following manner:

Let each of the several State societies select from among its most experienced and best qualified men a number equal to that State's representatives in Congress; that is, one perhaps from each Congressional district, one third (as near as may be) each year. These should hold office for three years, and be the State councilors of the national society or association. They could meet yearly or oftener, and do the work fitly falling upon a State or local committee. Each of these State boards should, once in three years, choose a national councilor from among their own number, or at large, as found best qualified and worthy. These local bodies could do preliminary work, revision of which should be left to the experience, sober judgment, and deliberate action of the National Council, whose members, moreover, might be allowed a seat, without a vote, at sessions of the State Council, in order to inform themselves of matters under consideration. Members of the State Council could be permitted the privilege of a seat, without a vote, at meetings of the National Council.

Matters of business and control should be left entirely with the National Council. The State councils (and societies) could then devote all their energies to professional and other allied scientific work. Existing State societies might be branches of the larger organization, and their members be the ordinary members of the National Association. Specialty societies and the present subdivisions within State limits could remain very much as they are now—all being united in one national confraternity. General meetings could be arranged by the National Council for orations in medicine and surgery, reports, discussions, etc., as deemed advisable, on which all ordinary members should be entitled to attend. Of course, various questions for solution arise when details are thought of, but the obstacles to bringing all our medical societies into harmonious co-operation or complete organic union do not seem insuperable—may it not be hoped?

As may be observed, this plan forms a governing body as a beginning; but, is not that the way in which any successful enterprise is started and carried on? The brain must direct, or the less intelligent (or less moral) members (*corporis*) will shipwreck the company.

Judged by their actions, the great majority of the more prominent portion of the profession in this country do not seem to recognize, in any existing organization commensurate with our territorial domain, a national medical society on an elevated and permanent basis. The arrangement above referred to, thought superior to any other yet offered, appears to be easily feasible (without revolution), to be well adapted to readily place any association which may adopt it enduringly upon a dignified professional and scientific basis, and to render fellowship and position therein attractive to men of merit. Praiseworthy effort of mediocre intellect could be rewarded by membership or office in the State societies and councils, while the National Council would offer fit prizes for the honorable ambition of genius and eminent talent. "Under such a plan the American Medical Association would soon become a 'power' in the land; and connection with it, even as a member merely, be an object of just pride with every high-minded and well-educated practitioner throughout the country."

Moreover, as international reunions are the custom of the day, it may not be superfluous to think upon the opinion which medical men outside society bounds, or the profession abroad, would have if there were an association that should really represent those who devote themselves to the science and art of medicine in America. JURE ET BENE.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

Meeting of November 7, 1889.

The President, Dr. ALFRED L. LOOMIS, in the Chair.

A Plea for the Practical Utilization of Hydrotherapy.—Dr. S. BARUCH, in a paper with this title, opened with a review of the history of the treatment of disease by hydrotherapeutic measures from the time of Hippocrates until the present age. He also quoted the opinions of the leading clinical teachers of Germany, France, and Italy as evidence of the high appreciation with which scientific treatment by means of water was regarded by recognized therapeutists of the present day. The use of water, he asserted, had maintained its hold upon some of the most able physicians in every century of medical history, despite the prejudices of the laity and of the medical profession at large. These prejudices had failed to abolish it from the therapeutic armamentarium, as had been the fate of many other equally vaunted remedies. Indeed, it was to-day more firmly intrenched than ever, not only on clinical grounds, but because its use was based upon well-ascertained and exact physiological facts. From carefully elaborated experimentation on man and animals, certain data as to the physiological action of water were deduced. The caliber of the blood-vessels could be diminished to any extent by cold water, until the coats of the vessels would lose their tone altogether. The application of cold water resembled that of irritants in producing reflex action from the central organ. Irritants excited considerable influence on the heart and vessels, and as, in proportion to the irritability of the individual, powerful cutaneous stimuli would lessen or weaken cardiac action, relatively weak stimulation would strengthen that action and narrow the lumen of the vessels. Changes produced by continued stimulation of the skin lasted sometimes after its removal, and relaxation of the pulse often followed powerful stimulation. The excitant effects of weak cutaneous stimulation continued after its conclusion, but were also followed by a less pronounced relaxation. Powerful cutaneous stimulation was always followed, after a period of warming, by a cooling down of the body heat which might last over an hour. Sometimes this occurred during stimulation, but, as a rule, took place after its cessation.

From observations made on the circulation of the rabbit trephined for the purpose, definite results of the effect of water stimuli were arrived at. A cold stream of water applied to the belly or back of the animal was at once responded to by the blood-vessels of the pia mater, contracting them if brief, dilating them if prolonged. A warm compress applied to the belly or back contracted the vessels. Cold baths produced dilatation

of the vessels in proportion to the extent of the body immersed. It was only after prolonged immersion in cold baths that a contraction of the vessels, as a result of the reduced blood temperature, took place. Immersion of the body in warm water brought about decided contraction of the vessels of the pia mater, and they remained contracted for some time afterward. By demonstrations on man it was found that the application of cold to certain definite parts of the surface exercised a positive influence upon definite vascular areas. It was a well-known fact that the human body was not affected by cold and heat like an inanimate body; that it reacted against the thermic stimuli. It must be remembered that the vital processes by which the system endeavored to protect itself against thermic disturbing influences were also definitely ascertained. By means of the calorimeter it had been positively demonstrated that the radiation of heat depended upon the cutaneous circulation. It was found that during the most active condition of the skin function three and a half times more heat might be retained in the body than the average loss of heat, or that it might be increased three and a half times. As the great bulk of the heat was produced in the voluntary muscles, which formed about one half of the entire body, it followed that the increased activity of the muscles aroused by the external application of cold was capable of producing an increase of heat. In the muscular reaction produced by the warm moisture of the pack, a condition most favorable to the nutrition of the muscles was brought about. The excretion of carbon dioxide was increased by the application of cold. It was also shown that there was a corresponding increase in the consumption of oxygen. The writer said that, from the conclusions of reliable experimenters, we were warranted in affirming as a physical law that, under the influence of cold, oxygen combustion was energized and augmented, on condition always that refrigeration did not exceed certain limits and cause depression of the rectal temperature below 30° C. (86° F.). It was found that the wet pack increased the elimination of the fluids and solids of the urine.

The writer did not maintain that in hydrotherapy we possessed a universal remedy, but that it was an indispensable auxiliary to other methods of treatment. His definition of hydrotherapy was the utilization of water at any temperature, internally or externally, for the treatment of disease. He did not say for the cure of disease. He hoped by this definition to emancipate it from hydropathy, or "cold-water cure." In dyspepsia and gastro-intestinal diseases water had been used with great success. By removing the products of fermentation and cleansing the mucous membrane, it restored tone and vigor to the gastric lining and enabled the natural forces to come into play. Another class of cases which offered a broad field for the employment of hydrotherapy was that to which belonged neurasthenia and other nervous diseases—rheumatism, gout, anæmia and chlorosis, obesity, and scrofula. In these cases the benefit derived from the application of water seemed to be produced by an increase in assimilative processes and in nutritive and tissue changes. He divided neurasthenia into two types—the erethetic and the true asthenic. The former was characterized by an instability of nerve forces, the latter by their enfeeblement. The former required soothing ablutions, or prolonged wet pack, followed by the half bath of 65° to 70° F. once or twice daily. The asthenic form, on the contrary, required the stimulus from the active reaction produced by the impingement of a mass of cold water for a brief period. Under the author's observations many cases of hysteria had yielded to the tonic influence of various hydrotherapeutic procedures. In chronic constipation the results were excellent. Statistics whose source was unimpeachable demonstrated that the mortality of typhoid fever had been reduced from twenty-five per cent. to two per cent. by the systematic bathing under Ernest Brand's method. The author gave the histories of a number of cases which had been considered hopeless, but in which the patients were now in comparatively good health from the application of water as a remedial agent. He said that the results in the Montefiore Home for Chronic Invalids were exceedingly good considering the desperate and hopeless class of cases, and that the last report recorded six cured and thirty-five improved sufficiently to return to their homes and daily work.

Dr. G. A. Peabody thought it was deplorable that it was possible to enumerate only two or three physicians in this great city who were known to avail themselves of hydrotherapeutics in the treatment of typhoid fever. The old prejudice still existed that it was a dangerous procedure suddenly to lower the temperature of the medium by which a patient was surrounded. The results at present achieved from the routine treatment of typhoid fever were by no means satisfactory. The statistics of mortality from the disease in this country was such as would be considered unjustifiable in any European capital. The death-rate here was from twenty to thirty per cent., and during the civil war had been from forty to fifty per cent. Dr. Brand had collected the data for a list of cases numbering about six thousand in which hydrotherapeutic treatment had been employed by physicians having faith in it. The mortality in these cases showed only 3·9 per cent. In the French and Austrian armies the method was not employed systematically from the beginning of the disease, and the typhoid-fever mortality-rate was 36·9 per cent. in the French and 27·4 per cent. in the Austrian army. In the German army, where there existed more or less system in respect of this method of treating typhoid fever, the death-rate was 9·6 per cent., and in the second army corps, in which the treatment was systematized, the mortality-rate was only a little over three per cent. He thought the profession in America had as yet not risen superior to its own prejudices against the use of the bath in typhoid-fever cases, while the expense and difficulties attending the conscientious administration of the system might also have stood somewhat in the way of its more general adoption. As to the various methods for the employment of the treatment, he thought there was little question but that the cold bath at from 65° to 68° F. was the most preferable form. The baths should be begun as early as possible in the cases and should be continued at intervals indicated by the patient's temperature, which should not at any time be allowed to rise above 102° F. Drugs he considered were at present employed in a most illogical manner. There was no sense in administering antipyretics in such a way as to keep a patient's temperature alternating between 98° and 106°. This course was anything but scientific, and if by the cold bath a uniform temperature of 102° could be assured, at least the comfort of the patient would be thereby promoted and complications prevented. Many patients came to the hospitals at a late stage of the disease with their hearts already enfeebled, their lungs not working well, and showing general symptoms of congestion, and of course it was not advisable to plunge such patients into cold water. His own practice was to employ in these cases the wet pack, and it always answered well. The sheet should be wet with water at about 55° to 60°, then wrung out, and during its application ice might be rubbed over it. The graduated bath he did not approve of; it was more troublesome to manage and more trying to the patient. Cold affusions were not advisable, in his opinion, as they gave too great a shock. The cold sponge-bath gave unsatisfactory results. It was a most unwise and reprehensible practice to apply cold in cases in which the internal temperature was high and the surface of the body cool.

Dr. A. A. Smith said that he was a warm advocate of the

use of the bath, and it was his practice to employ it in typhoid cases in his service at Bellevue Hospital. He was grateful to the author of the paper for the suggestions thrown out as to the utility of hydrotherapeutic treatment for cases of the neurasthenic type. Hysteria, it had also been stated, was amenable to this line of treatment. When the speaker was an interne at Bellevue Hospital, acute hysteria, with convulsions or coma, was treated by filling a large syringe with cold water, armed with which, the doctor would stand at the foot of the bed and endeavor to direct a stream of water so as to hit the patient between the eyes. While this method was often effective he did not consider it hydrotherapy of the best kind, and he did not allow it to be practiced now. He had arrived at the conclusion that, underlying all these cases of hysteria, there existed some nerve disease which a conscientious physician could not afford to ignore. While not wishing to depreciate the value of the hydrotherapeutic treatment as a valuable adjunct in cases of neurasthenia, hysteria, and allied conditions, he thought that its use had been at present too limited to warrant the assumption that the method would certainly result in a cure.

Dr. M. Putnam Jacobi read the history of a case of typhoid fever which had come under her immediate notice at the New York Infirmary, and in which treatment by the bath had been systematically carried out. The patient was admitted on the eighth day of the illness. Baths were given from the day of admission until the thirty-second. The bath was administered whenever the temperature rose to 103° or over, and was for some time required about every three hours. The case was one of severe infection, for there were early and for a time violent delirium, very feeble and gaseous pulse, great prostration of strength, sordes and brown tongue as early as the eighth day, pulmonary congestion, small bed-sores, and immense destruction of blood-corpuscles, as shown by the large amount of coloring matter found in the urine by the sulphuric-acid test; finally, the high and persistent fever. The duration of the fever did not seem to be markedly lessened by the treatment, but its danger was removed by lessening its intensity and introducing incessant but not too profound remissions. On the second day of treatment the evening temperature was over 106° F., but never afterward. Though the fever lasted forty days, all serious symptoms disappeared within the first week, and no new ones appeared. The first bath was given at a temperature of 70° F., but was followed by temporary collapse and violent delirium. After this the temperature of the baths was 80°, then 75°, and of only five or ten minutes' duration, reaching finally fifteen minutes' duration. This method differed from that of Brand in its intensity, and possibly for that reason the reduction of temperature effected by each bath was not so marked as was stated by others—thus, 2·5° during the first week, 3·1° during the second, and about 4° the third week. As far as it went, this case tended to justify Dr. Baruch's assertion that the cold-bath method was to be considered as contrafebrile rather than antipyretic. It was a question whether repeated exposure of the nervous system to an extensive amount of temperature change could be practiced with impunity. It also seemed to the speaker that clinical evidence in favor of cold baths was far less for other fevers, especially the eruptive, than for typhoid. Possibly the fact that the skin and subcutaneous tissues, with their heat-regulating mechanisms, were involved in the eruptive fevers, might have something to do with this difference. Probably, also, the germs of different infectious diseases behaved quite differently toward different temperatures.

Dr. G. B. Fowler said he was surprised to learn that the bath was not more universally in use. He had employed it ever since commencing practice. It was his custom to use it in scarlet fever, pneumonia, and the bronchitis of children. He expected from it in such cases more than the mere reduction of temperature. He looked for it to act in a curative way, for by the radiation which it produced it would bring about changes in nutrition physiologically less violent than by the use of other remedies. The author of the paper had omitted the consideration of the therapeutic value of water as a beverage. In cases of fever the speaker held it as important that water should be given the patient to drink as that it should be applied externally. He always advised that these fever patients should be given access to plenty of water.

Dr. Baruch, in the course of a brief reply, said that, as to the curability of hysteria by the use of hydrotherapeutical methods—the feasibility of which Dr. Smith had expressed himself somewhat skeptical upon—he considered that, when he stated that patients of this type, who had been examined and pronounced incurable before admittance to the Montefiore Home, could be sent out benefited, he was adducing a pretty convincing proof that there was something in hydrotherapy, when added to other means which had already been tried.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN SURGERY.

Meeting of November 11, 1889.

Dr. Robert Abbe in the Chair.

Suture of the Quadriceps Femoris Tendon.—Dr. W. T. Bull referred to a case which had been made the subject of a paper read before the Surgical Society last year, in which, after suturing the quadriceps tendon, the speaker could report recovery of the motions of the joint and a generally very satisfactory result. He regretted that the patient was not present, but thought it interesting to be able to complete the record begun by introducing another case of the same general character. He then presented a young man, aged seventeen, who, on the 29th of last April, was admitted to the New York Hospital with a cut across the knee received from a circular saw. The injury was three quarters of an inch above the patella, laying open the joint and denuding the internal condyle of the femur of its cartilage and severing the quadriceps femoris. A three-inch incision was made upward from the center of the wound, and the ends of the tendon were approximated and sutured with catgut. A drainage-tube was inserted and removed on the fourth day. The patient was up and around, with his limb in plaster of Paris, on the tenth day. He was discharged at the expiration of the fourth week, and the plaster dressing was removed three weeks later. Motion had gradually been restored to the joint, and at the present time the power of extension was normal, and there existed no interference with flexion. While in such accidents as the one just described there could be no doubt as to the propriety of suturing the tendons, in subcutaneous ruptures of the tendons some hesitation might be felt. His search for statistical and other information on the point had not enlightened him much; but the result obtained in his first case would lead him to attempt suture and not leave the repair to nature unaided. Though this question might not be of the same interest as had pertained to that of dealing with simple fracture of the patella, still the status of surgical procedures in the latter case was pretty well fixed, while the best method of dealing with subcutaneous rupture of the quadriceps femoris was still open to settlement.

Suture of the Ligamentum Patellæ.—Dr. R. G. Wiener showed a patient whose tendon he had sutured at a point below the patella. The operation had been done in this case some five years ago by Dr. Sands at the Roosevelt Hospital, and with good results as to union and motion. In December last the

patient had fallen down stairs and had ruptured the tendon once more, when he came under the speaker's care at Charity Hospital in June last. The patella was found to be four inches above the joint, and the power of extension was entirely absent. On the 29th of June an incision nine inches in length was made, laying bare all the tissues down to the joint. No remains of the patellar tendon could be discovered. It was impossible to make the patella approach its proper relation to the joint, and the operator then divided the quadriceps-femoris tendon above the patella, and, after restoring the latter to its proper position, drilled both it and the tibia, and secured the patella to the latter with stout wire. The continuity of the tendon above was then restored by suture. After a lapse of two weeks, primary union was found to have resulted throughout.

The Chairman thought the case seemed to answer Dr. Bull's question as to the advisability of dealing with these subcutaneous ruptures by operation. Motion appeared to be fairly restored.

Double Femoral Hernia in a Boy.—Dr. Milliken presented a case of double femoral hernia in a boy, explaining that the lesion was a rare one, being seldom observed in persons under twenty years of age.

Colo-colostomy for Cancer.—Dr. Willy Meyer presented a female patient, thirty-four years of age, upon whom he had performed a colo-colostomy for irremovable cancerous growths causing stricture at the hepatic curvature of the large intestine. The operation had taken place at the German Hospital on July 22, 1888, and the case had been reported in detail in the "Medical Record" and "New York Medical Journal" of November 27, 1888. The speaker said that he would not recapitulate the details of the case further than to state that the artificial anastomosis between the transverse and ascending colon had been made without the use of Senn's bone plates—the only material recommended up to that time for use in this class of operation—but had been completed by a double row of continuous catgut suture. The patient had made a rapid recovery and had constantly improved since the operation, immediately previous to which she had weighed only one hundred and twelve pounds, while four months later she had weighed one hundred and fifty five pounds. Her present weight was one hundred and fifty-one pounds. Twelve weeks after the date of the operation the patient had felt sufficiently strong and well to attend to cooking and general housework. At the end of February of the present year she had resumed her former position as stewardess in the service of the North German Lloyd Steamship Company. Since then she had made three trips from Bremen to Baltimore, visited England six times, and was now here after her third trip to New York, thus proving her ability to undertake quite heavy work. The patient had stated that her appetite was excellent and that she could with impunity partake of any kind of food except green vegetables and salads. She also had a normally formed passage from the bowels daily, and this without the use of cathartics or enemata. Only occasionally pain was present on the right side of the abdomen. Though no microscopical examination of the growth had been made, the speaker considered the diagnosis of cancer as beyond question. There was at the present time a distinct, uneven growth in the right hypochondriac region which was painful on pressure, also still the long, hard cord running parallel to Poupart's ligament, an infiltrated carcinomatous ligamentum coli. Furthermore, there was now an unevenly indurated inguinal gland on the right side which the patient stated had been of only half its present size eight months ago. The speaker apologized for presenting the same patient to a meeting of surgeons for the second time. He thought his possible justification lay in the fact that it was the first case, so far as he could ascertain from investigation into the literature of the subject, in which an artificial anastomosis between two different regions of the colon had been successfully established. He also deemed the continuous general improvement in the health of a patient afflicted with cancer of the gut not admitting of removal a matter of sufficient interest to lay before the Section.

Dr. Bull asked why, in consideration of the condition of the patient at present, it would not be proper to entertain the idea of removing the growth. He asked this question without being familiar with the previous history of the case.

Dr. Meyer replied that he would certainly have removed the growth at the time of the first operation, but it was seen that the whole of the ascending colon was studded with the carcinomatous infiltration and he would have had to cut it entirely away, as well as part of the transverse colon. He had not thought it wise to subject the patient to any more formidable operation, and so had only stitched the portions of the colon together.

Carcinoma of the Neck.—Dr. F. S. Dennis presented a patient from whose neck he had three weeks before removed a vascular sarcoma of fifteen years' standing. This latter fact he said was the point of interest, as, of course, sarcomatous growths in any other region were very malignant. Some slight hardness was to be made out about the parotid gland, but he did not think that in so short a time it indicated any return of the growth. The tumor was situated beneath the parotid and reached to the base of the skull, and was of about the size of a child's head.

Suppurative Articular Rheumatism.—The speaker then showed a case which he said was quite rare. The patient had been brought into the hospital suffering from acute articular rheumatism, upon which condition suppuration of the knee joint had supervened. The pus formation had been ushered in by repeated intercurrent chills and a temperature of 103° F. The speaker had opened the joint in several places, giving perfect drainage at three points and affording opportunity for thorough irrigation. The case was interesting, because it was seldom that, after a joint had been opened for acute inflammation, so good a result followed. A quart of pus had been taken from the joint.

Paralysis of the Arm after Subluxation of the Humerus.—Dr. Dennis then presented the case of a boy who had last summer fallen from a horse. The patient had been supposed to have sustained a dislocation of the head of the humerus, which had been reduced. At the present time there existed complete paralysis of the arm and subluxation of the shoulder joint. The question at issue seemed to be as to whether the paralysis was due to laceration of the brachial plexus or to a fracture which, in process of union, had involved the nerves in the new formation. Sensation was unimpaired at the back of the arm, but was lost on the fore part. The speaker proposed to cut down and open the joint and dissect down to the plexus, and unite any divided ends he might find torn.

Dr. F. Kammerer inquired if any histological diagnosis had been made in the case of sarcoma of the neck, because he had had several such cases in which he had done extensive operations. He had always considered them more malignant than bone sarcomata.

Dr. S. D. Powell thought that the boy's case was one of atrophy of the deltoid with relaxation of the capsular ligament to which was due the slipping down of the head of the humerus. He did not think the head of the bone really left the glenoid cavity.

Dr. A. G. Gerster had seen paralysis of the nerves composing the brachial plexus followed by dislocation of the shoulder joint in fractures of the humerus which took place in the

vicinity of the joint. He recollected four cases, in all of which the paralysis had resulted from traumatism. In all these cases function had been restored in time. In the case of a boy who had sustained a fracture of the neck of the scapula, function had returned, although the paralysis had persisted for a year and a quarter. The fracture, however, was still present and could yet be demonstrated. He therefore deemed it better to wait and subject these patients to treatment calculated to restore function. Suturing of the nerves could be done a long time after the initial injury with every prospect of success. In the matter of the knee-joint case presented by Dr. Dennis, with a history of acute articular rheumatism, it had occurred to the speaker that it might have been one of infectious osteomyelitis. The fact of an abscess being found in the leg seemed to indicate this. It was extremely rare to find pus in joints affected by acute articular rheumatism.

Dr. DENNIS explained that the case had been referred to his service at Bellevue Hospital from the medical side, where he believed the diagnosis had been made in the service of Dr. Janeway.

Dr. R. F. WEIR said that Dr. Dennis seemed to have got a very good result—better, in fact, than was customary at the hands of himself and many of his colleagues. Mr. Treves had suggested and practiced thorough and continuous irrigation of the joint in these cases, water being allowed to flow through the joint for a number of days—in one instance for twenty-seven days. This washed out the pus as it formed.

Dr. DENNIS stated that he had at present a case of chronic arthritis in which the tubes through the open joint were flushed out from day to day. In the case he had presented he had not supposed for a moment that the man would get well, but the operation seemed the only chance indicated.

The CHAIRMAN thought the case of dislocation one of special interest. Such paralyses were generally considered as due to laceration of what had been termed by Erb the fifth root group, and as occurring near the transverse processes, and corresponded to paralyses in infants resulting from pressure of this root, due to forceps injury or cramped position *in utero*. If the boy's weight had been directed to the shoulder when the accident happened, it seemed that the various nerve roots would have been torn higher up, and that there the lesion would have to be looked for.

Cancer of the Rectum; Removal of the Coccyx and Part of the Sacrum for Extirpation of the Growth.—Dr. GERSTER presented a Hebrew laborer upon whom he had made an excision of the rectum for cancerous growth. The man had suffered for some six months before admission to the hospital from difficulty at stool. When admitted he was somewhat emaciated and cachectic. Examination had revealed a rather irregular nodular tumor, occupying the lower portion of the rectum and situated as high as the finger could reach. The growth sent out a finger-like extension to the margin of the anus, involving at that point the sphincter. Careful exploration under anæsthesia showed no involvement of the glands, but small portions of the tumor removed for microscopical examination showed it to be a glandular cancer. The point in the case was that, in operating, he had adopted the plan of removing, in addition to the coccyx, as was the custom, a large portion of the sacrum. It was well known to operators that the removal of growths occupying this part of the pelvis was a procedure fraught with considerable difficulty by reason of the lack of space. This was particularly so in men, in whom the pelvis was narrower than in women. The vessels retracted as soon as they were cut, and there was great danger from uncontrollable hæmorrhage. Then, whenever the operation extended high up, the peritonæum was necessarily included, and, as long as the surgeon was unable to recognize when he wounded it, infection was likely to result. But, if everything was clear and the necessary precautions could be taken, this danger was reduced to a minimum, as the wounded peritonæum could be closed, and the operation and subsequent treatment be conducted extraperitoneally. He considered the suggestion of the removal of such a sufficiently large portion of the sacrum as would enable the surgeon to know exactly what he was doing a very important improvement in this operation. He believed the method feasible, not only in cancerous growths of the rectum, but also in those of the uterus, and for such inflammatory processes between the rectum and bladder as perforated the latter viscus and could not be reached in any other way. It would also be noticed that he had succeeded in giving his patient a practicable sphincter, which enabled him to retain soft fæces.

Fractures of the Base of the Skull.—Dr. DENNIS then read a paper on this subject. He considered that the treatment of fractures of the base of the skull ought to be governed by the same careful technique as was followed in the more modern operations. Though the injury was generally regarded as uniformly fatal, and all the text-books agreed as to the mortality point, still he believed such fractures to be amenable to surgical treatment, and considered that the great majority of patients so injured died from causes which could be wholly prevented by the surgeon. There were, he continued, three varieties of fractures of the base of the skull—those in the anterior fossa, in the middle and posterior fossæ, and in the posterior fossa. Three symptoms were characteristic of these fractures, and these were hæmorrhage, the escape of cerebro-spinal fluid, and coma. Though these symptoms were not severally of sufficient import to determine a diagnosis, yet, when found together, they constituted the essentials for an absolute diagnosis of basal fracture. In cases where the membrana tympani was not ruptured and the characteristic bleeding from the ear or nose was absent, the blood might find its way to the stomach, and then the first intimation of the hæmorrhage going on from the brain would be the hæmatemesis. Then, even when bleeding did occur from the ear, it was not a reliable diagnostic point, as it might be simply the direct result of a lacerated membrana tympani, or occur from the soft tissues in the canal. The cerebro-spinal fluid usually found its way from the brain through the transverse fissure in the petrous portion of the temporal bone and a tear in the arachnoid membrane. The discovery of shreds of brain-substance in any fluid discharged from the ear rendered the diagnosis absolute. Coma was present, in a greater or less degree, according to the severity or situation of the lesion, and careful observation and consideration of the physiological disturbances would determine approximately the extent to which the lesion was affecting each nerve.

Fractures at the base of the skull should be considered in the same category as those of the vertex or of long bones, and, this admitted, they should be treated on the general principles of aseptic surgery, and with the same attention to detail and technique as was given to other fractures. The patient should be removed to a room specially prepared, and isolated from such septic influences as would be present in the operating-room of a hospital. The scalp should be shaved and thoroughly washed with soap and water, and irrigated with a 1-to-500 bichloride solution. The external auditory canals and nasal passages should also be thoroughly cleansed and irrigated, and these canals protected from the entrance of septic germs by plugging with iodoform gauze and absorbent cotton. In ordinary fractures of the base there would be rupture of the membrana tympani and discharges from the auditory canal; but if the membrane was not ruptured it would be found distended by the accumulation behind, and it might in such event be wise to puncture it and

allow the escape of the blood and cerebro-spinal fluid. For the purpose of further insuring such patients against the possibility of infection, the speaker recommended the wearing of a specially constructed cap of biehloride gauze or carbolized absorbent cotton. This cap should cover the entire head and protect everything. These cases too often ended fatally from causes which could be prevented by the surgeon—such as basilar meningitis, cerebral abscess, pyæmia, suppuration in the petrous portion of the temporal bone, leptomeningitis, and other complications. He further suggested that all cases of injury about the head, associated with hæmorrhage, should be treated with antiseptic precautions. The speaker then presented a young man who had recovered from fracture at the base of the skull. This patient had struck his head upon a rail in falling from the top of a car. The symptoms were hæmorrhage from the ears, nose, and mouth, coma, and stertorous breathing. The day following the injury the patient had to be tied in bed. There was also discharge of cerebro-spinal fluid from both ears, which had continued for two weeks, and the life of the patient had also been threatened by a severe glossitis. The patient had received such treatment as was generally indicated in the speaker's paper, the discharge being kept perfectly aseptic, and in one month from the injury had left the hospital, and at the present time was in good health and able to work as well as ever.

Dr. Weir said that in fractures of the anterior portion of the base of the skull it was generally recognized that the prognosis was the most encouraging, in those occurring in the middle portion less so, while those of the middle and posterior or posterior fossæ alone were the most serious. So far as his memory served him he could not, however, recollect that the fatality in these injuries had resulted specially from septic complication. That the patients had died from hæmorrhage, or the presence of the resultant clot, had been demonstrated at the post-mortem examinations in many instances. When these cases did not terminate thus primarily from hæmorrhage, and the patients lasted for twenty-four or forty-eight hours, there was reason to hope they would be able to contend against the inflammatory processes and to feel reliance that they would come through without permanent damage. In the New York Hospital it was the custom to wash out and plug the ears with iodoform packing. He did not think they had resorted to the use of the cap. He had endeavored at one time to render the nasal cavity aseptic, but, on reflecting that the air was coming from behind and that he could not wash out the nose, and that any fluids passed into the nostrils would not reach up any distance, he had abandoned the procedure.

Dr. Gerster said he was fully in accord with Dr. Dennis as to the importance of cleanliness in these cases of fracture. The author of the paper had, however, spoken of bone fractures in general by way of comparison, but the speaker thought that it should be remembered that many of these fractures did not communicate with the open air, and such simple fractures possessed the best of antisepsis in their surroundings. In basal fractures of the skull, where no channel of communication existed with the air, such rigid precautions were not indicated. There were basal injuries which were not bone fractures but which yet led to bone suppuration or osteomyelitis. Still he was of opinion that many cases of meningitis could be traced to neglect of such precautions as might ward off suppuration.

Dr. J. A. Wyeth said he thought the question of drainage in this class of fractures worthy of more special consideration. It went without saying that every modern surgeon recognized and accepted the desirability of rendering aseptic any wound tissue, whether at the base of the skull or the base of the heel. In a very severe case, reported by a recent writer, in which the fracture at the base was complicated by compound fracture of the frontal bone, the very courageous surgeon, knowing he could not hope to clean out the immense wound, had bored through the horizontal plate of the ethmoid bone and drained by means of a tube passed up the nose and through the perforated ethmoid plate. By thus establishing a perfect drainage the surgeon had saved the patient's life. Such methods might be applicable for drainage of the posterior fossæ.

Some further discussion ensued, followed by a brief reply from Dr. Dennis.

Dr. Kammerer then reported a case of operation on a sarcoma of the dura mater and ligature of the longitudinal sinus.

Book Notices.

Diphtheria: its Nature and Treatment. By C. E. Billington, M. D. And Intubation in Croup and other Acute and Chronic Forms of Stenosis of the Larynx. By Joseph O'Dwyer, M. D. New York: William Wood & Co., 1889. Pp. iv–326. [Price, $2.50.]

The chief object of the first part of this excellent work is to enlarge and develop the author's views on diphtheria as briefly expressed in his previous writings on the subject, and to review the more recent methods of its therapeutics. He gives a brief but important summary of the history of this disease, both before and after the time of Bretonneau, whose investigations placed diphtheria in the definite place it occupies to-day in nosology.

The chapter on ætiology is a comprehensive *résumé* of our present knowledge on the subject and is full of instruction. It is not so much a discussion of the opinions of other authors as it is a series of abstracts of their researches. What will interest the reader is the able exposition of the present status of bacteriological investigation regarding the cause of this disease. The positive data touching the two varieties of germs found in diphtheria, resulting from the works of Oertel, Klebs, Löffler, Roux, and Yersin, are clearly enunciated and constitute the most recent progress in this direction.

After devoting twenty-two pages to the pathology of the affection, the author reviews its symptoms as evoked by the numerous localizations of the diseased area—in the respiratory tract from the nasal passages to the alveoli of the lungs, in the digestive tract from the lips to the anus, in the genito-urinary organs, and on the skin. This part of the work is the least satisfactory, but it is completed and amplified by a very excellent chapter on diagnosis, rendered still more practical and instructive by fine lithographic plates from drawings by Dr. Henry Macdonald, which give a fair representation of the diphtheritic patches as seen on the palate and the tonsils of the living patient. But what constitutes the best feature of this work is the complete and painstaking manner in which the most important portion of all is written—that concerning the treatment. The author deserves great credit for his systematic and separate description both of the different modes of employing remedies in this disease and of the multitudinous substances which have been and are still administered. He treats of caustics, astringents, agents for the destruction of false membrane, solvents of false membrane, and, above all, antiseptics, of which the description and the directions for employing them cover forty of the one hundred and fifteen pages devoted to treatment. The author gives his own method of treatment, including that of nasal and of laryngeal diphtheria, and adds a sufficient description of tracheotomy, with cuts of the instruments used.

The last forty pages are written by Dr. O'Dwyer, who here summarizes his previous writings on intubation, an operation which he has perfected and which is already well known by the profession. He describes the instruments and the operation in full and shows its advantages. We know of no book more practical and satisfactory to the practitioner who has to treat diphtheria than this one.

GENERAL LITERARY NOTES.

Among recent foreign publications we note the following:

F. Alcan, Paris.—L. Landouzy, "De la mortalité parisienne du premier âge (enfants de un jour à deux ans)." —— Lardier, "Hygiène publique. De l'isolement et de la désinfection dans la rougeole." —— Macario, "Manuel d'hydrothérapie." (2*fr.* 50.) —— Charles Ferré, "Du traitement des aliénés dans les familles." (2*fr.* 50.)

J. B. Baillière, Paris.—L. Raphael, "Diphtèrie et choléra." (4*fr.*) —— Nothnagel and Rossbach, "Nouveaux éléments de matière médicale et thérapeutique." Translated from the German by J. Alquier. 1 vol. (16*fr.*) —— A. Collineau, "L'hygiène à l'école." (3*fr.* 50.)

Bureaux du Progrès médical, Paris.—Bourneville and Rousselet, "Manuel de l'assistance publique à Paris." (0.30*c.*) —— E. Huet, "De la chorée chronique." (5*fr.*) —— L. Minor, "Contribution à l'étude de l'étiologie du tabes." (2*fr.*) —— Parinaud, "Compte rendu du service ophthalmologique pour l'année 1888." (1*fr.*) —— B. Narich, "Proposition d'un nouvel embryotome rachidien avec treize expériences à l'appui." (1*fr.* 50.) —— P. Philippe, "Traitement des anévrysmes par l'introduction de corps étrangers dans la poche anévrysmale." (1*fr.*)

A. Coccoz, Paris.—A. Weber, "Traitement par l'électricité et le massage." (5*fr.*)

O. Doin, Paris.—A. Dufour, "Contribution à l'étude des autointoxications, des manifestations morbides du surmenage physique." (3*fr.*) —— M. Natier, "Fièvre des foins. Pathogénie et traitement." (3*fr.*) —— J. Chopin, "Élimination de l'acide salicylique suivant les divers états des reins." (2*fr.*) —— F. Raymond, "L'étude des maladies du système nerveux en Russie." (3*fr.*) —— Joal, "Étude étiologique sur l'œsophagisme." —— P. Morot, "De la congestion du foie, esquisse de seméiologie clinique." —— L. Testut, "Traité d'anatomie humaine." (16*fr.*)

Gaulhier, Nice.—Berlin, "Le lavage de la vessie par la voie suspubienne, comme complément de la fonction evacuatrice."

Gonnouilhon, Bordeaux.—G. Morice, "Considérations générales sur la résorcine. Son action sur les surfaces ulcérées et le lupus en particulier."

Lecrosnier & Babé, Paris.—J. A. Fost, "Nouveaux faits confirmant l'efficacité de l'électrolyse linéaire dans le traitement des rétrécissements de l'urèthre." —— A. Bordier, "Bibliothèque anthropologique." Vol. X. (8*fr.*) —— Thomas, "Dictionnaire abrégé des sciences médicales." (7*fr.*) —— G. Martin, "Étiologie de la myopie." (1*fr.*) —— "L'Année médicale." Eleventh year. (4*fr.*) Vols. I to X. (16*fr.*) —— L. de Wecker and J. Masselon, "Manuel d'ophthalmologie." (29 *fr.*)

Henry Ollier, Paris.—A. Cabanès, "De l'emploi de l'hydrastis canadensis en médecine."

Sagnol père, Paris.—J. Sagnol, "L'Égalité des sexes."

Charles Schuchardt, Geneva.—P. Glatz, "Des dyspepsies avec suppression de la sécrétion du suc gastrique et plus particulièrement de la dyspepsie neurasthénique."

Bergmann, Wiesbaden.—O. Leichtenstern, "Zur Pathologie des Ileus."

Breitkopf & Härtel, Leipzig.—A. P. J. Dose, "Zur Kenntniss der Gesundheitsverhältnisse des Marschlandes." —— Heinrich Fritsch, "Sechszig Fälle von Laparotomyomotomie." "Volkmann's Sammlung," No. 339. (0.75*M.*) —— Leopold Landau, "Diagnose und Therapie des Gebärmutterkrebses." "Volkmann's Sammlung," 338. (0.75*M.*)

Hermann Costenoble, Jena.—H. Hirschberg, "Der Zucker als Nahrungs- und Heilmittel."

Enke, Stuttgart.—Rafaël Coën, "Das Stotterübel." —— P. Müller, "Handbuch der Geburtshilfe." Vol. III.

Fischer, Berlin.—Eugen Hahn, "Behandlung des Genu valgum und varum." (0.60*M.*) —— Arthur Hartmann, "Die Krankheiten des Ohres." 4th ed.

Gustav Fock, Leipzig.—Karl Gumpertz, "Zur Kenntniss des Lippenkarzinoms." (1*M.*)

Heuser, Neuwied.—W. Brügelmann, "Ueber den Hypnotismus." (0.75*M.*) —— Eugen Grätzer, "Medizinische Uebungsbücher." I. "Krankheitstypen der inneren Medizin." (2.40*M.*)

Hirschwald, Berlin.—Oskar Israel, "Praktikum der pathologischen Histologie."

Moritz Perles, Vienna.—T. Ki t, "Bakteriologische und pathologisch-histologische Uebungen für Thierärzte." (7*M.*)

Schumacher, Berlin.—C. Posner, "Ueber Propeptonurie. Zugleich ein Beitrag zur Chemie des Samens." —— E. Senger, "Ueber die Einwirkungen unserer Wundmittel auf den menschlichen Organismus und über ihre Leistungsfähigkeit."

J. Springer, Berlin.—S. Rosenberg, "Ueber die Wirkung des Perubalsams auf die idiopathischen Leukoplakien und sonstigen Epitheltrübungen der Mundschleimhaut."

G. Thienne, Leipzig.—W. D. Miller, "Die Mikroorganismen der Mundhöhle." (18*fr.*)

Urban & Schwarzenberg, Vienna.—San-Rat Gijurkovechky, "Pathologie und Therapie der männlichen Impotenz." —— Julius Hochenegg, "Jahresbericht der chirurgischen Klinik des Hofraths Prof. Albert." —— R. von Jaksch, "Klinische Diagnostik." 2d edit. —— H. Eichhorst, "Handbuch der speziellen Pathologie und Therapie für praktische Aerzte und Studirende." Vol. I. "Krankheiten des Cirkulations- und Respirations-Apparates." 4th edit. (2*M.*)

F. C. W. Vogel, Leipsic.—F. A. Hoffmann, "Vorlesungen über allgemeine Therapie." 2d edit. (10*M.*)

K. J. Weyss, Berne.—Theodor Kocher, "Vorkommen und Vertheilung des Kropfes in Kanton Bern." (1.60*M.*)

M. Armanni, Rome.—F. Cerasi, "L'acido picrico sugli eczemi impetiginoidi."

Bizzoni, Pavia.—B. Vittorio, "Sulla sensibilità della periferia della retina per la luce e per gli colori in occhi normali ed in alcuni casi patologici."

Fratelli Centenari, Rome.—P. Canalis and E. di Mattei, "Contribuzione alla studia della influenza della putrefazione sui germi del colera e del tifo."

G. Civelli, Milan.—Pietro Canalis, "Sulla disenfezione dei carri."

Ferrari, Venice.—V. Tecchio, "La vena d'oro nel quadriennio 1884–88."

Le Monnier, Florence.—G. Palichi, "Il bacillo dello scheurlen e un saprofita della pella."

A. Tocco & Co., Naples.—A. Zuccarelli, "Inversione congenita dell' istinto sessuale in due donne."

E. Cuesta, Madrid.—Vinals y Torrero, "Programa de obstetricia práctica."

Fomento, Mexico.—S. M. Pereira, "Cartilla de hygiene para diminuir la mortalidad en los niños."

G. Juste, Madrid.—P. Gomez de la Mata, "Terapéutica moderna de la tisis pulmonar; estudio y descripción de los tratamientos recomendados en los últimos años."

BOOKS AND PAMPHLETS RECEIVED.

The Honors of the Empire State in the War of the Rebellion. By Thomas S. Townsend, Compiler of the "Library of National Records." New York: A. Lovell & Co., 1889. Pp. vi–11 to 416. [Price, $2.50.]

Foods for the Fat: a Treatise on Corpulency and a Dietary for its Cure. By Nathaniel Edward Davies, Member of the Royal College of Surgeons, England. American Edition. Edited by Charles W. Greene, A. M., M. D. Philadelphia: J. B. Lippincott Company, 1889. Pp. vii–9 to 138. [Price, 75 cents.]

Annual Report of the Health Department of the City and County of San Francisco. For the Fiscal Year ending June 30, 1889.

Report of the Committee on Dental Practice. By M. L. Rhein, M. D., D. D. S., New York. [Reprinted from the "Dental Review."]

Chloride of Methyl. By M. L. Rhein, M. D., D. D. S., New York. [Reprinted from the "Dental Review."]

Enteralgia and Chronic Peritonitis. By A. Jacobi, of New York. [Reprinted from the "Transactions of the Medical Society of Virginia."]

Manual of Drill of the Ambulance Detachment. For the Provisional Use of the Hospital Corps and Company Bearers of the United States Army. By William D. Dietz, Captain and Assistant Surgeon, U. S. Army.

On the Treatment of the So-called Perityphlitic Abscess. By Robert F. Weir, M. D., Surgeon to the New York Hospital, etc. [Reprinted from the "Transactions of the New York State Medical Society."]

Some of the Limitations of Medicine. By Stephen S. Burt, M. D., Professor of Clinical Medicine and Physical Diagnosis, New York Postgraduate Medical School and Hospital. [Reprinted from the "Popular Science Monthly."]

Lehrbuch der allgemeinen und speciellen pathologischen Anatomie für Aerzte und Studirende. Von Dr. Ernst Ziegler, Professor der pathologischen Anatomie und der allgemeinen Pathologie an der Universität Freiburg in Baden. Zwei Bände. Sechste verbesserte und theilweise neu bearbeitete Auflage. Erster Band. Allgemeine pathologische Anatomie und Pathogenese. Mit 343 theils schwarzen, theils farbigen Abbildungen und einer Tafel in Chromolithographie. Jena: Gustav Fischer, 1889. Pp. xiv–567.

Egypt as a Winter Resort. By F. M. Sandwith, F. R. G. S., formerly Vice-Director of the Sanitary Department of Egypt. London: Kegan Paul, Trench, & Co., 1889. Pp. vi–153. [Price, 3*s.* 6*d.*]

Description of a Case of Embolism of the Left Central Retinal Artery. By Charles A. Oliver, M. D., of Philadelphia. [Reprinted from the "Transactions of the American Ophthalmological Society."]

A Treatise on Diseases of the Nose and Throat, in Two Volumes. By Francke Huntington Bosworth, A. M., M. D., Professor of Diseases of the Throat in Bellevue Hospital Medical College, New York, etc. Volume One. Diseases of the Nose and Naso-pharynx. With 4 Colored Plates and 182 Woodcuts. New York: William Wood & Company, 1889. Pp. xviii–3 to 670.

Miscellany.

Sore Nipples.—Dr. J. Eliott Langstaff, of Brooklyn, writes to us as follows: "If the following sentence, 'a sore nipple causes great pain when the child nurses,' which occurs in a very valuable 'System of Obstetrics,' were reversed, it would approach my experience with this important disease. I have found that great pain when the child nurses is generally *followed* by inflammation, excoriation, fissure, and sometimes mastitis. This pain, which is the first symptom of sore nipple, is caused by the sudden tension on the lactiferous ducts produced by the child each time it begins to nurse. Until the nipple is elongated sufficiently to fill the child's mouth and allow it to swallow without losing its hold, there is a constant jerking, with friction between the tongue and nipple. Acting on this theory, I have directed the mother or nurse to manipulate the nipple and areola between the thumb and two fingers, using vaseline and drawing gently outward for about a minute. The child is then put to the breast and nurses quietly, saving the mother that agonizing pain which is generally experienced in the case of a short nipple. I have yet to hear of a case where pain has not been relieved by this method, and I have seen deep fissures heal in a few days after this relief from pain. If mothers were treated for retracted nipple immediately after each confinement, there would be very few cases of sore nipple, and as long as the women of the present day will not recognize the evil effects of the corset, there will exist this condition of short nipple."

The North Texas Medical Association will meet in Gainesville on Tuesday, Wednesday, and Thursday, December 10th, 11th, and 12th, under the presidency of Dr. J. T. Wilson, of Sherman. The programme includes the following titles:

"Exophthalmic Goitre," by Dr. T. M. Taylor, of Sherman; "Valvular Lesions of the Heart," by Dr. M. C. McBride, of Lebanon; "Acute Articular Rheumatism," by Dr. J. D. Bedford, of Honey Grove; "Puerperal Fever," by Dr. O. H. Caldwell, of Dodds; "The Diagnosis and Treatment of Pelvic Cellulitis," by Dr. J. E. Gilcreest, of Gainesville; "The Most Desirable Position for a Woman in Labor," by Dr. Alonzo Sims, of McKinney; "Traumatic Cataract," by Dr. R. H. Chilton, of Dallas; "The Indications in the Surgery of the Larynx and Trachea," by Dr. E. W. Rush, of Paris; "Surgical Cases, including two Cases of Laparotomy," by Dr. J. M. Inge, of Denton; "A New Artificial Drum Membrane," by Dr. H. N. Spencer, of St. Louis; "Herpes Progenitalis," by Dr. G. Frank Lydston, of Chicago, Ill.; "Extirpation of the Ileo-cæcal Junction," by Dr. J. F. Hooks, of Paris; and "Cerebro-spinal Meningitis," by Dr. S. D. Moore, of Van Alstyne.

ANSWERS TO CORRESPONDENTS.

No. 299.—By evaporation on a water-bath.

No. 300.—1. We have not been able to ascertain. 2. Registration of the diploma at the County Clerk's office.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or proliz histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Lectures and Addresses.

THE CARTWRIGHT LECTURES
ON
VITAL AND MEDICAL STATISTICS.

DELIVERED BEFORE THE ALUMNI ASSOCIATION OF THE COLLEGE OF PHYSICIANS AND SURGEONS, NEW YORK, November 14, 20, and 22, 1889.

BY JOHN S. BILLINGS, M. D., LL. D., D. C. L.,
U. S. ARMY.

LECTURE II (ABSTRACT).

THE term "expectation of life" is used by different writers in different senses, and hence has often given rise to confusion and misunderstanding. It should be used only in the sense of the mean after-lifetime—that is, the average number of years which persons at any given age in a given place may expect to live. In a stationary population, where there is no migration, and where the births are exactly equal in number to the deaths, the expectation of life at any age would be found by dividing the sum of the number of years which the whole population lived after that age by the number actually living at that age.

The term "expectation of life" is often confused with the "probable duration of life," which is the age at which a certain number of new-born children will be reduced one half, so that for any one of these children it is an equal chance as to whether it will die before or after that age. The difference between the probable duration of life and the expectation of life may be understood from the following example: Suppose that of 100 children born, 30 live one year, 20 live five years, 30 live forty years, and 20 live sixty years. Then the probable duration of life is five years, because at the end of five years just one half of these children will be dead, so that at the beginning it is an even chance for any one child as to whether it will die before or after the age of five years; but the expectation of life of any one of these children is 25·3 years, because these 100 children will in all live 25,300 years of life. In like manner, if ten of these children were to die at the end of every five years, the probable duration of life would be 25 years, and the expectation of life would be 27·5.

Another phrase sometimes used in vital statistics is "specific intensity of life." This is the quotient of the dividend of the number of persons living at any age by the number dying at that age—that is $\frac{Px}{Dx}$, being the reverse of the ordinary mortality ratio.

The chief source of error in an approximate life table, constructed directly from the census figures and a registration of deaths without correction or adjustment, is due to the fact that there is a very considerable error in the number given of the living population in the first six or seven years of life. Usually the census figures show that the number of children two years old is greater than the number one year old, and that the number four years old is greater than the number two years old, owing to a tendency to erroneously report a child as being older than it is. If we undertake to adjust or correct these figures so as to truly represent the number living at each year, we usually have to make some assumptions as to the law governing the mortality, or as to what is sometimes called the law of life. This expression, the law of life, refers to the hypothesis that variations in mortality at successive ages take place in a regular succession which may be geometrically represented by a curve, and that, therefore, if we know the mortality at certain ages in a given community, we can, if we know this curve and if the number of observations were sufficient, deduce the mortality at other ages. Numerous formulæ have been proposed for this purpose, from that of De Moivre, in 1727, which is $Y = 86 - x$ (x being the age and Y the corresponding number of the living), to the latest and most generally accepted formula of Gompertz, as modified by Mr. Makeham. This last is based on the assumption that a person's power of resisting death decreases as his years increase, so that at the end of infinitely small periods of time he loses infinitely small portions of his remaining power to resist destruction, death being considered as the consequence of two generally coexisting causes—the one a progressive, necessary deterioration; the other, chance.

Calculations and corrections based on such formulæ as these give interesting results and are useful to life insurance work, but they are unnecessary for the purposes of the sanitary statistician. Even the fundamental hypothesis upon which Gompertz's law is based—that the proportion of deaths at a given age is constant—is always untrue for any given age, as the prevalence of infectious and contagious diseases of various kinds, and of various lethality, varies with different years, and for this reason it is desirable to have the records of deaths for a considerable period of time, at least three years, and better ten to twenty years, in order to correct these variations.

The most useful life tables for sanitary purposes are those which relate to certain circumscribed localities, such as a single city, or even a single ward of a city; but for scientific and medical purposes the most useful are those which relate to particular classes of people, particular occupations, etc. There is a special difficulty in preparing an accurate life table for a city, due to the effect of migration into and out of the city from and to the surrounding country, which disturbs very much the rates of death at different ages. The mortality in a great city is almost always reported as less than that which the actually existing causes of death and disease tend to produce, because domestic servants, shop girls, and others who have come from the country, go back to their rural homes when their health begins to fail after a year or two of city life, and there die. This is especially the case in regard to deaths from consumption and diseases of that class. The groups of ages which are thus specially affected are those between fifteen and twenty-five years, and therefore the mortality at this group of ages in the large cities as calculated from the number of deaths is too small to properly represent the causes of death acting on the population at those ages. On the other hand, the mortality at the same ages in the rural

districts near the city will be correspondingly unduly increased.

The data necessary for the construction of life tables are comparatively rarely available for the purposes of the sanitarian. Hence, while admitting that these furnish the only true measure of public health, registrars of vital statistics and sanitarians have sought for other standards for such measurement, the data for which could be more readily obtained and more easily applied. Especially has the search been made for some means of measuring sanitary conditions and progress from the data furnished by deaths alone without reference to population. One of the most common of these is the use of the period of infancy from nothing to five years, by comparing the number of deaths at this period with the total number of deaths. It is very certain that the period of infancy gives the most sensitive test of sanitary conditions, but the comparison must be made, not with the total number of deaths at all ages, but with the number of the living population furnishing such deaths.

In Europe it is more common to confine the calculation to children under one year of age, and these are much more valuable there than they would be in this country, because they have there a much more complete registration of births, and therefore the relation between the number of infants born and dying within the first year of life can be ascertained with an exactness which is quite out of the question in this country.

The test of sanitary condition which is most generally employed in this country is the proportion of the number of deaths which occur in children under five years of age to the whole number of deaths reported. This does fairly well in computing the rates of the same city, in which it may be presumed that the general ratio of age distribution is nearly uniform at different times, but it is a very fallacious method of comparing rates of different cities or localities. For example, during the last census year the ratio of deaths under five years per 1,000 of total deaths was, in Alabama, 475·9 for males; in California, 250; but in Alabama the proportion of male children under five years to the total population is 17·5 per cent., while in California it is only 9·1, or but little over half the Alabama ratio, and hence the true rate is actually higher in California than it is in Alabama, although the figures would indicate the reverse.

Another test which has been proposed is that of the mean age at death, which is the quotient of the sum of the ages of different individuals at death divided by the total number of deaths. This is only useful in comparing the conditions of two populations when the age and sex constitutions of these populations are the same. It is out of the question to apply the test to different occupations—as, for example, to compare the mean age at death of major-generals with that of second lieutenants. The chief use of this test is in its application to different causes of death, but even for this purpose the death-rate in relation to population is much better.

A considerable part of the errors to which one is liable in comparing the mean age of different occupations at death may be avoided by excluding from the computation all deaths of children under five years of age.

Although the expectation of life, or mean after-lifetime, is the standard of comparison almost universally accepted by statisticians, it is, in some respects, not a very satisfactory one, since it is often misunderstood by the public, which is apt to use the word "mean" in the sense of usual or ordinary, that which occurs most frequently. But the ordinary lifetime, or, as Bertillon calls it, the *vie normal*, is a very different matter.

The great majority of the mortality statistics prior to the present century are necessarily incorrect and unreliable, because they are based, for the most part, on the data of deaths alone. The deaths can only be taken as a measure of probable duration of life for any community when the births and deaths are equal and there is no migration, a state of matters which must very rarely happen and be of very brief existence.

Among the many expedients which used to be employed for estimating population was that of multiplying the number of living in which one death was supposed to occur by the number of deaths. That is to say, by guessing at a factor which could only be ascertained by comparing the annual deaths with the number living. Take, for example, the estimates of the population in London made by Graunt, in 1662, on the basis of one death occurring out of every thirty-two living, which made the population to be 403,000. In 1683, Petty, taking the mortality to be one to thirty persons living, made the population to be 669,930.

It may, perhaps, be asked why it is, if the nature of the data which are required to make mortality statistics reliable and satisfactory is so well known, that more of them are not provided by the municipal and state officers charged with the registration of vital statistics. For example, New York city has a very perfect system of registration of deaths, which is in competent hands and is well executed. Why, then, has New York city published no separate mortality report since 1883; and why, in the reports which it has published, does it not give the data with minuteness of grouping, so that we might know the number of deaths at each age, of each sex, and of each race and occupation, in each ward, from each cause of death, instead of giving, as it gave in its last report, the number of deaths from each, of a few causes of death for each, of a few groups of ages, and separately for each sex, and for natives of the United States, natives of foreign countries and colored; to which is added a statement of the deaths from zymotic diseases in each ward?

In order to understand the answer to this, it is necessary to have a clear conception of the difference in cost of tabulation and publication, according to the mode of grouping of the data.

When we have to tabulate data in such a way that the individual items are to be distributed through a thousand columns or more, and each of these to be summed up for different localities, a vast amount of clerical labor is required. For distributing in a thousand spaces the various items assigned in each death certificate, if it be done by the old-fashioned system of tallying on a large sheet, an expert clerk will not be able to tally off more than a thousand records of death per day; so that for, say, thirty thousand

deaths, which is less than the average number of annual deaths in New York city for the last ten years, it would require the labor of a clerk thirty days to produce a single page table—about one per cent. of what is needed.

By the use of cards, chips, or slips, tallying machines, adding machines, and sorting boxes of various kinds, this labor may be much reduced. One of the latest methods of doing this is by the use of cards of a uniform size in which holes punched in certain parts of the card correspond to the various divisions of locality, time of death, sex, age, occupation, cause of death, marital condition, etc. These cards may then be passed through a machine which registers on a series of dials such combinations of the data as the dials may be adjusted for, by means of electrical connections established between a metal plate below and a series of metal rods above, wherever there is a hole in the card.

Death-rates, even when derived from complete and accurate data and compiled in the most satisfactory manner in the form of life tables, necessarily give only a very imperfect view of the prevalence of disease in a community, or of the relative amount of disability among the people, requiring extra labor by the productive class due to the recurrence of sickness. Many forms of disease which render life more or less of a burden, and some of which totally disable the individual from earning his subsistence, seldom or never appear in the registers as a cause of death, while even of those diseases which are reported as causes of a considerable proportion of deaths we can rarely at present indicate any definite or certain relation between the number of cases of the disease and the number of deaths reported. For example, it is well known to all practicing physicians that the mortality varies greatly in different epidemics of such diseases as scarlet fever, measles, small-pox, whooping-cough, yellow fever, etc., the variations appearing to depend principally upon the particular conditions of the environment as to temperature, moisture, winds, density of the population, etc., at the time of the outbreak, and also upon particular conditions of the specific virus or micro-organisms causing diseases of this kind.

Take, for example, the spread of yellow fever in Texas and along the Gulf coast during the year 1867. Here the specific cause of this disease appears to have entered the United States by two distinct routes, one coming from Vera Cruz, Mexico, and the other coming from the usual source, Havana. At that time the United States had a comparatively large number of troops along the southern border of the country, and hence we have a series of returns showing not merely the number of deaths, but also the number of cases of sickness from this disease occurring in a given population.

Now, in those places where the disease was of Mexican origin, the cases were more fatal than those of Cuban origin, "two out of every five cases of the former dying, while the mortality of the latter was only two out of seven. The ratio of deaths was 400 per 1,000 cases for the first of these groups, 284 per 1,000 for the second."*

* War Department, Surgeon-General's Office, Washington, 1886, Circular No. 1, page 18.

For the great majority of diseases it is not possible to obtain statistics as to their prevalence among a general population. The only sources to which we can look for information of this kind are the records of the army and navy, of the police force in certain cities, of the employees of railroads, and of the members of certain societies having insurance against sickness. The records of the army and navy are especially valuable in this point of view, but they relate only to males of certain groups of ages and of a carefully selected class of population.

In the last United States Census an attempt was made to obtain on the schedules of the living population the number of those who, on the first day of June, 1880, were so sick or disabled as to be unable to pursue their ordinary occupations. This was the first attempt of the kind which has been made in this country, but similar attempts were made in two censuses in Ireland, in a census of the Australian Colonies, and in a census of Hungary.

Several attempts have been made to induce physicians to keep a record of all the cases which they treat, but with very little result. In 1857 the Metropolitan Association of Health Officers in London carried out a systematic registration of all cases of sickness which received attention at the public expense—as in hospitals, dispensaries, almshouses, etc. About one half of the hospitals and dispensaries in the district contributed information, but the enterprise broke down before the end of the second year; and, while results gave some interesting indications for the time as to the prevalence and progress of certain forms of epidemic disease, the records have very little statistical value, as they have no definite relation to the numbers of the population furnishing the cases of sickness.

It is very improbable that anything like complete returns of sickness will ever be obtained for any large body of the civil population. Such registration will always be confined to infectious and spreading diseases; in other words, those which are known or supposed to be preventable. In order to make a registration of this kind of any great practical value, it must be continuous and compulsory. The plan of endeavoring to get the medical men of a locality to voluntarily contribute this information, even when accompanied by the offer of the payment of a fee, has produced partial and incomplete results, which become more and more incomplete as time goes on and the first enthusiasm in favor of the new plan dies away.

On the part of some members of the medical profession, both in Great Britain and in this country, strong objections are urged to compulsory notification of disease, and especially to that form which requires the doctor to furnish such notification direct to the sanitary authorities. It is urged that such notification is a violation of professional secrecy, that it leads to concealment of cases of such disease and the refraining from calling in a medical attendant, and that it tends to throw the treatment of such cases into the hands of a lower class of practitioners, who are willing to run the risks of violation of the law, or even to make false returns for the sake of securing an increased practice. There is, however, little difficulty in keeping the information furnished strictly confidential, provided the health officer is a man of

tact and discretion, and provided also that the press does not insist upon being too inquisitive with regard to matters of this kind.

Any system of compulsory notification, however, which has to be continuously successful involves two things:

First, that the health officer shall not be in any way engaged in or connected with private practice, so as to do away with all reluctance on the part of general practitioners reporting their private cases.

The second is that, to obtain any benefit from notification, special hospital accommodations for such forms of diseases as are reported must be provided by the community, and there must be a power of compulsory removal of patients to such hospitals in certain cases.

Undoubtedly, valuable statistical data might be obtained by the simple notification alone; but the desire to obtain statistical information will never be accepted as a sufficient ground for legislation requiring compulsory notification.

We hear very much in recent years of the proportion of deaths from zymotic diseases as a test of the salubrity or sanitary condition of a place; but, as there is no general agreement as to what is and what is not a zymotic disease, and as the term rests on a theory of causation of disease which is now definitely abandoned, it should no longer be made use of. It is much better to select the mortality from certain forms of disease, and specify these in order that we may know exactly what we are talking about, and be sure that the matters compared between two localities are the same. English health officers often use the term "seven principal zymotic diseases," by which they mean small-pox, measles, scarlet fever, diphtheria, whooping-cough, typhus fever, and enteric fever. If this is the selection, it is not a good one, for it omits the diarrhœal diseases. Forty years ago, near the commencement of the speculations of Dr. Farr and Mr. Simon as to the causation of disease, nearly all of the contagious diseases were grouped together as zymotic diseases, and were supposed to be more or less connected with filth. At present we know that the cleanliness of the surroundings has little or nothing to do with the prevalence of small-pox, measles, scarlet fever, or whooping-cough; so that these, which are typical zymotic diseases, are of very little interest in connection with the question as to local causes of disease in a place connected with uncleanliness and to be remedied by sanitary effort.

Their relative prevalence and the mortality due to them is of interest in a totally different connection, and their separation involves an entirely different field of sanitary work. Such diseases as phthisis, diphtheria, and the various forms of diarrhœal disease, including cholera infantum or the summer diarrhœa of children, of England, are of especial interest as regards the field of local sanitary work in relation to sewerage, drainage, and cleanliness.

The influence of habitation upon death-rates, and on the prevalence of certain forms of disease, is indicated by statistics given by Dr. Korosi for the city of Budapest, where the deaths are reported with the following classification, viz.:

1. Persons in a habitation where at most two persons dwell in the same room.

2. Persons dwelling where from two to five persons dwell in one room.

3. Where there are from five to ten in a room.

4. Where there are more than ten in a room.

Comparisons thus made indicate that contagious diseases, with the exception of scarlatina and typhus, are more frequent and more fatal in the crowded houses, and that the same is true of congenital debility and diarrhœa, while tuberculosis and pneumonia do not seem to be specially influenced by this cause (?!). As the figures of deaths in these categories are not comparable with those of the living population, the results have not much value.*

What has been the influence of modern civilization upon the average duration of human life, upon rate of population, upon the average health and vitality of the races which it has affected? The present population of the world is between 1,500,000,000 and 1,600,000,000, of which there are in Europe over 350,000,000, and of European stock in other countries 100,000,000; in all, say, 450,000,000 as against 150,000,000 in 1788. (See Giffen, "Jubilee Volume of Statistics," 1885, p. 99.)

Evidently the birth and death rates now prevailing in Europe and the United States can not have long continued, for, if we suppose a population to double itself only once in a century, 1,000,000 of people living twelve hundred years ago would have developed into a population of over 4,000,000,000 by this time.

What, then, is the difference between the expectation of life in New York at the present day and that in European cities one, three, five, ten, or twenty centuries ago? This question has been asked in various shapes many times, and many attempts have been made to answer it, the general conclusion being that there has been a very great increase in the average longevity of man in civilized countries, not only within the last thousand years, but within the last century. Notwithstanding, it must be confessed that the statistical records bearing on this point are very incomplete, vague, and unsatisfactory, and that it is only for the last forty or fifty years that we can speak with anything like scientific precision as to the amount of progress made.

So far as what is termed potential longevity—that is to say, the maximum duration of life possible in an individual of the race—is concerned, there is no evidence that this has changed for at least two thousand years, being for man generally taken as a hundred years. You will remember the scriptural declaration that the years of a man "are three score years and ten, and if by reason of strength they be four score years, yet is their strength labor and sorrow"; notwithstanding, there are sufficient records to prove that even in those days the potential longevity of man was as great as it is at present.

But when we come to the average longevity and expectation of life at birth, there is sufficient evidence to indicate that it has increased; but whether this is due to the preservation of more infant lives for a few years, although they may still die before the productive period is reached, or to

* Korosi, "Influence des habitations sur les causes des décès," etc., Paris, 1877.

an increase of the number of those who live into and share the working period of life, is still uncertain, for this question can only be settled by comparative life tables, and I have already explained that we have no reliable life tables that are much over fifty years old.

The most important contributions to our knowledge of the increase in the duration of life in recent years is contained in a paper on the decline in the English death-rate, by Noel Humphreys, published in the "Journal of the Statistical Society" in 1883; and in a report by Dr. William Ogle in a supplement to the "Forty-fifth Annual Report of the Registrar-General of England," published in 1885.

The conclusions, as based upon English life tables, comparing periods from 1838 to 1854, and from 1871 to 1880, are as follows:

The mean after-lifetime of a male at birth was for the first period 35·91 years, for the second 41·35, showing an average gain of nearly a year and a half. The mean after-lifetime continues longer in the second period than in the first for each year of life until the nineteenth. At the close of the nineteenth year the expectation of life was exactly the same in each period—viz., 40·17 years. From that time onward the after-lifetime is shorter in the recent period than in the older one; that is to say, the individual male in England lives on an average a shorter time after he is nineteen years old than he did forty years ago; but the number of males out of equal numbers at the start who survive to live these shorter lives is very much greater than it was formerly, so that the aggregate life of the whole is considerably increased. The gain is greater in females than in males. Thus, in the first period the expectation of life in females was 41·85, while in the second period it was 44·62, being a gain of 2·77 years on an average for each female. The after-lifetime continues longer in the new period down to the completion of the forty-fifth year, when the expectation of life becomes the same—viz., 24·06.

The earliest attempt to give vital statistics for the United States is probably a paper by Edward Wigglesworth, published in the "Memoirs of the American Academy of Arts and Sciences," 1793, vol. ii, page 131, entitled "A Table showing the Probability of the Duration, the Decrement, and the Expectation of Life, in the States of Massachusetts and New Hampshire, formed from Sixty-two Bills of Mortality on the Files of the American Academy of Arts and Sciences in the year 1789." The whole number of deaths reported on these bills was four thousand eight hundred and ninety-three. He had no data of population, but the reports indicated that the births in the locality sending the bills were twice as many as the deaths. As his calculations are based solely on the deaths alone at certain ages, the conclusions are evidently entirely unreliable; but, such as they are, they are as follows:

The expectation of life at birth was 28·15 years; at five years, 40·87; at ten, 39·23; at fifteen, 36·16; at twenty, 34·21.

By another calculation he finds that the expectation at birth was 35·47, and at five years of age 48·46.

Another paper is by J. E. Worcester, printed in the "Memoirs of the American Academy of Arts and Sciences," Philadelphia, 1833, vol. i, new series, page 1, and entitled: "Remarks on Longevity and the Expectation of Life in the United States, relating more particularly to the State of New Hampshire." Taking the bills of mortality of thirty-two townships in New Hampshire for an average length of time of twenty-one years, he found that the death-rate was 1 in 83, or 12·04 in 1,000. He wisely remarks that the ratio is so small as to excite suspicion concerning the accuracy of the bills.

You are all, no doubt, familiar with what is known as the Malthusian theory, which is, essentially, that population is limited by the means of subsistence available, that population increases in a geometrical proportion, while the means of subsistence do not increase in a faster ratio than arithmetical progression; that, therefore, the growth of population is checked by want of means of subsistence, and, therefore, that the increase of mankind may be considered as the chief source of misery, which misery, together with moral restraint to a limited extent, and vice, check the superior growth of population, keeping it at a level with the means of subsistence.

If this doctrine be applied to the lower animals or to an extremely savage and ignorant set of men, it is very nearly correct; for in this case the term "means of subsistence" applies almost exclusively to the natural produce of the earth. As soon, however, as man applies his intelligence to the increase of the means of subsistence by improvements in agriculture, by manufactures, etc., it is no longer true that the means of subsistence increase in an arithmetrical proportion. They may increase, and for the last fifty years have, throughout civilized regions of the world, actually increased in a ratio more rapid than geometrical proportion and more rapid than the increase of population; and it is therefore substantially true that "the character of every race of men is the real limit to its numbers in the world, if allowance be made for accidents of position and time." *

The uneducated and unskilled laboring classes, who are without capital, when gathered together in large masses, tend constantly to illustrate the theory of Malthus by increasing faster than they can provide means of subsistence for themselves and their families.

But this tendency is opposed by the advance in knowledge, increase in energy, and improvement in inventions in the educated classes, who, although it may be said that they are acting only from selfish interests, are, nevertheless, led by those interests to expand the fields of agriculture, manufactures, and commerce, and thus to both increase the means of subsistence and to lessen the price thereof.

Under favorable conditions a population is capable of doubling its number every twenty-five years. In the United States, between the years 1790 and 1860, the population doubled itself about once in twenty-three years and a half. But a portion of this increase was due to immigration.

Whether in the future a systematic attempt to maintain an equilibrium between subsistence and population will become a practical problem of national policy is at present a purely theoretical speculation, for it is very easy to show, as

* Farr, "Vital Statistics," London, 1885, p. 15.

has been done by Mr. Atkinson (see papers by Atkinson in "Scribner"), that the means of subsistence at present at our command can easily be quadrupled, as the increase of the population occurs to both require and produce such increase.

One of the most interesting and important questions in vital statistics in this country is that relating to the relative increase in the white and colored population in the Southern States, and the influence which has been and will be exerted upon this by the abolition of slavery. On the one hand it is claimed that the large increase in the colored population between 1870 and 1880 indicates that in fifty, or at most a hundred, years more it will greatly predominate.* On the other hand, it is affirmed that the greater increase of the colored population is apparent rather than real.

We have little information of value relative to the vital statistics of the colored population in the South previous to the abolition of slavery. The only two Southern States having registration laws which were to any extent enforced were Kentucky and South Carolina. The Kentucky reports relating to the registry and returns of births, marriages, and deaths are eight in number, commencing January 1, 1852, and extending to December 31, 1859, the last report being printed in the early part of 1861. The South Carolina annual reports of registration of births, deaths, and marriages begin with the year 1853 and end with the year 1859. In neither State was the registration of either births or deaths in any year sufficiently complete to permit of accurate comparisons with the number of living population, either for the whites or blacks.

The conclusions drawn by the registrars may be summed up in the statement that the birth-rate of the slaves was much greater than that of the whites in South Carolina, while the difference was not marked in Kentucky; that in both States the death-rate of the negro was decidedly greater than that of the whites, especially in infancy, and that the average age at death was decidedly higher in the whites.

The average mortality in a population of a little over 43,000,000 whites was recorded as 14·74 per 1,000, while in a population of 6,752,000 colored the recorded mortality was 17·28 per 1,000. Is it known that each of these recorded death-rates is much lower than the actual one, owing to failure to record the whole number of deaths occurring during the census year; but it is also known that the proportion of failures to record was decidedly greater among the colored than among the whites, and hence the difference between the death-rates of the two races is even greater than that indicated by these figures.

How far is this excessive mortality in the colored population due to race characteristics? It is due to peculiar susceptibility on the part of the negro to certain distinctive forms of disease, or to his having less vital force and capacity to resist disease and death? Undoubtedly the great mass of the colored population is poor and ignorant, lives in the dampest and dirtiest parts of cities, and in the midst of unhealthy surroundings, and is in other respects unusually exposed to well-recognized causes of disease.

The statistics of 1880 show that the colored race is peculiarly liable to fatal results from certain forms of disease, especially consumption, pneumonia, diarrhœal diseases, affections of pregnancy, scrofula, and venereal diseases; and that, on the other hand, it is much less liable than the white race to fatal results from cancer, diphtheria, diseases of the nervous system, scarlet fever, and suicide.

Notwithstanding the interest and importance of the question, we have at present no sufficient data to determine whether the negro, under the same circumstances as to poverty, etc., is or is not more prolific or short-lived than the whites, and absolutely no data of any value for determining the relative fertility and mortality of the mixed bloods, including mulattoes, quadroons, octoroons, etc. An effort will be made in the coming census to supply this deficiency as far as possible. In the enumeration of the population those of mixed blood will be recorded separate from the pure whites and the pure blacks, and an effort will be made to obtain corresponding records of deaths in order to determine the death-rates of these mixed bloods. An effort will also be made to determine the birth and death rates of certain classes of poor and ignorant whites, such as the tenement-house population in our Northern cities, as distinguished from those of the mass of the white population, which will give us a better means of comparison of the mortality of the two races under comparatively similar circumstances than we now have.

In studying the causes of disease and death in communities a very important point to be considered is the relative poverty, ease, or luxury in which different parts of the population live, or the sickness and death-rates of so-called social classes.

That extreme poverty, producing inability to obtain the amount of food, clothing, and shelter requisite to preserve health, is a direct cause of high death-rates, especially in northern climates, is known to all; but the extent to which this factor of want influences the death-rates in different countries or communities is by no means easy to determine, and thus far we have, for the most part, only data bearing indirectly on this subject. For the provident and presumably well-to-do classes we have the statistics of life-insurance companies; but these are for selected lives, which fact tends to give a low death-rate during the early years of the policy-holders, while, on the other hand, the tendency to cease paying annual dues and to give up the insurance is greater in those who are well and strong than in those who have reason to suspect that they are diseased, so that the death-rates in the greater ages are higher in the insured than in those not insured. We can also draw some inferences from the vital statistics of occupations, from tenement-house statistics, etc.; but it is very difficult to distinguish between effects of density of population, occupation, race, intemperance, uncleanly habits, and actual want of the necessaries of life.

The tendency now is to accumulate the best and the worst of the race in cities. They draw to them the most enterprising, vigorous, and prudent, whose tendency is to late marriages and few children, and thus tend, after a time,

* See paper by E. W. Gilliam, "Popular Science Monthly," xxii, 433.

to lower the standard of the race. Where the tendency is to replace a feeble and lower race by a better one there is progress; where the tendency is the reverse there is decay. "The hope that by increased knowledge, charity, and co-operation, the feeble, sickly, and incompetent can be so cared for that they shall become strong and vigorous, is that held by most men of the present day, but there is nothing in the laws of heredity which gives any foundation for this hope."

"What is to be the outcome of this modern civilization? Its enemies are not without but within—not savage nations on its borders, but dwellers in its own cities. The general tone of modern European literature is pessimistic as to the future, filled with doubts and fears as to what the coming supreme democracy will do. In this country it is more hopeful, and looks forward to progress in improvement in the physical conditions of the race, though admitting the dangers and difficulties which this very physical improvement tends to produce." But whatever be the views of individual thinkers and writers, on one point all can agree, and that is as to the desirability of having at our command definite, positive information as to the character, amount, and set of currents of this stream of human life in different countries and localities. An important part of such knowledge is that which relates to the composition of and changes in the population in different countries, which is the special field of vital statistics.

Original Communications.

THE BOTE.

DESCRIPTION OF A PECULIAR SEXUAL PERVERSION FOUND AMONG NORTH AMERICAN INDIANS.

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Desiring absolutely to avoid discussion of the existence or non-existence of the anomaly classically known as hermaphroditism, in which, in one individual, are found more or less developed the sexual organs of both male and female, I have chosen the word in the heading of this article to designate a class which exists as a class, so far as my knowledge goes, nowhere but among certain tribes of the American Indians.

The word bō-tĕ′ I have chosen as being the most familiar to me and not likely to convey a wrong impression, since I shall be the first, perhaps, to translate into English and define it. It is the word used by the Absaroke Indians of Montana, and literally means "not man, not woman." A corresponding Tulalip word, used by Indians of Washington Territory, is "burdash," meaning "half man, half woman." As the Absaroke is an unwritten language, in the orthography of the word I have adopted the alphabet suggested by the Smithsonian Institution to secure uniform spelling of Indian words. These words are appropriate as descriptive of manners and practice, but are not, by the Indians themselves, intended to convey the idea of anomalous sexual conformation.

The practice of the bote among civilized races is not unknown to specialists, but no name suited to ears polite, even though professional, has been given it. The practice is to produce the sexual orgasm by taking the male organ of the active party in the lips of the bote, the bote probably experiencing the orgasm at the same time. Of the latter supposition I have not been able to satisfy myself, but I can in no other way account for the infatuation of the act.

Of all the many varieties of sexual perversion, this, it seems to me, is the most debased that could be conceived of.

In the Crow or Absaroke tribe, of which I have had medical charge for two years, there are at present five bote (in this dialect there is no plural form, the number being indicated by the qualifying words), and about this number has flourished for years past.

While in reports of physicians and others concerning various Indian tribes I find no mention of this class, and while in personal replies from physicians in charge of more than twenty agencies I have been able to get little positive evidence concerning them, yet I feel assured that the bote is to be found in nearly all tribes of Indians, of the Northwest at least.

From physicians I have obtained the following information:

Dr. Joseph B. Graham, of Lower Brulé Agency, Dakota, reports one "so-called hermaphrodite who affects woman's manner and dress, and it is said he lives and cohabits with a man occasionally, but more I have been unable to learn."

Dr. Best, of Fort Berthold, Dakota, informs me that there are among his Indians, Gros Ventres, Mandans, and Rees, "a few bucks who have the dress and manner of the squaws and who cohabit with other bucks," but in what manner or for what purpose he is unable to say.

Dr. C. K. Smith, of Klamath, Oregon, writes: "There is but one 'hermaphrodite' in this tribe. She (?) has lived with a number of different men who claim that they have performed the sexual act with her. She has also cohabited with white men. The Indians claim that she has a rudimentary penis and that she used to cohabit with females. She dresses as a female, but is masculine in voice, features, etc."

One of the bote accredited to the Absaroke tribe is a Sioux, and I can assert, on perfectly reliable testimony, that among the Lower Gros Ventres there is a larger number of them than in the Absaroke tribe. A bote, a description of whom will be introduced presently, told me that the tribes of his acquaintance living in the Northwest had bote as follows: Flatheads, four; Nez Percés, two; Gros Ventres, six; Sioux, five; Shoshonis, one. There seems a species of fellowship among them, and I have no reason to doubt the correctness of his statement.

The bote wears the "squaw" dress and leggins, parts the hair in the middle and braids it like a woman's, possesses or affects the voice and manner of a woman, and constantly associates with that sex as being of it. The voice, features, and form, however, never so far lose masculine qualities as to make it at all difficult to distinguish the bote from a

woman. One of them does "squaw" work, such as sweeping, scouring, dish-washing, etc., with such skill and good nature that he frequently finds employment among the white residents.

Usually the feminine dress and manner are assumed in childhood, but the art to which they subsequently devote themselves does not generally become a practice till toward puberty. One little fellow while in the Agency Boarding School was found frequently surreptitiously wearing female attire. He was punished, but finally escaped from school and became a bote, which vocation he has since followed.

One of the bote of my acquaintance is a splendidly formed fellow, of prepossessing face, in perfect health, active in movement, and happy in disposition. Desiring that my knowledge should be positive, I had this bote brought to my office, and, by offering a moneyed consideration, induced him to submit himself, though with considerable reluctance, to a thorough examination.

He is five feet eight inches high, weighs one hundred and fifty-eight pounds, and has a frank, intelligent face—being an Indian, of course beardless. He is thirty-three years of age and has worn woman's dress for twenty-eight years. His dress was the usual dress of the Indian female, consisting of four articles—a single dress or gown of half a dozen yards of cloth, made loose with wide sleeves, and skirt reaching to the ankles, the skirt and body of one piece, very much like the "Mother Hubbard" *negligée* worn by ladies; a beaded belt loosely confining this at the waist; stockings from Government annuity goods; and buckskin moccasins extending above the ankles. The hair, twenty-four or twenty-six inches long, was parted in the center and allowed to hang loose in two masses behind the shoulders. Since among the Sioux and some other tribes it is usual for men to wear their hair in this way, it is well to observe that in this tribe (Absaroke) the men usually wear the hair in long braids and always part it on the side and "roach" the front.

Removing his dress, I found his skin smooth and free from hair, there being absolutely none on the legs, arms, or breast, or in the armpits. This, however, is of no special significance, as all Indians with whom I am acquainted, male and female, are free from hair on these parts of the body. The mammæ were rudimentary, as usually found in the male.

Coming now to the more interesting parts, the sexual organs, I will state that when he removed his dress he threw his thighs together so as to completely conceal the organs, whether male or female; such a movement as I have frequently seen made by timid women under examination—a movement usually successful in the female, owing to the non-projecting character of the genitals and to the rotundity of the thighs, but not usually easy, for the reverse reasons, in the male. In this the bote—either from the conformation of the thighs, which had, really or to my fancy, the feminine rotundity, or from skill acquired by habit—succeeded completely.

When he was induced to separate his thighs, male organs came into view, in size perhaps not quite so large as the physique of the man would indicate, but in position and shape altogether normal. The penis, being flaccid, measured four inches and a half in length, three inches and a half in circumference. The testicles were of about the size of the shell of a small almond; the foreskin and glans were normal. On the pubes was a light growth of short hair, the usual amount found on the Indian male.

Before he would submit to the examination he had me promise that I would tell nothing to the authorities nor to any of his tribe. When I was done he asserted that no one had seen his genital organs from childhood till this examination. His constant associates are women, and I said to him, "You go swimming with women; how do you keep them from seeing your organs?" "Oh," he said, "I do this way," throwing his thighs together as he had done when he first removed his dress for examination, again completely concealing the penis and scrotum, and under direct inspection in this position it would be impossible to declare his sex. He denied ever having had sexual intercourse with a female, and pointed as evidence to his penis and groins—"no sore, no scar"; by no means bad evidence in a tribe so universally venereal. Other Indians assert that this bote formerly occasionally had sexual intercourse with women. Such, however, is rare, perversion of the function depriving them of the normal passion for the female. They have, however, for this perverse gratification a passion equivalent to the normal. I have heard a bote *beg* a male Indian to submit to his caress.

The bote described above lived constantly two years as the female party to a marital partnership with a well-known male Indian. It is not, however, the usual habit of the bote to form a "partnership" with a single man. He is, like the female members of this tribe, ready to accommodate any male desiring his services.

In habits the bote very closely resembles a class described by Hippocrates as found in his day among the Scythians of Caucasus, and called by the Greeks *ἀνανδρίεις*, a word strikingly similar in meaning to bote. The *ἀνανδρίεις* are described as males who—indirectly, from excessive horseback riding, and directly, in the opinion of Hippocrates, from the cutting of certain veins near the ears—have been rendered impotent and, in the words of the "Father of Medicine," "assume the attire of women, declare that they have lost their virility, associate exclusively with women, follow like occupations, and have a like pitch and tone of voice." The credulous assertion of the writer that "near the ears there are veins which render impotent those in whom they are cut" should be kindly forgotten along with the numerous errors of this great observer. The origin and perpetuity of these *ἀνανδρίεις* is thus accounted for by Herodotus (Rawlinson's translation, "History of Herodotus," vol. i, p. 190): "When the Scythians were about leaving Syria and Palestine, which they had invaded, their rear guard pillaged the temple of Venus at Ascalon. The goddess was so enraged at the act of desecration that she caused the perpetrators to become like women, and further decreed that their posterity should be similarly affected."

Dr. William A. Hammond ("Impotence in the Male," p. 163 *et seq.*) describes with great minuteness two *mujerados* whom he found among the Pueblo Indians of New Mexico. These again closely resemble the bote in dress,

habit, and practice. "The Pueblo Indians," writes this author, "are in the habit of selecting some one male from among those living in a village and rendering him sexually impotent, reserving him at the same time for pederastic purposes. This person was called a mujerado, a corruption probably of the Spanish word *mujeriego*, which signifies feminine or womanish. There is no such word in Spanish as mujerado; but if there were, it would, according to the construction of the language, mean 'womaned,' or 'made like a woman.'" Of the use and manner of making the mujerado, Dr. Hammond writes: "A mujerado is an essential person in the saturnalia or orgies in which these Indians, like the ancient Greeks, Egyptians, and other nations, indulge. He is the chief passive agent in the pederastic ceremonies which form so important a part in the performances. . . . For the making of the mujerado one of the most virile men is selected and the act of masturbation is performed upon him many times every day; at the same time he is made to ride almost continually on horseback." From over-excitement comes abolition of the orgasm, the organs atrophy, the temperament changes, and he becomes assimilated with the female sex, perhaps at first with reluctance, but finally with entire complaisance and assent.

That the perversion of the bote is not due to excessive equitation is evident when it is known that the female dress is often assumed in childhood, and rarely at a later period than the age of puberty.

In the manner of making the mujerado and his importance in the traditional rites of the people among whom he is found, Dr. Hammond gives him a position of greater dignity than I can assign the bote, whose making I adjudge the work of his own perverted lust, and whose tolerance I attribute not to any respect in which he is held, but to the debased standard of the people among whom he lives.

There is, moreover, a difference in the method of the practice of their vocation. Pederasty is by no means unknown among the tribes of Indians where the bote is found, but the bote is less than any other a pederast. With him it is the oral and not the rectal cavity into which he admits the male organ.

It is interesting, however, to observe that Indian tribes vastly dissimilar in habits and as widely separated as the western half of the continent will allow possess each a class closely resembling and all markedly similar to the Scythian ἀνανδριεῖς described centuries ago.

That the bote is a study of practical as well as scientific value to the surgeon is evident to one whose practice has brought him in contact with examples in the white race, not only of the mujerado but of his more disgusting cousin, the bote. With the former every specialist is familiar, and several cases are reported with graphic minuteness by Dr. Hammond in the little volume referred to above. Of the latter, a striking example was the case of an officer in the United States army, who was recently caught *in flagrante delicto*, the other party being an enlisted man, and allowed to resign from a Western post. He confessed the practice of the habit for years, showing that there is no bottom to the pit into which the sexual passion, perverted and debased, may sink a creature once he has become its slave.

TALIPES EQUINUS.

By C. W. BARRIER, A. M., M. D.,
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Concerning this deformity certain fundamental principles are conceded by all, while other principles and methods are still *sub judice*. Of this latter class alone I propose to write. As F. R. Fisher, F. R. C. S., of London, in Ashhurst's "Encyclopædia of Surgery," treats of this subject comprehensively, and represents a larger class of writers and operators, I will show wherein my views differ from his teachings.

To reduce the deformity he directs two operations, as though it could not be done at one. The mechanical treatment after each of these operations he describes as requiring two or three months, making four or six months necessary to complete a reduction. I have found in my practice that a large majority, if not all these cases, may be successfully treated at one as well as at two operations, and the patient may be well and walking about in at least two or three months, the time he directs to continue the mechanical treatment after each of his operations. I have found one operation preferable for the following reasons: 1. The patient and the parents are not horrified by the thought of two operations and such a long treatment. In one case, which I treated at one operation, the parents had been deterred from the treatment till the child was sixteen years old by the thought of two operations. 2. The patient is not helpless and does not require the attention of the surgeon more than half so long. 3. There is not half the danger that some unforeseen contingency may prevent the cure. The child may become sick; an epidemic may prevail; accident, sickness, or death may befall the surgeon in six months. 4. Some parents are very fickle and may conclude that, as so little has been accomplished at the first operation, another would not be worth while. I have seen more than one treatment cut short in this way. 5. One part of the deformity can not be entirely reduced while the other exists. 6. The danger, if any—and who can say there is none from the use of chloroform?—is only half so great. 7. Last, but not least, I object to two operations, because I have not seen their necessity, and I have operated in several cases extreme deformity and of long duration.

A. W., aged sixteen, with paralytic talipes equino-varus from birth, had made application to various surgeons, who advised two operations and frightened the patient from the treatment. On the 18th of last January, assisted by the accomplished physician, Dr. W. W. Bloodworth, I operated, accomplishing the whole at once, consuming in the operation and dressing only six minutes. On the eighth day the deformity was completely reduced. In three months the boy was walking on the foot all over town. In five months he was put to work at a job which required him to be on his feet twelve hours each day. The foot is still straight, with no tendency to return to its old position, although not strengthened by a brace.

W. W., aged ten years, of this city, having complete equinus, with slight varus from birth and with great displacement of the tarsal bones, was operated upon by myself, assisted by the efficient Dr. E. W. Jenkins, the two operations being performed at once. On the seventh day the deformity was entirely re-

duced, and on the ninth day the boy stood with the heel flat on the sole-piece of the splint, and bore all the weight of his body on the deformed foot. On the eighteenth day I discovered that the boy had thrown his crutches away and was walking on the foot in its splint, and I was compelled to devise means to keep him off of it.

Our author's method of cutting the tendo Achillis is no less objectionable than the two operations. I will enumerate the dangers attending the operation by his method in his own words. He says: "The division of the tendon in a healthy body, or when performed on a dead subject, is a very simple operation; but in the case of paralytic equinus it is by no means so easy to divide the tendon deftly; in the paralyzed leg all the tissues are very much wasted, there is, consequently, very little subcutaneous fat, and the skin folds closely over the tendon, etc., . . . but it renders the subcutaneous division of the tendon much more difficult than it would be if the superficial tissues were less closely adjacent to the structure which has to be divided. The dangers which have to be avoided are: (1) making a second puncture of the skin on the opposite side of the leg on which the tenotome is entered; (2) increasing the size of the first puncture during the section of the tendon so as to produce a gaping wound; (3) and, lastly, cutting through the skin over the tendon after the division of the latter is complete; all these accidents have happened in practice." All this is true, but he fails to enumerate all the dangers. However, I will do so in his own words. "If the tendon has not been perfectly severed, (4) the knife has probably pierced its deeper fibers instead of passing under it; (5) or else it has not been carried far enough to the side opposite to that of puncture and some of the fibers of the tendon have been left undivided; in such case the knife must be re-entered and section made complete; and the same must be done if the small plantaris tendon has not been severed."

These dangers are real, not imaginary, and certainly they are enough to attend any one operation. It seems to me that they all arise from the point of entering the knife—viz.: on the side of the leg, passing it anteriorly to the tendon—and they are augmented by the operator having to keep the sharp point of the knife in contact with the inner surface of the skin in passing around the curve to reach all the points of the tendon; and after the last fibers are cut the whole of the back part of the skin is drawn with force over the edge of the blade. To those who will reflect, I submit the following method of operating, which I think removes all these dangers: The patient being placed in the recumbent position on a table, the operator stands at the patient's feet and elevates the limb at a right angle to the body, which places the tendo Achillis directly before the eyes of the operator. Enter the tenotome on the median line of and posterior to the tendon, with the back of the blade directly toward the os calcis. When the knife has passed through the skin, with the thumb of the left hand on the side of the tendon opposite the point where the blade is entering, press the skin toward the blade; this will enable you to pass the tenotome between the skin and tendon, until the point of the knife is opposite the anterior surface of the tendon. Then turn the edge of the knife to the tendon, and replace the thumb of the left hand by that of the right hand, with the handle of the knife in the latter. Now you have only the tendon and one layer of the skin between the edge of the knife and the thumb. With a few even sweeps of the knife, the thumb pressing the tendon firmly against the blade, while the tendon is put on the stretch by forcibly extending the toes, you sever it; the thumb feels the knife approaching the skin and warns you when to go slowly; and the tendon, being on the stretch, gives way with a distinct jerk, by which you know the work is complete; and you have no fear of having to re-enter the knife to cut around in search of undivided fibers or plantaris tendon. There is no curve to pass around in cutting the tendon, the point of the knife is not all the while in contact with and probably cutting the skin through, and there is no danger of pulling the skin with force over the edge of the knife when the tendon gives way, as in this case the skin is not pulled toward the edge, but down the knife. If there are any dangers attending this method, I have neither conceived of nor encountered them. There may be some danger of cutting the posterior tibial artery, but this danger is not so great in this as in the former method, as the thumb may press the edge of the tendon nearest the place of puncture more firmly against the knife, and cause the inner anterior surface of the tendon, which is nearest the artery, to be the last severed, and, as soon as this is done, we feel the tendon give way and take the knife out without cutting the artery. By the other method there is great danger of cutting the artery in moving the knife around to find uncut fibers or plantaris. I have practiced this method so successfully that my assistant, though a skilled physician, failed to discover the puncture until it was pointed out to him, it was so small.

Our author directs the use of Scarpa's shoe, as though the deformity could not be reduced without it. Aside from the economy, I prefer not to use it. I take two pieces of white pine, three eighths of an inch thick, and fit one to the sole of the foot, the other to the back of the leg. I cut a hole in the piece extending up the leg for the heel to fit into. I join these immovably at the heel, tacking on pieces of leather at the angle from one piece to the other, to act as braces. I make the included angle a little less than a right angle. I pad this with cotton, on which I place the foot and leg after having performed both operations at once and covered the punctures with iodoform gauze; then I place another pad of cotton over the limb and apply a roller bandage firmly yet comfortably, controlling muscular spasm and protecting the parts from shock on moving the body. Over this I apply a Martin's elastic bandage around the instep and anterior part of the foot, just tight enough to keep the bandage from falling off. When thus applied it produces no pain, and exercises a gentle traction sufficient to gradually draw the sole of the foot to the sole-piece of the splint, and causes the foot and leg to take the position of the angle of the splint. The bandage will accomplish this in from five to ten days, and the patient will not so much as know that a force has been applied. After this, I leave off the elastic bandage and replace it with a second roller bandage, making the parts immovable with the foot well set and at rest till the tendon is fully developed.

But let us hear how it is with Scarpa's shoe. "The whole success," says our author, "of the mechanical treatment of the case depends upon the skill with which the instrument is applied and used, and from a want of appreciation of this fact an imperfect result very frequently follows; and it is quite remarkable how one can blunder in his first attempt to apply a Scarpa's shoe." Again, "for the first twenty-four hours the limb is merely kept resting in its original state of deformity; then the instrument is taken off and the leg is examined to see if too much pressure has been exercised at any one spot from over-tightening the straps." "If such a strain is put on the foot as to give rise to swelling or pain, the pressure must be removed immediately, as otherwise the skin may be excoriated by the tightened straps, and the only remedy will be to give up treatment until the abraded surface is again sound."

Now, after it has required our author, an experienced hand, four days to apply the instrument, and after he has run such a great risk of excoriating the skin and of having to give up the treatment, he goes on to give directions how the cog-wheel is to be turned on from day to day for two or three painful months to complete the reduction. But why do we get so much better results from the use of the elastic bandage than from that of Scarpa's shoe? 1. Instead of narrow, hard leather straps, I use a three-inch elastic bandage, which exercises equal force on all parts. 2. Instead of using a force with which "it is quite remarkable how one can blunder," I use a force that the mother, after a little instruction, can apply as well as or better than the surgeon, which I actually leave for her to do. 3. I commence traction immediately after the operation, before the foot is swollen and sore. He waits four days, leaving the foot in its original state of deformity. I control muscular spasm with a firm dressing. He leaves the limb in a flexible dressing three days and then allows it to rest in its original state of deformity the fourth, while in my treatment, if on the fourth day the foot is left unsupported and is allowed to drop back into its deformed position, it causes great pain. 4. I apply a continuous force almost infinitely small. He applies a violent force probably one second in twenty-four hours, one second being about the time required to turn the cog-wheel. Let us estimate how much more a given force can accomplish by acting continuously than it can by acting only one second in twenty-four hours. The formula in mechanics applicable to this case is: $rd = ft$, in which r represents the resistance to be overcome to complete the reduction, d represents the distance through which the heel has to be pulled down, f represents the force applied; in the one case it is the force applied to the cog-wheel, in the other it is the elasticity of the bandage; t represents the time each force is applied; in the one case it is one second in twenty-four hours, in the other it is 8,640 seconds in twenty-four hours. Now, to find what a given force applied by means of the cog-wheel will accomplish in a day, we have $f = rd$, as in this case $t =$ one. In the case of the elastic bandage we have $f = \frac{dr}{8{,}640}$, as t in this case is 8,640. Hence, we see, to accomplish a given work with a cog-wheel in one day the force must be 8,640 times as great as that required by the elastic bandage. This is not overdrawn, for we have supposed the child to be perfectly passive while the cog-wheel is turned on, which is impossible, as he can not control the muscular spasm, nor the contortions of the limb, when he knows the dreaded force is to be applied. Indeed, it is impossible to obtain this minimum force with the bandage; but, happily, the child can bear, when applied in this way, a much greater force, which accomplishes the reduction in a far less time than two or three months, just as I have found it in practice, which time has in no case exceeded six or eight days.

But that he should postpone until the fourth day commencing the mechanical treatment, allowing the foot to rest in its original state of deformity, seems stranger to me than all else. If we will study the physiological method of repair in the case of divided tendons we shall see the tendency of such treatment. When tendons are divided their ends separate on account of their natural contractility. To fill up this gap, Nature, during the first four or five days, provides what we call plastic material. During the next ten or fifteen days this is converted into connective tissue, and during the next twenty or thirty days it is fully developed into tendon and supplied with nerve-force and contractility. The foot remaining the first four days in its original state of deformity, the tendons are only slightly separated, hence only a small quantity of plastic material is deposited. On the fourth day, after Nature has stopped supplying this plastic material, he commences his stretching process, by which he stretches this small amount of plastic material over a distance probably three or four times as great as Nature supplied it for. I prefer to apply the mechanical treatment immediately after the operation, increasing the space between the ends of the tendons so as to make room for the greatest possible amount of plastic material, which also lessens the distance through which it must be stretched. Thus, if the heel is to be let down two inches, and the cut tendon separates by its natural contractility one inch, he will have to stretch the small amount of material deposited in this one inch over the whole two inches, or twice the distance Nature has provided it for; while, on the contrary, if I, by commencing the mechanical treatment immediately, can increase this separation to an inch and a half by the fourth day (which I have never failed to do), I have this greater space to receive this plastic material, and it has to be stretched only half an inch, or one third the distance which Nature provided it for. But he continues the stretching through the whole time in which the material is to be converted into connective tissue, and while it should be taking on nerve-force and contractility. I prefer to complete this part of the treatment at least by the eighth day, while the material is yet plastic, and then leave the parts at rest to undergo physiological repair. Can we suppose that this stretching in no way impairs the natural process of repair? What other process of repair is not better accomplished by the parts being at rest? Is it any wonder that he complains of "imperfect results," and says that "the union will be weak and that the tissue will always be liable to stretch and leave the patient with the opposite condition of deformity, *calcaneus*"? It occurs to me that our author

is doing somewhat as the surgeon does when he leaves a broken limb half dressed and gets ligamentous instead of bony union.

ERYTHROXYLON COCA;
ITS VALUE AS A MEDICAMENT.

By MARC LAFFONT, M. D., Paris,
professor of physiology at the faculty of Lille, France.

During the last few years the therapeutic use of coca has been so greatly extended that it may be interesting and useful as a *résumé* to enumerate its many applications.

Although coca has, from its earliest introduction as a pharmaceutical product into France, enjoyed the highest professional recognition, this South American plant can hardly be said to have entered into current therapeutics. It is only since the discovery of the scientific application of the alkaloid of *Erythroxylon coca*, and since the important essays on the drug and the experiments made with it, that physicians generally have studied and recognized its therapeutic value.

It is well remembered how, in former years, the virtues of the salts of quinine were held to entirely supersede those of cinchona; in like manner this inevitable error has arisen with coca, its alkaloid, cocaine, only having been considered by many.

In consequence of the tests made with cocaine, which, from a physiological point, have established the dose and the limit of its toxic effect, and, from a medical view, have brought to light cases of abuse which have resulted in more or less serious accidents, many have been led to regard the plant coca itself as a dangerous drug.

The proof of the therapeutic value of the coca leaf is clearly shown by the many excellent results obtained in practice with such reliable preparations of the drug as have been furnished the profession by that worthy pharmacist, Mariani.

As to the comparison which many of our *confrères* make between the preparations of cocaine and of coca, we do not fear to state that, however sound may be the theory of preferring to administer certain alkaloids to administering a preparation of a plant of which the virtues vary according to where and how it was gathered, the place of its cultivation, its quality, and the constitution and nature of the preparation—we repeat, we do not fear to state that in the majority of cases, as the alkaloid does not contain all the active principles of the plant, it can not be preferred, except in special cases where the particular action of the alkaloid alone is desired.

The fact is well established that the salts of quinine can not replace the extract, the wine, or the powder of cinchona, the tonic principles and the essential oils of which have, without doubt, shown a special therapeutic value; and I need merely cite the indisputable success obtained by Professor Trousseau with the powder of cinchona in checking malarial fevers which had resisted even the largest doses of sulphate of quinine. More especially cocaine can not replace all the active principles and the essential oils of the leaf of *Erythroxylon coca*, as has been proved from the time of the earliest discovery and use of this plant.

In 1887 at the Institute of France (Académie des sciences), and in 1888 at the Académie de médecine, I demonstrated that coca, by virtue of its active principles, had three very distinct separate actions (published in the "Proceedings"):

1. As an anæsthetic, acting upon the protoplasm of the terminations of the sensory nerves, preventing the transmission of painful sensations to the centers or the unconscious sensibility of Bichat.

2. As a nerve tonic, producing functional excitement of the cerebral and spinal nerve centers and increasing the intellectual and muscular activity.

3. As a tonic to the unstriped muscular fibers of the stomach, the intestines, and the bladder, producing functional excitement of the constrictor action of the great sympathetic nerve, with consequent functional exaltation of all the smooth muscular fibers or muscles of organic life.

The dissatisfaction produced and the complaints which are made that the plant is wanting in uniformity of quality and is unreliable in producing the desired effects, are due to the varying quality of the preparation.

An essential requisite to produce reliable uniform preparations of coca is a thorough knowledge of the origin of the leaf, its nature, and its quality.

Careful study and researches made by Mr. Mariani for many years as to the origin, the nature, the species, the culture of the different leaves of coca, and the care which he gives to his preparations, have been the means of placing at our disposal products uniform in quality and unvarying in their effects in those varied cases where their internal administration is called for.

I will cite but a few names among those of my many *confrères* whose recorded experience with the Mariani coca preparations coincides with my own, which I am about to set forth, based upon continued observation in hospital and private practice.

It has long been known that the natives used the coca leaves to lessen fatigue, to keep up the spirits, and to appease the cravings of hunger.

The first and main application of the "vin Mariani" is, therefore, as a general tonic for persons either physically or mentally overworked (Brown-Séquard, Germain Sée, Dujardin-Beaumetz, Ball, Bouchut, A. McLane Hamilton, A. E. Macdonald, A. L. Ranney, L. C. Gray, L. Weber, Carlos F. Macdonald, H. M. Lyman, I. N. Danforth, P. S. Conner, J. K. Bauduy, C. H. Hughes); in convalescence after lingering wasting diseases, where nourishment is needed and where it would be dangerous to overcharge the stomach; with all whose recovery is tardy from wasting or constitutional weakness; in chlorosis, anæmia, and rhachitis (Ch. Robin, Durand Fardel, Gubler, De. Piétra-Santa, Fordyce Barker, Isaac E. Taylor, A. L. Loomis, W. T. Lusk, F. P. Foster, C. C. Lee, J. J. Henna, L. L. McArthur).

It is further used in diseases more specially referable to atony of the smooth muscular fibers, among which we class atony of the stomach. In dyspepsia, in those very common cases where this organ has become weak and torpid, is dis-

tended, and fails to secrete gastric juice, coca is well indicated (De Saint-Germain, Cottin, Dieulafoy, Salemi, Companyo, Rabuteau, A. J. C. Skene, P. A. Morrow, T. C. Giroux, Hunter McGuire, E. R. Palmer, O. O. Burgess, J. R. Leaming, Daniel Lewis, T. E. Satterthwaite, W. H. Pancoast, D. F. Woods, J. N. Hyde, L. G. N. Denslow).

It is also serviceable in weakness of the vocal cords, in the case of ministers, singers, actors, teachers, and orators (Ch. Fauvel, Morell Mackenzie, Lennox Browne, Botkine, Cozzolino, Zawerthal, Poyet, Coupard, Fraenkel, Marius Odin, Labus, Massei, Louis Elsberg, R. P. Lincoln, Beverley Robinson, W. C. Jarvis, H. H. Curtis, C. C. Rice, C. E. Sajous, E. Fletcher Ingals, H. Schweig, T. R. French).

It is, moreover, of value in weakness of the vascular organs, with the anæmic, the plethoric, where, principally on the face, the small blood-vessels show enlargement or venous arborescence which points to a similar state in the vessels of the nervous centers. The same vascular weakness is also observed with the varicose, in whom coca is indicated; likewise with the paraplegic, with whom it regulates the circulation of the nervous centers (Bernard, Bétancès, Landowski, Casenave-Delaroche, Gazeau, Rabuteau, V. P. Gibney, Robert Newman, E. B. Bronson, J. E. Janvrin, B. McE. Emmet, W. O. Moore, W. J. Morton, D. W. Yandell, J. H. Etheridge).

It may be also as a regulator of the nervous centers that the infusion of coca known as thé Mariani produces such marvelous results in mountain-sickness, in sea-sickness, and in the vomiting of pregnancy. It is well remembered how this preparation sustained the illustrious General Grant during several months (Cuffer, Letellier, Dérrécagaix, Trossat, Bouloumie, Dechambre, Fordyce Barker, G. F. Shrady, J. H. Douglas, H. T. Hanks, G. R. Fowler, J. M. Keating).

From a psychological point of view and from mental pathology it may be stated that coca is the only drug which successfully combats melancholia, low spirits, and all forms of depression of the nervous system, upon which it acts "like fulminate," to use the felicitous expression of Professor Gubler.

Graves's Disease.—"A case of Graves's disease in the Academical Hospital at Upsala, under the care of Dr. I. Aug. Hammer," says the *Lancet*, "tends to confirm Benedikt's view that the cervical branch of the sympathetic is not affected in this disease. *A priori* it seemed probable enough, as exophthalmos had developed more rapidly on the left side, and at the same time sensibility over the superior cervical ganglion of the left side existed, together with long-standing headache affecting the left side, and partaking of the character of paralytic hemicrania. The result of microscopic examination was, however, quite negative. In twenty-two post-mortem examinations in Graves's disease, published from 1860 to 1887, the sympathetic nerve was found quite normal in fifteen; in the other cases, either unilateral atrophy of the nerve elements—especially of the ganglion cells—was found, or the connective tissue was hypertrophied, or these two conditions coexisted."

Ergot in Cholera.—"Surgeon-Major Comerford, of India, has recently been using the fluid extract of ergot with marked success in the first stages of cholera and in severe diarrhœa. The drug was used hypodermically in ten-minim doses. In every instance its use was followed by complete success, the diarrhœa being quickly checked and collapse averted. These results were, however, only obtainable during the first stages of the disease."—*Medical and Surgical Reporter.*

A CASE OF DIABETES MELLITUS IN A CHILD FIVE YEARS OLD.

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The rarity of diabetes mellitus in childhood makes the following case worthy of record. I saw the case with Dr. J. J. Youtsey, of Alexandria, Ky., in July, 1888, and am indebted to him for the following notes:

The child was five years and eleven months old when the symptoms of disease were first noticed. Dr. Youtsey saw the case for the first time on July 25th. Up to this date the parents, who were German farmers, had not thought their little girl seriously sick, although they knew she had not been quite well for some time. The mother remembered that in April, three months before, the child had begun to lose flesh, but nothing was thought of it at the time, as she had a good appetite and showed no other indications of sickness. She continued to lose in weight and strength, and during the past few weeks had had an unusual appetite and thirst, and had passed very large quantities of urine. During all this time the child had gone about and had not complained, and for this reason the parents did not think her sick enough to demand medical attention until July 25th, when the doctor was sent for. At this date her temperature was 99·75° F. and her pulse 112. She was not restless and had no pain, but was quite weak and very much emaciated. The voracious appetite which had characterized her sickness had disappeared two days before, but the insatiable thirst continued. She was passing daily from six to seven quarts of colorless urine, with a specific gravity of 1·035 and containing a large percentage of sugar. The child was given fluid extract of ergot and placed upon a diabetic diet.

July 28th.—Temperature 98°, pulse 116, amount of urine six quarts; child very weak and dull; no pain.

29th.—Died at 10 A. M.

WHAT SPECIAL MECHANICAL TREATMENT HAS PROVED MOST SERVICEABLE FOR EACH VARIETY OF REDUCIBLE AND IRREDUCIBLE HERNIA?*

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ASSISTANT SURGEON, HERNIA DEPARTMENT,
HOSPITAL FOR RUPTURED AND CRIPPLED, NEW YORK.

At the Hospital for Ruptured and Crippled of this city I have had an opportunity to treat mechanically many cases of hernia, the average daily attendance being between forty and fifty patients. While it is found that the simple and inexpensive truss of Dr. Knight, the founder of the hospital, is satisfactory in a large proportion of cases, it is necessary occasionally to resort to other forms. The management is liberal enough to permit the use of any truss that the medical staff may approve.

Last year's observations, like those of previous years, have demonstrated that no special form of truss is applicable to all cases.

Inguinal Hernia.—The great majority of cases being inguinal, my remarks will for the present be directed to

* Read before the New York State Medical Association, September 26, 1889.

this variety. For convenience and practicability I have divided it into three degrees, as follows:

1. A simple bubonocele, where the viscus remains in the canal.

2. The hernia is without the external ring, but the canal remains oblique or intact.

3. When the canal is obliterated, and the external ring is enlarged. This last degree is practically a direct hernia.

The difficulty with which herniæ of the first and second degrees are retained is usually not great when any form of truss is employed. The most satisfactory treatment has been accomplished by the following five forms of truss:

1. The spiral spring, of which there are many modifications, is too well known to call for a description. This style is especially adapted to patients that require perfect freedom of the abdominal walls, as only a leather strap is in front. In cases of the third degree it is often necessary to attach a perineal strap; even with this procedure a few exceptionally difficult cases can not be retained.

2. The Knight has a band that is almost elliptical and extends about three fourths around the body; on the end is attached a malleable shank, with a round or oval pad. The band should be so tempered that it can be fitted to the body after it is covered. The mechanism is very simple, and, with the proper adjustment of the shank, there are very few cases even of the third degree that are unmanageable. The addition of a perineal strap assists greatly in keeping the pad in position. A double truss can be made by attaching another shank about four or five inches from the end of the band that crosses the abdomen.

3. This differs from the foregoing in that it has no shank. The Seeley, which is covered with hard rubber, and the celluloid of Pennfield, are the most durable ones of this form. This truss is better suited to the first and second degrees, because pressure does not have to be made so low. It is also applicable to the third degree, but is somewhat less efficient than the Knight.

4. The complete band is represented by the Hood. This truss has a tempered bar on each side that extends from the sacro-lumbar joint to the inguinal region, where it is attached to a slotted steel plate, and these are connected by a bar that is considerably heavier than those of the side. The pads being also slotted, allows the truss to be modified to suit most all forms of inguinal hernia. With a well-fitting band, the antero-posterior pressure can be regulated by the thickness of the pad. Only in extreme cases of the third degree does a large pad have to be employed.

5. A truss that has been quite efficient in cases with corpulent abdomens and large rings is the complete band with a shank. This is simply a combination of the Hood and Knight (See cut.) The band, which is a single piece of bar steel, is fitted to the pelvis and abdomen with the patient standing. It is especially important that the band should come just beneath each anterior superior spinous process to prevent upward displacement. Although the band crosses the lower portion of the abdomen, it need not restrict its movements, because it can be arched forward without decreasing the usefulness of the truss. The shank has to be slightly longer than on the Knight, but otherwise it is identical. The band has about the same dimensions as that of the Hood. The use of this truss has been limited to



those cases that were especially difficult to retain, and care has been taken to get a perfect fit in each instance. But for the ordinary cases of inguinal hernia it is quite unnecessary to make a truss for each when such varieties of form are at our disposal.

Femoral Hernia.—As the anatomical relations are much less varied in femoral than inguinal hernia, it is unnecessary to make any subdivision. This form of hernia is very rarely difficult to retain, however simple the appliance may be.

The two styles of truss that are best adapted to its treatment are the spiral spring and the Knight.

Umbilical Hernia.—The most satisfactory treatment of umbilical hernia in children has been with rubber adhesive plaster and a small pad. The plaster should not be changed more frequently than once a week, and should be allowed to remain two weeks if no excoriation is produced. In patients past three years a French umbilical truss can be applied, but difficulty is often encountered in keeping the pad in position. The percentage of incurable cases in children is very small, while with adults it is the reverse. As only palliative measures are usually attempted with the latter class, it is found that the abdominal supporter answers this purpose admirably.

Irreducible Hernia.—In the majority of cases of irreducible hernia of the inguinal and femoral types operative treatment is advised; but there is a certain number of cases of epiplocele whose symptoms are slight and who decline to be operated upon. In this class of cases the application of a simple spica with a soft pad, reapplied every day, often accomplishes partial or complete reduction after a week or ten days. This method has been chiefly effective in cases of femoral hernia.

Irreducible Umbilical Hernia.—As irreducible umbilical hernia is almost exclusively met with in the adult, rarely are any more than palliative measures attempted. Should no symptoms of incarceration be present, the application of an abdominal supporter usually partially reduces the mass, and this can be still further assisted by adding a large flat pad.

A New Cure for Headache.—"Several Moorish envoys have arrived in France. They are accompanied by a native doctor, who, judging from an account received of his *modus operandi* from the Phocæan city, seems rather given to the adoption of heroic remedies. A negro servant had a headache, and, as he had vainly applied slices of lemon to his throbbing temples, the medical gentleman took him in hand. Violently seizing the skin between the patient's eyebrows, the 'doctor' bit it till it bled, and then, taking hold of the man's ears, he nearly pulled them off. But he worked a rapid cure. The headache was gone, at least so said the unlucky patient, and he ought to have known."—*British and Colonial Druggist.*

THE
NEW YORK MEDICAL JOURNAL,
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NEW YORK, SATURDAY, DECEMBER 7, 1889.

THE SENSE OF SMELL.

THERE is no other cranial nerve which presents so much to puzzle the physicist, the anatomist, and the physiologist as the olfactory. The course of its fibers from the nasal mucosa to the cortex in the temporo-sphenoidal lobe is devious and obscure, but the phenomenon of matter of various kinds imparting the sensation of odor by contact with the periphery of the first nerve is still more mysterious. With regard to light and color and all the sounds of the octave, we have long been able to conceive of their reception and differential appreciation by the cortex as due to vibration and variation in vibration rates. The wave-theory accounts satisfactorily for these visual and auditory phenomena.

There are some well-known facts concerning the olfactory sense which have always been matters of daily familiarity, but which we have not as yet scientifically interpreted. For instance, some odors, though mingled together, can still be dissociated and recognized by the olfactory nerve-ends, whereas others, on the contrary, overwhelm one another, so that one only may be perceived, the other being completely suppressed. This antagonism has been little studied, and has been generally dismissed by the physiologist under the assumption of a chemical process occurring in the mixture. As illustrating this internecine warfare among smells, the odor of almonds conquers that of musk; certain ethereal oils destroy the unpleasantness of iodoform; orris-root is employed against bad breath; sulphuric ether overcomes Peruvian balsam; camphor makes the odors of the oils of lemon and juniper, of petroleum, of cologne, and of onion disappear; and coffee and cloves have the reputation in our drawing-rooms of being inimical to certain spirituous exhalations.

There seems, then, to be a sort of strife between odors of various kinds—a strife inexplicable upon any simply chemical theory; and it is more than probable that the vibratory hypothesis must needs be accepted to account for the sensation of smell as well as for those of light and of sound. Not long ago Professor Haycroft ("Brain," July, 1888) made some investigations upon the olfactory sense, from which he drew the conclusion that the sense of smell as well as that of taste depended upon the rate of vibration of gaseous particles, and he found, moreover, a relation existing between the molecular weights and vibrations of bodies and the odors which they exhaled.

More recently Dr. Zwaardemaker, of Utrecht ("Fortschritte der Medicin," Oct. 1, 1889), has been studying the same subject in a manner to throw additional light upon the difficult problem. He has constructed an instrument which he calls an olfactometer. It consists simply of a glass tube, one end of which curves upward to be inserted into the nostril. A shorter movable cylinder made of the odoriferous substance, or a cylinder of filter-paper moistened with any redolent matter, fits over the straight end of this glass tube. When one inhales through the glass tube no odor will be perceived so long as the outer cylinder does not project beyond the inner tube; and the further we push forward the outer cylinder the larger will be the surface of scented substance presented to the in-rushing column of air, and the stronger will be the odor perceived. The cylinder may be made, for instance, of ordinary yellow wax, balsam of Tolu, gum benzoin, cacao-butter, paraffin, Russia leather, vulcanized rubber, etc.; or it may be fashioned of porous earthenware, which may be saturated with a known solution, either in water or in oil, of any odoriferous compound whose qualities it is desired to investigate. Whatever sort of cylinder is used, it should be of a fixed size, graduated in millimetres, 10 centimetres long by 8 millimetres in diameter.

In employing the instrument one inhalation is taken at a time. A normal sensory organ under ordinary circumstances and at 15° C. will always require the same quantity of scented material for the production of the minimum of perception. This normal perceptible minimum can be accurately determined and mathematically expressed by means of the graduated cylinder. In this manner one odor may be compared with another. The unit of olfactory irritability may be termed an olfactor, its value being equivalent to the number of millimetres of the cylinder necessarily exposed in order to obtain the faintest smell from the substance used. Thus, at 15° C., the olfactor of cedar-wood has been found to be 20 mm., and that of paraffin, Russia leather, and gum benzoin each 10 mm., etc.

Should one desire to study the effect of mingling two odors, it is only necessary to saturate the cylinder of the olfactometer with one scented body and another cylinder with another. By the juxtaposition of the ends of the two cylinders, the lengths being accurately determined, the air rushing in upon inhalation through the tubes must take up and mingle the two odors. The author found by this means that whenever one outweighed the other, he perceived the one or the other smell, but that when both were in exact equilibrium, either no odor at all was perceived or at most a very weak and uncertain impression was made, which partook of the qualities of neither of the two substances employed.

But as some sort of union of the gaseous molecules could not be altogether excluded by this method, such as an indifferent osmotic or physical combination preventing sensory perception, it was deemed expedient to make use of a double olfactometer in experiments of this character. This instrument consists merely of two of the olfactometers described above, one for each nostril. The difficulty that the two nasal organs may differ in their sensitiveness must be borne in mind, and the olfactor of each determined. We may then employ different scented substances, either in minimal quantities or up to two or three olfactors. By the use of the double olfactometer one may easily convince himself that even in this procedure one odor will overwhelm another, rubber, for instance, causing the

smells of paraffin, wax, and Tolu balsam to disappear. Even with very strong excitants there is never a mingling of sensations. Either the one or the other odor is distinguished by one or the other nostril, until, by careful equilibration of the two, no sensory effect is at all perceived. Sensibility is absolutely eliminated. Each nasal half becomes in this manner completely insensible to the odor inhaled through it, although its sensitiveness is really the same as before.

A striking example of this may be observed in making use of a two-per-cent. solution of acetic acid in one cylinder and a one-per-cent. solution of ammonia in the other. Both are powerful sensorial excitants. By pushing first one and then the other cylinder forward on the nasal tubes, first one and then the other odor is strongly perceived, while at one position, the point of equilibrium, no smell of any kind is noticeable. Were such a disappearance of the effluvia observed to take place in the open air, it would naturally be supposed to be due to a chemical combination of the two substances in the form of an odorless salt of ammonium. But under the circumstances such an explanation is out of the question, and the phenomenon is explicable only upon physiological grounds analogous to the well-known compensation occurring in the gustatory sense. Dr. Zwaardemaker is, however, averse to offering any hypothesis in elucidation of the problem.

We are constrained to believe that there is something in the vibratory theory, already applied to sight and hearing, to account for these remarkable facts in the domain of smell, and that is the interference of molecular waves with each other, producing in the former cases darkness and silence and in the latter temporary anosmia.

MEDICAL PRACTICE IN OLD TIMES.

It is not in reading the works of ancient medical authors that one has glimpses of the general practitioner or specialist of that day in their relations to the people. From the works of Hippocrates and Galen, and from those of the skilled Arabian physicians, we learn many interesting medical and surgical facts, some of which, to tell the truth, have only recently been rediscovered and relabeled by modern practitioners unfamiliar with the experiences of their ancient *confrères*. But it is to popular writers—the poets and philosophers of the past—that we must turn for those side-lights which show us the doctor himself in his various practical attitudes. In the course of some desultory reading we may meet with such passages as abound, for instance, in the works of Epictetus. He was born toward the end of the reign of Nero, somewhere in Phrygia, and, although a Greek and a philosopher, was the slave of a Roman captain, as it was fashionable in those days for prominent Romans to add living poets, wise men, and athletes to their anthropological collections acquired from every zone.

Epictetus pictures the general practitioner in Rome in this wise: "Going about as a physician does and feeling pulses, saying to one you have a fever, to another you have a headache or the gout; to one, abstain from food; to another, eat, or do not use the bath; to another, you require the knife or the cautery." (Book iii, chap. 22.)

Here is a little side-light upon household remedies, those familiar crotchets of the old ladies of Rome: "Eye salves are not useless to those who use them as they ought and when they ought. Fomentations are not useless. Dumb-bells are not useless. Let him who is suffering from dysentery ask me if vinegar is useful. Seek first for the discharge to be stopped and the ulcers to be closed." (Book ii, chap. 21.)

Antisepsis was exceedingly popular, as the following bears witness: "For this reason, water, oil, hands, towels, scrapers, nitre, sometimes all other kinds of means are necessary for cleaning the body." (Book iv, chap. 11.)

Here is a query for the ophthalmologist: "What is more paradoxical than to puncture a man's eye in order that he may see?" (Book i, chap. 25.)

The climatologist had also his place in Rome: "Thus also physicians send those who have lingering diseases to a different country and a different air." (Book iii, chap. 16.)

We have an occasional glimpse of the obstetrical service of those days: "To say nothing of the rest, he must have a vessel for heating water to bathe the child; wool for his wife in labor; oil, a bed, a cup." (Book iii, chap. 22.)

The allusions to the aliptic art are exceedingly numerous, for the *aliptæ* were the *masseurs* and *masseuses* of that day. Massage and inunction were far more widely employed then than even now.

It seems that, through some defect in the laws perhaps, diploma mills must have been run very fast in Rome in the time of Nero and his successors. There must have been more doctors than were actually needed, and the struggle among them for practice must have presented the same edifying spectacle that we behold to-day in various places. Otherwise, how are we to explain the following? "What physician invites a man to be treated by him? Indeed, I now hear that even the physicians in Rome do invite patients, but when I lived there the physicians were invited." (Book iii, chap. 23.) "If you like, take your place in the agora and proclaim your syllogisms for sale like dealers in physic!" (Book iii, chap. 24.)

Were the foregoing passages written eighteen centuries ago or yesterday? Coming down to a little over two hundred years ago, to London, Mr. Samuel Pepys, among his famous commentaries upon the life and fashions of that time, especially at court, does not forget to mention the great representatives of our profession with due respect and honor. What color could he have added to this sketch to bring the doctors in a more life-like manner before our mind's eye? It was written in his "Diary," September 19, 1664: "Dr. Pierce tells me, when I was wondering that Dr. Fraizer should order things of the Prince in that confident manner, that Fraizer is so great with my lady Castlemaine, and Stewart, and all the ladies at court, *in helping to slip their calves when there is occasion*, and with *the great men in curing of them*, that he can do what he please

with the King, in spite of any man, and upon the same score with the Prince; they all having more or less occasion to make use of him."

MINOR PARAGRAPHS.

DEEP INCISIONS INTO THE SOFT PARTS IN DIFFICULT CASES OF LABOR.

A BOLD operation is proposed by Dührssen in the "Prager medicinische Wochenschrift," which he professes to have performed ten times. In each case the mother was saved, but all the children had died during the prolonged labor. Two of the mothers were in danger from eclampsia at the time of the operation. It is said to be indicated in old primiparæ where there is great rigidity of the parts with weak pains, when there is danger from eclampsia, after premature rupture of the membranes, when the pelvis is flattened so that the head of the child will not engage in the superior strait, and when the cervix is rigid or cicatricial as a result of venereal disease, carcinoma, ulceration, or operation. The technique is as follows: No speculum is required. The cervix is seized with the fingers or with forceps, and when the tissues are well stretched an incision 3 ctm. deep is made toward the tuber ischii on each side, extending 4 ctm. up the vagina. The child is then easily removed. The hæmorrhage is slight and easily controlled. After the birth of the child the wounds are drained and treated with iodoform. In cases of eclampsia an anæsthetic is not necessary. The chief danger seems at first to be that of the wounds being torn to a greater depth, but Dührssen asserts that there is no danger of this, inasmuch as the canal thus formed is sufficiently large to allow of the passage of the child's head without causing sufficient tension to tear the wounds any deeper.

"BISULPHATE OF MORPHINE."

A LAWSUIT interesting to the members of the medical profession as well as to apothecaries is now before the courts in Montreal. A French Canadian practitioner, wishing to prescribe quinine for a young child, through absent-mindedness wrote upon his prescription *bisulphate of morphine* instead of *bisulphate of quinine*. The paper was taken to the shop of a well-known apothecary, whose assistant, perceiving an error, at once, after the manner of inexperienced dispensers, attempted a substitution, and made up the powders with sulphate of morphine. The result was fatal. And now a curiously complicated question has to be settled by the judges. The father of the child has sued the doctor because it was through his absent-mindedness that the child lost its life. The doctor has sued the apothecary for all the damages to which the father's suit may put him. It is true, he pleads, that he ordered bisulphate of morphine, and that, if such a substance existed and if the apothecary had sent it to the child, he would be responsible, but he never ordered *sulphate* of morphine, and it was the sulphate of morphine that killed the child. It will be interesting to know the result of the trials.

LEAD POISONING FROM GINGER ALE AND SODA-WATER.

SEVERAL cases of lead poisoning have occurred within the last few months in Montreal which have been traced to the use of soda-water and ginger ale kept in bottles with metallic stoppers. A patient in the Montreal General Hospital, who is at present the subject of wrist-drop and other saturnine manifestations, acknowledges having indulged very freely in soda-water at the bar where he was serving. There was a distinctly marked lead line, and lead was found in the urine. Samples of the "cream" soda have been analyzed by Dr. Ruttan at the university laboratory, and found to contain a very large quantity of lead.

A LARGE GIFT FOR HOSPITAL PURPOSES.

A VALUABLE bequest has befallen Pittsburgh, Pa., for hospital purposes, under the will of John H. Schoenberger. Eight hundred thousand dollars and a valuable block of ground have been bequeathed to establish the St. Margaret's Memorial Hospital for Incurables, to be administered under the auspices of the Episcopal Church. This large endowment will, in all, reach to nearly a million dollars in value.

CHRIST HOSPITAL, JERSEY CITY.

A NEW hospital building was dedicated in Jersey City, on November 13th, by a notable company of bishops and other clergy, the Governor of the State, and the mayors of two cities, along with many medical men. This hospital will be superintended by the sisterhood of St. Margaret, of the Episcopal Church, but its charities will be dispensed regardless of creed or denomination. There will be an out-patient department, a contagious disease isolation ward, maternity wards, eye and ear wards, and an ambulance annex. Dr. A. C. Post and Dr. Joseph Hilton are among those newly appointed to the consulting staff.

RETINAL CHANGES IN CHRONIC ALCOHOLISM.

THE "British Medical Journal" records, in its report of the Ophthalmological Society of the United Kingdom, the following results of ophthalmoscopic and microscopic examinations (made by Mr. Edmunds and Mr. Lawford) of the retinæ of a man who had died of alcoholic paralysis and heart disease. The ophthalmoscopic changes consisted of widespread haziness of the retinæ, without hæmorrhage or localized exudation. Sections of the retina revealed slight œdema of the nerve-fiber layer in the immediate vicinity of the optic disc and well-marked œdema spaces in the outer granule layer. In these spaces there were round and oval masses of clear homogeneous effusion. The only other recorded similar case, so far as the authors know, is one reported by Dr. Sharkey.

THE PENNSYLVANIA "UNIVERSITY PRESS."

THE friends of the University of Pennsylvania are about to form a syndicate of publication, under the name of "The University Press." Their purpose is to control the present publications in the interests of the University and issue such new ones as seem to be needed. Four magazines will probably be on foot at the beginning of the new year. Among the supporters of this undertaking are Dr. D. Hayes Agnew, Dr. H. C. Wood, Dr. James Tyson, Dr. John Marshall, Dr. Edward Martin, Dr. J. H. Musser, and Dr. S. D. Risley. Dr. O. W. Holmes is named as having promised to contribute to the magazines.

MEDICAL LIBRARIES IN THE WEST.

A CHICAGO correspondent of the "Medical News" complains that that city has no good medical library. He shows that, although a large sum is presently to be invested in the Newberry and Crerar libraries, medicine has no part in the matter; and the Chicago Public Library seems entirely ready to get rid of its medical "incubus." The only important medical collection within the valley of the Mississippi, he says, "is located at Milwaukee, and is a private institution." The Chicago profession must, he thinks, rely wholly upon themselves and must

sink all other differences and antagonisms in order to build up their newly proposed Medical Library Association.

THE DOCTOR IN GENERAL LITERATURE.

Under the title of "The Pardon of Ste.-Anne d'Auray, and other Breton Pictures," Dr. William Perry Northrup contributes to the current number of "Scribner's Magazine" an exceedingly clever portrayal of some of the peculiarities of the people of Brittany, interspersed with brief but telling comments. We have before had occasion to speak of Dr. Northrup's work in general literature, and we hope that opportunities of referring to it in the future will not be lacking.

THE CHILDREN'S AID SOCIETY.

The thirty-seventh annual report of the New York Children's Aid Society shows that 38,850 children were under observation and cared for, more or less, during the year; 4,500 children were received at the Summer Home at Bath, and 1,400 received the aid afforded by the Sick Children's Mission; 850,000 meals and 220,000 lodgings were supplied at the six lodging-houses and thirty schools.

A FIREMAN'S WARD.

A movement is on foot to raise a fund for the establishment of a ward in some prominent hospital for sick and injured firemen and fire-patrolmen. Mr. Chauncey M. Depew and a number of well known citizens are reported to be interested in this beneficence, and its success is probably assured.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending December 3, 1889:

DISEASES	Week ending Nov. 26.		Week ending Dec. 3.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	30	6	24	10
Scarlet fever	53	7	40	2
Cerebro-spinal meningitis	1	1	0	0
Measles	41	5	30	5
Diphtheria	81	21	73	17
Varicella	6	0	5	0

The "Lehigh Valley Medical Magazine."—The Medical Association of the Lehigh Valley is about to publish a quarterly journal, of about two hundred pages annually, to further the interests of the profession in that part of Pennsylvania.

The "Country Doctor."—Dr. J. T. McColgan, of Arcot, Tenn., has a journalistic conception under consideration and expects to bring out a new monthly, to be called "The Country Doctor," on or about January 1, 1890.

The Death of Professor Richard Volkmann, of Halle, is announced. He was well known in this country, not only by his personal work as a surgeon, but also by his exceptionally valuable collection of variorum "Klinische Vorträge."

The late Dr. Walter De Forest Day.—Dr. Day, whose death occurred on Wednesday of last week, had for many months been known to be the subject of an aortic aneurysm, and had been unable to continue his meritorious career in the service of the Health Department and as a teacher in the College of Pharmacy. His industry, precision, and amiable qualities will be much missed by those with whom he was brought into contact.

The Medical Microscopical Society of Brooklyn.—At the meeting of Wednesday evening, the 4th inst., the order for the evening was a paper on "Technical Methods for the Central Nervous System," by Dr. E. H. Wilson.

Change of Address.—Dr. L. Bolton Bangs, to No. 31 East Forty-fourth Street.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from November 18 to November 30, 1889:*

Loring, Leonard Y., Major and Surgeon. By direction of the Secretary of War, the extension of leave of absence on surgeon's certificate of disability granted in S. O. 241, October 16, 1889, from this office, is still further extended one month on surgeon's certificate of disability. Par. 3, S. O. 268, Headquarters of the Army, A. G. O., November 16, 1889.

Moseley, Edward B., Captain and Assistant Surgeon, is relieved from duty at Whipple Barracks, Arizona, to take effect upon the expiration of his present leave of absence, and will report in person to the commanding officer, Fort Clark, Texas, for duty at that station, reporting by letter to the commanding general, Department of Texas. Par. 4, S. O. 268, A. G. O., November 16, 1889.

Fisher, Walter W. R., Captain and Assistant Surgeon, is relieved from duty at the Presidio of San Francisco, Cal., and will report in person to the commanding officer, Fort Assiniboine, Montana, for duty at that station, reporting by letter to the commanding general, Department of Dakota. Par. 4, S. O. 268, Headquarters of the Army, A. G. O., November 16, 1889.

Ebert, Rudolph G., Captain and Assistant Surgeon. The leave of absence on surgeon's certificate of disability granted in S. O. 109, May 11, 1889, from this office, is extended six months on surgeon's certificate of disability. Par. 13, S. O. 270, Headquarters of the Army, A. G. O., November 19, 1889.

Havard, Valery, Captain and Assistant Surgeon. By direction of the Secretary of War, the extension of leave of absence granted in S. O. 240, October 15, 1889, from this office, is further extended one month. Par. 1, S. O. 272, A. G. O., November 21, 1889.

Ball, R. R., First Lieutenant and Assistant Surgeon, Fort Riley, Kansas, will proceed to Fort Sill, Indian Territory, and report to the commanding officer for temporary duty at that post. Par. 2, S. O. 173, Department of the Missouri, November 21, 1889.

Pilcher, James E., Captain and Assistant Surgeon, is relieved from duty at Fort Ward, New York Harbor, by direction of the Secretary of War, and will report in person to the commanding officer, Fort Clark, Texas, for duty at that station, reporting also by letter to the commanding general, Department of Texas. Par. 3, S. O. 276, A. G. O., November 26, 1889.

Cochran, John J., Captain and Assistant Surgeon. Leave of absence for fifteen days is granted, to commence about December 1, 1889. Par. 8, S. O. 272, Division of the Atlantic, November 27, 1889.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the two weeks ending November 30, 1889:*

Rush, W. H., Passed Assistant Surgeon. Ordered to the U. S. Steamer Saratoga.

Urie, J. F., Assistant Surgeon. Detached from the Coast Survey Steamer Gedney and ordered to the U. S. Steamer New Hampshire.

Bryant, P. H., Assistant Surgeon. Detached from the Norfolk Hospital and ordered to the Coast Survey Steamer Gedney.

Smith, George T., Assistant Surgeon. Detached from the Army and Navy Hospital, Hot Springs, Ark., and ordered to the Naval Hospital, Norfolk, Va.

Stone, E. P., Assistant Surgeon. After examination for promotion, to await orders at Boston, Mass.

Gunnell, F. M., Medical Director. Placed on the retired list November 27, 1889.

Gaines, J. H., Surgeon. Ordered to duty at Army and Navy Hospital, Hot Springs, Arkansas.

Society Meetings for the Coming Week:

Monday, *December 9th:* New York Academy of Medicine (Section in Surgery); New York Ophthalmological Society (private); New York Medico-historical Society (private); New York Academy of Sciences (Section in Chemistry and Technology); Lenox Medical and Surgical Society (private); Boston Society for Medical Improvement; Gynæcological Society of Boston; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private); Baltimore Medical Association.

Tuesday, *December 10th:* New York Medical Union (private); Medical Societies of the Counties of Chemung (quarterly—Elmira), Oswego (semi-annual—Oswego), Rensselaer and Ulster (quarterly), N. Y.; Newark, N. J., and Trenton, N. J. (private), Medical Associations; Morris, N. J., County Medical Society (semi-annual); Baltimore Gynæcological and Obstetrical Society.

Wednesday, *December 11th:* New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medico-legal Society; Medical Societies of the Counties of Cayuga (semi annual), Cortland (semi-annual), and Montgomery (quarterly), N. Y.; Pittsfield, Mass., Medical Association (private); Philadelphia County Medical Society.

Thursday, *December 12th:* New York Academy of Medicine (Section in Pædiatrics); New York Laryngological Society (annual); Society of Medical Jurisprudence and State Medicine; Brooklyn Pathological Society; South Boston, Mass., Medical Club; Pathological Society of Philadelphia.

Friday, *December 13th:* New York Academy of Medicine (Section in Neurology); Yorkville Medical Association (private); Medical Society of the Town of Saugerties.

Saturday, *December 14th:* Obstetrical Society of Boston (private).

Letters to the Editor.

DANGER IN THE RHEOSTAT.

50 N. Fourth Street, Columbus, O., *November 29, 1889.*

To the Editor of the New York Medical Journal:

Sir: A rather unique and painful accident happening in my practice a few days since opened my eyes to a new element of danger in the use of electricity, and I make haste to lay it before the profession. Nearly all writers and teachers of electrotherapeutics on this side the Atlantic denounce the collector and advise the substitution of the rheostat. They maintain that the successive turning on of cells through the collector is accompanied by disagreeable shocks to the patient, and that, as certain cells are habitually used to the exclusion of others, the battery becomes unevenly exhausted, and will require more care. Furthermore, the leash of wires running from the individual cells to the collector multiplies the chances of derangement and adds to the uncertainty of action. All this is true, and, although I was possessed of a new and elegant sixty-cell Leclanché-Gonda battery with a collecting board of the most approved pattern, I was much annoyed by these self-same conditions and added hydro-aluminium rheostat. It worked admirably, and I was seriously contemplating the entire abandonment of the collector when my rheostat began to work imperfectly. I first noticed that, owing to the increased resistance caused by its interposition, my milliampèremeter did not register much more than half as much with the same number of cells as without it, so that greater battery power was needed to produce the same effect. I next noticed irregular and erratic excursions of the needle and simultaneous complaints on the part of the patient that the electrical flow was irregular. I now gave the rheostat a thorough overhauling and cleaning, as I supposed; and at this juncture a young lady whom I had been treating for stenosis of the uterine canal presented herself for treatment. The electrodes being adjusted and the full force of the battery being made available, the current was turned on through the rheostat until the needle stopped at 70. All of a sudden the patient complained, and, seizing the wheel of the rheostat to turn off the current, I was horrified to see the needle bound up to nearly 350 milliampères. Simultaneously the patient uttered a series of shrieks, cried out that she was dying, and lapsed into unconsciousness. Turning off the rheostat had no effect on the electrical current, and, stepping to the collector, I turned off the current as rapidly as might be without creating too much shock. Addressing myself to the patient, who lay pale and death-like, it was fully two minutes before she gave evidence of returning consciousness. Fortunately, she was a woman of good physique, and the effects soon passed off. Had she been a subject of heart disease or other serious organic lesion, it is problematic what the result might have been. On examining the rheostat critically, I found that a small flake of the smegma-like deposit that forms on the aluminium plates had floated out and adhered to the central plate, thus forming a connection that allowed the almost full force of the battery to flow through the patient independently of the immersion. I have for the time being discarded the rheostat, preferring the inconveniences, but greater safety, of the collector. Should I return to its use, I shall only turn on so many cells at once as I think the case may need.

D. Tod Gilliam, M. D.

THE TYPHOID SPINE.

189 Green Lane, Manayunk, Pa., *December 1, 1889.*

To the Editor of the New York Medical Journal:

Sir: Your issue of 30th ult. contains an article by Dr. V. P. Gibney entitled "Typhoid Spine." Less than one year ago a case came under my care which can be justly placed under that title. The history is briefly as follows:

Ella S., aged twenty-two, single. Mother living, the subject of diabetes mellitus. Father and one sister dead, cause unknown. One brother living and healthy. January, 1889, attacked with typhoid fever. The fever ran its usual course with no marked irregularities. Indeed, the only complaint made was of rather an unusual amount of pain in the loins. The temperature was normal at the end of the fourth week. She complained of nothing except excessive pain in the lumbar region on movement. Toward evening the pain would become almost unbearable—so great that anodynes were used. Careful examination was made of the lumbar region. There was no

fullness and there was no marked tenderness, but great pain on movement, always referred to the right lumbar region. The urine was normal. Vaginal, rectal, and abdominal examinations were negative. There was no pain on movement of either hip. No tenderness along the sciatic or crural nerve. Blisters over the seat of pain and continued counter-irritation were tried without much effect. After four weeks' rest in bed or a reclining chair, she was able to be out and rapidly improved. About the ninth or tenth week from the beginning of the fever she went to work. She is a finisher in a paper mill and stands all day. After one week's work she was suddenly seized with severe pain in the old situation, which again confined her to bed. She was again examined carefully with entirely negative results, except that pain was excessive in the lumbar region on attempting to rise.

Rest was enjoined, potassium iodide was given with apparent benefit, and it was suggested to fit a jacket in order to enable her to be about. She became dissatisfied and passed into the hands of a "worm doctor." After several weeks of rest in bed, however, she again recovered and has been at work for the past three or four months and is apparently well.

A diagnosis of a low grade of inflammatory trouble about the ligaments of the lumbar spine was made.

M. H. Fussell, M. D.

OCULAR DEFECTS AND THE NEUROSES.

New York, *November 29, 1889.*

To the Editor of the New York Medical Journal:

Sir: I find myself very much surprised by a leading article in your Journal of November 30th. I refer to one entitled "Ocular Defects and the Neuroses." I was present at the meeting of the Neurological Society there referred to. I heard the report of the committee, the protest and answer of Dr. Stevens, the evidence of the extra-official commission chosen by Dr. Stevens himself, and yet I failed to understand, as stated by your editorial, that six patients out of fourteen had been improved by ocular tenotomy. Now, if such a complete misapprehension has occurred on my part, it is possible that a similar one has affected other minds. I write this to ask, if it be not already the attention of your Journal so to do, that you will publish the report of the commission and the reply of Dr. Stevens in full. I hope I am not seeking too much, for it seems to me to be in the interests of fair play that those of us who have been assailed as being behind the age, because we have never been able to accept the doctrine that epilepsy and chorea are cured by operations on the muscles of the eye, should not now be deprived of the support of evidence of an impartial commission, which has presented a report overwhelmingly in favor of our side of the question.

D. B. St. John Roosa, M. D.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN NEUROLOGY.

Meeting of November 8, 1889.

Dr. Landon Carter Gray in the Chair.

Chronic Delusional Insanity; Paranoia.—Dr. Matthew D. Field reported the histories of cases of this affection as follows:

Case I.—W. E. L., male, aged twenty-nine, a photographer. The patient was committed for examination as to his sanity by Judge Murray on July 3, 1888. The history was obtained from his sister. The patient was the youngest child of a family of four children. His father was twenty years older than his mother, being fifty-six years of age when he died. The patient's father had suffered from consumption for several years, and had died a few months after the birth of the patient. During pregnancy with this child the mother had been severely taxed physically by the care and nursing of a consumptive husband. The patient had been a weak and sickly baby, and, until after the age of two years, had not been expected to survive. He had received a fair school education, but had never displayed any force of character. The only intimate friend he had ever had became insane some years ago, and was now an inmate of the Bloomingdale Asylum. On account of his delicate health the patient had been petted and indulged, and had never been able to support himself. From boyhood he had been solitary, moody, and irritable, having outbursts of passion from slight causes. Shortly after attaining his majority he went West, where he had remained some eighteen months. His family had known little of his life during this time. When he came home he brought some photographic apparatus, and said that he had acquired that art while away, and had the ambition to become an artist. He stated that he had been victimized and cheated while away. He became more moody than ever, and was sociable with no one, except one of his sisters. At times he would become much excited and harangue, his theme being usually religion. Curious pictures of his own production were found in his room, representing heavenly visions he had seen. He talked to his sister about the star of Bethlehem, and was often found gazing at the sky. He would point out a star and say: "That is the star of Bethlehem; that is my star." He frequently refused food, and said that God fed him. He asserted that he was ordained to perform certain things for the good of the world. He now began to talk more strangely, and the family learned that he had been arrested for creating a disturbance on the street. The patient had a weak face and a silly and pompous manner, poor physique, narrow and highly arched palate. The patient stated that he had been arrested for preaching on the street and attempting to stop the street cars. He had not directly interfered with the cars, but had shouted to the drivers that they were breaking the Sabbath and that the wrath of God would descend upon them, and that he had been commanded to warn them. In 1886 the patient saw three visions. He said they were revelations from God, and that in these visions it was revealed to him that he was to reform the world. These three visions had appeared early in 1886, and had never been repeated. His description of the visions was much confused, but he said he could represent them better by drawings. [The sketches made by the patient were exhibited to the meeting.] In the corners of the drawings the patient had written an explanation and description of the visions. The patient's family took him home and cared for him until September, 1887, when he was again committed for examination. His mental condition had changed but little. The same delusions existed, and the connection with the three visions was just as apparent.

This case had seemed to Dr. Field to be an interesting one of systematized delusions occurring in a feeble-minded individual, where the delusions followed and were built upon vivid visual hallucinations th at had never been repeated. It was the experience of the reader that visual hallucinations were rare in cases of paranoia, and it was still more rare to find them the standing-point of delusions not yet repeated. It was more usual to find auditory hallucinations, and to have them continue and to be

come prominent factors in the delusions. He recalled, however, one other case—that of a man who had attracted considerable attention in New York a few years ago. In his case there had been a single vision, not repeated. This man could give not only the date, with the hour and minute of its appearance, but its actual duration. From the moment of this single vision he had been an altered man.

Case II.—S. D., aged thirty-eight, married, an inventor. The family history on the paternal side was good. The father was a man of education and marked ability, but was intemperate. On the maternal side the mother was consumptive, and the grandfather and grand-uncle insane. The patient was the youngest of four children. The elder sister was a rounded character in everything—educated, refined, and practical. The next was a brother, who was odd, a good thinker, but, from his family connections, noticeably weak in character. This brother's children were markedly bright and capable. The next sister was certainly peculiar. She made much of little matters and was very erratic in actions and conversation, but was at times very entertaining. The patient was a man of magnificent physique. He had displayed marked ability from early childhood. He was considered a genius, was eccentric in some ways, and was always a poor business man. His inventions had given him a world-wide reputation. He was an erratic worker. It was difficult to get him to perfect his inventions, as, after demonstrating the principles, his interest would diminish. Some four years ago he had undertaken the management of a company where he had had much executive and business work to do, as well as the exercise of his own profession. This work had greatly harassed him and he became very irregular in his mode of living. Sleep was interrupted and he drank freely, though rarely, if ever, to intoxication. He became much run down physically, and it was thought best that he should take a rest. He started for Europe with his wife early in December, 1885. Almost as soon as the steamer left the dock he exhibited delusions of persecutions. He became suspicious of everything and everybody, and declared that there was a conspiracy to destroy him. He interpreted every action of his fellow-passengers as relating to himself. When several would be conversing anywhere he would feel sure that they were talking about him. He continued to travel, and every new sight and face suggested some new idea of persecution. After a few weeks his wife induced him to return home, which he seemed glad to do. On the return voyage his delusions became so active as to attract the notice of the other passengers. The patient was seen immediately on his arrival by the speaker, who found him almost completely given up to the contemplation of these delusions. When confined to his own home, where everything was familiar and where no strangers were allowed to see him, he was quite calm and free from these ideas, was a pleasant companion, and ate and slept well. One day the patient called at the office of the speaker and wanted the roof of his mouth examined, which was done, and a small sore discovered, the nature of which was explained to him, but he declared that it was a chancre and he knew just how he had contracted it. While on shipboard he had observed that his cigars were always given him out of a particular box, and that those cigars, infected with syphilis, had been prepared for him. He had been suspicious of the cigars, but had not been able to divine their designs until now. The explanation of this delusion was that the patient had seen a copy of the "Medical Record" that had contained an editorial on the lewd pictures of cigarette girls that were then conspicuously displayed in all of the cigar stores, and remarked that girls who would allow themselves to be photographed in such positions would be likely to acquire venereal disease, and added that it was well known that syphilis had been conveyed in cigars. This was sufficient to convince the patient that the sore in his mouth was a chancre. When it was found that the patient was much more comfortable in his own home, a young man was found to act as a companion and keep a constant watch over him. A workshop was built at home, and here he continued his inventions and made his own models. He had continued to improve up to the present day. The speaker had observed the progress of this case, and no sensory hallucinations had been manifested; there had never been delusions of grandeur.

Case III.—H. F., aged fifty-eight, married, clerk. This patient came to Bellevue Hospital on May 4, 1888, and asked to be sent to the Island. He was much agitated and declared that he had syphilis and had infected his family and visitors to his house. He declared that he had lost all his manhood and that he had the "blot on the brain." He wanted to be sent to the asylum, for he was sure his sons would murder him when they found out how he had wronged them. His sons had taken him home and tried to care for him. On May 22, 1888, the patient had again come to the hospital and begged to be sent to the asylum. He had expressed all the delusions as on the first occasion. He was again taken home. In July, 1888, the patient had come again to the hospital and fairly begged to be taken in. He had told how he had escaped from home by climbing out on the roof and making his way to the street. When it was decided to admit him, he quieted down and seemed much relieved. The patient had declared he was about to die, as the syphilis was consuming him. He believed that his sons had general paresis due to infection from him. The patient probably had had syphilis, but there was no physical evidence of the disease. He was sent to the State asylum at Middletown, N. Y. Under the date of November 26, 1888, Dr. Talcott wrote the speaker that the patient had not changed very much in the character of his delusions until within the past two or three weeks, when he had become more irritable and suspicious, and thought there was a conspiracy to keep him in the asylum. The delusions in this case were systematized and had existed for a long time, certainly six months, almost unchanged. Though hypochondriacal in character, they were logically reasoned out from his false conceptions of syphilis, and upon this all his delusions were founded.

Morel in 1852 had given some observations on the transformation, among the hereditary insane, of hypochondriacal ideas into ideas of persecution and afterward of grandeur. Krafft-Ebing distinguished two kinds of paranoia. First, that with delirium of persecution, which he fully described with its three stages of hypochondria. Second, that of persecution and grandeur and its sub-variety, "quarreling insanity." The speaker thought it would be interesting to learn if this patient developed ideas of grandeur in the future. He did not want to be understood as advocating the classification of this case under the name of paranoia, as he thought the term was being made too comprehensive by some. The patient's age was certainly against paranoia. It was to be regretted that the family history could not be given.

Case IV.—Mary L., aged fifty-six, single, domestic. No family history. On admission to the hospital the patient was in a filthy, neglected condition. She resisted all interference. She said that "her husband was an officer in the upper land." "He first presented himself to me on October 1, 1868." She did not see him when he first presented himself, but was told by God's voice that on the next Sunday he would sit beside her in the pew in church. The next Sunday, October 4, 1868, she saw him in the seat with her, and she described his personal appearance. She had been and was still waiting for her husband to come with a procession and carry her away, as he had

promised to do. At times she was quite incoherent, and spoke of her father being the Heavenly Father's grandfather, etc. In this manner, and by her indifference to her surroundings and neglect of her person, she displayed much dementia. When the duration of the delusions was considered—*i. e.*, twenty years—the dementia was slight. In this case the hallucinations were auditory and were the foundations of the delusions, and continued to form a very important feature of the disease.

Case V.—James M. D., aged thirty-three, single, canvasser. No family history, except from the patient. From his account there was no hereditary insanity. He said that he had always been considered eccentric. A lineman who had known the patient some three or four years ago stated that D. then talked much of one of the leading actresses, and believed that she, as well as many other ladies above his station in life, was in love with him, and that they were constantly making overtures to him. He was suspicious and egotistical, and would think that the actions and conversations of others related to himself. He seemed to have a fear of detectives, and would often leave his work and disappear. His own account of his life was that he had received a common-school education, and when a mere boy had started out to care for himself. For some time he had worked in a factory, and finally went West and was a prospector, and then a miner. In the mines he had made a few thousand dollars, but asserted that he had been cheated out of a fortune. Then he was a telegraph operator, and then a lineman, and lately had been canvassing for Appletons' "Cyclopædia." For years he had been trying to study and explain all natural phenomena, and was writing a work that was to elucidate all such subjects—such as the creation of the world, geology, astronomy, chemistry, etc. He believed that he had been very attractive to ladies, and that they had followed him about in disguise. He assured the speaker that he could have married ladies of rank and fortune. After the presidential election four years ago the patient had sent to Mr. Cleveland a long congratulatory telegram and volunteered his services. The patient had said that he had first seen Miss A. some six years ago, and that he had fallen in love with her and she with him. He had followed her about, as her protector he said, from place to place, and two or three times to Europe. He had never attempted to speak to her but once, and that was when she returned from Europe last September or October to fill her professional engagement in New York. The patient began at once to besiege the lady with letters and frequent calls at her hotel. On the 14th of November he was arrested, and was seen on the following day by the speaker. The patient conducted himself with quite an air of importance, and was much puffed up by the space the newspapers gave to him. He wrote a long statement for publication, which he desired to appear just as he had written it, and he wanted to correct the proof himself. When arrested he was armed with a self-cocking revolver, with five chambers loaded. There was also found in his pocket a sheet of letter paper, at the top of which was the word "Notice," and below was written, "Some time I may be found dead or in a trance; if so, you can safely say I have met with foul play at the hands of A. and that gang. P. S. No matter where my body may be found, ship it to Miss A. She will see that it is interred, and will attend to all the funeral arrangements." The speaker exhibited to the Section the photograph of the patient, and also tracings of his head, which had been made by Dr. Frederick Peterson.

The speaker then read some abstracts from the patient's statements of his own case.

"Piqued Jimmie & Mamie. M. A. visits this country on the sly to see D. After her Jimmie, while supposed to be in a convent in London. Passing over the earlier portions of our

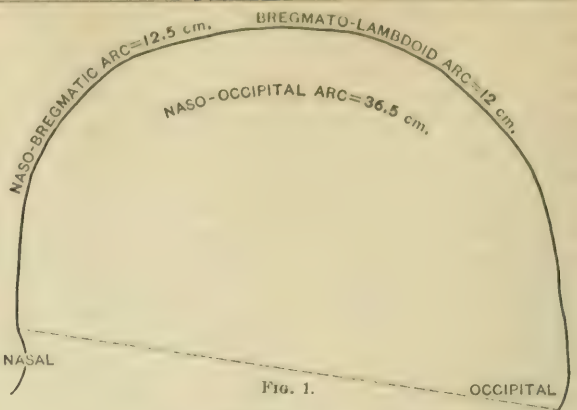


Fig. 1.

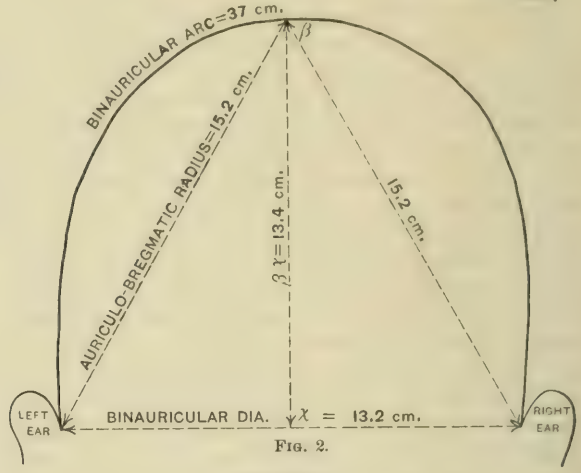


Fig. 2.

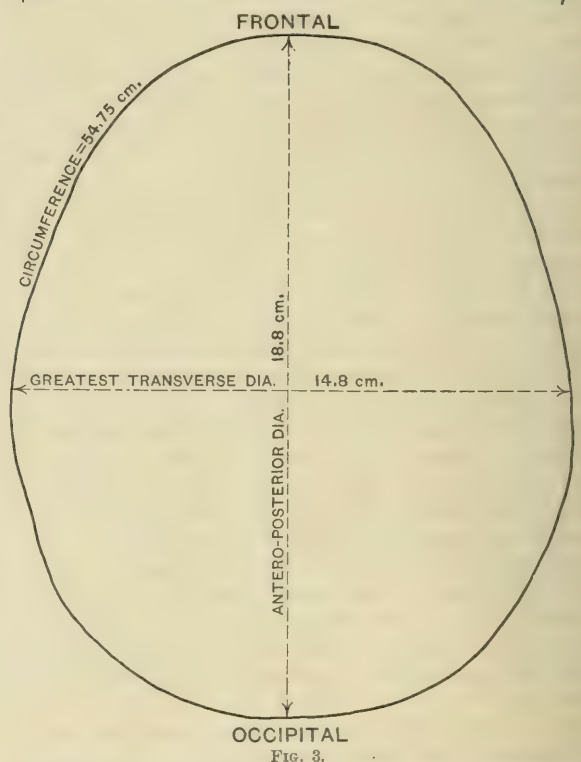


Fig. 3.

Cephaloscopic Drawings of the Head of an Erotic Paranoiac.

Fig. 1.—Departure from the normal proportion in the naso-occipital arc, owing to great vertical height of skull.

Fig. 2.—Vertical measurement $\beta\chi$ is excessive, and a pathological variation from the normal.

Fig. 3.—Shows asymmetry of the skull in horizontal circumference, the right frontal segment being greater than the left, and the left parietal segment greater than the right.

love affair, which, tho interesting to us, might weary the reader. While in Liverpool, on my last trip to England, I was severly poisoned in a glass of liquor in the 2nd Class Refreshment Room of Northwestern R. R., Line St. Station, its effects were very severe but I managed to cure it well enough to take care of myself. The impared stomach caused by this drugging run me so low in vitality that I fear'd that I would not live to see this November So I wrote Miss A. bidding Her good bye, telling Her I probaly would not Live to see Her again. This was some time about the latter part of July last. About the middle of August I attended St. Paterick's Church in Washington to vespers. As I came out after services a womans voice sounded: 'OH! what can I do when he wont speak to me.' I may here state that from the first Miss A. refused to be formally introduced to me or answer my letters. But seemed anxious to form my acquaintance in a More Romantic way. * * * I now felt certain of her, but made up my mind to let Her run awhile, as she did me in London. That night I was sitting in my room when I heard the gruff voice of a man outside the door of the House opposite say 'You can't ever Make anything out of That dude; let 'em go.' a voice like Miss A's answered 'Cheese it. He's onto us watching Him. She evidently was standing with Him as He uttered his advice, and She spoke Her reply as She dodged into The House. I at the Time Turning to look at Them. It was quite dark so I could not recognize what the Man was like, but from his voice believe He was a short thick-set Florid, 'Duffer like' Man, such as I seen with Her afterward in the Temple Cafe'. She then evidently took a trip away for a few Days for I heard the same young womans voice which did The Mantering in the carriage say the following evening 'I dont know what she wanted to go away for. Shes just as crazy after Him as She can be' adding 'of course she is' to a grunt from an Elderly Man, Her Companion. This Man then in an irritable old Honest Farmer like voice said 'These actresses are a poor lot, Theyr Frauds all of Them, not only that but Theyr mean' following it up with a Tirade against acting in general. 'The next I heard of Her was Three or four evenings afterward. while sitting in my Room. picking up Her picture, gazing at it for a time, finally ending by kissing it. as I did so There was a couple of little Jesting Laughs from two females in The House opposite. and 'ha My picture. maybe He wont like Me when he sees Me,' in a sort of Happy uncertain subdued voice from our M., who evidently was sitting with Them watching us. . . . I Then went to the Sisters orphan School near by and asked one of them to undertake the task of arranging a meeting between us. But the Sister only looked incredulous and said it was worse than a Fairy Tale, and said if Miss A. had come to Washington it would surely be in the papers. I Tried to explain to her that under The circumstances it surely would not be in the papers, and that I would pay Her for The Trouble. * * *

"The last I heard of Her she said 'Ill speak to Him any way and if he loves me Ill take Him Home with me.' I thought I had conquered but she evidently changed her mind or it may be that the opportunity did not occur and That she was forced to go in a hurry to attend to business or catch the ship to return and fill her Provincial Engagements in England, and upon sober thought coupled with the urgent advice of Friends concluded That as I was broken the best thing to do was to give me up or she may be suffering from a bit of pique at my seeming intentional slights. I meant the Most Honorable in The world toward M. but sought to break Her Terrible Self Will. I have broken Myself instead, while Mary Sails on as of yore as a 'Ajax Defying the Lightening.' * * * After this Terrible expose I feel That all must ever be over between us, and fully realize my great loss. She has Trivial vices that cling to Her from Her surroundings as a smoky odor. To the one who Works among it but the mind of the woman is as far Her surroundings as Heaven. Purgatory. The current belief that Mary is a piece of Marble is all wrong. She appears as cold as the cloud crested volcano to the verdant grassy Hillock as is M. compared to other women. She has possessions as Herself so far above The ordinary That the ordinary cannot understand. They watch and like but dont understand, passion, she is filled with passion and riven unknown, but the surges of the woman Heart can never do more than gurgle through and soften Her nature. The wondrous mind is ever in control. I shall feel My loss and believe M. will remember Jimmie. D.

"If the mere fact of my Running after my sweetheart without the formality of an introduction constituted a sufficient reason for my being considered insane. I am satisfied that More than Half of the now married men, have deserved this punishment at some period of their lives, also if such were the Case Mary as I show above should be sent to the Island in the same Boat with myself. if however She is suffering from a fit of Pique over my supposed slights, in Justice the statements here made should be looked into and if found True, I can only see that I have err'd more in omission than commission. That she was recognized by many during her stay in Washington I feel assured. * * * If however all that I have stated are conjured phantoms of a diseased Brain Then I am only too Thankful that I live in a country where such good institutions are provided for my welfare and shall only be happy to avail myself of the privilege of entering such. If my Brain is really affected it is probaly due to excessive study in trying to raise myself to position that would enable me to make my advances towards my M. from at least a somewhat equal station, as during the last five years I have been furthering a set of discoveries that will mark an epoch in the advance of Natural Sciences, in a Book which I am now preparing. I will give a Theory on the probal forms of Atoms. An Hypothesis on the structure and action of Molecules together with an explanation of the causes of Molecular Motion. * * * * My Manuscript as it now exists in its unfinished state will lead the casual investigator to but more thoroughly believe in my insanity. I humbly ask That it May be saved and given to me if I be put in the asylum That I may finish it before my Brain is totally gone. My private letters from my Friends and relatives have been destroyed as 'Trash.' They appear so to the authorities but They were not Trash to me. If my Investigators will but give me the benefit of the doubt till proven insane, if They will look through History and find examples numerous where men not understood, were termed 'Cranks' subjected to various tortures, although they helped posterity, which now Honer Them with monuments for my own part I would much sooner have the grasp of a Friendly Hand now than a Million Dollars Monument by posterity. J. M. D. Bellevue Hospital, November 17, 1888."

In this case the delusions of grandeur had been developed slowly and had continued for years with but little change. Delusions of persecutions had appeared, but they had developed from those of grandeur and were in every way conditional upon them. The late appearance of the hallucinations was rather unusual. The exaggeration of the *ego* displayed throughout was very characteristic of paranoia. This case was not unlike Esquirol's estomania, a subdivision of monomania. According to Esquirol, this perversion was not necessarily accompanied by animal sexual desire, and the adjective erotic was here used in the classical sense. The patient noted in his adolescence for his romantic tendencies, construed an ideal of the other sex in his day-dreams, and subsequently discovered the incorporation of this ideal in some actual or imaginary personage, usually in a more exalted social circle than his own.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN THEORY AND PRACTICE OF MEDICINE.

Meeting of November 19, 1889.

Dr. R. C. M. Page in the Chair.

The General Therapeutic Action of Electricity.—Dr. A. D. Rockwell read a paper on this subject. He thought that few who were now using electricity in the treatment of disease stopped to consider the effects of the passage of currents through living tissues, or upon what was based the *rationale* of every electro-therapeutic result. The literature on this subject had accumulated beyond measure, but still showed so little correct appreciation of its physics that it was necessary to emphasize the statement again and again that electricity was not a simple, single manifestation of natural force, but that it was a generic term, which included complex phenomena with wide variations and manifestations. Electricity was, according to the speaker, a stimulant of the most powerful character, and an irritant when this side of its nature was sought after. As a sedative, in some cases it was unequaled. Admitting the recognized significance of the word tonic, and that remedies for improving the tone of the system still held an important place in the classification of the materia medica, it was the opinion of the speaker that electricity should be classed as a tonic of very high order. It possessed varied influences of this kind, according to the kind of current used and the method of its application. To produce that tension of the nervous system and of the muscular fiber generally, so as to enable them to respond to their natural stimuli, the mechanical effects of the faradaic current seemed to be especially applicable. This was a current of alternation, with a to-and-fro motion, dependent on the closing and breaking of the current. Unlike the galvanic current, it possessed no chemical action which need be feared, and no powerful reflex effects need render one unduly cautious in its use. In the passage through the body of a current interrupted with the requisite degree of rapidity, it need produce no appreciable muscular contractions, yet it gave passive exercise to all the deeper layers as well as to the superficial muscles. Aside from the purely mechanical effects of the induced or faradaic current, there seemed to be a more subtle influence upon the nerves themselves. No purely mechanical influence could produce the numerous phenomena that followed its use in some diseased conditions. In the tedious period of convalescence from the protracted fevers, electricity in some of its forms had done good service. It gave passive exercise to the muscles; it promoted and rendered more natural the processes of secretion and excretion; it corrected circulatory disturbances, and gave tone and strength to both nerve and muscle. The writer said that those who had failed to get good results in the use of electricity were either deficient in experience, or were not sufficiently persistent, or had somehow failed in the technique of application. Some of the results in electro-therapeutics were due in a measure to physical effects. Judging from analogy, as well as from facts, there could be little doubt but that an appreciable degree of heat was excited. All conductors of electricity became heated more or less, according to the degree of their resistance. As the body offered great resistance, a certain proportion of the electrical force must be converted into heat. The physical effect of electricity on metals was well known. It was said by some writers that the copper wires used to conduct the faradaic current broke more frequently than when used to conduct galvanic currents. The chemical or electrolytic action was practically confined to that form of dynamic electricity that was termed galvanism. Its visible effects occurred in the department of electro-surgery, when needles or pointed electrodes were used. A distinction had been made, and justly, between electrolysis and galvano-chemical cauterization. The former was a disintegrator and separator of the constituent elements of organized structures. The latter produced its effects by means of the acids and alkalies that were liberated at either end of the pole by electrolytic action. It was the chemical galvano-cauterization, and not the electrolysis, that accomplished most of the good results that followed intra-uterine applications in cases of endometritis. The action of either current modified the physiological functions in various ways. It had been readily demonstrated how the secretion of salivary glands could be increased. Mucous secretions were very quickly increased by either current. In the writer's own experience, the electrical treatment had sharpened the appetite, quickened digestion, and relieved constipation so rapidly and decidedly as to make it evident that the gastric and intestinal juices were all made to secrete more liberally, and that the action of the current was on the nerves that supplied these organs, rather than on the tissues of the organs themselves. Among the affections of the bowels where electricity was quite certain to exercise a beneficial effect were those of defective innervation; also those diseases comprehended under the names of hypochondriasis and neurasthenia. Its influence over the circulation, on the arteries, veins, and capillaries was due to its power to increase the quantity and quality of innervation received by them.

Dr. C. L. Dana, in opening the discussion on Dr. Rockwell's paper, said that he should like to make special allusion to the therapeutical value of static electricity. In this form the electrical fluid, or ether, was in a state of stress or strain, and might be likened to a thin rubber band stretched to its utmost. When the strain was relieved, a disruptive discharge took place. According to another analogy, static electricity was like a thimbleful of water raised to an immense height; when spilled it gathered such momentum in its fall that a severe blow was struck. If the thimble was continuously filled and as rapidly emptied, we had a succession of static discharges which formed an intermittent electrical current. The electro-motive force produced by the fall was immense, being over 33,000 volts, but the resistance met was very great, and the quantity of the fluid small, so that the total effect, or current strength, was ordinarily not great. The static current, so called, was made up of successive and almost infinitely brief discharges from the positive to the negative, with accompanying numerous oscillatory discharges. A single disruptive discharge consisted of a principal discharge, or current from positive to negative, with numerous minor oscillations. By using small Leyden jars which filled and discharged quickly, this current could be made almost continuous, and could cause chemical effects. The intensity or current strength was the amount of electricity passing through a given space in a second of time. The static discharge occupied such a fraction of a second that its intensity or current strength was hardly measurable. But its voltage or electro-motive force was, as already stated, immense. The intermittent current produced was therefore a peculiar one. The muscular contractions caused by static electricity had been stated to be due to a purely mechanical effect. This was, in the writer's opinion, a wrong view to take, for the reason that the sparks caused contraction when applied directly to the muscle, while mechanical irritation sufficient to cause contraction of a whole muscle must be, under clinical conditions, applied to the motor points. Also because there was no apparent mechanical irritation in the ordinary sense when the static current was applied with wet electrodes. In the case of the spark there was a sudden expansion of the skin at the point of contact from heat, but no deep mechanical disturbance. It was thought the spark acted like the secondary current of a faradaic battery, causing no measurable electro-

tonic effects. The static electricity was applied in the form of a disruptive discharge or spark, in the bath and breeze, and by the current. The effects of the spark were well known, but the effects of the bath and the breeze had been inadequately stated heretofore. When a patient was seated on an insulated stool and charged, a series of discharges was going on from all points of the body. This produced a cutaneous stimulation and a mental effect. The cutaneous stimulation had in some cases a peculiar physiological and therapeutical effect. It was by no means psychical, but belonged to the same class of physiological phenomena as those of metals. The static current could be used with moist sponge electrodes directly through the clothes, or with wet electrodes upon the skin. This current caused contraction of the muscles. The special advantage of the static battery was in paralyses with some spastic element, and in monoplegias and paraplegias. Outside of this, its best results were in chronic muscular rheumatic and myalgic conditions, also in sensory disorders.

Dr. J. H. Gunning said that he did not propose to enter into the mysteries of electricity, but would simply give his experience as to its therapeutic action. His work in this direction had been principally confined to the use of static electricity. The faradaic current he believed to be very valuable as an emmenagogue and also as a sedative. Excellent results were got from its use, especially when given in conjunction with drugs in some forms of peritonitis and in some forms of obstinate vomiting. The results of his observations in the use of static electricity corresponded with those of Dr. Dana. He found that from the application of static electricity with the wet sponge directly to the nerve in certain forms of facial paralysis, instead of a treatment extending over five or six months, as necessitated by other electrical methods, the patients were entirely restored at the end of six weeks. He thought that the static form would prove most serviceable to the general practitioner. The galvanic method was of value as an emmenagogue and in cases of weak uterus where stimulation of that organ was indicated.

The Auriculo-ventricular, Presystolic, Sound.—A paper on this subject was read by Dr. H. D. Chapin. The presystolic, auriculo-systolic, or auriculo-ventricular murmur had been the subject of much discussion and acrid controversy. In 1841 Gendrin had called attention to a presystolic murmur, and Fauvel in 1843 considered it to be due to mitral obstruction. This view seemed to have been accepted at that time, but some years later Dr. Barclay advanced the idea that a mitral obstructive murmur had no existence in fact, the sound usually attributed to this condition being really due to regurgitation. This dispute had recently been renewed by Dr. Dickinson, in the columns of the "Lancet," in 1887, who denied that the so-called presystolic murmur was indicative of mitral stenosis. The latter gentleman regarded the murmur as covering the first portion of the systole up to the point of closure of the valve, and named it rather an early systolic murmur. Gairdner, Balfour, Bristowe, and others had vigorously replied. Dr. Bristowe had summed up the arguments in favor of the presystolic nature of the murmur as follows: 1. That it accorded with the physiological fact of the auricular contraction running with the ventricular systole, the beginning of which was indicated by the very sound that terminated the murmur. 2. That the murmur preceded the pulse and ended with the apex beat. 3. That the presystolic murmur did not differ in quality from the earlier mitral murmurs which were acknowledged to be direct. 4. That all the direct mitral murmurs were characterized by consonated noisiness and lack of penetrating power, and were audible over a curiously restricted area, but were not conveyed into the axilla as all regurgitant mitral murmurs were. Finally, post-mortem examinations not unfrequently revealed a condition of stenosis of the mitral valve. Dr. Chapin's conclusions had been derived from clinical studies alone, and were intended to be suggestive rather than dogmatic. He said a presystolic or auriculo-ventricular murmur was produced by some interference with the normal and easy passage of blood through the auriculo-ventricular septum or valve. The murmur was rough in quality, beginning at the end of diastole and ending abruptly with the systole. In rhythm it might be considered metadiastolic as well as presystolic. One of the most characteristic points about this murmur was its abrupt termination. This quick stop of the abnormal bruit was very different from the gradual ending of a mitral regurgitation murmur. Almost all of the authorities the speaker had been able to consult considered that the presystolic murmur was invariably due to organic disease at the mitral valve. There was a class of cases, however, in which this sound was distinctly heard, which the speaker believed to be entirely free from organic heart disease. The class referred to was that of growing children, especially girls, who were pale and hydræmic and suffered from various digestive disturbances. These cases were not only subject to palpitation of the heart, but at times, especially after exercise, a more or less rough presystolic murmur might be heard at the apex. Many of these children had been confined for a long time in crowded or badly ventilated school-rooms. Possibly they were over-ambitious in their studies, but, at any rate, were in a condition of defective nervous equilibrium. Under treatment with iron, cod-liver oil, nutritious and easily digested food, with plenty of fresh air, the abnormal heart sound had often disappeared. It had seemed to the speaker that the trouble in these cases was due to an irregular muscular action, dependent upon a defective innervation of the heart. Weak children had an especial tendency to a faulty, over-irritable action of the muscles, both voluntary and involuntary. This might show itself in the incontinence of urine, or by twitching of certain muscles of the face, or it might eventuate in general chorea. Why might not the innervation of the heart be affected with or without any of the disturbances just mentioned? In such a case an irritable, strongly acting auricle, with a mitral valve whose muscles were too tense, might be a cause of a blubbering sound just before the systole. The sound produced by any such irregular muscular action would be intensified by the watery condition of the blood. Undoubtedly a large proportion of cases of presystolic murmur were due to organic valvular trouble. Meigs and Pepper stated that mitral obstruction was comparatively frequent in childhood. Goodheart considered that in children under eight years of age this lesion was almost unknown, but with advanced years the affection became more common, and was one of the most frequent affections of adult life. Eustace Smith considered that mitral stenosis unaccompanied by insufficiency of the valve was not common in the child. The speaker had in his possession the histories of forty cases of mitral stenosis that he had been able to keep under observation for different lengths of time, varying from a few weeks to several years. The ages varied from two years to that of adult life. In thirty-one of the cases there was simple mitral obstruction, while in nine cases there were combined murmurs. Of the latter, five were double mitral, three were double aortic and double mitral, and one was a combined mitral and pulmonic obstructive murmur. The commonest symptom of slight degrees of mitral obstruction that the speaker had noted was that of pain and dyspnœa on exertion. The pain was directly referred to the region of the heart. It seemed as if the labored action of the heart to pass the blood through a partially constricted auriculo-ventricular septum produced a neuralgia in some of the adjacent nerves. A slight dry cough was more or less frequent. The speaker thought that a careful examination of the heart would explain a certain proportion of cases of obscure developmental trouble and poor

vitality in children that could not otherwise be accounted for. It was interesting to note the connection of this murmur with rheumatism. Out of thirty-one of the speaker's cases, twenty presented evidences of rheumatic taint. From the records of the London Hospital for 1880, only fifty-eight per cent. of the cases of mitral stenosis presented a history of rheumatism, while seventy-seven per cent. of the cases of mitral regurgitation were rheumatic. In 1886 the speaker had read before the Academy his conclusions based upon a study of seventy-six cases of rheumatism in children. Of this number, twenty-six patients had had valvular disease of the heart. Of the twenty-six, only four had presented evidences of mitral obstruction, while eighteen had had mitral regurgitant murmurs. In making a diagnosis of the mitral direct murmurs, it was well to remember that they often varied in intensity according to the action of the heart. It was the custom of the speaker to have the patient jump up and down in a vigorous manner before auscultation in any suspected case. If we regarded the prognosis of mitral stenosis from a theoretical standpoint, it would not be good, owing to the comparatively limited compensation that was possible; but, as a matter of fact, the prognosis was believed to be exceedingly good. The only instances of death in these cases that the speaker knew of were in those who had had regurgitation combined with the stenosis. But most of his cases had been in young children, when death from any form of cardiac disease was not common. The treatment should be hygienic, with tonics if required. These patients had best be kept under observation so as to meet indications as they arose, just as in any other form of cardiac trouble.

It was frequently the experience of physicians to be called upon to treat cases of valvular disease of the heart when it was impossible to trace back to the inception of the trouble. The patient might not be able to give a history either of rheumatism or endocarditis, but sought advice for dyspnœa, swelling of the extremities, or other symptoms of failing circulation. It was the opinion of the speaker that a large proportion of the cases of valvular disease in the adult had begun in childhood. The beginning of the trouble, which was the most hopeful period for treatment, was overlooked for a number of reasons. The nature of the rheumatism that attacked children was often obscure, and several attacks of wandering or so-called "growing pains" might be overlooked. In most of the histories of valvular disease in children the cardiac affection seemed to come on after several attacks of rheumatism. Great care should be exercised to make an early diagnosis, and vigorous measures taken to combat the first manifestations of rheumatism in children, fearful that, although the heart might escape the first mild attack, it might suddenly and unexpectedly become affected by an equally light manifestation of the disease. When endocarditis ensued, the symptoms were apt to be very obscure. Palpitation, slight pain, and breathlessness, with a dry cough, might not be particularly noticed by the parents, although the child would seem sicker than before. These patients were often taken to the dispensaries, and the mother would be quite surprised to learn that her child had incipient heart disease. Just at this juncture rest was indicated above all things. If this was not procured, the delicate, softened heart muscles quickly underwent dilatation, followed by permanent damage to the valves. Dilatation very readily took place in early life. Compensative hypertrophy, however, quickly ensued, although there might be no sign of it until years later. By recognizing the endocarditis at the start and keeping the child quiet, we might reasonably hope to avoid dilatation and consecutive crippling of the valves.

Dr. Andrew H. Smith said he was not one of those who believed that there was any essential difference between a diastolic and a presystolic murmur. He thought the same conditions existed in both, the difference being only in the degree or character of the obstruction at the auriculo-ventricular opening. If this was greatly narrowed or irregular, a murmur would result which would be audible in diastole. If, on the other hand, the obstruction was not very great and the irregularities were not marked, and there was a comparatively easy flow of blood during the quiet part of the diastole, no murmur would exist until the current was quickened by the auricular systole. A great many murmurs were credited with being presystolic which were in reality systolic. The difficulty lay in defining at what instant the systole began. It was now universally recognized that normally the first sound of the heart occurred at the first instant of systole. It had been said that before the first sound there was still another murmur, but this did not necessarily precede the initial action of the systole. Frequently this was of a soft character, and disappeared after a brief duration. It occurred in cases where the muscular walls of the heart were defective, and where there existed a certain amount of dilatation, and it was not difficult to arrive at a definite explanation of the condition of things. If the normal diameter of the ventricle was represented by four and the length of each of the opposite chordæ tendineæ by two, then, in the event of any weakness in the heart muscle, the diameter of the ventricle was increased to five, while the sum of the length of the chordæ tendineæ remained four at the moment of systole. When the chordæ tendineæ were tense, a space would be left equal to one; so that, with the diameter of the ventricular cavity as five and the combined length of the chordæ tendineæ as four, coaptation of the valves could only take place when, in the progress of the systole, the former was also reduced to four. The resultant reflux of blood would then give rise to a murmur which would have the character of a presystolic murmur, though really systolic, and he believed many of these murmurs were of this character. It had been asserted that in these cases there existed a permanent systolic murmur due to dilatation of the auriculo-ventricular ring, so that the curtains could not reach across the increased diameter of the auriculo-ventricular opening. That applied more to permanent cases, and in that class it would be found that the murmur was distinctly systolic—a first-sound murmur. He had been much interested in what the author of the paper had termed the tolerance of children to this grave lesion. As an instance of this he would cite the case of a boy of three years and a half of age in whom the murmur was so loud and harsh that it could be heard two or three inches away. He had apprehended the most serious results, but as time went on nothing happened, and the boy was now about ten years old and seemed to be very little inconvenienced by his heart lesion. The murmur was still there, however, but very much modified in intensity, and could not be heard unless the ear was applied to the chest.

Dr. W. H. Katzenbach said that as to the frequency of mitral obstruction murmurs his experience accorded with that of the reader of the paper. He had lately analyzed carefully murmurs occurring with the systole of the heart. He had found that out of one hundred and twenty-eight cases of mitral obstruction murmurs, sixty-seven were in combination with mitral regurgitation. He had met with this murmur in comparatively few young children, but it was frequent in young women averaging about twenty-three years of age. He thought when doubt existed as to diagnosis, comparison of the aortic and pulmonic sounds would sometimes aid in forming a conclusion. Change of position or a moderate amount of exertion would frequently make this murmur quite intense. In mitral stenosis one symptom was often met with—namely, spitting of blood; in advanced cases especially this often took place.

Dr. A. L. Loomis said he had not supposed that any doubt existed in the minds of experimenters on the question of presystolic murmurs. There had been a time when this point might have been raised. He had been accustomed to divide presystolic murmurs into three classes—the anæmic, the congenital, and those that were due to chronic endocardial conditions. The anæmic murmurs were unquestionably produced in the same way as in the cavity of the heart. These murmurs would be present for a time, disappearing to return again. Congenital mitral stenosis was not of infrequent occurrence. He remembered an instance where a murmur from this cause, with a purring thrill, was quite distinctly present in each of three sisters, whose ages ranged between eight and sixteen. From neither of them had he been able to elicit anything which would lead to the conclusion that the murmur was developed after birth. It seemed then that there certainly did exist a congenital mitral stenosis which did not interfere with the comfort of the patient. In children the heart sounds, it must be borne in mind, were intensified and slight murmurs would sound very loud, from the thinness of the chest walls and the comparatively greater area over which the sound was distributed. Consequently, murmurs heard in children sometimes seemed very terrible. As to the murmurs due to endocarditis, it seemed to the speaker that any one who had observed these during life and noted carefully the post-mortem appearances would not hesitate to conclude that the adhesions of the valves giving rise to the "button-hole" slit was sufficient pathological change to produce them. There were several varieties of systolic murmurs —the presystolic, systolic, and metasystolic. A pure systolic murmur was the one which we had in mitral obstruction with regurgitation, whereas in pure mitral regurgitation without any obstruction, the first part of the systole would probably be heard, and then the murmur came later, and was metasystolic. After all, it seemed to the speaker that a great deal was heard about cardiac murmurs, but the really essential point for consideration was the cause of cardiac diseases. Still, as had been stated, some conditions of the heart seemed to exist, giving rise to heart murmurs, which, however, did not in any way interfere with the patients and which did not appear to have any pathological significance. Every family practitioner was familiar with the occurrence of endocarditis in children of rheumatic habit or heritage, and who developed the endocarditis before the signs of the rheumatic dyscrasia manifested themselves. Pericarditis and endocarditis occurred frequently and simultaneously in some children. When the possibility of infectious diseases was considered as a cause in producing endocarditis in children it would be seen how common it must be for them to have inflammatory heart complications. If the nutrition and general health were preserved, and adequate compensation was established, many of these patients went on to middle life before any symptom arose indicating valvular changes.

Dr. H. N. Heineman gave the statistical results of a large number of cases in which he had made careful analyses as to the exact character of the murmurs. The observations had included 300 adults and 153 children. He found that $\frac{2}{15}$ of the cardiac murmurs in cases of the children were mitral obstruction murmurs, while in adults the proportion was only $\frac{4}{15}$. He would like to know what became of the patients with these presystolic murmurs. He thought that no cardiac affections should be diagnosticated by the character of the murmurs present, but rather by combined signs, such as changes in the size of the heart, changes in the valves, and the sphygmographic tracings. He thought that from what had been said it must be accepted that there existed such a thing as a presystolic murmur, that it occurred most frequently in children, and that though it apparently disappeared, it did not really do so, but became, in later life, merged into some mitral and aortic lesion and thereby lost its identity.

Dr. E. G. Janeway said there was no serious doubt as to the existence of a mitral stenosis and of a mitral presystolic murmur indicative of it. After describing the theories as to the production of the cardiac murmurs under discussion, the speaker said that those cases in which mitral stenosis was marked and in which the murmur ceased had given rise to a great deal of argument. Any one who had watched patients with mitral stenosis for years would have noticed that they came and went from the hospitals, until they came in finally with various symptoms and complications, such as cirrhosed liver, dilated right heart, and dropsy. The presystolic murmur was, however, gone, and in its place would be heard a mitral regurgitant murmur. As regarded the murmurs due to dilatation of the ventricle, he was in the habit of classing these under the head of mitral systolic rather than mitral presystolic, as they occurred with the systole. Whether due to anæmia or to some weakness of the heart walls, causing temporary inefficiency, the prognosis in mitral stenosis was, in the speaker's opinion, by no means hopeful. It seemed to him that these cases disappeared because the patients died. Where it was possible to follow them up it would be found that many died suddenly.

The question was then further discussed by Dr. J. L. Smith and Dr. Thompson.

The Chairman remarked that, while he would not dispute the fact that some of these many murmurs of which they had been hearing might be functional, still he felt bound to say that his experience led him to the conclusion that they were always associated with some organic lesion.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION IN PATHOLOGY.

Meeting of Friday, November 1, 1889.

The President, Dr. E. H. Bennett, in the Chair.

Fracture of the Skull with Hernia Cerebri. — Dr. T. Evelyn Little made a communication on a case of fracture of the skull, with hernia cerebri, in a child. The patient died on the fourteenth day in an attack of convulsions, there having been no symptom whatsoever pointing toward a fatal result until a few hours before death. At the post-mortem meningitis was found over both hemispheres, with an excavation in the frontal lobe corresponding to the seat of the injury.

The President said the disproportion between the injury to the bone and the injury to the brain was fully borne out by experiments, which had demonstrated the great elasticity of the skull in children.

Dr. Swanzy said the feature of the case which had interested him most was the symptom of the turning of the head toward the side on which the injury was situated. As Dr. Little had mentioned, that was generally associated with rotation of the eyes in the same direction. There was a conjugate deviation of the eyes and head toward the same side. But there might be one part of this duplex symptom without the other. In health a very discursive motion of the eyes to one side was usually associated with a motion of the head in the same direction; nevertheless, by a slight effort of the will it was possible to turn the eyes while the head was kept steady, or to turn the head while the eyes were kept fixed. Consequently one need not be surprised if in any diseased condition he occasionally found one part of this duplex symptom without the other. With regard to the position of this center of motion of the head and eyes, Ferrier,

by experiments made some years ago on monkeys, had satisfied himself that it was in the superior and posterior parts of the middle frontal convolutions. Some time afterward Grasset had argued from clinical observations that the site was in the inferior parietal lobuli. Later still the site had again been placed by Horsley in the frontal lobe. A few months ago Wernicke had ascertained to his complete satisfaction that it was situated in the inferior parietal lobuli; and now Dr. Little placed it in the frontal lobe.

Dr. LITTLE, in reply, admitted that there were different theories with respect to conjugate deviation of the head and eyes. As to the deviation in this case having been due to some more distant lesion of the brain, he felt some difficulty in adopting that supposition. Although the amount of brain substance lost was very considerable compared with the injury, still it was remarkably definite and remarkably local; and these circumstances were of importance in connection with the question of localization. To say that the lesion here might have produced symptoms of interference with centers in other parts of the brain was no more than what could be said with respect to any lesion, traumatic or from disease, in any part of the brain.

Renal Calculus.—Dr. J. K. BARTON communicated a case of renal calculus which had been successfully removed by operation. The calculus had been tightly wedged into the calices of the kidney.

Dr. FOOT asked if there had been any history of hæmaturia in the case. That symptom was an obvious one in the diagnosis of renal calculus; still he should not have thought it likely to occur here, on account of this being a fixed calculus.

Dr. BARTON, in reply, said the patient had no hæmaturia. The urine was faintly acid, but became alkaline after it had stood for some time.

Conjunctival Cyst.—Dr. J. B. STORY submitted a conjunctival cyst which had been removed from the eye of a baby aged six weeks. It was attached to the cornea and sent a band backward to the internal rectus muscle, from which it had to be raised by a strabismus hook. The cyst was a dermoid, and Mr. Scott exhibited microscopic sections of its wall.

Mr. Story commented upon the presence of these dermoid cysts in cases of coloboma of the lids, and dermoid bands uniting the globe to the skin of the face, and stated his approval of the theory of Van Duyse, who attributed all these defects to the existence of amniotic adhesions in embryonic life.

The PRESIDENT remarked that adhesions between the amnion and the surfaces of the embryo were the greatest cause of these congenital defects.

Tubercular Kidney.—Dr. HEUSTON submitted an example of tubercular kidney in a boy aged thirteen, which had been successfully removed by operation, and said there were microscopic specimens of the kidney on the table showing the giant cells and other evidences of tubercular disease. He had been unable, however, to detect in these specimens the *Bacillus tuberculosis*.

Miscellany.

The New York Academy of Medicine.—At the next meeting of the Section in Surgery, on Monday evening, the 9th inst., Dr. George E. Brewer will read a paper entitled "Accidents, Complications, and Results following Internal Urethrotomy in 120 Cases of Stricture," the subject to be discussed by Dr. F. N. Otis, Dr. R. F. Weir, Dr. F. R. Sturgis, Dr. A. G. Gerster, Dr. R. W. Taylor, Dr. L. B. Bangs, and Dr. Eugene Fuller; Dr. George G. Hopkins, of Brooklyn, will present a curette for the male bladder, and Dr. F. N. Otis will demonstrate the finished litholapaxy evacuator.

At the next meeting of the Section in Paediatrics, on Thursday evening, the 12th inst., Dr. L. E. Holt will read a paper on "The Anatomical Characters, Nomenclature, and Treatment of the Diarrhœal Diseases of Infancy," the subject to be discussed by Dr. W. P. Watson and Dr. A. Caillé (the dietetic treatment), Dr. H. Koplik and Dr. A. Seibert (the mechanical treatment—irrigation), Dr. J. H. Fruitnight (the use of opiates), Dr. S. Baruch, Dr. H. D. Chapin, Dr. G. B. Fowler, Dr. J. E. Winters, Dr. A. Jacobi, and others.

At the next meeting of the Section in Neurology, on Friday evening, the 13th inst., Dr. Græme M. Hammond will read "A Contribution to the Study of Exophthalmic Goître," and show a patient; and Dr. M. Allen Starr will read a paper on "The Relation between Peripheral Irritation and Nervous Phenomena."

ANSWERS TO CORRESPONDENTS.

No. 301.—We think the board is not now in session. Notices of the times and places of its sittings are published by us from time to time.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Lectures and Addresses.

THE CARTWRIGHT LECTURES
ON
VITAL AND MEDICAL STATISTICS.

DELIVERED BEFORE THE ALUMNI ASSOCIATION OF THE COLLEGE OF PHYSICIANS AND SURGEONS, NEW YORK, November 14, 20, and 22, 1889.

BY JOHN S. BILLINGS, M. D., LL. D., D. C. L.,
U. S. ARMY.

LECTURES III AND IV (ABSTRACT).

THOSE of you who are familiar with the history of medicine in the early part of this century will remember the great anticipations which were formed and expressed by prominent physicians as to the results which might be expected from what was called the system of statistical medicine, introduced in the Paris school by Louis and his contemporaries. This was not exactly a new system, but rather an attempt to methodize an old one—*i. e.*, to present the experience of different physicians in such a way that comparisons might be accurately made and the results mathematically expressed.

In this so-called numerical method all the details of each case observed are to be noted as far as possible without any special regard to whether these details may appear to the observer to have any special connection with the course of the case or its termination, or not. When a number of such cases have been collected, they are to be compared in all their details, showing in round numbers how many present such and such particular circumstances and how many do not.

In order to make a useful application of this method, it is of course necessary that the different observers shall be describing substantially the same thing; that is to say, the disease to be observed must present a definite series of symptoms, so that a person properly qualified will recognize its existence without any liability to error. It should also be a disease which follows a tolerably regular and definite course, having a commencement which can be recognized. Such forms of disease include the so-called specific diseases and acute affections of particular organs. The method is most applicable to surgical cases of all kinds, including those which come under the domain of the various specialties.

As regards details of pathological anatomy, it has been pointed out by Dr. Flint that the statistical method can only apply to those changes which can be appreciated by the senses after death, and that, there being but one constant lesion found in typhoid fever—viz., the softening of Peyer's patches in the small intestine—the statistical method gives us little assistance in the investigation of the pathological condition of this disease.

We may note, however, that—if it be admitted that typhoid fever is due to a specific bacillus, as seems now to have been fairly demonstrated, and that this bacillus has been discovered and verified mainly by the application of experimental methods—it is nevertheless true that the results thus obtained have met with a general and prompt acceptance, mainly because the application of statistical methods to the circumstances of outbreaks of this disease in different communities are in perfect accord with the bacillus theory of its causation.

This merely illustrates the general law that the experimental and the statistical methods must be used together, and that their results must be in accord to produce full confidence in the results obtained by either alone.

It must be admitted that the probabilities of error are much greater in medical than in vital statistics, and this for a number of reasons. The first is that no two observers examine or interpret a disease in precisely the same way, and hence it is extremely difficult to collect a mass of observations sufficiently large to form a basis for statistical reasoning. Those who wish to be scientifically accurate in the use of such material are usually compelled to deal with a very limited number of observations, because they can not obtain a large number upon which they can fully rely.

The best data are, for the most part, those which lie in the field of surgical observation, since here the symptoms observed, the methods of relief applied, and the results obtained are tolerably definite, and there is not likely to be much difference in the methods of recording them.

The methods of medical statistics differ fundamentally from those used by the vital statistician in that they usually have no relation to the phenomena observed in the normal, healthy, living population. The physician inquires, out of a thousand cases of children or of old persons that have been treated, how many times this particular disease has been met with; or, in a given number of cases of this disease, what proportion have died. This method is in fact practically the only one which is available to the physician, but the vital statistician, if dealing with disease, will want to know the probabilities that a male between twenty and thirty years of age will contract a given disease, such as phthisis or typhoid fever, and for this purpose he wishes to know the whole number of cases observed in a given population, and the number of the population furnishing those cases, in order to establish the ratio.

The fact that in each case of sickness there are many different circumstances which combine to produce the result is not, as Louis remarks, a valid objection to the use of statistical methods for the purpose of estimating the influence and relative importance of each of these influences; it is rather an argument in favor of their employment. Counting is better than guessing, and when it gives contradictory results as applied to two groups of cases, it indicates that some circumstances have not been taken into sufficient account, and that further inquiry is necessary. In the body of the sick man, as in the test tube, like causes under like circumstances will produce like effects.

Admitting that the chances of error in medical statistics are very much greater than in those relating to vital statistics, it does not follow that they have no value. It simply increases the desirability of collecting a large number of facts before proceeding to draw any definite deductions.

In statistics in regard to therapeutics we have to take account of the various influences which the condition of the organism exerts upon the results before we can fairly estimate the action of the new and special influence which has been introduced in the shape of an action of a drug, or a particular mode of treatment. In any event, such statistics, even when derived from a small number of cases, serve to indicate lines of investigation and to ask questions, if they do not answer them. As Legoyt remarks, two pneumonias do not resemble two dice, each having the same number of faces and of numbers, but rather dice with an unequal number of faces and different numbers.

The greater part of our pathology and therapeutics has not been derived from statistical observation. It is not by this means that the diagnosis of small-pox, or of scarlet fever, or of rheumatism, has been worked out, or the fact that the ulceration of the intestinal glands belongs to typhoid fever, or the presence of gummy tumors to syphilis; nor has it been by this means that the transmissibility of certain forms of disease by contagion has been proved. Whenever a necessary and logical connection between a particular cause and the resulting phenomena has been established, statistics are of little or no value in demonstrating the connection. In every case the result must follow the cause, as it does in a chemical experiment, and a few repetitions of such experiments give as great a degree of certainty as a thousand or more.

The chances of the occurrences of a certain event in relation to cause can only be mathematically calculated when the totality of the possible causes of the result remains the same under the different circumstances investigated. This is one of the chief reasons for the impossibility of drawing positive conclusions from medical statistics properly so-called.

The results of medical statistics will not apply to the treatment of any particular case. They can never prove that bloodletting should be employed in all cases of pneumonia, or that it should never be applied in any case of pneumonia. Even the results obtained from the most satisfactory medical statistics will only be found useful to the physician in directing his treatment in the absence of any special indications in the particular case which he has before him.

The data upon which to base medical statistics must be obtained either from published records, from unpublished memoranda collected by means of correspondence, or by the so-called collective investigation methods, or from personal experience. The published data include such records of private practice as are given in journals, transactions, monographs, etc., records and statistics of hospitals, statistics of public medical services and of medical and life insurance societies.

Detailed reports of cases such as are suitable for use in statistical work are not over-plentiful. In the majority of cases the individual data are not given. We have only summary statements of tables of results. This is the case with regard to much the larger part of the great mass of reports of results of hospital and asylum practice which have been published during the last hundred years, either in the form of separate annual reports or in summaries for journals or societies. These reports give some information as to the prevalence of certain diseases in certain places at certain periods of time, and in this way have some historical value, but they do not show the proportion of cases of disease or death to the living population in which these occur, and very few of them give the data by sex and age in the manner required by the statistician. Some of these calculate death-rates with reference to the total number admitted during the year, others to the total number treated, which includes those remaining on hand at the beginning and those admitted during the year, and others to the total number disposed of during the year by discharge, transfer, or death. A few of them give the average daily number under treatment during the year and the average number of days' treatment for each case, sometimes making a distinction of sex, but almost never of race or age.

Comparisons of gross death-rates of different hospitals, however calculated, are of little value for the purpose of determining either the sanitary condition of the place, the skill of the medical staff, or the merits of the particular system of treatment, owing to the great variations in the class of patients admitted. Of course the statistics of hospitals for special classes of diseases can only be compared with those of the same kind; and even for general hospitals, the fact that the gross death-rate of one is higher than that of another proves very little.

In comparing hospital death-rates, it is now generally agreed that it is best to make use of the death-rates in relation to the total number of persons disposed of by discharge, transfer, and death for a series of years. Comparison of the number of deaths with the admissions only is apt to give very misleading results. A better method than this is that of Bertillon, who adds to the number at the beginning of the year one half the sum of those admitted and of those going out. It is also desirable to know the ratio of deaths and discharges to the mean population of the hospital, which is obtained by dividing the number of days of treatment by three hundred and sixty-five; but in this connection it is to be remembered that when the mortality is calculated with relation to the number of days' sojourn in the hospital, those physicians who keep their patients the longest will show the lowest death-rates.

From what has been said in these lectures it will be seen that no form of hospital statistics can be considered as satisfactory which do not give the distinctions of sex and age, and this not only for the total of all the patients, but for each of the several forms of disease treated.

Prior to the discovery and employment of antiseptic methods in obstetrics the records of lying-in hospitals were very unsatisfactory. It is true that we have no very definite standard of death-rates in child-bearing in private practice with which to compare them, but this rate is given by the Registrar-General of England as being at the rate of five per thousand children born alive for the twenty-eight years 1847 to 1874.

The summary of the returns of the externe maternities in connection with Guy's, Bartholomew's, and St. Thomas's Hospitals for the twenty-one years 1856 to 1876, compris-

ing an aggregate of 74,580 cases, give a mortality of 4·1 per 1,000.

The largest lying-in hospital and the oldest is that known as the Rotunda, or Dublin Lying-in Hospital. In 198,481 cases of confinement in that hospital, the death-rate was 13·9 per 1,000.*

It is not an easy matter to determine what may be called the normal or average mortality of women in childbirth in order to determine the probable utility of a particular mode of managing cases of labor, as, for example, the so-called aseptic method. From the mortality statistics of the late U. S. Census ("Report on Mortality and Vital Statistics," Pt. II, lxx) we find that in 1,577,173 births 5,646 deaths of the women are reported, being in the proportion of 3·57 per 1,000 births. This proportion was higher in the rural districts than in the large cities, and in negroes than in whites.

For the same year (1880) the Registrar-General of England reports the death-rate of women in relation to births as 2·07 per thousand. If now we compare these figures with those given by obstetricians and physicians, we shall find that the latter give death-rates from two to four times as great. Thus, Duncan gives the death-rate in private practice as from 8 to 10 per 1,000 births, while Le Fort gives the figures from maternity hospitals as 30,594 deaths in 888,312 births, or over 34 per thousand, while Ehlers, using the statistics of Prussia from 1816 to 1886, gives the rate as from 5·8 to 9·4 per thousand.

How are we to explain these differences? Is the reported greater mortality in rural districts, in certain races, or in physicians' reports due to peculiarity in the cases reported, or to the surroundings, or to the method of making reports and collecting data? Evidently the latter is first to be considered. In the data furnished by the census and the English registration reports, the cases attended only by midwives and wise-women are included as well as those attended by physicians, and it is among the negroes and the Germans that the proportion of cases thus attended is the greatest. Moreover, in the cities, where there is a regular registration of deaths upon physicians' certificates, there is less tendency to give the vague term of childbirth as the cause of death than in the rural districts, where the cause of death is returned by non-professional persons; but this does not apply to England, and it is not probable that it greatly influences the results in this country.

The deaths reported in the census as due to childbirth are those which occur during or soon after labor, including those due to hæmorrhage, exhaustion, acute uræmia, etc., while those which occur at a later period may be reported as due to peritonitis, septicæmia, etc., although the physician, in reporting the results of his private practice, would include all these as deaths due to labor.

While the physician will usually consider only the relation between the number of cases of labor and the number of deaths in childbirth, the vital statistician will study the relations of deaths in childbirth to the number of women living between the ages of fifteen and fifty years, or to the total number of deaths from all causes. The figures of the last United States census show that of every 100,000 women between the ages of fifteen and fifty living in our large cities, 16·21 died in childbirth during the year, while in the rural districts the corresponding figure is 51·58.

If, then, we are to judge as to whether the death-rate in childbed in the practice of a particular physician is to be considered as high or low, we must first know whether the figures relate to hospital or to private practice, and, if the latter, whether it was in the city or in the rural districts. To obtain some standards for comparison we may use the numerous reports found in medical literature in which physicians have given the statistics of their private obstetrical practice, and compare the results with those given in the statistics of maternity hospitals.

Suppose that, for the sake of testing the relative efficiency of two different modes of treatment or of the general progress made during a series of years in therapeutics, we take the statistics of a particular disease, which should be one having a tolerably definite train of symptoms so as to be easily recognized. A disease which it is common to select for this purpose is acute lobar pneumonia. Suppose, now, that in a given group of cases of pneumonia subjected to one method of treatment the mortality or the proportion of death is found to be greater in another series of cases subjected to a different treatment; are we thereby authorized to conclude that that mode of treatment connected with the lowest mortality is really the cause of the low mortality? By no means. Before we can do this we have to settle the character of the cases, the proportion of those in each group occurring in advanced age or in intemperate persons, or in those affected with other diseases, or in certain races, because all these circumstances influence the death-rate. We have also to take into account the total number of cases in each group in order to make an allowance for the probable error due to small numbers. If the two groups of cases have occurred in different localities or have been treated in different institutions, we have then to take into account the special influences of the locality or institution, as far as it is possible to do so, and not until all these corrections have been made can we fairly estimate the relative influence of the treatment.

In the absence of statistics of cases and deaths by ages, we can get very little information from statements of death-rates from pneumonia. For example, the death-rate in United States hospitals from pneumonia from 1877 to 1888 was 18·72 per cent. of the cases treated. Was this a high or a low death-rate? We can only say that it was probably rather below the average, since the average death-rate for males between twenty and fifty years of age is 19·9 per cent. of cases treated. The need of such considerations is well illustrated in a paper by Dr. C. W. Townsend and A. Coolidge, contained in the "Medical News," July 27, 1889, p. 85. This paper is a discussion of all the cases of acute lobar pneumonia treated at the Massachusetts General Hospital from 1822 to the present time, the figures being divided into periods of ten years, making seven decades in all.

* Summarized from the "Dublin Medical Journal," 1869, and from Dr. Johnston's "Annual Reports" from 1868 to 1875.

The conclusions arrived at by the authors are as follows:

1. In the thousand cases of acute lobar pneumonia treated at the Massachusetts General Hospital from 1822 to 1889 there was a mortality of 25 per cent.

2. The mortality has gradually increased from 10 per cent. in the first decade to 28 per cent. in the present decade.

3. This increase is deceptive for the following reasons, all of which were shown to be a cause of a large mortality:

(*a*) The average age of the patients has been increasing from the first to the last decade.

(*b*) The relative number of complicated and delicate cases has increased.

(*c*) The relative number of intemperate cases has increased.

(*d*) The relative number of foreigners has increased.

4. These causes are sufficient to explain the entire rise in the mortality.

5. Treatment which was heroic before 1850, transitional between 1850 and 1860, and expectant and sustaining since 1860, has not, therefore, influenced the mortality rate.

6. Treatment has not influenced the duration of the disease or of its convalescence.

Suppose we try to estimate the relative value of a particular treatment of rheumatism, say, by salicylates. We find several tables in medical literature giving the results treated by this and other methods. As a type, take the analysis of 1,200 cases treated at Guy's Hospital, given by Dr. Hood ("Brit. Med. Jour.," Dec. 31, 1881, p. 1119), in which he gives the average duration of illness, number of relapses, and number of cases of cardiac complications in 350 cases treated with salicylates and in 350 cases treated without them, and concludes that relapses and cardiac complications were more frequent under the salicylate treatment, but that the pain ceased sooner and the average length of stay in hospital was less. But the cases are not tabulated by sex, age, race, etc., so that we can estimate the bearings of these circumstances on the results, nor in any tables are these results thus classified.

An important point in medical and vital statistics is to keep the current record, or what may be called the day-book account, entirely separate and distinct from the classification or modes of tabulation. The current record must be made complete at the time, for if any items are left out they can never be replaced. But this record, once made, may be used in various systems of classification and comparison for many years afterward. If an attempt be made to put this record into the form of a classified return primarily, it is certain to be defective, and will not be applicable to researches of another kind.

In the reviews of the progress of medicine, of which we already have a large supply in the shape of annual addresses and centennial literature, and to which extensive additions will no doubt be made at the close of the present century ten years hence, you will find more or less elaborate statements of the advances which have been made in diagnosis, pathology, preventive medicine, and surgical therapeutics in all its branches. Also, it is easy to show that we have made great advances in the art of relieving pain. But, when we seek by statistical methods to determine what advances we have made in the prevention of death by the internal use of drugs, it must be confessed that the data are, for the most part, wanting, and that the optimist and the pessimist can propound their theories and beliefs upon nearly an equal footing—*i. e.*, that of ignorance of the real facts in the case.

It is easy to see that the statistics of fevers collected in the last century—before typhus, enteric, and relapsing fevers were distinguished from each other—are of little use now, and modern bacteriology has destroyed, to a great extent, the value of the old statistics of tubercular diseases, typhoid fever, cholera, etc., and of the statistics of surgical operations. They have rendered some service in their day, but their value is now chiefly historical. There is, however, in existence in medical literature a very considerable number of cases which have been recorded with sufficient detail to be available for statistical treatment which they have not yet received. Death-rates in relation to number of cases of special forms of disease, showing relations of mortality to sex, age, and race, are yet to be calculated, and there is material for some good and useful work in this direction.

Within the last twenty-five or fifty years in civilized communities the gross mortality has diminished, there has been a prolongation in the average expectation of life, and the mortality of the years of infancy has greatly diminished; but how much of this is due to preventive medicine, how much to improved conditions of habitation and to the lowering of the price of food, and how much to improved methods of treatment? Dr. Zweifel endeavored to answer this question in a lecture on the influence of medical knowledge on the life of the people, delivered in Leipsic in 1887. ("Der Einfluss der ärztlichen Thätigkeit auf die Bevölkerungsbewegung.")

Taking as a basis for his calculations the figures of Bavaria for ten years and those of Saxony for thirteen years, he found that, for 100,000 living population, the average number of deaths from tuberculosis increased from 250 to 258; from inflammation of the lungs, from 222 to 270; from croup and diphtheria, from 98 to 123. He remarks that these are saddening figures, in spite of the sanitarians and health resorts, in spite of ventilation, new methods of treatment by inhalation, compressed air, etc. The number of men who die from diseases of the respiratory organs is steadily increasing, and he queries whether Süssmilch was not right in his phrase "Göttlichen Absterbeordnung" ("Divine law of death").

On the other hand, he shows that the mortality from typhus has fallen from 62 to 34. But the question is whether this is due to a diminished prevalence of the disease, or to a diminished mortality in the same number of cases of the disease due to improved medical treatment. It may be noted in this connection that the chief effect of improved sanitation appears in the lessened mortality in children under five years of age, and that it is chiefly in the mortality occurring after these ages that we are to look for the influence of improved medical treatment. In examining this, how-

ever, it is to be remembered that improved sanitary conditions, affecting chiefly infants by preserving a number of feeble and sickly children, tend to produce a higher rate of mortality in succeeding years. In cases admitting of surgical treatment, and in childbirth, there can be no doubt as to the diminished mortality in the practice of those who use the best accepted modern methods, but these methods are not yet used scientifically by half of the profession, and the results are not perceptible in the general death-rates thus far collected.

It must be admitted that the greater part of the increased expectation of life is probably due to better food, purer water, greater cleanliness, and improved methods of preventing the spread of contagious diseases. If we look at the curves representing the loss of life in large masses of people at different times and places we see that the laws of life and death have but a narrow range of variation after the age of infancy has passed, and that improvements in therapeutics have lifted the lines but very little. They have lessened suffering greatly, but they have not greatly deferred death.

In our present state of knowledge there are certain forms of disease and derangement of organs whose tendency is to recover without any treatment, or in spite of bad treatment. There are also certain diseases and derangements which are incapable of cure by any known method of treatment. Otherwise, man would not be mortal. Between these two classes is a small number of cases of disease the result of which depends on the treatment. In order that medical statistics may give us any information in regard to this last class, we have got to have some idea as to the proportion of each of the two other classes.

A very good illustration of some of the ways in which lies can be told with statistics may be found in the various books and papers which have been produced in connection with the anti-vaccination controversy.

In order to understand the relations between vaccination and small-pox it is necessary to have the death-rates from small-pox given for different periods of life—that is, by age. In this country and in Great Britain we have no data as to the deaths by small-pox by different ages prior to the introduction of vaccination, because the registration of deaths by ages has only been carried on for a little over fifty years. We can, however, for Great Britain, compare the statistics of vaccination for three different periods—the first, from 1847 to 1853, in which gratuitous vaccination was provided for the people, but it was purely an optional matter with them whether they should make use of it or not; from 1854 to 1871, when vaccination was obligatory by law, but this was mainly theoretical, since the law was practically not enforced; from 1872 to 1880, when the vaccination was rigidly enforced.

Before the introduction of vaccination there were but few persons who did not have the disease at some time in their lives. It appeared in epidemic waves over Europe, usually at intervals of from five to seven years, being about the period of time required to accumulate by births a sufficient amount of susceptible persons to enable an epidemic to make headway. Of course, then, the great majority of persons had the disease in infancy, or in early childhood, and a large proportion of these died. So that in those days the small-pox mortality in the early years of life was high, while those who survived were either protected from future attacks or presented a certain amount of immunity to the poison of the disease, so that the small-pox death-rate of the higher ages was then low. When vaccination came to be general, the young were protected, but were not protected as permanently and completely as would have been effected by an attack of small-pox. The result of this was that the death-rate from small-pox under five years of age fell eighty per cent., while from five to ten years of age it fell forty-five per cent., and in the older ages it may even have increased where revaccination was not systematically and thoroughly carried out. Taking the English records for 1872 to 1874 and 1877 to 1880, it is found that the proportion of deaths under and over fifteen years of age, per thousand deaths, from small-pox differs according to whether the persons were vaccinated or unvaccinated, as follows: Of 1,000 unvaccinated persons dying from small-pox, 672 were under fifteen years of age and 328 over fifteen. Of 1,000 vaccinated persons dying from small-pox, 334 were under fifteen and 666 over fifteen, the proportions being, as will be seen, almost precisely reversed under the two conditions.

If we compare the death-rate per 1,000 of living population in an epidemic of small-pox occurring in a city in the United States in recent times with that of an epidemic occurring in a city in the last century, we shall probably find that the death-rate was greater in the modern city than in the ancient one. Perhaps two thirds of the people in the modern city were properly vaccinated; in the ancient city none were vaccinated. Are we to conclude that partial vaccination increases the death-rate from small-pox? Yes, for a single epidemic year; but if we take a period of twenty years or more for our comparison, we shall find the death-rate much lower in the vaccination than in the ante-vaccination period, because in the ante-vaccination period the adults had been through several epidemics of small-pox, and had either had the disease and survived, or had proved insusceptible to the virus, being in either case protected. The only class of the population in much danger from small-pox in those days were the young children born since the last epidemic, less than ten years ago. But in the modern community, partially protected by vaccination, there has accumulated a considerable number of unprotected adults during the long periods which now elapse without an outbreak, and these increase the death-rate. Comparisons of small-pox statistics for single years are therefore almost worthless.

In vital statistics, as in other branches of social science, it is not true that the effects of causes acting in combination are equal to the sum of the effects of each of the causes acting separately. Different causes of death having no relation to each other do not have a joint effect which is equal to the sum of the effects of each cause taken separately, and it is therefore difficult to bring the phenomena of vital statistics within the boundaries of mathematical formulæ. In the doctrine of this kind of averages time and number are not convertible terms.

Statistics applies to masses of men, to communities, not to individuals. We find a mass of matter moving in a certain direction with a certain velocity and endeavor to calculate the direction and amount of the forces which have produced this result. In like manner we may consider the tendency to death in a community as a resultant of several forces as indicated in the diagram, and endeavor to estimate the influence of each of these forces in producing the result.

In studying medical and vital statistics one is somewhat in the position of a man on the deck of a large Atlantic steamer, out of sight of land and gazing on the troubled ocean. He sees many waves, large and small, apparently moving in very different directions, and it is not until he has, by careful examination and repeated comparison, learned to distinguish the ripples due to the wind now blowing, the larger cross-seas resulting from forces which were acting a few hours before, and the long rolling swells which indicate to some extent the direction and force of the tempest of yesterday, that he can begin to understand the roll of the ship on which he stands; while to appreciate the force and direction of the great current which is sweeping with it all the troubled water and the ship itself requires skilled observation with special instruments, and the use of charts which embody the experience of hundreds of voyages. So also in viewing the records of human life, disease, and death, the variations which are at first most perceptible are often those which are most superficial and which give little or no indication of the magnitude and direction of the movement of the great masses beneath.

The following works will be found useful for reference:

Süssmilch, J. P., "Die göttliche Ordnung in den Veränderungen des menschlichen Geschlechts, aus der Geburt, dem Tode und der Fortpflanzung desselben erweisen," 2. Theile. Vierte verbesserte Ausgabe, genau durchgesehen und näher berichtiget von Christian Jacob Baumann. 8vo. Berlin, 1775.

Niles, N., Jr., and Russ, J. D., "Medical Statistics; or, a Comparative View of the Mortality in New York, Philadelphia, Baltimore, and Boston, for a Series of Years; including Comparisons of the Mortality of the Whites and Blacks in the Two Former Cities; and of Whites, Free Blacks, and Slaves in Baltimore." 8vo. New York, 1827.

Neison, F. G. P., "Contributions to Vital Statistics, being a Development of the Rate of Mortality and the Laws of Sickness, from Original and Extensive Data; with an Inquiry into the Influence of Locality, Occupations, and Habits of Life on Health; an Analytical View of Railway Accidents; and an Investigation into the Progress of Crime in England and Wales." 3d ed., 4to. London, 1857.

D'Espine, M., "Essai analytique et critique de statistique mortuaire comparée, renfermant les monographies étiologiques des accidents et de la plupart des maladies mortelles et expliquant les lois générales de la mortalité des peuples par les influences combinées des diverses causes de mort." 8vo. Genève, 1858.

Ansell, C., Jr., "On the Rate of Mortality at Early Periods of Life, the Age at Marriage, the Number of Children at a Marriage, the Length of a Generation, and Other Statistics of Families in the Upper and Professional Classes." 8vo. London, 1874.

Bertillon, "La démographie figurée de la France ou étude statistique de la population française avec tableaux graphiques traduisant les principales conclusions. Mortalité selon l'âge, le sexe, l'état-civil, etc., en chaque département et pour la France entière comparée aux pays étrangers." Folio. Paris, 1874.

Ollendorff, A., "Die periodischen Sterblickeits-Schwankungen in ihrer Bedeutung für die Medicin." "Arch. f. path. Anat.," etc., Berlin, 1886, cv, 110–128, 1 pl.

Bertillon, Jacques, article "Démographie" in "Encyclopédie d'hygiène et de médecine publique." Paris, 1889, 8vo, tome 1, p. 119.

In addition to the census and registration records we have another important source of information in vital statistics—namely, the records of life and health insurance companies. These are not so well known to physicians generally as they should be, and I wish therefore to call special attention to the two most valuable compilations of them now in existence—namely, the "Insurance Cyclopædia," commenced by Cornelius Walford, of which five volumes have now been published, and the "System and Tables of Life Insurance based on the Experience of Thirty American Life Offices," by Levi W. Meesh, published in 1881.

Original Communications.

CONGENITAL ABSENCE OF FIVE RIBS, WITH RESULTING DEFORMITIES.*

By HOMER GAGE, A. M., M. D.,
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The subject of the following sketch was referred to me in May last by Dr. O. H. Everett, of Worcester, Mass. I have been unable to find any similar case in my own reading, and Dr. R. Lorini, of Washington, who has made at my request a very careful search, reports that he can find no reference to any like deformity in the library of the Surgeon-General. I have thought, therefore, that these photographs,† with a brief sketch accompanying them, might prove of interest to you.

Susie S., born in Worcestershire, England, aged seventeen years and two months, is the oldest of nine children, none of whom present any peculiarities of growth or development. While pregnant her mother fell down stairs, injuring her side, but had never attached any significance to the injury. The absence of part of the bony wall of the thorax on the left side was noticed at birth. There was not, however, any curvature of the spine, nor was anything noticed with regard to the position of the heart. While she was yet a baby in long clothes, a little bunch was observed in the left side, which appeared only

* Read before the American Orthopædic Association, September 19, 1889.

† For the photographs I am under great obligations to Dr. E. V. Scribner, of Worcester. The lines indicating the position of the ribs and viscera were drawn upon the body with soft crayon.

when she was coughing or crying, was about as large as a walnut, and seemed not unlike a rupture. She was carried daily to the hospital in the vicinity, where a bandage was applied to keep the bunch from coming out. These measures were, however, unsuccessful, and it gradually grew larger, attaining its present size about four or five years ago. The spinal curvature was first noticed when she was five or six years old, but received no treatment until four or five years later, when plaster jackets were applied, and these four years ago were discarded in favor of a corset made of millboard stiffened with fish glue. The corset has not provided any proper support for more than a year, and in consequence her curvature has increased very rapidly, and her general health been very much impaired.

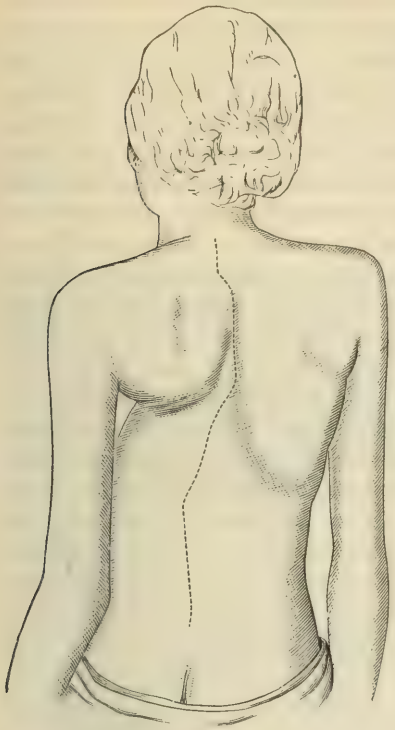


FIG. 1.

She has never had any serious illness, has met with no accident, and until within a year past has been obliged to assume, to a large extent, the work and responsibilities of the house. Since the jacket failed to afford an efficient support she has lost both flesh and strength, has complained of pain in the back and left side almost constantly, has lost her appetite, and has complained of great pain and distress after eating. She says that she can neither walk nor eat without pain. She has never menstruated. She is four feet one inch and a half tall, weighs seventy-two pounds, is pale and thin, breasts undeveloped, no signs of puberty. She has a lateral curvature of the spine in the middorsal region, with the convexity to the right, and a long compensatory lumbar curve. There is considerable horizontal rotation of the vertebræ, as indicated by the prominence of the angles of the ribs on the right side, but there is no corresponding prominence of the costal cartilages in front on the left. Upon inspection, the left side presents very much the appearance often observed after severe empyema, when the cavity has been closed by the retraction of the chest wall instead of by the expansion of the lung. But closer examination shows that the appearance is due not to the retraction of the chest wall, but to the congenital defect in its development. As indicated in Fig. 2, the first, second, third, fourth, and fifth ribs are found in their natural positions and relations. Just below the fifth costal cartilage is a sixth cartilage which is connected with the end of the sternum and can be traced outward and upward until it joins the extremity of the fifth rib. There is no trace of the sixth, seventh, eighth, ninth, or tenth rib, and in the gap thus left the muscular wall can easily be pushed in until the pulsations of the aorta can be felt from the side. In this gap, too, as is shown in Fig. 4, can be readily made out and felt the upper half of the spleen. Across the middle of the spleen can be felt the eleventh and twelfth ribs, smaller and in much closer proxity to each other than normally.

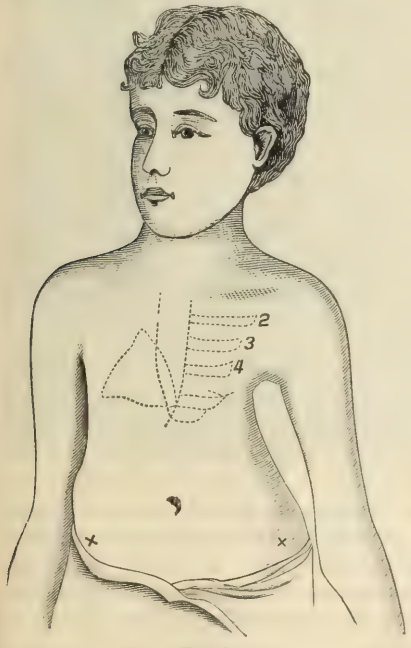


FIG. 2.

Pulmonary resonance and the respiratory sounds are lost below the border of the fifth rib in front and below the angle of the scapula behind. The area of cardiac dullness begins at the middle of the sternum, and extends to below the right nipple in the fifth interspace, as shown in Figs. 2 and 3. The first sound of the heart is heard loudest at this point, and the second sounds along the opposite side of the triangle. There is no murmur. Pulsation can be seen and felt all over this area, but more distinctly along what seems to be the basal line. Figs. 3 and 5 are instantaneous photographs taken while the girl was in the act of coughing, and afford a very accurate representation of the bunch to which I have already alluded. It can not be produced or maintained by any ordinary muscular effort, and subsides almost at once with the expiration which completes the cough. It has a firm, elastic feel, and, as it is thrown out against the hand, gives a sensation exactly like the impulse of a hernia. Percussion over the whole area reveals a resonance decidedly stomachic in character. When once thrown out it can be partially held in position by the hands, and if at such times a little water is swallowed, it can be distinctly heard to fall into the stomach. Unless this bunch can be prevented from appearing by firm pressure of one sort or another, she says that she is in constant distress, which is aggravated by eating or drinking.

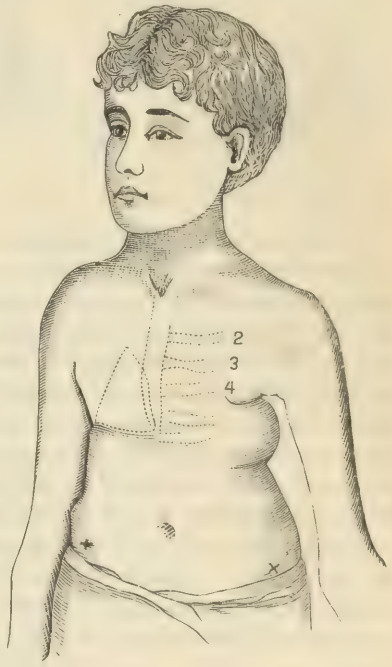


FIG. 3.

For her relief I applied a plaster jacket, from which I made a cast of the body from the axillæ to the trochanters. Upon this cast I had a leather corset molded, and I endeavored to give it additional strength by incorporating four steel stays. She has worn this corset now for about two months with very

satisfactory improvement. She has gained in flesh and strength, has a better appetite and better color, and is once more able to attend to her household duties.



Fig. 4.



Fig. 5.

Coexistent with these anomalies in the number of ribs there is very often, almost as a rule, a corresponding defect in the development of the vertebræ, as in the very remarkable case reported to the Royal Medical and Chirurgical Society by Willett and Walsham in 1880, in which five ribs on the right side, four on the left, and four and a half dorsal vertebræ were absent. There was a lateral curvature with convexity to the left which was believed to be due to the absence of the right half of the third dorsal vertebra. I feel very confident that in the case which I have just described there are twelve dorsal vertebræ. How many, if any, of them are imperfectly developed could be determined only by post-mortem dissection. Repeated and very careful examinations have, however, failed to give any evidence of asymmetry in their development. Moreover, I fail to see why such a supposition is necessary to explain the subsequent deformities. The absence of five ribs upon one side must cause a very serious disturbance in the arrangement of muscles and fasciæ. What has become in this particular case of the attachments of the serratus magnus, of the lumbo-sacral division of the erector spinæ, of the latissimus dorsi, and the great muscles of the abdominal wall, is of course impossible to determine; but, whatever their attachments may be, these muscles must work at a disadvantage as compared with their fellows of the opposite side. In consequence thereof, as soon as the child began to assume the erect position the superincumbent weight of head and upper extremities was transmitted to a spinal column whose supports were seriously crippled on one side. The result has been the gradual development of a lateral curvature with its convexity toward that side whose supports were strongest.

The position of the heart on the right side is very much indeed like that observed in cases of left-sided pleurisy with large effusion, or in cases of left pneumothorax, and I am strongly inclined to the belief that it is the result of similar mechanical conditions. The left pleural cavity is diminished very much by the absence of so many ribs, and has been wholly occupied by the growth and expansion of the lung. In some way or other it seems to me that this growth and expansion of the lung with the sinking in of that side of the thorax and the increasing lateral curvature have forced the pericardium and its contents to the right. The only alternative is to assume that the position is an anomaly of development, and that seems to me hardly necessary. A congenital displacement is usually associated with a general transposition of viscera, and that is certainly not true of this case.

There remains only the peculiar tumor which appears with the act of coughing. I have already indicated briefly my idea as to its probable nature, and will only add that the evidence obtained from its shape and position, from auscultation and percussion, and from the manner of its appearance, leaves in my own mind no reasonable doubt that the tumor is a hernia of the stomach.

AN EXANTHEMA AFTER THE USE OF RHUBARB.*

By HERMAN GOLDENBERG, M. D.

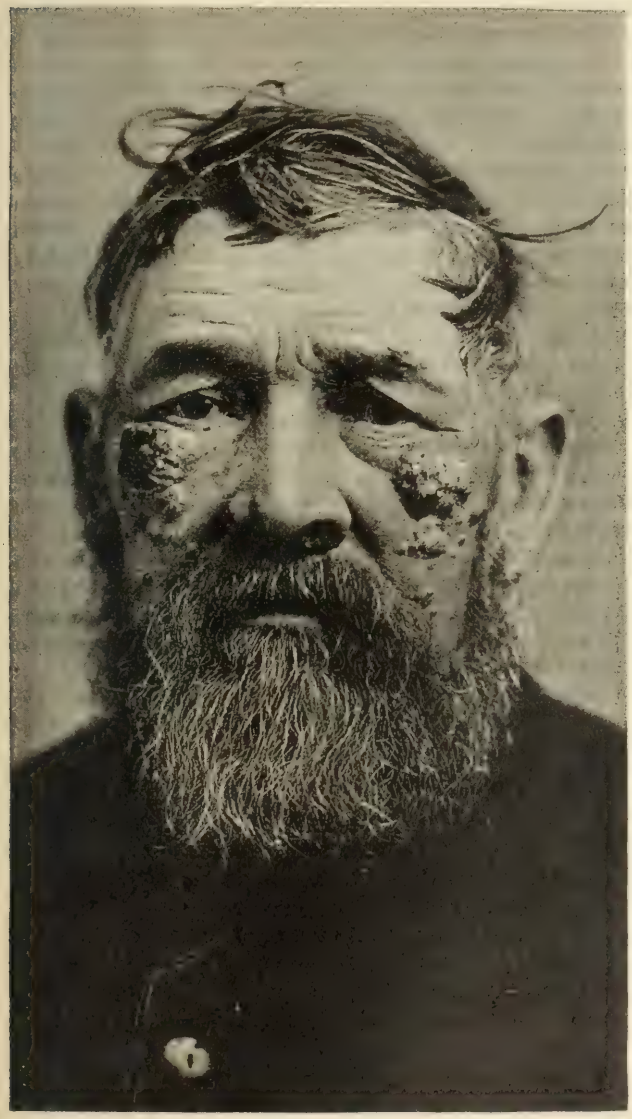
I. W., German, aged sixty-four years, a sailor, was taken sick last November with cough, bloody expectoration, and a swelling of both ankles, which was regarded as rheumatic and treated with a solution of salicylate of sodium. The amount taken could not be ascertained. He stated that, after having taken about thirty teaspoonfuls of the mixture, he awoke on the morning of the 6th of January with a violent beating sensation in the head and a burning in the face. He found, on examination, a number of small nodules on the face, which, in the course of the day, became larger and at the same time pustular. The number of nodules then increased, and others appeared over the hands, which also underwent the same pustular change.

When I saw the patient, on January 8th, he was suffering from frequent epistaxis, and presented an anæmic appearance, suggestive of some general disturbance. Temperature normal, urine scanty, specific gravity 1·011, containing two per cent. of albumin.

The face was quite disfigured, and showed perfectly symmetrical lesions on both cheeks. They extended not above a line drawn from the upper end of the concha auris to the lower eyelid, and below they were limited by a line drawn from the lower end of the concha auris to the angle of the mouth; on the outer side they were found up to the ear, and on the inner side to a line joining the middle of the cornea to the angle of the mouth. The scalp and hairy parts of the face were not affected. The eruption was confined to the region supplied by the peripheral branches of the facial nerve, involving especially the zygomatic and the buccal. It consisted of from fifteen to twenty brownish-red, irregularly-shaped pustules, varying in size from that of a pea to that of a bean, or larger. The lesions seemed to be deeply infiltrated at their bases, and were

* Read before the American Medical Association at its fortieth annual meeting.

surmounted by a superficial pustular formation, the whole being surrounded by an inflammatory area. On pressure, a quantity of pus exuded, followed by blood, the lesions retaining their original size. Below and to the outer side of the middle of the eyes, protruding tumor-like, two large pustules were found. They were much infiltrated, of about the size of a fifty-cent silver piece, and elevated about an inch from the level of the face. The surface of the tumors presented a number of cribriform openings, out of which pus, sebaceous matter, and blood could be pressed in the same way as in the smaller pustules. On the surface of these tumors the pus had dried, forming a thick crust. After their removal there appeared a moist, bleeding, fungoid, ulcerated surface. A similar nodular and pustular eruption was present on the dorsum of either hand. The lesions gradually disappeared without any treatment in the course of a few weeks, leaving a bluish pigmentation, but no cicatrices. The albumin remained constant during the whole time that I observed the patient. The eruption had been looked upon by the physician who sent the patient to me as pemphigus. Although at first glance it resembled pemphigus very strongly, closer observation and the clinical course, together with the nature of the lesions, excluded this affection. I need only refer to the facts that there was no fever, that the general health was good, and that the eruption had appeared suddenly, consisted of infiltrated nodules and pustules, and was confined to the face and hands.



I concluded that we had here to deal with an artificial eruption, as I had previously seen a similar case caused by the use of bromide of potassium, and, furthermore, the eruption resembled the one described by Dr. R. W. Taylor and Dr. C. W. Cutler as dermatitis tuberosa after the use of the iodides.

His physician had reported to me, as I have already mentioned, that the patient had taken large doses of salicylates, but, as I had never heard of any similar eruption occurring from their use, it occurred to me that there might have been an error on the part of the apothecary. This was proved, however, not to be the case on analyzing the medicine. I believed myself, therefore, justified in regarding the exanthema as one caused by the salicylates, and was confirmed in this belief through the reports of Dr. Lauriston E. Shaw, of 1886 and 1887, and, still more recently, his recorded cases in the "Lancet" of January 19, 1889, in which hæmorrhage occurred in rheumatic patients after the use of the salicylates. He says that the epistaxis during salicylation is mentioned by nearly all writers on the subject. In order to determine if the salicylates were the real cause, I continued giving the patient a mixture containing the salicylate of sodium during the following four weeks, without, however, producing any eruption or causing any disturbance in the general health. My conclusion, therefore, seemed to have been at fault, as it hardly appeared probable that this medicament would not have produced a result similar to the last eruption, even if not to the same degree.

It is well known that affections of the kidneys have an influence on artificial exanthemata in such a manner that those drugs which are well borne in a normal state of the kidneys produce a toxic effect upon the skin if they are affected, owing to the fact that the perspiration takes vicariously and to a certain extent the place of the kidney secretion. On the other hand, the same drugs are well borne when the normal kidney function is restored. In the case of my patient such a tolerance of the drug could not be assumed, since the amount of albumin during this period was not only not diminished, but rather increased. Although forced to exclude the salicylates as the causal agents, I yet adhered to the opinion that the eruption was produced by some artificial means.

I must here mention that the patient had informed me that before the appearance of the eruption he had been subject to constipation, for which he had been in the habit of taking rhubarb and Hamburg tea containing also rhubarb. I had noted these facts, but had not considered them of any importance. I also read about the same time of a case presented by Dr. Litten, at a medical meeting in Berlin, of a rhubarb eruption resembling a very severe pemphigus and which could be reproduced at will. I was therefore led to try the effect of this drug.

After a week's rest from all medication I gave the patient a mixture of rhubarb and soda. Having taken about an ounce and a half of the mixture, containing about two drachms of the pulvis rhei, the patient awoke on the morning of the 12th of March with a burning sensation in his face, and he noticed on both cheeks an eruption consisting of small, hard blisters, pea-sized, of tubero-pustular character, surrounded by a red inflamed area. The lesions increased to such an extent that, when I saw the patient the next morning, almost the entire face was covered

with thick yellowish crusts, beneath which there was an accumulation of pus. The eruption was symmetrical, the scalp and hairy part of the face being free. The characters of the single lesions were the same as in the first attack: pustules on an infiltrated base, and also a tendency to bleed on the removal of crusts. On the extensor and the flexor surfaces of the hands and somewhat on the fingers there was the same eruption as on the face.

The patient discontinuing the medicine, the lesions gradually faded in a few days and the ulcers began to heal. On the fourth day, through a misunderstanding, the patient again took two or three teaspoonfuls of the mixture, and a few hours later a decided effect of the drug was again noticeable upon the skin. The reproduction of the eruption by rhubarb thus occurred three times, and I would consequently conclude that that drug was the cause.

I regret that I was unable to continue my observations on this interesting case, as his death ensued not long after from purulent peritonitis following a suppurating embolus of the spleen.

107 East Fifty-ninth Street.

REPORT OF A CASE OF PERNICIOUS ANÆMIA.

By E. R. AXTELL, M. D.,
RESIDENT PHYSICIAN TO ST. LUKE'S HOSPITAL, DENVER, COL.

G. S., aged thirty-four, of normal weight (one hundred and seventy-five pounds); nativity, England, northern part; in Denver five months; came here from Massachusetts, where he had resided one year. He was in Canada two years ago; he had been there five years; occupation, ditcher, laborer. Three months ago, while ditching, he worked in water up to his waist. He worked in this water for a week, and dates all his symptoms from that time.

The patient was always strong and healthy. He had a slight bilious attack last summer; was sick only four days. He denied syphilis. Never was a great drinker nor a regular one. Has been drunk, however, a number of times.

He was admitted to St. Luke's Hospital August 12, 1889. He states that last winter he felt excellently; never had better health. In June last the patient worked for a week at ditching. Was compelled to stand in water up to his waist. During this week he had numerous chills, with languor and fever. Since that time he has never been well—has never been able to do a full day's work. Always felt tired—"played out." For a week or two after, he was on a ranch putting up a wire fence. He found that he could not do a day's work; would have to quit. No dyspnœa, but a sense of extreme weakness. Then he came to Denver and found that he still could not work. Appetite began to fail, he had repeated vomiting, looseness of bowels, few chills, and some fever. He states that he consulted a doctor about July 25th, and that the doctor visited him for some time, but that he got no better. He states that about July 24th he had a very severe nose-bleed, which continued for an hour without ceasing. It was stopped, he says, by ice being applied to the back of his neck. An hour later his nose bled for the second time, and continued to bleed for half an hour. He states that his nose had bled several times before this, but not freely. Was now confined to bed. When the patient was brought to the hospital he was thought to have typhoid fever. Placed on a solution of quinine and listerine. Quinine, five grains every four hours. He was kept on this for a week without effect; the case in the mean time was studied with the following result:

Nervous Symptoms.—Great languor, with weakness of limbs. Much dizziness upon arising from bed. Subjective noises in head and ears. Backache at times. Slowness of memory; no headache; sight and hearing good; distressing feeling of being "tired out."

Respiratory Symptoms.—Some cough at times; nose feels "stopped up"; free discharge; has catarrh; while lying in bed has no dyspnœa. Respires 15 to 18 times a minute. When out of bed has just the slightest amount of "air-hunger," hardly sufficient to be noticed; has nose-bleed almost daily; hardly able to blow nose without some epistaxis.

Circulatory Symptoms.—Pulse weak, compressible, and ranging from 60 to 100; no cardiac palpitation; none during the whole term of observation.

For temperature range, see below.

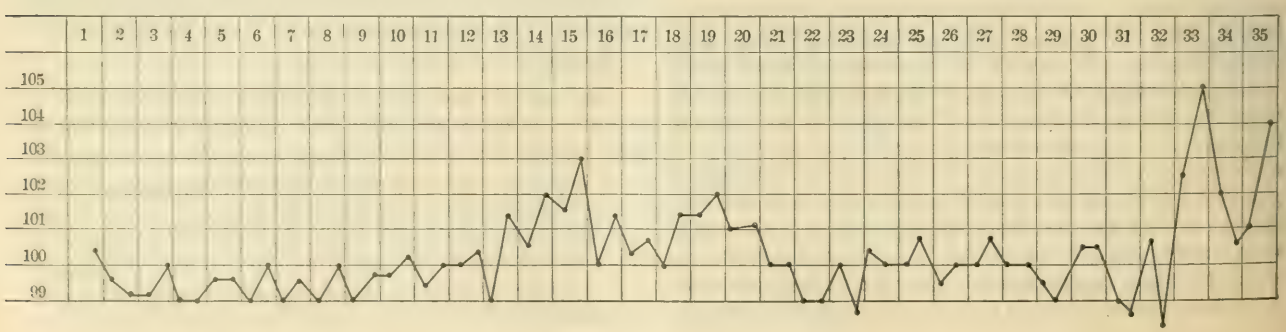
Digestive Symptoms.—No appetite; nausea and vomiting frequent; bowels very loose; painless; has had from ten to twelve stools during several nights; medicines exert but little effect; stools dark-brown, thin, watery, and speckled with lumps of yellow fæces and mucus; states that he has passed a small quantity of blood by the bowel on several occasions; no piles; mucous membrane of mouth pale; tongue large, soft, light in color, with a light coating of whitish fur at times; no great thirst.

Genito-urinary Symptoms.—Had gonorrhœa a month ago; passes water freely at present. Uranalysis: Urine clear, amber-color, specific gravity 1·018, ranging to 1·024, reaction acid, no albumin, no sugar.

Tegumentary System.—Skin dry, harsh; exposed parts a dark, faded-leaf yellow; forearms especially darkened; other parts slightly tinged; conjunctiva slightly yellowed at inner canthus; at times patient sweats a great deal.

Muscular and Osseous Systems.—Nutrition fairly good; fair amount of fat; patient stated that he had lost twenty pounds since the commencement of the disease, or after working in that ditch of water; has tired feeling in body and limbs at all times; no pain or tenderness in bones.

Physical Examination.—Skin of a mulatto-color, earthy yellow; forearms darker than chest; slight sore on lobe of left ear; conjunctiva partly jaundiced, the rest pearly white; gums, tongue,



lips, and nails anæmic; nails very slow in growth; superficial veins never prominent; chest well developed; no sinking of spaces; expansion good; palpation and percussion normal; auscultation reveals dry wheezing râles over right lung anteriorly; left lung normal; heart dullness normal; impulse feeble and diffused; hæmic systolic murmur heard over both pulmonary and aortic orifices; this loud and clear; abdomen of good size, flabby, not distended; liver dullness lessened; splenic outlines greatly enlarged; can be felt below ribs as a hard rounded mass; extends upward to sixth rib; some pain on pressure; limbs normal, except for discoloration of skin.

Ophthalmoscopic examination of fundus oculi revealed numerous small hæmorrhages irregularly scattered over both discs. One large hæmorrhage in lower outer quadrant of left retina.

Course.—The patient, after being on quinine for a week without any perceptible effect, was then placed on Warburg's tincture, a half ounce every three hours, to which was added later tincture of digitalis and tincture of chloride of iron. Diarrhœa in the mean time continued, but was partially checked by bismuth and opium, only to commence if the medicine was omitted for a half-day. Gradually patient got weaker and weaker. Nose bled more frequently. Appetite became very poor, and tired sensation became very distressing. Patient seemed to realize that he was to die and was very low-spirited

At this time the blood was examined as to its physical character, and also microscopically. Quite a pin-thrust was necessary to draw any blood at all. The drawn blood was red, but paler than normal, and was of less consistency, being thin and watery. Power and rapidity of coagulation lessened. Under the microscope the number of red cells was found to be greatly diminished, as compared with a specimen of blood drawn from a healthy man. No count was made, no hæmatocytometer being obtainable. The red corpuscles were very small, irregular in shape, crenated, and paler than normal. They did not form rouleaux, and but few presented a side-view. The white corpuscles or leucocytes were also very scarce, and their diminution was clearly as noticeable as the diminution of the red cells. Clearly a leucæmia also prevailed.

Warburg's tincture was continued for over two weeks with no result. Some stimulation also administered. Patient then placed on Fowler's solution of arsenic; five drops after each meal. All other medication was then discontinued except stimulation.

For eight days the patient was kept on this treatment. No apparent change occurred. On September 13th the patient had two severe chills—one in the early morning, one at 3 P. M. These were followed by fever, severe pain in the right side, and the next day by "rusty sputa" and typical signs of croupous pneumonia, from which the patient died at 4 A. M., September 16th.

Autopsy.—Body that of a well-developed, well-nourished man; skin of a light, earthy-yellow color; post-mortem rigidity well marked; autopsy made sixteen hours after death; fair amount of subcutaneous fat; no post-mortem staining of skin; both lungs free from pleuritic adhesions; whole lower lobe of right lung and lower part of the upper lobe in first stage of croupous pneumonia; pleura over affected surface intensely inflamed; left lung normal; no hydrothorax; heart normal in size; no excess of pericardial serum; muscular tissue soft, flabby, pale in color; cavities filled with soft, brown clots; auricles and ventricles thinned; ventricles more degenerated than auricles; valves normal; spleen markedly enlarged in all directions; about two pounds in weight; substance intensely reddened and harder than normal; small supernumerary spleen, size of a marble, in omental fat; liver slightly contracted and markedly *cirrhotic;* gall-bladder contained but little bile; pancreas normal; kidneys normal, slightly paler than usual; suprarenal capsules normal, as regards size and shape; intestines very pale and flabby; mesenteric glands not enlarged; brain not examined.

Points of interest centering in the case:

Sudden Onset.—The patient stated positively that he was well and hearty until he began ditching in June, during which time he worked for a week in water up to his waist.

Definite Cause.—Working in cold water. Prolonged application of cold, with no means of recovering heat during the resting hours. As a definite cause, this seems to be pretty well established in this case. Just why it should produce in him this trouble I know not. Whether others working with him were similarly affected could not be ascertained.

Tired Sensation.—This was a most prominent symptom, and patient could lie in no position without experiencing it. Sleep brought no rest. Limbs always felt as though they had been used for some time.

Absence of "Air-hunger."—As a symptom, dyspnœa is considered almost pathognomonic or essential, but in this case it was never marked. On exertion the patient would have slight dyspnœa, but it was hardly noticeable.

Absence of Palpitation of the Heart.—This was a special point of inquiry, but the patient always denied its existence. Why it should be absent when the heart and blood changes were so marked is hard to fathom.

Presence of Leucæmia—for clearly a leucæmia was present, there being but a few white cells present in any specimen examined. The estimated proportion of the cells, as seen, was one white to one hundred red.

Inadequacy of Treatment—quinine, Warburg's tincture, iron, and arsenic proving of no avail. If the disease had been recognized early, the arsenic would have been pushed, but it was not, and the pneumonia supervened so early that no manifest change was noticeable from its limited use.

Duration.—This was about thirteen weeks. But the disease was complicated by the pneumonia, and it was the immediate cause of death. But the patient was so weak, pulse so thready, that it would seem a question of but a few weeks with him when the disease itself would have killed. A duration, then, for this case of from fifteen to twenty weeks would seem to be most reasonable.

Presence of Post-mortem Rigidity.—This was hardly expected. The patient had been sick so long and the blood was so poor in coagulability that the muscle-clot (myosin) and muscle-plasma were hardly expected to contract at all. Yet a very decided rigor mortis was present sixteen hours after death.

Presence of Chronic Interstitial Hepatitis.—This pathological change was one of the most prominent changes present, and it was quite marked. Large "hob-nails" studded the entire liver surface, and new fibrous tissue traversed the liver in all directions. The presence of this condition is significant, and our case requires careful study. Could it be one of cirrhosis of the liver and not pernicious anæmia? Many of the symptoms were those of cirrhosis—

gastro-enteric catarrh, pyrexia, enlargement of the spleen, and jaundice. Yet there were present many symptoms which could not be dependent upon cirrhosis—diminution of red and white corpuscles, profuse losses of blood, hæmorrhages into the retinæ, and hæmic murmur. This condition complicating the trouble makes an interesting case, and I would call attention to the fact that the two diseases can make a very similar array of symptoms, and care must be taken in separating them. In this case cirrhosis was never suspected, as no clear history of drinking could be obtained.

PRELIMINARY NOTE ON THE STUDY OF EXOPHTHALMIC GOITRE.

By LOUISE FISKE-BRYSON, M. D.

Careful observations in a certain number of cases of exophthalmic goître would seem to indicate that, however inconstant and variable the presence of symptoms hitherto considered pathognomonic of this strange and unexplained disease, distinctive, fixed conditions prevail, and that these perhaps afford the only rational basis for prognosis.

Such a condition is diminished chest expansion. This is accompanied by increased respiration and frequently by cough. In all the cases examined—the examinations in several instances being repeated at regular intervals for many months—this symptom was constant, varying only in degree. In severe cases the chest expansion on forced inspiration was half an inch, and sometimes less. A chest expansion of one inch or more, on forced inspiration, was considered sufficient ground for a favorable prognosis, in spite of persistent loss of strength and the presence of classical symptoms. Every case examined, with possibly a single exception, gave evidences of present or previous disease of the respiratory tract, usually chronic rhinitis, pharyngitis, or bronchitis. Appropriate measures directed to this locality have been followed by marked improvement in the general condition. Dampness increases the respiratory difficulty and aggravates other symptoms, notably the depressive symptoms of the mental state.

Respiratory Tract.—Diminished chest expansion, frequent respiration, cough, evidences of past or present chronic pharyngitis and rhinitis, of bronchitis; and certain conditions resembling those that prevail in angina pectoris and asthma. Peculiar catching of the breath at regular intervals when reading aloud.

Digestive Tract.—Excessive thirst; sudden hunger; nausea; vomiting; characteristic diarrhœa (sweating of the intestine), coming on suddenly and lasting a few days, a few weeks, then disappearing, possibly returning again at irregular intervals throughout the course of the disease, and remaining as a constant symptom toward the close of life in fatal cases.

Skin.—Perspiration, urticaria, eczema, petechiæ, local or general pigmentation. Transient brown spots, isolated or in groups, appear during the course of the disease, and sometimes bronzing of the skin. A woman of the German peasant class—neck measurement seventeen inches and three quarters, chest expansion on forced inspiration less than half an inch—presented complete bronzing of the skin, with darker areas about the neck, temples, and chest. Whatever abnormity of the skin may exist, the irritation caused by it is out of all apparent proportion to the lesion. In a late stage of fatal exophthalmic goître in a woman every trace of hair had disappeared from the entire body, with the exception of the eyebrows and a fairly good-sized oval-shaped growth partially covering the vertex and occiput. The hair being long, it was possible to conceal the denuded spaces. There was every reason to suppose that in time the alopecia would have become general. The patient stated that she was always wringing wet from perspiration, and the hair had rotted out in consequence.

Genital Tract.—Leucorrhœa, menorrhagia, metrorrhagia.

Muscles.—Tremor. A kind of paresis—sudden loss of power—of the lower limbs that causes stumbling and falling; von Graefe's symptom absent in the case of two negresses. A slight increase in the size of the muscles of the left side, making the measurements equal to those of the right.

Ophthalmoscopic Examination.—Practically negative.

Mental State.—At first and for a short time there is great depression of spirits, with tearfulness, irritability, specified fears or general apprehension. This gives way to a condition of hopefulness that eventually becomes "desperate cheerfulness" as the disease progresses. L. S., a few days before her death, enjoyed making plans for a short stay in some hospital, to be followed by a trip to the mountains. Her symptoms at that time were of the most exaggerated type, together with weakness so profound that the patient could not raise herself or turn over in bed. M. R. reported that when ill-health compelled him to give up business the previous year he had been melancholy beyond expression. "But now," he added buoyantly, "I believe I could spend all my capital, and borrow money if necessary, without feeling it so very much." Accompanying or growing out of this desperate cheerfulness there often exists an absurd and perfectly useless mendacity. Commonly it has no more reason for being than the mendacity of hysteria, though there may be some foundation in fact for what the patients say about themselves. Whoever studies carefully and persistently the characteristics of persons suffering with exophthalmic goître will be struck with the fact that, whatever the degree of their natural or acquired timidity, they all have a remarkably good opinion of themselves and a strong desire to impress others with a realizing sense of their virtues and accomplishments, and urge their claim to special consideration on the ground of some cherished quality that seems to raise them above their natural station in life. A young girl of the German peasant class replied, in answer to varied and apparently off-hand questions extending over a period of weeks, that she could play and sing extremely well, could read aloud in a fascinating manner, and dance charmingly. The only accomplishment the writer had an opportunity to test was that of reading. This proved to be clear in point of enunciation, but expressionless and non-intelligent, performed with the same regular catching of the breath that characterizes this disease (and perhaps others). M. R. said he could play on every known musical

instrument. W. F. says that she sings, plays, dances very well, and speaks German. She belongs to a social class in which such accomplishments are not common. S. L., a negress, is forty-five years old, and looks fully twenty years younger. She is very proud of this distinction, and of her neat, stylish appearance, and of her correct views of life. L. S. was, according to her own statement, a linguist and a musician. Dreams (which the patients are unwilling to speak about) are not the least of the many annoyances that appear in the complex of symptoms known as exophthalmic goître. Persistent and tactful questioning, repeated at intervals, will serve at last to elicit about the same history of dreams, which are terrifying in their nature, of harmful *black* objects—rats, toads, reptiles, animals, men—in pursuit of prey. Sleep is disturbed and unrestful. There are jerking of the limbs, sudden starts, and occasional outcries.

Exophthalmic goître may exist simultaneously with some other constitutional trouble, such as migraine, hysteria, Addison's disease, diabetes, and myxœdema. Often there is a history of infectious disease during childhood that seems to have been the starting-point of marked alteration in nutrition, as scarlet fever, inflammatory rheumatism, etc. There is but little reason to imagine that exophthalmic goître starts up out of space and hits its victim like a thunderbolt out of a clear sky. It is more reasonable to suppose that the way has been prepared earlier.

When exophthalmia is absent, it is possible—more than that, it has been done—to mistake Graves's disease for tuberculosis or malarial fever, especially when the latter is of an irregular type. The following general comparison of symptoms makes the differential diagnosis somewhat apparent:

Tuberculosis.	Exophthalmic goître.	Malarial fever.
Chilliness now and then.	Tremor.	Chills.
Fever.	Fever.	Fever.
Cough.	Cough.	
Increased respiration.	Increased respiration.	Increased respiration during fever.
Dyspnœa on exertion.	Dyspnœa on exertion, or in damp weather, or coming on suddenly without apparent cause.	
Sweats.	Sweats.	Sweats.
Diarrhœa.	Diarrhœa.	
Pallor and hectic flush.	Pale yellow tint; bronzing of skin; pigmentation; eruptions.	Jaundiced hue; pigmentation.
Hopefulness and courage.	Desperate cheerfulness; easily cowed.	Melancholy.
Loss of flesh.	Loss of flesh.	
Pulse: No uniform relation to temperature; always feeble, varying rarely in rhythm, and accelerated by slight causes.	Pulse: No uniform relation to temperature; often feeble, varying frequently in rhythm, and accelerated by causes so slight as to be almost inappreciable.	Pulse: Bears a somewhat regular relation to temperature.
Anæmia.	Anæmia.	Anæmia.

Treatment.—General hygienic measures, the first of which is to get the patient as far away from the ground floor as possible and from all sources of dampness. Inland—especially a mountain region of moderate altitude—seems emphatically the choice location for vacations or a change of air. The common report is that a stay at the sea-shore makes life a perfect burden, increasing the respiratory difficulty and bringing back depression of spirits. Damp days have the same unfortunate effect. A salt sponge bath, followed by friction—lower limbs first, upper limbs, trunk, neck, and head—two or three times a week, induces a more healthful action of the skin. Alcoholic and malt liquors must, as a general thing, be discarded, together with sweets and fried food. Regular rest and regular exercise should be prescribed according to careful direction, like any other medicine.

Drugs.—The iodides, nux vomica, carbazotate of ammonium, and strophanthus have given good results. The iodides are contra-indicated when there is much respiratory difficulty. Jaccoud gives arsenious acid night and morning, and bromide of potassium between meals. Friedreich advocates quinine for an indefinite period.

Strophanthus (Kombé arrow-poison) was first presented to public notice by Professor T. R. Fraser, of Edinburgh (see "British Medical Journal," November 14, 1885). "However introduced into the body, it increases the contractile power of all striped muscles, and renders their contractions more complete and prolonged. . . . As a result of the action on muscle, the heart is early and powerfully affected. It receives a larger quantity in a given time than any of the other muscles of the body, and therefore it is probable that strophanthus affects its action more distinctly and powerfully than it does that of the other striped muscles." Strophanthus is without cumulative effect, is antipyretic, diuretic, and promotes appetite and digestion (Bartholow). It has a marked central effect upon the vagus ("Reference Hand-book of Medical Sciences").

The following interesting items are copied from the history and the report of the autopsy of Dr. J. West Roosevelt's case, which he has courteously furnished for the greater completeness of this preliminary note:

Patient, woman, aged forty-seven years; father died of phthisis, maternal uncle insane; no knowledge of other neurotic trouble in family. . . . Over lungs, resonance of exaggerated type. There are places where coarse and fine liquid râles are heard. . . .

DATE.	Pulse.	Respiration.	Temperature.
May 25.	120	38	100°
May 26.	128	48	98
	120	40	100
May 27.	120	38	98
	112	38	98·6
May 28.	118	32	98·8
	108	34	98·4
May 29.	116	32	99
	116	32	98
May 30.	108	34	98·4
	112	32	98·6
May 31.	100	28	98
	100	28	99·2

Autopsy.—Diaphragm on right side rises to the fourth space; on the left to the fifth space. Lung: Small, dark-pink in color; left lower lobe is œdematous and shows commencing red hepatization; pleural cavities normal. . . . Bronchial and mediastinal glands enlarged and deeply pigmented. . . . Heart: Normal size; muscle looks normal; coronary arteries somewhat thickened; mitral and aortic valves slightly but distinctly thickened.

. . . Stomach and intestines: Mucous membrane throughout thickened and coated with mucus. . . . Liver: Smaller than normal, dark in color. . . . Brain: Vessels at the base somewhat thickened. . . . In pia mater over middle peduncle of the cerebellum, small, flat new growth about the size of a filbert, which does not seem to have pressed on anything. . . . Pneumogastric and sympathetic nerves look normal.

Microscopic Examination.—Negative.

The study of a special subject has convinced me that the medical profession is a fraternity full of generosity and *esprit de corps*. While I have been the recipient of the greatest kindness from many physicians, in New York and elsewhere, in regard to opportunities of observing and investigating cases, to Dr. Edward C. Seguin I am indebted for special courtesy.

38 West Thirty-eighth Street.

A CASE OF POISONING BY COAL GAS.

SLOW RECOVERY. HEROIC TREATMENT.

By JEFFERSON C. CROSSLAND, A. M., M. D.,
ZANESVILLE, OHIO.

In vol. l, No. 17, of this Journal there appears an article on poisoning by illuminating gas from the pen of Dr. W. C. Kloman. This article is written partly to correct some false impressions contained in Dr. Kloman's article, but especially to record a case which the writer considers interesting, instructive, and in some particulars exceptional. Illuminating gas, no doubt, produces death by the carbon monoxide of the gas combining with the hæmoglobin of the blood.

As to the comparative amount of carbon monoxide in water gas and coal gas I am uninformed, and therefore accept Dr. Kloman's statement.

However, the case of Dr. Kloman, and that shortly to be described by the writer, do not seem in accord with the comparative amounts of carbon monoxide in the two gases.

On November 20, 1888, Mary S., a muscular young woman of excellent physique, applied at the Kirk House, at 10 P. M., for lodging. It was subsequently learned that she had been employed as a domestic for about a year in the western part of Ohio, and was on her way home, having stopped here for the night, and intending to take the morning train for her home in a coal district in an adjoining county. She was unable to write, and the clerk placed her name on the register, with a call for 5 A. M. She was assigned a room, and immediately retired. At 5 A. M. the clerk went to her room to call her. On approaching her room, the clerk found the hall fragrant with the odor of gas, and, recalling the illiteracy of this guest, suspected she had blown out the gas. He made violent raps on the door, and, receiving no response, broke it open. There on the bed lay the young woman, apparently hopelessly asphyxiated by the gas. The stop-cock was examined and found to be turned on full. The gas was shut off. The door was opened and a window raised. The room was a very small one, not exceeding 10 by 10. Dr. C. Draper was called, and when he arrived found the patient in the following condition: Respiration stertorous, shallow, and abounding in mucous râles; radial pulse merely perceptible; eyes partly open, fixed, and insensible to touch; pupils moderately dilated and not reacting to light; conjunctivæ congested. There was marked lividity about the face and extremities. The patient was cold and moribund.

Seeing that the ventilation of the room and the vigorous atmosphere of a November morning had had no effect in restoring the girl, Dr. Draper administered stimulants hypodermically and Dr. E. C. Brush was called in consultation. After the arrival of Dr. Brush, treatment by stimulants, hypodermically administered, was continued until 9 A. M. without the least improvement in the condition of the patient. At this hour I was called in consultation, and, being informed as to the nature of the case, I took with me a galvano-faradaic battery and a drachm phial of a one-per-cent. solution of nitroglycerin prepared by Parke, Davis, & Co.

Fifteen minims of the nitroglycerin solution were injected in the epigastrium. The good effects of this on the heart action were perceived in about five minutes. It was soon evident to us, however, that several hours would elapse before the system could throw off the poison sufficiently for the patient to regain consciousness. We soon learned, by observing the effects of our remedies, that nitroglycerin was the remedy *par excellence*, and we made it our anchor remedy throughout the treatment. No exact record of the treatment having been kept, I shall have to generalize somewhat. The treatment by hypodermic injections, chiefly of nitroglycerin, was continued at intervals varying from thirty minutes to two hours, according to the indications. At 3 P. M. the vital powers were almost collapsed, and death seemed imminent. Twenty minims of the nitroglycerin solution were injected over the epigastrium, and the poles of the battery applied to the regions along the track of the pneumogastric nerve. Artificial respiration was practiced. In an hour the condition of the patient was as good as it had been at any time since 9 A. M.

This line of treatment was kept up till 2 A. M., when, by the use of a strong current from the battery and slapping the face with a wet towel, the patient seemed to notice those in the room. At 3 A. M. she had so far recovered from the effects of the poison as to mutter "Don't" in protest against the use of the battery and slapping the face with a wet towel. At 4 A. M. she could answer questions, and expressed a desire to defecate. Fearing evil results from allowing her to remain up long enough to defecate, we furnished her with a bed-pan, which she insisted she could not use.

We allowed her to get up, but she could not have a stool. She was no sooner in bed than she desired to get up, and several times she was placed on the chair without an action of the bowels. Thinking this desire to defecate only rectal tenesmus, I administered an injection of morphine in the perinæum, and the desire to defecate ceased. From this time the patient went on to a rapid recovery. She was not, however, able to leave her room for two days, and left the hotel on the third day.

Nitrogenous Contents of Sputum.—"Dr. M. Panoff has examined the sputum of patients suffering from various forms of lung disease with the view of ascertaining the amount of nitrogen expectorated. The details of his results are given in No. 2 of the St. Petersburg Dissertations for the session of 1888–'89. The estimations, which, of course, included both the liquid and precipitated portions of the sputum, were made by means of the Kjeldahl-Borodin process, the general result being that the greatest daily expectoration of nitrogen was 1·14 gramme, and that the sputum which contained the largest amount of nitrogen, both when reckoned by the total daily expectoration as well as by its percentage composition, was that of phthisical patients, while, on the other hand, that which contained the least nitrogen, both absolute and relative, was that occurring in cases of bronchitis and croupous pneumonia."—*Lancet.*

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MEDICAL STATISTICS.

IT is a curious fact that medical men in general, while frequently making use of statistical data, seem to have but little knowledge of their real value. Dr. Billings, in the Cartwright Lectures, sets forth in a most interesting manner a number of facts in regard to the data needed, some of the modes of obtaining them, some common errors and omissions, and some of the ways of judging of the probable accuracy of the figures. If medical men would realize how important these points are, how necessary it is to know what to tabulate and what to omit, how many cases are needed in order to furnish material from which to draw inferences, and how greatly these numbers differ when different problems are to be studied—if they comprehended that, owing to the omission of certain facts, tables, no matter how extensive, may be worse than worthless—it is probable that we should be saved much work and should get more knowledge.

Perhaps the most important thing to learn in dealing with statistics is that the results are true of masses, but not necessarily of individuals. "The results of medical statistics," says Dr. Billings, "will not apply to the treatment of any particular case. They can never prove that bloodletting should be employed in all cases of pneumonia or that it should never be applied in any case of pneumonia." It is too frequently the case that men attempt to make statistics prove that a course of treatment which has seemed beneficial in a large number of cases is, therefore, applicable to each case individually. Now, although a large mass of cases may serve to give the average results of treatment, yet in that mass there are many cases which depart from the average, and it is quite possible that treatment which has given good average results should have been fatal to a certain number of individuals, have injured some, in no way have affected others, have saved the lives of many, and have shortened the course of the disease in the rest. It is well to bear in mind that a number may have been killed or injured, though the average results are better. It is utterly wrong to reason from facts obtained which apply to masses, when the individuals composing the masses are to be considered. Suppose that in a given disease ten per cent. die, as shown by large masses of figures, say 100,000 cases. Does this mean that the chances in any one case can be represented as one in ten that death will result? Not at all. The chances in that case may be enormously in favor of the patient's recovery or of his death. It would be as foolish to assume that the average represented the actual chances as to think that it indicated the death of one tenth of each person, instead of one tenth of the mass.

The numbers needed to establish any facts of value in different cases, the margin of error, the absolute necessity of recording sex and age—these and much else of importance Dr. Billings mentions. His lectures should teach those who use or make medical statistics that it is needful to understand what to record and what can really be deduced from the records.

PROTECTION APPLIED TO THE PRACTICE OF MEDICINE.

THE very large number of Americans who winter in the south of Europe, whether for purposes of recreation or for the recovery of lost health, will hear with astonishment and dismay of the recent action of the French Government concerning English physicians practicing abroad. Formerly a foreign physician wishing to practice in the Riviera could qualify by reporting himself at Marseilles and passing the by no means insignificant examination for the grade of *officier de santé*. This was a considerable obstacle and deterred many from pitching their tents in the French winter resorts. But it seems that even this protection is not sufficient. At Nice, Cannes, and Mentone—places, be it remembered, built up entirely by the recommendations of English physicians—the whole of the English and American practice (and very good practice it is in the season) has been in the hands of the well-established English-speaking physicians settled there. This state of affairs seems to have caused a great deal of jealousy among the native doctors, who, as elsewhere on the continent, regard Anglo-American travel as an institution specially devised by Providence for their maintenance. Pressure has been brought to bear upon the French Government, by the representatives of these persons, of such weight as to force M. Fallières, the Minister of Public Instruction, to inform the English ambassador in Paris, with respect to English medical men who may be seeking authority from the French Government to practice in France, that it will not be possible in future for his Department to give the same favorable consideration to applications of this kind as has hitherto been accorded them, whether received directly by the Minister or through the British Embassy, and that the applications will be refused unless "in instances presenting very exceptional claims."

The meaning of this pronunciamento is plainly to the effect that after date no English doctor is to practice in France. Those who have already gained a high professional position in the cities and towns which Englishmen and Americans most frequent will, it is presumed, not be expelled; but they are not immortal, and a few years will see the race die out, and then the French doctor will have it all his own way; he alone will have the honor and glory of looking at the tongue and feeling the pulse of John Bull and Brother Jonathan.

We regard this as a very serious matter, requiring joint action on the part of our Government and that of Great Britain. When we consider the vast number of our countrymen who spend their time in France, it seems outrageous that they should practically be denied the privilege of obtaining necessary advice, to say nothing of sympathy and consolation, from

one speaking their own tongue. A foreign doctor in no way takes the place of one accustomed to our ways of thought and action, even if he does speak English or even if we do speak his language. The French law, if carried out, will render it a punishable offense for a young American or English doctor to travel with a patient in France, and a New York or London consultant will not find in foreign cities a physician to whom he can transfer a patient whose case requires careful explanation.

If the French Government would but inquire into the causes of the influx of visitors to these winter resorts, it would find that the Anglo-American immigration originated largely in the recommendations of those speaking our language. Smollett, an English doctor, brought Nice to public notice. What would Cannes, with its sixty hotels and its floating population of ten thousand, be to-day were it not for the notice into which it was brought by Lord Brougham, and for the recommendations of such authorities in chest disease as Williams and Walshe? As for Mentone, it was made by Bennett. And now, having enjoyed for so many years the products of the conversion of the English sovereign and the American dollar into the French franc, the Department of Public Instruction of the Republic is about to perform that old operation described in detail by Æsop and known to the public as killing the goose that lays the golden eggs.

MINOR PARAGRAPHS.

DRYNESS OF THE THROAT.

From the "Medical News" we copy a formula used by Dr. Solomon Solis-Cohen for the relief of dryness of the throat and mouth, which characterizes both acute and chronic morbid conditions of the mucous membrane. The following ingredients are compounded in the form of a lozenge, to be dissolved gradually in the mouth:

Fluid extract of pyrethrum	2 to 3 minims;
Pilocarpine hydrochloride	$\frac{1}{32}$ grain;
Pure extract of licorice	2 grains;
Powdered acacia	2 "
Glycerin	1 minim;
Sugar, enough to make	20 grains.

One of these may be taken every two, three, or four hours, as may be indicated. Speakers and singers have informed the author of the preparation that the taking of some such lozenge just before a lecture or concert has enabled them to perform their part with comfort, which otherwise would have been attended with both pain and fatigue.

BAD SPIRIT OF NITRE IN PHILADELPHIA.

Dr. H. A. Hare, in the "University Medical Magazine," reports twenty-five examinations of sweet spirit of nitre bought by him at widely separated apothecaries' shops in Philadelphia. Fewer than half of his samples were found good or very good; eight of them were rated as very poor or absolutely devoid of ethyl nitrite, and five were poor. One sample, utterly worthless, was obtained from a shop which for a generation has borne the reputation of a paragon of correctness. The weak specimens were not, as a rule, sold in the more pretentious shops, although there were three such. This result is startling. We do not suppose that, in this particular, there is any greater security in one city than in another, but no such result should have been found in any town that makes drugs for the country at large. Again, the discovery is an unpleasant one in view of the increasing tendency to use the nitrites in a wide range of diseased conditions. New nitrites have been introduced of late years, but a good article of the sweet spirit of nitre still has a strong therapeutical standing. The test used by Dr. Hare was a solution of antipyrine, ten to twenty grains in the ounce of water. This reveals the presence of ethyl nitrite by causing a deep green color to appear, the reaction being the formation of isonitrosoantipyrine. Dr. Hare used this test in preference to other older ones recommended by the chemists, as being the more suitable to the purposes of the general practitioner.

DITHIOSALICYLATE OF SODIUM.

The "Therapeutic Gazette," quoting from the "Revue générale de clinique et de thérapeutique," states that Dr. H. Linderborn recommends this drug as a substitute for salicylate of sodium. It is formed by the combination of two atoms of sulphur and two molecules of the salicylate of sodium, is a very hygroscopic, grayish-white powder, and is very soluble in water. Various micro-organisms are said to be destroyed in forty-five minutes by the twenty-per-cent. solution. It arrests articular rheumatism and is efficacious in the treatment of gonorrhœal rheumatism. It does not produce gastric trouble, ringing in the ears, or any tendency to collapse.

THE IMPORTANCE OF RE-VACCINATION.

The "London Medical Recorder" quotes from a pamphlet by Dr. Gerstacker on the sanitary importance of re-vaccination as exemplified in Germany since 1874. That was the year in which the re-vaccination of school-children was enforced, the result of which, according to Dr. Gerstacker, has been the almost total extinction of small-pox. From that year the German army began promptly and strikingly to feel the effect of the law, although no difference was intended or carried out in the army regulations. Dr. Gerstacker places the average duration of the protection against small-pox at ten years.

RICORD'S LIBERAL BEQUESTS.

According to the "Lancet," the will of Dr. Ricord gives to the Paris Academy of Medicine ten thousand francs for the establishment of a biennial prize which shall bear his name. A like sum is left to the General Association of Medical Men in France. Five thousand francs have been bequeathed to the Society of Surgeons to found another biennial prize fund. To the Hôpital du Midi he has left his extensive library, as a memento of his half-century of work and interest, and it is in contemplation to change the name of the hospital so that it shall henceforth bear the name of Ricord.

CHINESE MEDICAL DEPARTMENTS.

The Chinese Government proposes to create a new form of surgical administration, in regard to both its army and navy. The bureau, in the case of each of them, will be modeled on Occidental methods. Requests for information have been presented to the Government at Washington as to hospital organization and ambulance work in this country. The surgeon-in-chief will probably be a foreigner, with a considerable staff of native assistants who have been trained in European and American schools. A beginning will be made in northern China, by the establishment of a medical college and of several hospitals and dispensaries at points where there are already military stations.

THE CREDIT SYSTEM IN MEDICAL EDUCATION.

In the French medical colleges in Canada a curious system of educating on credit has existed for some years. The poor and proverbially honest country boy who wishes to be a doctor, but who has no money for his fees, can, if properly recommended, be provided with lecture tickets and a degree, for which he gives his promissory note, which we hope is well backed. When the young graduate begins to feel the fees dropping into his pocket he is supposed to repay with grateful interest the advance his Alma Mater has made him. Unhappily, this is not always the case. According to the "Montreal Star," the Montreal School of Medicine and Surgery has just won an action in the Circuit Court against one of its former students, who, it was proved, had given it a note for $75 to cover his tuition fees for one term, but which he left unpaid. Another case of a similar kind is pending against another physician, who, however, is said to have come to the United States.

DR. VON HOFMANN'S DEATH BY GLANDERS.

The death of Dr. von Hofmann, of the University of Vienna, has been the occasion, says the "British Medical Journal," of some erroneous statements, among which was one to the effect that he had become inoculated with a hypodermic syringe which had been in use in bacteriological work. The "Journal" holds that the extensive intrathoracic disease, as shown by autopsy in this case, indicates beyond question an infection through the respiratory tract. The exact source of the infection will never be known.

THE STILLÉ LIBRARY.

The Medical Library of the University of Pennsylvania contains over 3,500 volumes, the gift of Dr. Alfred Stillé. Other contributions at various times by Dr. Joseph Leidy, Dr. William Elmer, Dr. Joseph Carson, Dr. W. H. Taggart, and Dr. H. C. Wood, bring the total to about 6,000 bound volumes and 5,000 pamphlets. To these there has been added, quite recently, a contribution of special value from Dr. William Pepper, including a large share of his own medical library and many books that formerly belonged to his father.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending December 10, 1889:

DISEASES.	Week ending Dec. 3.		Week ending Dec. 10.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	24	10	17	5
Scarlet fever	40	2	71	6
Cerebro-spinal meningitis	0	0	2	2
Measles	30	5	46	5
Diphtheria	73	17	94	26
Varicella	5	0	5	0

Wards for Convalescents.—It is announced that there are two convalescent wards at the Isabella Heimath, each containing fourteen beds. They are intended for convalescents who have no home in which they can find rest and care. The trustees are ready to admit, for a term not exceeding four weeks, convalescents of either sex needing care and rest after acute internal diseases or surgical operations; and no distinction will be made on account of creed or nationality. Applications, bearing the indorsement or recommendation of the attending physicians or surgeons, should be addressed to the consulting physicians, Dr. August Caillé, 185 Second Avenue; Dr. A. G. Gerster, 56 East Twenty-fifth Street; Dr. A. Jacobi, 110 West Thirty-fourth Street; and Dr. H. G. Klotz, 222 East Nineteenth Street.

The Orthopædic Dispensary and Hospital.—At the anniversary meeting of the directors of the Orthopædic Hospital, the report of the work for the past year showed not far from 2,000 patients treated. On the part of the medical profession, Dr. Newton M. Shaffer and Dr. John T. Metcalfe made addresses, and emphasized the fact of the constantly increasing demands upon the medical staff, and of the almost immediate necessity for adding to the accommodations of the building at present occupied.

The Babies' Wards at the Post-graduate Hospital.—A reception to the profession and public will be held in the new building devoted to the babies' wards, at No. 222 East Twentieth Street, on Wednesday, the 18th inst., from 2 to 4 P. M. The steady growth of this important work of the hospital during the past five years has finally called for a separate building given up entirely to sick infants. The wards are under the medical care of Dr. Henry D. Chapin, with Dr. J. H. Ripley as consulting physician. The fifth annual report of this hospital announces that the last has been the busiest year of any in the history of the hospital. This institution was the first to secure special care for babies, and, thus far, has been the only place where such work has been carried on continuously. During the eighteen months since the last report was issued, 486 house patients—153 babies and 333 adults—have been treated; 8,086 new patients have been treated in the dispensary, where 32,194 visits have been made. The district physician of the dispensary, Dr. F. C. Carpenter, has treated 263 patients in their homes. An orthopædic ward for children has lately been added to the hospital, and whenever the funds are at the disposal of the directors, a lying-in ward will also be added. This is a much-needed charity—one that appeals at once to all who desire earnestly to relieve and prevent suffering. Contributions to the Post-graduate Hospital may be sent to the treasurer, Dr. L. Bolton Bangs, 226 East Twentieth Street, New York.

The Northwestern Medical and Surgical Society gave a social entertainment at Dr. Thomas H. Burchard's house, on the occasion of its twentieth anniversary, November 27th, including an excellent musical performance by members of the society and others.

The Society of the Alumni of Charity Hospital.—At a meeting held on Tuesday evening, the 10th inst., Dr. Joseph O'Dwyer showed some new instruments, and Dr. A. T. Muzzy read a paper on "The Prevention of Ophthalmia Neonatorum." Officers for the ensuing year were chosen as follows: President, Dr. D. Bryson Delavan; vice-president, Dr. Ramon Guitéras; secretary, Dr. W. L. Baner; treasurer, Dr. A. T. Muzzy.

A Medical Official Exonerated.—Dr. Remsen Taylor, the health officer of Long Island City, has been under investigation for extortion, by the Grand Jury of Queens County, and has received an official vindication.

The Hypnotic Society of London.—The "Lancet" states that a number of London medical men have united to form a Hypnotic Society, the purpose of which will be to prevent by law public exhibitions of mesmerism and hypnotism. Another object will be to study privately and in a scientific manner the phenomena of those morbid states.

The Kings County Medical Society.—At the December meeting, on the 16th inst., the Committee on Obstetrics is to

make its report, inclusive of papers by Dr. Charles Jewett, Dr. R. L. Dickinson, and Dr. George McNaughton. Their subjects will be, in part, puerperal wound-infection, immediate repair of the uterine cervix after labor, and a case of separation of the pubic symphysis.

Dartmouth Medical College.—On November 26th the medical department held its commencement. The graduating class numbered twenty-one.

Society Meetings for the Coming Week:

Monday, *December 16th:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Hartford, Conn., City Medical Association; Chicago Medical Society.

Tuesday, *December 17th:* New York Academy of Medicine (Section in Theory and Practice of Medicine); New York Obstetrical Society (private); Medical Society of the County of Kings; Ogdensburgh Medical Association; Medical Societies of the Counties of St. Lawrence (semi-annual) and Westchester (White Plains), N. Y.; Hunterdon, N. J., County Medical Society (Flemington); Baltimore Academy of Medicine.

Wednesday, *December 18th:* Northwestern Medical and Surgical Society of New York (private); Harlem Medical Association of the City of New York; Medical Societies of the Counties of Allegany (quarterly) and Tompkins (semi-annual—Ithaca), N. Y.; Strafford, N. H., District Medical Society (annual—Dover); New Jersey Academy of Medicine (Newark).

Thursday, *December 19th:* New York Academy of Medicine; Brooklyn Surgical Society; New Bedford, Mass., Society for Medical Improvement; Addison, Vt., County Medical Society (annual).

Friday, *December 20th:* New York Academy of Medicine (Section in Orthopædic Surgery); Chicago Gynæcological Society (annual); Baltimore Clinical Society.

Saturday, *December 21st:* Clinical Society of the New York Post-graduate Medical School and Hospital.

Proceedings of Societies.

SOUTHERN SURGICAL AND GYNÆCOLOGICAL ASSOCIATION.

Second Annual Meeting, held in Nashville, Tenn., November 12, 13, and 14, 1889.

The President, Dr. Hunter McGuire, of Richmond, Va., in the Chair.

Report of Gynæcological Work, with special Reference to Methods.—Dr. R. B. Maury, of Memphis, Tenn., contributed a very interesting paper with this title. The paper presented a brief summary of the more important portion of his operative work during the past year. With four exceptions, all of the operations reported were done in a private hospital, built especially for the purpose, and under his own control. The summary embraced twenty-one laparotomies for the removal of ovarian tumors, or of the uterine appendages, or for the relief of obscure disease within the abdomen; two laparotomies for ectopic gestation; twenty-eight operations for laceration of the cervix; fourteen perineal and vaginal prolapse operations; five proctoplasties; and four anterior colporrhaphies. The speaker summarized the methods as follows: 1. An antiseptic field of operation and an aseptic surgeon. 2. A small incision—in the case of inflammatory disease in the pelvis—just large enough to introduce and work with two fingers. 3. Aseptic silk ligatures, as fine as may be consistent with safety in tying. 4. Enucleation of diseased structures, in spite of firm adhesions and even profuse hæmorrhage. 5. Irrigation by means of the siphon-trocar as a substitute in most cases for sponging, using simple hot water for this purpose and excluding all antiseptics. 6. Drainage often, and whenever one is in doubt as to its necessity. 7. Careful replacement by spreading out of the omentum before proceeding to close the wound. 8. Inclusion of all the structures in passing the abdominal-wall sutures, and replacing the deep sutures half an inch apart. 9. The use of means for moving the bowels on the second or third day after removing the appendages; and the avoidance, if possible, of opium.

Direct Kelotomy.—Dr. W. O. Roberts, of Louisville, Ky., read a paper on this subject, in which he reported ten cases and eleven operations. Seven cases had occurred in females, three in males. There had been three cases of umbilical hernia, three of femoral, three of inguinal, and one of ventral. Six of the operations had been done during strangulation, while five had been performed for troublesome irreducible hernias. In the six cases of strangulated hernia the sexes had been equally represented. There had been three inguinal, two femoral, and one umbilical. In five of them the operation for radical cure had been done. The remaining case had been one of strangulated hernia, where stercoraceous vomiting had existed for eight hours before it was seen. General peritonitis had been evident at the time of the operation. Considerable reddish material had escaped when the contents of the sac were returned. Death had followed in thirty-six hours. He had since thought that if, after returning the contents of the sac, he had done a low median laparotomy and washed out the peritoneal cavity, the result might have been different.

The four cases of irreducible hernia had been all in females. Two had been umbilical, one femoral, and one ventral. In one of the former a second operation had been made necessary by the hernia recurring at the end of six months. The tumor also had reformed at the end of ninety days in the case of femoral hernia. The remaining eight patients continued well to the present time.

In all the cases the sac had been first cleanly dissected out and not opened until all hæmorrhage had been entirely checked. In both the ventral and umbilical hernias the integument and fascia had been divided by an elliptical incision. After opening the sac, all adherent omentum had been tied with catgut and excised. The remaining contents had then been returned into the cavity. In one case of umbilical hernia the neck of the sac had been tied close to the margins of the opening and cut away immediately in front of the ligature. The stump had then been fastened tightly in the opening with silk-worm gut sutures, and the wound finally closed by interrupted sutures of the same material. In this case no suppuration had occurred, but the hernia had recurred at the end of six months. In both the other umbilical and in the ventral hernias the neck of the sac had been excised on a level with the abdominal opening and sutured with catgut. The opening itself, after its edges had been freshened, had been closed with the continued suture of chromatized catgut in the ventral hernia, and aseptic corded silk in the umbilical cases. The superficies had been brought together by silk sutures, which had been continued down to the aponeurosis.

In the femoral hernias he had adopted the practice of Mitchell Banks. In the cases of direct inguinal hernia, after tying the neck of the sac just within the ring, and removing all in front of the ligature, the ring was closed with catgut sutures.

In the cases of oblique inguinal hernia he had done Mr. Ball's operation, which consisted in freeing the neck of the sac up to the internal opening, ligating it, cutting away all in front of the ligature, then twisting the neck upon itself to effect closure of the peritoneal orifice, and finally stitching the stump to the pillars of the ring to guard the neck against untwisting itself.

The Abortive Treatment of Acute Pelvic Inflammation.—Dr. VIRGIL O. HARDON, of Atlanta, Ga., read a paper on this subject, in which he said that the views held by gynæcologists in regard to acute pelvic inflammation in the female had within the past few years undergone a radical change. The inflammatory processes formerly regarded as idiopathic, or at least as primary affections, were now almost universally recognized as dependent upon antecedent disease in the ovaries or Fallopian tubes, especially the latter. This change of opinion had to a large extent been due to the result of advances in surgery which had enabled the conditions of the pelvic organs to be studied in the living subject by immediate inspection and palpation instead of through the medium of the vaginal tissues; consequently it was often that a change of opinion on this subject had been most marked among those men who had had large experience in abdominal work. The diagnostic value of abdominal section under such circumstances was almost as great as that of post-mortem examination, and hence the opinion of the laparotomist was entitled to very great weight. As a result of this mode of observation, the conclusion could not be avoided that acute pelvic inflammation was, at least in the majority of cases, associated with septic, gonorrhœal, tubercular, or some other form of inflammation of the tubes. There were two forms of inflammation which were recognized as occurring within the pelvis as a result of tubal disease—pelvic cellulitis and pelvic peritonitis. In many cases both forms of inflammation were simultaneously present in the same subject, and it was not improbable that in all cases when either was present, the other also existed in a greater or less degree.

The treatment consisted in the withdrawal of the effusions from the cellular tissue by means of the aspirator, etc. Where pus tubes were present he would advocate their removal.

Dr. JOSEPH PRICE, of Philadelphia, said that his experience was a little different from that of the essayist. Relief from salines and the aspirator in the cases reported might have been justifiable, but tubes containing pus in every instance called for abdominal section. Dr. Price then exhibited some such tubes, one of which was seven inches in length, and called attention to their frequency in cases of pelvic inflammation.

Dr. GEORGE J. ENGELMANN, of St. Louis, Mo., said that there was a fascination in the results achieved by Dr. Price and other operators in these cases, but he thought the pendulum was swinging too far in that direction. He could indorse the surgical treatment advocated by Dr. Price in dealing with pelvic inflammation which resulted from salpingitis, or where there was pus in the tubes. Many of the cases which were formerly called pelvic cellulitis were the sequelæ of salpingitis or pus in the tubes, but he was satisfied that there were cases which existed without salpingitis.

Dr. W. G. EWING, of Nashville, said that when he began to practice medicine he was on the conservative side, but was now satisfied that many of the cases which came under his observation could have been dealt with surgically and successfully. He favored early operative interference, and said the surgeon should not delay in such cases, for, by so doing, additional adhesions were apt to form with extension of the inflammatory process.

Dr. HARDON said he feared he had been misunderstood, but would now say that tubes distended with pus admitted of but one rational treatment, and that was their removal. He invariably recommended that this be done; but what should the surgeon do with those patients who would not permit an operation? As regarded pelvic cellulitis without disease of the tubes, he could corroborate the statements of Dr. Engelmann, and called attention to two cases which he had reported last year to the association which verified this fact. In these cases he had aspirated and withdrawn several drachms of serum from the cellular tissue. Subsequent examination had revealed absolutely no disease of the tubes. He had examined these patients from time to time, but not the slightest evidence of tubal disease could be found, and there had been no recurrence of the pelvic inflammation.

(To be concluded.)

NEW YORK ACADEMY OF MEDICINE.

Meeting of November 21, 1889.

The President, Dr. A. L. LOOMIS, in the Chair.

The Annual Address.—The PRESIDENT spoke briefly on the subject of the new Academy building. He said that his predecessor, Dr. Jacobi, had expressed a hope that the work would be carried to completion in the near future. These hopes were to-day almost realized. Thus far the building had been paid for, and the lots upon which it was being erected were also paid for. There was sufficient money in hand to carry on the work for some time as it was now progressing, but, in order to insure funds for its completion, it was necessary to effect a sale of the old building. This, it had been hoped, would bring in about $70,000. If they could sell for this sum and each fellow of the Academy would contribute his share of the sum of $20,000 more, then by the first of next October they would enter one of the finest buildings in the country free of debt. It devolved upon the members of the Academy to take a more earnest part in this matter. Some had worked well while others had done nothing. The subscription so far had amounted to $50,000, which had been raised among one hundred and fifty of the fellows. There were six hundred fellows in all, and it seemed that there should really be no difficulty in raising the $20,000.

The Relation of Medicine to the Problem of Socialism.—Dr. W. M. POLK delivered an address thus entitled. The speaker had stated that he would consider the relation of the medical profession to some of the questions of the day. He would modify the statement and say "the question of the day." No less an authority than Professor Seelye had recently said: "There is one question of our time toward which all other questions, whether of nature, of man, or of God, steadily tend. No one will be likely to dispute the affirmation that the social question is, and is to be, the question of our time." The speaker thought that the profession would be encouraged to inquire into this question by reason of the widespread interest which socialism was evoking. One of the surest evidences of the truth of this assertion was to be found in the frequent and able discussions and dissertations upon it in the current literature of the day. Politicians were making of it a factor in government, and the Church, conscious of the moral aspects of the question, was fast awakening to the necessity of an active censorial position on its part. The social question might be defined as an inquiry into the status of the order of civilized people, and their relations one to the other in the economic arrangements of the social system. The recent growth of the inquiry was due to the conviction that these relations were becoming dangerously abnormal through the action of preventable causes. The causes were being gradually defined and remedies were being sought for by many of the best minds of the day. As was to be expected in such a question, there existed wide differences of opinion. But

upon one point all were agreed—namely, that discontent was widespread, and that this discontent was assuming the nature and proportion of a defined class question upon which the two great orders of present society were arraying themselves, the one in opposition to the other. The question assumed phases which differed somewhat in different countries according to the kind of government which prevailed. As enunciated by the class in whose interest it was first begun, this movement was called socialism. It was the belief of many, and history seemed to confirm it, that in socialism we but witnessed a continuance of that process by which man as a whole was being lifted upward. Examples of the process stood out in every epoch. To go back no further than nineteen hundred years, we found a movement beginning in an obscure village of Palestine which, extending itself among the lower classes, dominated the Roman Empire, and subdued every conqueror who successively overran the realm. The underlying principle was betterment of the lower orders, and in that far-reaching agitation it was not difficult to discover the greatest step in social evolution recorded in history. It was seen again in the Reformation, and its latest imprint stood before us in the tragedy of the French Revolution. Socialism, however, had scarcely been a formulated creed until about the beginning of this century. The stimulus derived from the French Revolution initiated it, and this, together with the growth of the democratic ideas of government, as witnessed in this country, might be said to have developed it. Realizing that little could be accomplished save through political power, its first aim had been toward securing the ballot. Its history so far had been largely made up of successful efforts to that end, so that to-day, in most civilized countries, political power, to a greater or less extent, was practically conceded to it. In this country there was to be seen the highest development of its political effort, and there could be no question that, conscious of its power, it was making ready to advance toward the end and aim of its existence. To-day it practically stood organized for self-protection; its next step would be one of aggression. "Socialism," then, was the expression of the lower orders to show their discontent with the conditions of their lives, and was at the formulation of any ideas and purposes as to the remedy. It drew the line with sufficient clearness between itself and its opponents, so that no one need be ignorant of its purposes. The question at issue was being gradually narrowed to that of property rights, the term property being made to cover everything out of which man met his daily wants, whether it was his money accumulations, his hands, or his brains. It was interesting to note that, while the successful working of republican government in our country had stimulated to a tremendous degree the growth of socialism in Europe, yet socialism had never until the present day been able to assume a definite shape in America. Our peculiar position had undoubtedly been responsible for this immunity. The first aim of socialism, political power, was conceded by us at the outset; and as for the question of "property rights," it could have no bearing. In fact, in this, a new country, all the conditions securing content so far outstripped those of an opposite tendency that anything like general dissatisfaction in any one class of the population was an impossibility. A most curious condition of affairs had been evolved, however, from what was apparently the most fortuitous combination of human circumstances. The fundamental principle of our system was declared to be the freedom and equality of man in the pursuit of any of the just purposes of life. Our domain being large and the population relatively sparse, immigration was successfully encouraged. Ignorance being recognized as a threat to the state, education had been amply provided for and carefully fostered. The pace at which we had moved had been indeed tremendous, but, while demonstrating some of the advantages of freedom, it had also developed a well-recognized law of nature, the survival of the fittest. It began to show that to the strong literally belonged the victory. Already combinations for the purpose of destroying freedom in competition were assuming shape. It was only necessary to point to the restrictions upon imported contract labor and those upon apprenticeship sought for in one class, and the combination to check production and expenditure in the other. It would appear then that the doctrine of human equality was being worked out among us to a point which would demonstrate that it had inevitable restrictions. The suddenness with which this apparent failure of the practical application of the doctrine had come upon us was mainly due to the abnormally rapid increase in our population through immigration, for this increase had been mainly in the order which had the least in the shape of worldly possessions, and therefore felt most the pressure incident to its acquirement. Instead, therefore, of a limited discontent which could safely be put down to laziness and viciousness, we found ourselves confronted by a rapidly spreading dissatisfaction with the present state of our economic conditions which could be traced to the strain put upon man's resources by the free and active competition for what there was to be had of profit and prosperity in a rapidly increasing population. But this was not all. When educating a man we encouraged him to institute comparisons; he instituted them, and, when applied to himself, content was not always the result. Here in America there was a fear that education might not enable men to reconcile the incongruities which their observation told them existed between the facts of their daily life and the assertion upon the equality of man contained in that corner-stone of Government, the Declaration of Independence. Such men were apt to see in the doctrine of equality of man a panacea for economic inequalities which they saw about them. And if they were touched sorely a selfish interest would lend zest to the desire to apply it to their betterment. That this great question of socialism was primarily one of statecraft there was no doubt. But so were Christianity and Mohammedanism, and there were excellent proofs of the influence of medicine in propagating the one and in civilizing the other. John Watson, in his sketch of the history of medicine, delivered before the Academy some years before, had spoken of the attitude of medicine in the past ages—how, in the person of the Parabolani, it worked as an engine of Christian propagation, and how, in the person of its temples of learning, it stood upon the side of the pagan; how, in the contest that finally witnessed the triumph of Christianity, we were rent in twain, our culture deposed, and our ignorance installed as the directing influence in our affairs. For us then there were both warning and encouragement. The state must rest upon the intelligence of its people for the wise solutions of the questions which vexed it, and especially upon the intelligence of the leading orders of its society. Were not the members of the medical profession of this number, and did they not stand out more prominently than ever before as a recognized force in the social system of the day? And as they had borne no small share in the great questions of the past, it was well that they be not blind to their mission of to-day. The content of a people was dependent upon their physical well-being. The conditions necessary to insure this were at the command of the one order, so that they had but themselves to blame if it was not allowed. But how was it with that other which was forcing the social question to the front? Was there another element in any civilized land, which was better placed than in this, to properly answer this question? And this community—what was it? Was it not the exponent? Did we not find in it the very essence of that question of socialism which was beginning to press so hard upon us? In

its seething mass of humanity, with its pleasures on the one hand, its sufferings on the other, its aspirations here, its lost hopes there, we had the very epitome of the whole human race. And as we passed from home to home, from tenement to tenement, did we find the conditions of healthful life present, or even possible, with the majority of our population? It had been said that the medical profession was the buffer between the colliding forces of society. It seemed to the speaker that there was a woful ignorance, or perhaps woful blindness, on the part of the mass of the higher orders to the physical condition of the lower. How many people in New York really knew what the conditions of healthful life were? They had a general idea, but general ideas were not working formulæ. The speaker believed that the public, of both orders, should be taught that the essence of the discontent was in the absence of the conditions of healthful life. To get the public to heed, exclusiveness must be dropped. For plain people to understand, plain terms should be used to point out the practical application of facts, not theories. Facts were plentiful enough, as was well known. As practitioner, as minister to his ailments, man had always accepted the physician, but as teacher he had been less receptive. Man had always exacted of the profession more than could be given—namely, "eternal life." And failing to get this, he easily became skeptical as to whether we could tell him anything about life at all. Having but a surface knowledge of nature, supernaturalism had become his mainstay, and remained his prop until within the days of present knowledge. And yet, while he had asked for the elixir of eternal life, he had failed to furnish the educational conditions essential to a knowledge of the laws which governed even the short life assigned him. This, perhaps, was natural, recognizing as he did that he was to be the material out of which medical men were to carve their science. If ever there was an age in which knowledge of the laws of life, of health, and of death were more universally sought than in this, history had failed to record it. Education and competitive life had brought the civilized world to our door, so that it might truthfully be said that we stood upon the threshold of the golden age of medicine. It was indeed our opportunity, and if we failed to grasp the occasion it would be the fault of just such representative bodies as the speaker had the honor to address. A broader view of their mission than was involved in the process of self-instruction had best be taken. Let them shake off the exclusiveness of their teachings, and take the public more into their confidence and speak directly to it of those laws of life and health which were each day becoming so necessary to it in its present emergency. Say those things which they would be glad to receive from physicians as recognized expounders. Drive home to him whose property right was represented by his brain, or by his muscle, that his body was his capital out of which his profit must come. Show him, in the economics of his life, how important it was that he should keep his body in the best working order. He had heard of chance, of luck; bring it home to him that the luck he lost was lost because of physical defects engendered by heredity or in the hygienic defects of his daily habits. And put it forcibly before him that in the failure of to-day he but saw the paralyzing influence of some infraction of the laws of health yesterday, and that in the conduct of his life to meet his daily wants in health, as in morals, he must accept this doctrine. Let the profession lay before the community the inevitable reaction of such a status of human existence, and in doing it let them do it wisely and do it well, so that it might be said at the end that they had met to the fullest the duty which, in the processes of social evolution, had been laid upon their shoulders, and that, in answer to the mandate of that first law of Nature, they had taught "self-preservation."

SOCIETY OF THE ALUMNI OF BELLEVUE HOSPITAL.

Meeting of October 2, 1889.

The President, Dr. Richard Kalish, in the Chair.

The President's Address.—On assuming the chair, Dr. Kalish said: "Allow me to give you my sincere thanks for the honor you have done me in electing me to preside over this prosperous society. I am deeply sensible of this honor, and trust, by devotion to the interests and the work of the society, to demonstrate how great is my appreciation.

"A review of the work already accomplished by the society requires but a momentary consideration of the papers read and discussed during the past year to prove how varied and extensive a range of subjects was brought to your notice. A partial list will include 'Demonstration of the Treatment of Lateral Spinal Curvature'; 'Report of a Case of Perforation of the Vermiform Appendix, with Laparotomy'; 'Yellow Fever and the Jacksonville Epidemic'; 'Report of Four Cases of Classified Insanity'; 'Presentation of a Case of Misplaced Heart from Fibroid Phthisis'; 'Trephining, with Replacement of the Button of Bone'; 'The Radical Cure of Hernia'; 'Drainage of the Peritonæum in Acute and Subacute Peritonitis'; and the list might be greatly extended, but this is sufficient to show how wide a field was covered in eight meetings of the society.

"The signal success which has followed the scope planned by the organizers of this society renders me loath to make any suggestions leading to a change in the rules or guidance of the proceedings. Some years ago a determined effort was made to establish a society similar to this and upon plans which then seemed feasible, but the society failed to materialize, if my memory serves me, not even a single meeting being held. Under other plans this society was inaugurated, and in a little over two years from this inauguration its register held eighty-seven names. Another year has passed, and to-day its membership is one hundred and fifty-two, an increase of sixty-five, the roster including members of the profession eminent at home and abroad, whose opinions bear weight and whose knowledge and proficiency have added honor, dignity, and a new luster to the medical profession. As an example of the widespread interest the proceedings of this society is awakening in the profession, it is only necessary to instance the large attendance of rapt listeners at the delivery of the annual oration by Professor William Osler, when the seating capacity of the Academy of Medicine was more than overtaxed by the great number of physicians who not only crowded the large lecture hall, but uncomfortably filled the parlors as well.

"The Committee on Science is endeavoring to secure contributed papers of a greatly varied character, so that subjects relating to all the departments of medicine and surgery may in turn be brought before you. Circulars giving full particulars and asking for contributions, also blanks to be filled in with the titles of proposed papers, have been sent to all the members, and an early response will greatly facilitate the completion of the arrangements for future meetings. As soon as this schedule is completed a printed copy, containing a list of the papers to be read as well as the dates on which they will come before you, will be sent to each member, in order that those interested in a special subject may have timely notice and be prepared for a full discussion.

"There are certain matters to which your notice is particularly directed, and first the necessity of a full and regular attendance at all the meetings. No one wishes to read a carefully prepared paper before an array of empty seats, with few or none present to discuss the views and opinions set forth. With the assurance, however, of a large and critical audience,

the author is spurred on to taking greater care in preparing his paper and to making a greater effort in elaborating his ideas and deductions, and, with the knowledge that these ideas and views will be fully discussed, the paper acquires a depth and breadth it would not otherwise have attained. The meetings heretofore have been well attended, but I would request a larger attendance, even if only for a part of the session.

"Another matter is the completion of the 'Catalogue of Bellevue Hospital,' which to the society is more than a necessity. It will put in an enduring form much valuable data now scattered through various channels and likely to be lost. It is proper that the compilation should be done under the auspices of this society, which is eminently fitted to undertake the work, as it is particularly interested in all that pertains to Bellevue Hospital. The Committee on Catalogue, appointed over a year ago, has made considerable progress, but much still remains to be done. In the compilation of this work the following table of contents was decided upon: An Alphabetical List, a Geographical List, a List of each Staff since 1817, a List of the Visiting Staff, a History of the Hospital, and a History of the Epidemics which have prevailed in the Hospital. The alphabetical and geographical lists, as well as the list of each staff, are nearly completed, but upon the other divisions very little has been done. A catalogue of this nature is usually issued decennially, and the spring of 1890 would seem to be an appropriate time for publication.

"Another matter which should enlist your earnest attention is the proposed publication of the 'Reports of Bellevue Hospital.' An immense amount of clinical material, involving all the practical work done in Bellevue Hospital almost from its inception, is contained in the history-books of that institution. Very little of this has been published, and little benefit indeed has the profession been able to obtain from the valuable experience gained in the hospital, and recorded as it occurred. I have been able to find but three reports of Bellevue Hospital, and these are for the years 1848, 1856, and 1870.

"The report for 1848 is made by the house physician to the Medical Board, and consists of statistical tables of admissions, discharges, and deaths, also the diseases under each of these headings, a table of the diseases of those remaining in the hospital, an obstetrical table for 1848, and a table of the number of admissions, discharges, and deaths for the period extending from 1827 to 1847. For 1856 the report is not unlike that of 1848, but is issued by the Medical Board. It gives these tabular reports, refers to the improvements made in the buildings and grounds, and gives a complete history of Bellevue Hospital from its inception, compiled by Dr. B. W. McCready. For 1870 the report includes Charity Hospital, and gives a description of unusual cases and the statistics derived from new methods of treatment as observed in these two hospitals. Among the contributors are Dr. I. E. Taylor, Dr. A. Flint, Sr., Dr. L. A. Sayre, Dr. F. H. Hamilton, Dr. W. A. Hammond, Dr. F. Delafield, Dr. E. G. Janeway, Dr. T. G. Thomas, and others.

"Many of the European hospitals, notably those of Great Britain, publish annual reports, giving full histories of peculiar cases and a comparison of various methods of treatment as well as a full description of new apparatus and forms of application. There has been considerable discussion of this subject among the members in an informal manner, and it has been suggested that the society, with the advice and co-operation of the Medical Board of Bellevue Hospital, should assume the compilation of these reports.

"If we should decide to undertake this important work it is well to understand before entering upon it that it is a labor involving a great amount of research and entailing quite a large expense. The editing of so extensive a series of books is an item which must be taken into consideration and thorough and complete arrangements made therefor. I have no plan of operative procedure to suggest, and present this matter that a full and free discussion may take place."

A Case of Multiple Joint Lesions was presented by Dr. R. J. Carlisle. The patient, an Italian boy seven years old, belonged to a family whose history did not point definitely to either tuberculosis or syphilis, and the patient himself had passed easily and promptly through the first dentition, and had been apparently in good health up to two years ago. At this time, without any known traumatism, his present disease had begun. When first seen by the speaker, about one month ago, the first and second phalanges of the fifth finger of the right hand had become diseased, and, the boy being far too timid to admit of a thorough examination, a provisional diagnosis of syphilitic dactylitis was made. At the next examination the whole of the right metatarsus and a part of the left had become acutely involved. The axillary temperature was 99·2° F., and the lungs were not diseased.

When first seen he had been ordered fifteen grains of potassium iodide daily, and at the end of two weeks, as no symptoms of iodism had appeared, the daily quantity was increased to thirty grains; and this quantity had been taken for the last twelve days. To-day for the first time there was some coryza. The smaller joints had become worse during this treatment.

Dr. L. W. Hubbard said that it was not very common to see so many of the smaller joints involved, and the diagnosis lay between syphilis and tuberculosis. The appearance presented by the fingers strongly suggested syphilis, while the sinuses about the foot were very similar to those usually seen in tubercular joint disease. From the history of the case, in the absence of more definite information, he would consider it a case of tubercular joint disease. As regarded treatment, he would advise disinfection and cleanliness, rest of the diseased parts, and attempts to improve the general nutrition by securing him good food and air, and by the administration of cod-liver oil and the hypophosphites.

Dr. R. H. Sayre considered the case tubercular, and was strongly in favor of efforts directed toward improving the general nutrition; but, in addition to this, he would advise local treatment with iodoform, preferably by means of injections of an ethereal solution of iodoform.

Dr. Frank Hartley concurred with the previous speakers in the diagnosis of tubercular joint disease, and would also advise against too active local treatment, as, in a similar case which he had observed, each time the diseased parts were subjected to scraping they became reinfected, and the patient grew steadily worse.

Actinomycosis of the Pleura in the Human Being.—Dr. T. M. Byron reported the history of a case of this disease. (To be published.)

Dr. Parker Syms asked what the usual duration of this disease in the lungs was.

Dr. Byron replied that this was only the second time that he had seen a case of peripleuritis; but those who had had a more extended experience with the disease stated that it was of long duration; and in a case of prevertebral abscess due to actinomycosis the patient was treated for several years for Pott's disease.

Dr. E. Le Fevre wished to know whether the disease was apt to extend to the lungs, and how the actinomycetes gained entrance to the lungs.

Dr. Byron said that their mode of entrance was probably the same as for the tubercle bacilli; but just what this was had not yet been determined. At the present time an investigation on this subject was being carried on at the Loomis Laboratory,

and it had been found there that on inoculating rabbits with emulsions made from the glands of men who were known to be free from pulmonary tuberculosis, about eighty-five per cent. of these animals became tuberculous, showing that the tubercle bacilli gained entrance into the lymphatics; and it was probable that the same took place with the actinomyces. The subject had not been thoroughly studied, and it was on this account—the importance of the subject, and the fact that the disease, although not new, was almost unknown—that he had been led to read this paper. He believed that only about twenty-eight cases of actinomycosis had been reported.

Dr. HARTLEY spoke briefly of three cases which he had seen in the Roosevelt Dispensary. The first was in a girl of thirteen years, who had presented herself with an enlargement of the lower jaw which resembled a tuberculous process both in its size and in the scrapings from it; but the appearance of the pus led to a correct diagnosis. The second case was that of a man about twenty-two years old who had had an ulcer on the inside of the cheek for some time, when suddenly it had begun to enlarge rapidly, and he presented himself with a rather diffuse inflammation of the skin, which was quite soft in the center. The discharge from it was examined by Dr. Prudden and found to contain the actinomyces. In the third case a little girl also had an ulcer on the inside of the mouth, from which the same peculiar material was discharged. Nothing was known concerning the sources of infection in these three cases; two came from different parts of the city, and the other came from the country. He had seen a fourth case, which had been presented by Dr. Lange at a medical society meeting. It was a case of actinomycosis of the liver, which at first had been mistaken for an abscess of the liver.

Dr. BYRON said that the report of these additional cases only served to emphasize his statement that the disease was not so rare as is commonly supposed. A positive diagnosis of the disease could not be made without the microscope; and, in the search for tubercle bacilli by the now classical Ehrlich-Koch method of staining, the actinomycetes were not stained, and were therefore invisible; hence the necessity of physicians giving more attention to the study of this dark part of pathology.

A Case of Cerebro-spinal Meningitis, with a Remarkable Diminution in the Number of Respirations.—Dr. J. F. ERDMAN read the report of a case. (To be published.)

Dr. LE FEVRE spoke of a case where rigidity of the muscles of the neck and back, together with Cheyne-Stokes respiration, had continued for eight days. He had made a diagnosis of meningitis, but, after having watched the case for five days, he had called in Dr. Loomis, who thought it questionable about its being a case of meningitis. The patient was given large doses of quinine and recovered. Another member of the family was soon after taken down in the same way, and then it was found that the main sewer pipe was open, and the case, instead of being meningitis, was an aggravated form of sewer-gas poisoning. The temperature had remained at 107° F. for seven days. He would like to know whether, in Dr. Erdman's case, chills had preceded the attack.

Dr. ERDMAN said that there had been none, and the highest temperature recorded had been 99° F. on the day of the eruption.

A Case of Pyonephrosis.—Dr. PARKER SYMS read the report and presented a specimen.

The patient was a man under fifty years of age, although possibly appearing to be ten years older. He had been intemperate in his youth, but for some years past had not drunk to excess, and had been in good health. During the two years prior to his coming under the speaker's observation he had had increasing trouble with urination, and he gave a pretty distinct history of the passage of gravel. When first seen by the speaker, micturition was frequent, and the urine was loaded with pus. He had consulted several physicians, but, so far as could be ascertained, no diagnosis of renal trouble had been made. On examination, a non-fluctuating tumor was found in the region of the left kidney, and this, together with the very large quantities of pus voided, without bladder symptoms, seemed to point pretty clearly to a suppurating kidney. Three days later—May 31, 1889—the operation was performed. At this time he had a septic temperature of 102° F., but his pulse was 100 and fairly strong, and his general condition seemed pretty good. An incision was made along the lower border of the twelfth rib to the anterior superior spine of the ilium and curved forward. This was subsequently enlarged in a forward direction. The kidney was found very firmly adherent, and, during its liberation from its attachments, there was a rapid venous hæmorrhage which was controlled by double clamps on the pedicle, so that the patient did not lose more than about three ounces of blood. The kidney was rapidly removed, but no bleeding point was found, and it was probable that it came from a rent in some vein, which was kept open by the presence of the tumor. The operation lasted an hour, including the time taken in examining the patient under ether. The man died unexpectedly from shock about twelve hours after the operation, and his death was probably due to the hæmorrhage, which, although not large, was a good deal for a man in his condition.

It might be interesting to discuss the advantages and disadvantages of the operation in the loin as compared with abdominal section. It had seemed to the speaker that in the majority of cases it would be difficult, if not impossible, to remove such a kidney by abdominal section without rupturing it; and the pouring of pus into the peritoneal cavity was certainly a serious matter. By the curved posterior incision one got nearly as much room as by the anterior incision, and it would seem that the advantages of the extra-peritoneal operation were very great.

In answer to a question from Dr. R. H. Sayre as to the time when shock had supervened, the speaker said that the patient went into shock about half an hour after the stopping of the ether, and that he remained in that condition until he died. There was no hæmorrhage in the wound, and no opening into the peritoneal cavity. As no autopsy was permitted, he could not say whether the other kidney was diseased, or even whether there was another kidney.

Dr. R. H. SAYRE had asked the question because he had in mind a case in which, after an operation on a patient known to have kidney disease, the patient had gone into a dangerous collapse and remained in that condition for several hours, and had been with great difficulty resuscitated. The collapse had seemed to be due to suppression of urine.

Dr. HARTLEY thought that the curved posterior incision gave all the room that was needed, and as much as was obtained by the anterior incision.

Dr. CARLISLE remarked that he had been under the impression that the danger in giving ether to patients with kidney disease was not from shock, but from suppression of urine.

Meeting of November 6, 1889.

The President, Dr. RICHARD KALISH, in the Chair.

Syndactylism.—Dr. J. McG. WOODBURY presented a case which involved both feet and hands; there was also a talipes equino-varus of the right foot. One thumb had been freed considerably, and there was a prospect of ultimately getting a good result also with the other hand. The talipes had been treated by a method which had worked admirably in upward

of nineteen cases. It consisted in applying Sayre's sandal, and by means of it bringing the foot in good position, and then righting it by confining the whole apparatus in plaster of Paris.

Multiple Joint Lesions.—Dr. Frank Hartley presented a case, which was the one he had alluded to when discussing this subject at the last meeting. The boy was admitted to the Roosevelt Hospital three years ago with an injury to the external condyle of the right humerus. A tuberculous abscess had formed and communicated directly with the elbow joint, which had been accordingly excised by Dr. Sands. Following this operation there had been a succession of recurrences—first, nearer the shoulder and in the external angular process of the frontal bone on the affected side, and subsequently on the opposite side. Subsequently skin gummata had appeared over the shaft of the ulna, then over its olecranon process, and, later still, over both tibiæ. So far five or six operations had been performed on this patient, but each operation had been followed by a recurrence of the growth, so that it had become necessary to abandon operative procedures and trust mainly to measures directed toward improving his general nutrition. There had never been any "bone cries," because the process had been mostly superficial and the bone had not been involved. Moreover, before the primary operation there had been no other foci except the one at the elbow. The speaker had watched the case for three years, and he felt pretty sure of the diagnosis. The case which had been presented at the previous meeting would, in all probability, pursue a similar course.

Ankylosis of the Lower Jaw.—Dr. L. W. Hubbard presented a case with the following history: Walter S., aged three years and ten months, in January, 1888, had had an attack of what was called malarial fever, which had lasted about three weeks; and, after an interval of about one week, during which the boy had been apparently well, there had been a return of the fever, and this time it had been accompanied by profound drowsiness. In the following February abscesses formed on the leg, arm, and over the left ramus of the jaw. This latter abscess was incised and drained on March 12, 1888, but continued to discharge until the following June. During this time the jaw had been bandaged to retain the dressing, and apparently no attempt had been made to move the jaw. In June it was noticed that there was very little motion in the jaw, and in September an attempt was made to force open the jaw by means of instruments, but this had resulted in temporarily loosening the lower incisor teeth, so this procedure had been abandoned. Subsequently another attempt was made under chloroform, but the child behaved so badly under the anæsthetic that nothing was accomplished. There had been no further treatment until the case came to the speaker in the middle of last July. Although the patient had been kept necessarily on fluid diet, he was well nourished at this time. The jaws could be separated scarcely an eighth of an inch, and there seemed to be no muscular control of the lower jaw. The parents objected very decidedly to the use of an anæsthetic, so a method of gradual stretching was adopted and carried out by means of an instrument which the speaker had devised. This instrument consisted of two steel plates, fastened together at one end by a separable hinge, and capable of being separated at the other end by turning a screw. It differed from the usual wedge-shaped instrument in having a separable hinge, and in being made considerably thinner at this end, which in this case was absolutely necessary in order to permit the introduction of the instrument into the mouth. The original intention in having the hinge separable was to facilitate the cleaning of the instrument; but it was subsequently found that there was an additional advantage—*i. e.*, having partly separated the jaws of the instrument, a cork could be inserted between the plates near the hinge and the action of the screw reversed, by which the instrument was made to exert considerable pressure on the molar teeth.

Owing to long disuse, the muscles of the jaw were very weak, particularly the depressors, so that electricity was employed as an adjuvant, and with benefit. At the present time the instrument could be inserted as far back as the molar teeth; but it was observable that when the child was excited he had less control over the muscles of the jaw, which did not open as much as at other times.

(The instrument was exhibited, and its use demonstrated.)

Dr. J. W. S. Gouley said that he had treated about half a dozen such cases, all in children. The closure of the jaw had been due sometimes to an osteitis from decayed teeth, and sometimes to cicatrices following stomatitis; but in all the cases there was a permanent and unilateral contracture of the masseteric muscles. He had employed various instruments, beginning with one devised by Dr. Valentine Mott. This instrument effected the desired object, but in several instances broke the teeth. In some cases he had separated the jaws quite rapidly under an anæsthetic, while in others the gradual method had been adopted. In the latter method, after opening the jaw a little, a small wedge of cherry wood (which was found to be better than cork) was inserted and kept in the mouth; and this treatment was continued, not merely for weeks or months, but for years. In one case, that of a girl of twelve years, these wedges had been worn daily for ten years, but at the end of this long period she could only separate her teeth half an inch. At this time she demanded an operation, and he excised a portion of the maxillary bone according to the method of Esmarch, with the result of enabling her to open her mouth and chew her food; but the operation had caused an ugly deformity. The other cases had not been followed for so long a time; but in none of them had the original method employed been successful, as there was a recontraction. Dr. Valentine Mott had told the speaker that he had tried both this method and the slow one, and had even divided the masseteric muscle on the affected side, but had never been completely successful. The case presented to-night was worthy of careful treatment, as the child was young, and the chance of ultimate success was better, for the contracture was not so marked as it had been in the cases which he had narrated. He approved of the instrument, as, on account of its broad bearing, it was less likely to injure the teeth.

Dr. Hubbard said that he had based his hopes of success in the case on the yielding nature of the contracture, as at no time, so far, had it been necessary to employ a force sufficient to cause much pain or make the teeth sore.

The Radical Cure of Varicose Veins by Multiple Ligation.—Dr. Charles Phelps read a paper thus entitled. (To be published.)

Dr. J. D. Bryant said that it had been his good fortune to witness some of these operations, and also the results. One of the dangers incident to the existence of varicose veins had not been touched upon in the paper, but had been illustrated in a case in his own practice. The case had been one of phlebitis associated with a well-marked varicose condition along the inner side of the knee joint, and the patient had died from pyæmia.

That varicose veins were amenable to treatment had been known since the time of Celsus, and from very early times the application of ligatures to varicose veins had been more or less generally recommended. The principal operative methods were: 1. Direct ligation of the veins, with the removal of a portion. 2. The application of ligatures at isolated points, or multiple ligation. 3. The use of caustics. Those familiar with the teachings of Dr. Gross knew that he preferred the use of caustics to multiple ligation; but the speaker's own preference

was for multiple ligation, or for ligation and excision. This question had recently been thoroughly discussed abroad by the German surgeons, who were about equally divided in favor of these two operations. Which method offered the best chances for the patient? There were three objections to passing any form of needle subcutaneously around a vein: 1. The danger of including a nerve, thereby modifying function or sensation. 2. The danger of wounding the vein, which would be very serious if the needle were not thoroughly aseptic. 3. A likelihood of including in the ligature the tissues surrounding the vein, which, although perhaps not dangerous, was certainly not requisite.

If the vein was exposed by an incision, the ligature could be passed around it without exposing the patient to any of these dangers, and with the additional advantage that collateral branches could be avoided. Although his experience with multiple ligation had not been so extensive as that of Dr. Phelps, he had done it many times, and had never observed suppuration; and, in a somewhat more limited experience with removal of portions of veins, suppuration had occurred in only one case. In simple cases he thought multiple ligation the better method, but where there were many and large veins to deal with, a free incision, with the removal of two inches or more of the vein, was the safer procedure.

As regarded the results of operation, there was no question that the veins were occluded and ulcers healed; but one could hardly say that there had been any permanent cure. The length of time which varicose veins took to develop was greater than the time the cases reported to-night had been under observation; and, besides this, the same causative conditions existed in the patients after as before operation. There was also no doubt that the *venæ comites* might themselves become varicose, for in many instances, while ligating the posterior tibial behind the internal malleolus, very tortuous varicosities had been found, both with and without more superficial varices. The subcutaneous and the open methods of ligating veins were the best operations we had at present for the treatment of these infirmities.

Dr. Gouley said that he would have very little hesitation in choosing between these two operations; for, both theoretically and practically, the subcutaneous method was the safer one, as there was always greater risk of complications from an open wound than from small punctures as made by Dr. Phelps. The reader of the paper had given the indications for ligation of varices, and had by implication furnished also some general indications; but there were special indications which should be mentioned. As an illustration he cited the case of a medical man who had come under his observation some twenty years ago suffering with large varices of the leg and thigh where the saphenous vein had been about half an inch in diameter. At its point of communication with the femoral vein there had been an ampulla two inches and a half in diameter, which had extended like a huge aneurysmal sac up the thigh to Poupart's ligament, beyond which it could not be traced. In such cases no method of operation would have been safe. The previous speaker had spoken of the operation of excision; but there had been another craze in this country—*i. e.*, the injection of varices with perchloride or persulphate of iron. He had once been tempted into doing this, and had come very near regretting it, although the patient had lived in spite of the damage done. The method consisted in injecting into the vein a few drops of the perchloride of iron with a Pravaz syringe, while pressure was made above. There was no certainty that a serious thrombosis would not result. The operation had been done frequently by one of his hospital colleagues, but the results had been very unsatisfactory.

In connection with the subject of contra-indications, he related the history of the case of one of his patients who had had a thrombosis of the iliac vein following some operation. This had resulted in a swelling of the leg like a classical "milk leg" in a puerperal patient, and subsequently in the formation of a large abscess in the upper part of the thigh. Eight or nine months after his recovery from this the speaker had noticed superficial varices of the leg and thigh, and in the course of a year there had been a great bunch of varicose veins in the hypogastric region. The greater part of the blood from the leg had been found to traverse the hypogastric region to open by one of the large venous trunks into the right femoral; and, when this was compressed, the enlarged hypogastric veins had become much swollen, some of them being three quarters of an inch in diameter. A surgeon had proposed an operation for the purpose of closing these veins; but, had this been done, the consequences could be easily imagined. (Photographs of this patient were shown.) The man lived twelve years, and at the autopsy the left iliac vein had been found to be completely closed. The question of cure of varicose veins was by no means settled, and a period of four or five years would scarcely be a sufficient test of the permanency of the cure.

Dr. J. R. Conway said that his experience with the method of multiple ligation was limited to three cases, but the results so far went to corroborate the statements made by Dr. Phelps in his paper. In one case, that of a woman, the veins had been much dilated from the lower third of the thigh nearly to the ankle. Near the knee the veins had formed a large thin-walled tumor, and in the lower third of the leg had been an extremely deep ulcer of five years' standing, which had resisted all attempts to cure it. Nine ligatures had been applied to the veins at intervals of an inch and a half to two inches, and she recovered very rapidly. The two other cases had not been so severe. In one of them nine ligatures had been applied to a varicosity which had had a diameter about equal to that of the thumb. The result had been complete obliteration of the veins. In the third case only three ligatures had been employed, and the veins, although much diminished, had not been entirely occluded, owing to the re-establishment of the circulation through anastomosing branches. An interval of two inches between the ligatures seemed to be about the proper distance to secure obliteration of the vein. In none of these cases had there been inflammation, suppuration, or pain; and the patients had recovered rapidly. The operation was a simple procedure, and there did not seem to be much danger of including in the ligatures nerves or other important structures.

Dr. Hartley had never seen any particular trouble from infection of the wound, whether the case was treated by subcutaneous ligation or whether the vein was excised. In some cases, especially where there were ulcers, it would seem to be very difficult to prevent infection; but, even in these cases, if the ulcer were disinfected and kept dry, there would be no interference with the process of healing. He had been accustomed, where the veins were large, to tie the vein above and below and excise, and also to tie the neighboring branches. Where varicosities were very extensive, a continuation of this process would make the operation unnecessarily lengthy, so he had been in the habit of employing, under such circumstances, the multiple ligatures.

Dr. Phelps said that he did not maintain that the cure at the present time was radical, and he considered the method by excision about as good, except that it was very tedious. He wished especially to insist upon the necessity of the multiple occlusion of the vein, either by ligature or otherwise, in order to secure obliteration of the vein.

Book Notices.

Lectures on Bright's Disease. By Robert Saundby, M. D. Edin., Fellow of the Royal College of Physicians, London, etc. With Fifty Illustrations. New York: E. B. Treat, 1889. Pp. vi–290. [Price, $2.75.]

The author gives one of the best summaries which have come under our notice of the various views held in regard to the vexed questions of albuminuria, dropsy, and the urinary and vascular changes found in renal disease. He writes also a most excellent chapter upon the clinical examination of the urine, both microscopical and chemical. We can hardly, however, accept all his statements regarding the clinical significance of tube-casts. When we come to his classification of Bright's disease we can not help feeling that he should either have kept to one of the older ones or given some comprehensible reason for adopting the one he has selected. He speaks of "febrile nephritis," "toxæmic nephritis," and "obstructive nephritis." Now, we suffer enough from bad classifications, and we should not have one thrust upon us which is incomprehensible in its very meaning. Who would imagine that "obstructive nephritis" meant what is often called "surgical kidney" or "suppurative nephritis"? Except for this classification, the book is very good, and the remarks upon treatment especially deserve praise.

Electricity and the Methods of its Employment in removing Superfluous Hair and other Facial Blemishes. By Plym. S. Hayes, A. M., M. D., etc. Chicago: W. T. Keener, 1889. Pp. vi–128.

This treatise contains the usual statements upon the subject, and is a contribution to book-making rather than to medical literature. The busy practitioner has no time for it, and it seems powerless to enlighten the laity except to the most limited extent.

BOOKS AND PAMPHLETS RECEIVED.

A Text-book of Practical Medicine, designed for the Use of Students and Practitioners of Medicine. By Alfred L. Loomis, M. D., LL. D., Professor of Pathology and Practical Medicine in the Medical Department of the University of the City of New York, etc. Eighth Edition, revised and enlarged. With Two Hundred and Fifteen Illustrations. New York: William Wood and Company, 1889. Pp. xvii–1147.

Chemistry: General, Medical, and Pharmaceutical, including the Chemistry of the U. S. Pharmacopœia. A Manual on the General Principles of the Science, and their Applications in Medicine and Pharmacy. By John Attfield, F. R. S., M. A., and Ph. D., of the University of Tübingen, etc. Twelfth Edition. Philadelphia: Lea Brothers and Co., 1889. Pp. xvi–13 to 770. [Price, $2.75.]

Notes on a Case of Maculæ Cæruleæ. By Fred J. Leviseur, M. D. [Reprinted from the "Journal of Cutaneous and Genito-urinary Diseases."]

The Cure of Hernia by the Use of the Buried Antiseptic Animal Suture. By Henry O. Marcy, M. D., LL. D. [Reprinted from the "Journal of the American Medical Association."]

Chronic Inversion of the Uterus. By Henry O. Marcy, M. D., LL. D. [Reprinted from the "Journal of the Americal Medical Association."]

The Bible Doctrine of Immortality. Shown by Numerous Texts. Compiled and edited by Joseph Wheeler, of St. Louis, Mich.

Medical Communications of the Massachusetts Medical Society. Vol. XIV, No. 111. 1889.

Jahresbericht über die Fortschritte auf dem Gebiete der Geburtshilfe und Gynäkologie. Herausgegeben von Prof. Dr. Richard Frommel in Erlangen. II. Jahrgang, Bericht über das Jahr 1888. Wiesbaden: J. F. Bergmann, 1889. Pp. viii–651.

A Guide to the Diseases of Children. By James Frederic Goodhart, M. D., F. R. C. P., Physician to Guy's Hospital and Lecturer on Pathology in its Medical School, etc. Rearranged, revised, and edited by Louis Starr, M. D., Clinical Professor of Diseases of Children in the Hospital of the University of Pennsylvania. Second American from the Third English Edition, with Numerous Formulæ and Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1889 Pp. 13 to 772.

Through the Ivory Gate: Studies in Psychology and History. By William W. Ireland, M. D. Edin. New York: G. P. Putnam's Sons, 1889. Pp. vii to 311. [Price, $3.]

A Compend of Human Physiology. Especially adapted for the Use of Medical Students. By Albert P. Brubaker, A. M., M. D., Demonstrator of Physiology in the Jefferson Medical College, etc. Fifth Edition, revised and enlarged. With New Illustrations and a Table of Physiological Constants. Philadelphia: P. Blakiston, Son, & Co., 1889. Pp. viii–9 to 188. [Quiz Compends.]

A Hand-book of Dermatology. For the Use of Students. By A. H. Ohmann-Dumesnil, A. M., M. D., Professor of Dermatology, St. Louis College of Physicians and Surgeons. Illustrated. "St. Louis Medical and Surgical Journal" Publishing Company. Pp. viii–167.

The Cure of Crooked and Otherwise Deformed Noses. By John B. Roberts, A. M., M. D., Professor of Anatomy and Surgery in the Philadelphia Polyclinic. Philadelphia: P. Blakiston, Son, & Co., 1889. Pp. 7 to 24.

The Physician's Visiting List (Lindsay & Blakiston's) for 1890. Philadelphia: P. Blakiston, Son, & Co.

Injuries to the Skull, with Some Observations on One Hundred and Eighteen Cases. By Thomas H. Manley, M. D. [Reprinted from the "Brooklyn Medical Journal."]

New Inventions, etc.

A GRAVITY DOUCHE.

By S. E. Cook, M. D.,
HOLDREGE, NEB.

My object has been to produce a physician's gravity douche that would supply an even flow throughout, so long as the relations between nozzle, reservoir, and cut-off were not disturbed, that would give a regularly intermittent flow when desirable, and of any desired strength of each pulsation, in which the temperature of the fluid in the reservoir could be gradually raised, and as it passes from the reservoir strained of sediment, and that would not inject air.

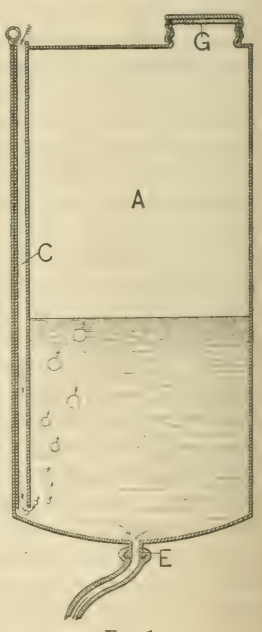


Fig. 1.

From experience I know that my instrument possesses these qualities, and I think is not unduly complicated. Figs. 1, 2, and 3 show the different steps I have followed in perfecting my design, Fig. 3 being the perfect apparatus.

The design, Fig. 1, is a simple closed can, A, with an outlet nipple, E, for attachment of the rubber tube, a screw cap, G, with washer, covering the opening for filling, and a straight tube, C, open at both ends (externally above and internally below near the bottom of can), to supply air to the interior of the reservoir and produce an even flow. This reservoir will produce an unvarying current until the fluid falls below the level of the lower end of the tube, C, when the reservoir is practically empty.

The drawing, Fig. 2, shows an open reservoir, A, provided with a small outlet nipple, E, beneath which is a smaller closed reservoir, B, supplied with an air-tube, D, long enough to reach above the level of the fluid in A. Within this smaller reservoir is a cylindrical float, K, slightly smaller in every direction than B, so as to be quite free to move in a vertical direction a quarter of an inch. This float is centrally perforated by a light rod provided at its lower extremity by a conical valve. This valve rests upon a valve-seat in the center of the bottom of B, which is continued into an outlet nipple, F, for the attachment of the rubber hose.

The reservoir, A, being filled, if the discharge nipple, F, carries the fluid from B faster than it can enter through E, a series of regular pulsations occurs, continuing so long as the fluid lasts in A. The *modus operandi* is as follows: The air being expelled, the valve and float resting on the valve-seat are kept in that position by their own weight, pushing downward, and the weight of the column of fluid in the rubber hose pulling downward. Against these two forces is the buoyancy of the float, which increases as the fluid in B rises. This upward force finally becomes the greater and the float with valve suddenly rises. The opening of the valve transfers the weight of the fluid in the discharge pipe from the valve to the fluid in B, which is pulled downward with a rush. When the fluid in B is low enough the float lowers and the valve suddenly closes. This action repeats itself so long as the supply of fluid lasts. There being always a bed of fluid in B, the injection of air is impossible. The action represents very accurately that of the hand compression syringe.

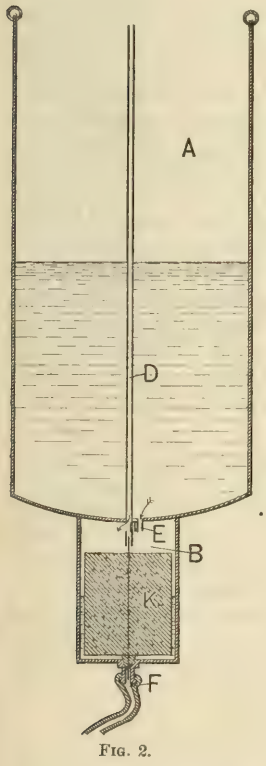


Fig. 2.

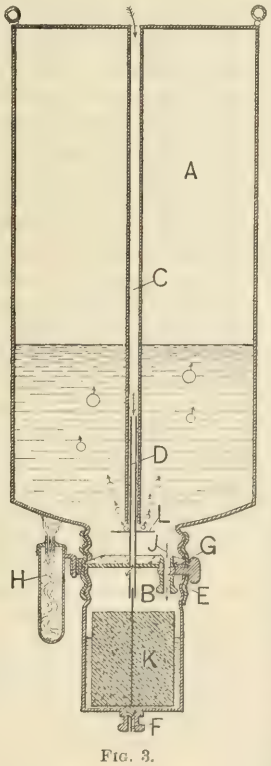


Fig. 3.

In order to combine these two ideas in one instrument, I have devised that shown in Fig. 3—the reservoir in Fig. 1, A, with the air-tube, C, centrally located, and the opening for filling changed to the bottom. The screw cap or stopper, G, is provided with a screw flange on each side, serving to connect the large reservoir with the small one. The nipple, E, is provided with a stop-cock to regulate the supply of fluid from A to B. The stopper, G, is also perforated centrally for, and provided with, an air-tube, D, the upper end of which enters C, extending some distance above the level of fluid in C. This tube, D, supplies B with air, maintaining a proper equilibrium. I further provide G with a small loop to hold the hook or arm of a small alcohol lamp, H, when necessary, to increase the temperature of the fluid in A. In order to further guard against the escape of air bubbles through the nipple, E, a circular disc, L, somewhat larger in diameter than C, and perforated for D, guards the lower extremity of C. A strainer, J, also overlaps the outlet vent.

To fill the reservoir, unscrew and remove G and invert the reservoir. If a continuous current is desired, unscrew and remove the small reservoir, B, with float, and attach the hose to E. If an intermittent current is desired, attach the hose to F, leaving B in place.

Revert the reservoir and hang it high enough to get the desired strength. In using the intermittent current, the stop-cock, E, determines the number and length of the pulsations in a given time, while the height of B above the nozzle determines the force of each beat. By using the stop-cock, from one or two to twenty beats in a minute may be secured with a force determined by a head of from one to five feet.

If the temperature of the fluid is desired to be gradually elevated light and place in position the small alcohol lamp. The sensations of the patient will decide the limit of heat, when the lamp can be removed.

Of course, ordinarily the continuous current will be desirable, as in intra-uterine medication, where a very gentle even flow is desired, while for vaginal use alone, as in Emmet's method, many cases would be benefited by a pulsating current.

I have corresponded extensively with our leading gynæcologists, and, with but few exceptions, they approve of my idea. Some favor the continuous current for all purposes, while others have informed me that to gain the full therapeutic effect of hot water they prefer the interrupted current of the "hand-bulb" syringe, and have on that account partially or wholly discarded the use of the "fountain" syringe.

My syringe corrects these defects and, though doubtless still capable of improvement, is reliable and convenient. The reservoir I intend shall hold at least a gallon, which I believe to be the most useful size. It can be made quite cheaply, being entirely of tin, and needs no engineer to run it.

Miscellany.

Buffalo Lithia Water in the Treatment of Stone in the Bladder, etc.—In the "Virginia Medical Monthly" Dr. John Herbert Claiborne, of Petersburg, Va., writes as follows: "I have for many years been prescribing the use of the Buffalo lithia water in cases of lithiasis, uræmia, Bright's disease, cystitis, and allied affections, and with the same marked results which have followed its exhibition in like conditions by a number of other physicians. The most striking instance, however, in which I have seen the solvent properties of the waters manifested has been in the case of Mr M., of this city. Mr. M. had been subject to attacks of lithiasis for several years, but in August last, after one of the most violent attacks of nephritic colic, passed gravel from the kidney into the bladder, where it remained for a week or more, setting up a severe inflammation of that viscus, with all its painful and distressing symptoms. Finally, however, the gravel re-commenced its journey, and became lodged in the prostatic portion of the urethra, cutting off the flow of urine and causing retention. Being compelled to use a catheter for the relief of this symptom, I pushed the calculus back into the bladder, as there was too much inflammation to resort to either the crushing of the stone or to its removal by lithotomy. I put the patient to bed, restricted him to a milk diet, administered opium suppositories in sufficient doses to relieve vesical tenesmus and pain, and directed him to drink the Buffalo lithia water in the largest quantities which he could bear. He succeeded in drinking from half a gallon to a gallon every twenty-four hours, and, at the end of about ten days, commenced to pass the detritus of the gravel, as I suppose, in quantities which seemed incredible. At all events, after passing his water upon a clean board, and allowing as much of it to flow off as would, you could then scrape up with a knife a teaspoonful or two (after every passage of urine) of phosphates, urates, etc., closely resembling whitewash which had been applied to the board, and which had there dried. This continued for a week. I then washed out the bladder several times with a warm solu-

tion of boric acid, and Mr. M. was soon on his feet again. At this writing he says that he is perfectly well, and feels, for the first time in many years, entirely free from all kidney or bladder trouble."

Dr. Hammond's Sanitarium, in Washington, is said to contain a greater number of patients now than at any time since it was opened, about a year ago. We learn that Dr. Hammond is making a number of experiments in the treatment of epilepsy by trephining over the site of the suspected brain lesion and paring the convolutions.

American Pharmaceutical Products at the Paris Exposition.—Messrs. W. R. Warner & Co., of Philadelphia, have been awarded a silver medal in recognition of the excellence of their pills and effervescent salts.

Mortality in Cities in the United States.—The following table represents the mortality in the cities named, as reported to Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, and published in the abstract of sanitary reports received by him during the week ending December 6th:

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—									
				Cholera.	Yellow fever.	Small-pox.	Varioloid.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y.	Nov. 30.	1,591,057	566	..	..	..	..	..	..	8	8	17	3	6
Brooklyn, N. Y.	Nov. 30.	843,602	292	..	..	..	..	..	..	8	1	23	..	3
Philadelphia, Pa.	Nov. 30.	1,040,240	360	..	..	..	..	..	..	7	9	16	..	..
Baltimore, Md.	Nov. 30.	500,343	152	..	..	..	..	..	..	5	1	6	..	1
St. Louis, Mo	Nov. 23.	450,000	140	..	..	..	..	..	..	2	3	7	..	1
Boston, Mass	Nov. 30.	420,000	..	..	..	..	..	..	..	2	..	10	..	..
Cincinnati, Ohio	Nov. 30.	325,000	105	..	..	..	..	..	..	4	..	6	..	2
New Orleans, La.	Nov. 23.	254,000	123	..	..	..	..	..	..	..	..	3	..	..
Washington, D. C	Nov. 23.	250,000	98	..	..	..	..	..	..	5	..	6	..	1
Washington, D. C	Nov. 30.	250,000	..	..	..	..	..	..	..	6	..	3	..	..
Detroit, Mich.	Nov. 23.	250,000	65	..	..	..	..	..	1	..	1	10	..	..
Cleveland, Ohio	Nov. 2.	235,000	100	..	..	..	..	..	..	2	..	8	..	1
Cleveland, Ohio	Nov. 9.	235,000	97	..	..	..	..	..	..	3	2	9	3	2
Pittsburgh, Pa.	Dec. 3.	230,000	64	..	..	..	..	..	..	2	..	5	..	..
Minneapolis, Minn.	Nov. 30.	200,000	48	..	..	..	..	..	..	3	..	3	..	..
Rochester, N. Y.	Nov. 16.	130,000	36	..	..	..	..	..	..	1	..	..	..	..
Rochester, N. Y.	Nov. 30.	130,000	28	..	..	..	..	..	..	..	..	1	..	..
Providence, R. I.	Nov. 30.	127,000	26	..	..	..	..	..	..	2	..	1	1	..
Indianapolis, Ind.	Nov. 29.	124,450	32	..	..	..	..	..	..	6	..	2	..	..
Toledo, Ohio	Nov. 29.	89,000	27	..	..	..	..	..	..	1	1	4	..	..
Fall River, Mass.	Nov. 30.	69,000	22	..	..	..	..	..	..	1	..	..	..	..
Nashville, Tenn.	Nov. 30.	65,153	15	..	..	..	..	..	..	..	..	..	..	..
Charleston, S. C.	Nov. 30.	60,145	27	..	..	..	..	..	..	..	..	1	..	..
Lynn, Mass.	Nov. 23.	53,000	11	..	..	..	..	..	..	..	..	..	..	..
Lynn, Mass.	Nov. 30.	53,000	13	..	..	..	..	..	..	..	..	1	..	..
Manchester, N. H.	Nov. 23.	42,000	16	..	..	..	..	..	..	..	..	..	..	..
Portland, Me	Nov. 30.	42,000	11	..	..	..	..	..	..	..	..	1	..	..
Galveston, Texas	Nov. 15.	40,000	23	..	..	..	..	..	..	..	..	..	..	..
Council Bluffs, Iowa	Oct. 28.	35,000	12	..	..	..	..	..	..	..	..	5	..	..
Council Bluffs, Iowa	Nov. 5.	35,000	9	..	..	..	..	..	..	..	..	1	..	..
Council Bluffs, Iowa	Nov. 12.	35,000	5	..	..	..	..	..	..	..	..	2	..	..
Council Bluffs, Iowa	Nov. 19.	35,000	7	..	..	..	..	..	..	1	..	2	..	..
Council Bluffs, Iowa	Nov. 25.	35,000	6	..	..	..	..	..	..	..	..	3	..	..
San Diego, Cal.	Nov. 20.	32,000	6	..	..	..	..	..	..	..	..	..	..	..
Yonkers, N. Y.	Nov. 29.	31,000	7	..	..	..	..	..	..	..	..	..	..	..
Altoona, Pa.	Nov. 23.	30,000	7	..	..	..	..	..	..	..	..	..	..	..
Binghamton, N. Y.	Nov. 30.	30,000	9	..	..	..	..	..	..	..	..	..	..	..
Canton, Ohio	Nov. 22.	30,000	5	..	..	..	..	..	..	..	1	..	..	..
Auburn, N. Y.	Nov. 30.	26,000	15	..	..	..	..	..	..	..	..	..	..	..
Haverhill, Mass.	Nov. 30.	25,000	12	..	..	..	..	..	..	..	..	..	..	..
Newport, R. I.	Nov. 21.	22,000	5	..	..	..	..	..	..	..	..	..	..	..
Newport, R. I.	Nov. 28.	22,000	5	..	..	..	..	..	..	..	..	..	..	..
Newton, Mass.	Nov. 30.	21,553	5	..	..	..	..	..	..	..	..	1	..	..
Keokuk, Iowa	Nov. 23.	16,000	..	..	..	..	..	..	..	..	..	1	..	..
Keokuk, Iowa	Nov. 30.	16,000	5	..	..	..	..	..	..	..	..	..	..	..
Rock Island, Ill.	Nov. 24.	16,000	3	..	..	..	..	..	..	..	..	..	..	..
Pensacola, Fla.	Nov. 23.	15,000	4	..	..	..	..	..	..	..	..	..	..	..
Pensacola, Fla.	Nov. 30.	15,000	8	..	..	..	..	..	..	..	..	..	..	..

Oysters.—Oysters are so nutritious and of so much value in many forms of convalescence, as well as so largely employed as a luxury, that it is to be regretted they should have fallen under the ban of a scare. It is so easy, when the public mind is disquieted and alarmed by the prevalence of an epidemic, to fix the blame upon one special article of diet, and to be lulled into a false sense of peace provided that this substance is avoided; but, on the other hand, the connection between the disease and the supposed peccant substance is very frequently imaginary. The relief obtained by branding some possibly innocent substance may occasionally serve to divert attention from some radical sanitary defect, while it also causes an irrational distaste for some article of diet which requires much time and experience to eradicate. Contamination with sewage is justly regarded as a danger, and one of the latest suggestions is that some epidemics of typhoid fever are to be traced to the use of oysters thus poisoned. It is an undoubted fact that sometimes attacks of diarrhœa follow the ingestion of oysters, but the comparative rarity of this leads many to brave this danger with an easy mind. The proof of the connection between typhoid and oysters can only be established by careful inquiry. So many sanitary defects exist in Dublin that we should be sorry to find the stigma cast upon foreign oysters regarded as a satisfactory solution of the problem, still less as a reason for taking no measures to relieve that city from the frequent and powerful odors which at present pervade it. While it is possible that oysters may cause disease, it is certain that the other question urgently calls for attention and improvement.—*Lancet.*

ANSWERS TO CORRESPONDENTS.

No. 302.—We know of no competent observer of the present day who looks upon the lenticular spots as absolutely essential to the diagnosis of typhoid fever, but most authors agree that their absence or the fact that they are not observed renders the diagnosis doubtful for a time.

No. 303.—They are identical.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Lectures and Addresses.

SOME POINTS IN THE PROGNOSIS OF VALVULAR HEART DISEASE:

AN ADDRESS DELIVERED BEFORE THE MEDICAL SOCIETY OF THE PHILADELPHIA HOSPITAL.

BY FREDERICK P. HENRY, M. D.,

PHYSICIAN TO THE PHILADELPHIA AND TO THE JEFFERSON MEDICAL COLLEGE HOSPITALS.

YOUR flattering invitation to address you found me unusually busy, and my first impulse was, naturally, to decline it. I did not at first see how, in the pressure of other work, I could make ready, in the short interval allowed me, to address you on any subject in a manner satisfactory either to myself or to you. On second thought, however, it occurred to me that I might have something to say on the important and highly practical matter of prognosis.

Much has been said, and with great force, in favor of the view that prognosis is the most important of the various subdivisions of medical science. I do not know that I am prepared to accept this statement as applicable to all diseases, but I am firmly convinced of its truth with reference to those of the heart, and I am sure that a moment's reflection will serve to convince you of it. Imagine yourself in the place of a man hitherto strong, active, and hard working, with children dependent upon him not only for support, but for protection and counsel in the daily emergencies of life. He becomes conscious of a gradual failure of vital power, and is compelled to admit that the source of this trouble is the heart. He feels the deadly arrow in his side. "*Hæret lateri letalis arundo.*" Finally he consults a physician and finds his fears confirmed. Is it not a foregone conclusion that the first question of this man, to carry out our figure, will be, Can the arrow be extracted, or, if not, how long will it rankle there? I am sure I need not say another word to convince you of the paramount importance of prognosis in heart disease.

The idea of sudden death is invariably associated with that of heart disease, and yet, in the majority of cases, we can positively assure our patients that no such event is to be apprehended. It is only of two forms of cardiac disease that sudden death can be said to be the frequent termination, and these are aortic insufficiency and angina pectoris—the true angina pectoris of Heberden. In cases of mitral insufficiency sudden death is a rare event, occurring, according to Leyden,* in about two per cent. of the cases—that is to say, not much more frequently than in individuals with no heart disease whatever. In such cases, therefore, we are quite justified in trying to free the minds of our patients of all dread of an event of such rare occurrence.

In the prognosis of heart disease the age, sex, and mode of life of the patient should be taken into careful consideration. In quite young children the prognosis is most unfavorable, the course of the disease being, as a rule, rapidly progressive. I recall the case of a boy of six who was attacked with acute articular rheumatism and mitral disease causing insufficiency, and who died in six months with great ascites and general anasarca.

In youth and early manhood, on the other hand, the prognosis is comparatively favorable, owing to the kind of valvular affections that are most prevalent at this time of life.

In advanced age, according to Leyden, the prognosis is decidedly unfavorable, and this is because the commonest cause of these affections at this time of life is arterio-sclerosis, which is generally a steadily progressive disease. Compensation for valvular defects, however, occurs quite as readily in advanced life as in youth, the heart being probably the only organ of the body of which the relative size increases with age.*

The second part to be considered in the prognosis of heart disease is *sex*, and it may be laid down as a general rule that the prognosis is more favorable in females than in males. This difference in favor of females is not so marked in hospital as in private practice, because the life led by females of the lower classes is not materially different from that of males. They undergo the same privations, and many of them are engaged in severe manual work. Still there is a decided difference, and this is due chiefly to the facts that arterio-sclerosis, a common cause of heart disease, is comparatively rare in the female sex, and that in females those forms of disease are most prevalent which warrant a favorable prognosis.

The mode of life is doubtless the point of greatest importance in the prognosis of heart disease. Manual labor in heart diseases is like the fuel which feeds the fire, or, rather, like the bellows which fans it. For this reason the well-to-do classes are able to resist the progress of heart disease much better than those who depend for subsistence on their own bodily exertions.

The disposition is of almost equal importance, for outbreaks of temper and violent emotions generally act in the same way as severe bodily exertion. In this connection the most interesting case on record to us medical men is that of John Hunter, who had long suffered from angina pectoris and died from the immediate effects of violent excitement. The following extract from the Hunterian oration for 1855, by Joseph Ridge, M. D., will, I am sure, be heard with interest:

"Arrived at the hospital, he found the board already assembled, and, entering the room, presented the memorial of the young men and urged the propriety of their being admitted. In the course of his remarks he made some observation which one of his colleagues thought it necessary instantly and flatly to contradict. Hunter immediately ceased speaking, retired from the table, and, struggling to suppress the tumult of his passion, hurried into the adjoining room, which he had scarcely reached when, with a deep groan, he fell lifeless into the arms of Dr. Robertson, one of the physicians of the hospital who chanced to be present."

* Leyden, "Ueber die Prognose der Herzkrankheiten," "Deutsche medicinische Wochenschrift," Nos. 15, 20, 21, 22, 1889.

* Leyden, *loc. cit.*

Hunter, from all accounts, was a man of ungovernable temper and quite conscious of his infirmity, for before the meeting referred to he had "expressed his apprehension lest some unpleasant dispute might occur, and his conviction that if it did, it would certainly prove fatal to him."

The manner in which the patient responds to treatment is another point of importance in forming our prognosis. There are great differences in this respect. In some cases the usual effect of digitalis, for example, is not easily obtained; in others the effect of this remedy is promptly manifested but speedily exhausted. This drug, and others of the same kind, should be employed with great economy. When the desired effect has been obtained through their use—in other words, when cardiac irritability has subsided and the pulse, from being rapid, irregular, and perhaps intermittent, has become of normal frequency, regular, and free from intermission—the drug should be withheld and an attempt made to maintain the circulatory equilibrium by means of nutritious, easily digestible food, tonics, especially the vegetable bitters, and an occasional saline laxative. The latter is of great service in preventing venous stasis, for it unloads the vessels of any excess of fluid and places them in the most favorable condition for the absorption of proper nutriment.

With reference to prognosis, cardiac affections may be divided into the three customary classes: 1. Non-organic diseases. 2. Diseases of the valves. 3. Diseases of the muscular structure. It is of the utmost importance, from a prognostic point of view, to be able to separate the non-organic from the organic disorders, and yet in certain cases it is extremely difficult to make the distinction. As a rule, the diagnosis of non-organic disease is justified when the most careful physical examination fails to detect anything abnormal either in the size of the heart or in the sounds to which its action gives rise. This diagnosis will receive support if the patient is young, of a neurotic diathesis, and especially if of the female sex. It must not be forgotten, however, that an anæmic murmur may be present, and when this occurs in connection with the manifold subjective and objective symptoms of functional heart disease the diagnosis must often be held in reserve by the greatest expert in cardiac diseases. A few words here with reference to inorganic heart murmurs. There is, I believe, little or no difference of opinion with reference to the fact that they are all systolic. In the majority of cases they are heard only at the base of the heart, though occasionally at the apex. The former murmurs have been called hæmic; the latter, dynamic; but the term inorganic covers them all, for it implies the fundamental fact that, in case of death, no lesion of the valves can be found to account for their existence. We are not entirely ignorant, however, with reference to the mode of their production. Experiments have shown that a murmur is not produced by the quiet flow of fluid through a tube of uniform caliber. If, however, the fluid be forced rapidly through the tube, a murmur is produced, and the ease with which this is done is in inverse ratio to the density of the fluid. Dr. B. W. Richardson, of London, says that "if our blood were reduced to the condition of distilled water, and we could live and hear, as we do now, we should probably always be conscious, not only of the heart sounds, but of a soft, internal, musical murmur, produced in our own vessels."

An inorganic murmur, in short, is produced by blood of low specific gravity flowing through the vessels under high tension. It has long been supposed that the arterial tension in chlorosis, in which these murmurs are most often heard, is low; but this is not the case, as may be proved, not only by means of the sphygmograph, but by the facts that the heart is often found hypertrophied and its second sound accentuated. A loud second sound, of course, implies high tension in either aorta or pulmonary artery. Again, an inorganic murmur does not immediately follow a copious bleeding, as it would if due to low arterial tension, but makes its appearance when the volume of the blood has been restored by the absorption of water. When an inorganic murmur is heard with greatest intensity at the apex, it has been called, as already stated, dynamic, and is caused by mitral regurgitation due to imperfect contraction of the left auriculo-ventricular orifice. During systole, as has been proved by Ludwig and others, the size of the auriculo-ventricular orifice is reduced one half. If, however, the cardiac muscle is weak, as in anæmia, and especially if the blood tension is also high, the closure will be imperfect and regurgitation will result. "This regurgitation is not due to a dilatation of the orifice beyond its normal limits, but to an incompetent contraction during systole, and thus at post-mortem the orifice and valves appear perfect." *

The practical bearing of these remarks is that an examination of the blood may be of decided value in determining whether or not a cardiac murmur is organic. It does not necessarily follow, however, that a cardiac murmur in an anæmic individual is inorganic. In fact, according to Dr. Goodhart,† of London, anæmia long continued may give rise to valvular disease. The doubts concerning the nature of a murmur may sometimes be removed by the effects of treatment. If the murmur persists after the blood has been restored, by proper treatment, to its normal composition, it is organic. If the anæmia persists in spite of treatment and the case steadily progresses to a fatal termination, the doubts concerning the murmur may not be removed until the heart is inspected on the post-mortem table.

Having decided the murmur to be organic—*i. e.*, dependent on some valvular imperfection—the questions which at once arise are: 1. Does the character of the murmur—that is, its seat, intensity, tone, etc.—influence the prognosis? 2. Is there any prospect of a cure?

The best prognosis, other things being equal, is afforded by cases of mitral insufficiency, by which I mean that in this form of valvular lesion compensation is more readily made and maintained than in any other. The worst form of valvular defect is aortic insufficiency, and it is in this variety of cardiac disease that sudden death is most apt to occur. Between these two extremes lies mitral stenosis. Of course

* Garland, "Boston Med. and Surg. Journal," 1883, vol. cix. In this article, and in one in the same journal by F. C. Shattuck, will be found a thorough consideration of inorganic heart murmurs.

† "Lancet," vol. i, 1880.

there are numerous exceptions to the rule just laid down. For example, cases of aortic insufficiency of ten, fifteen, or twenty years' duration are not infrequently observed, but, on the whole, the facts will be found to be such as I have stated.

In estimating the gravity of a valvular lesion it is important to observe whether, besides the murmur, the valvular sound can also be heard. When the normal valvular sound is entirely replaced by a murmur, the lesion is more extensive and the prognosis, of course, more grave than when both murmur and sound can be detected. It is a common mistake to suppose that the gravity of the lesion is in direct ratio to the intensity, the loudness, of the murmur, whereas the fact is that loud murmurs are generally more favorable from a prognostic point of view than faint ones. The loudest valvular murmur I ever heard was in a boy, still living, and now about twelve years of age, and was undoubtedly due to a congenital stenosis at or near the orifice of the pulmonary artery. The most singular fact concerning this murmur is that it was detected by the boy's mother. The lad was supposed to have swallowed a cent, and his mother, thinking the coin might be lodged in his throat, put her ear to his chest and heard the murmur. Not understanding its nature, she brought the boy to me. I may say that the congenital defect has never caused the boy any inconvenience, or in any way interfered with his physical development. With reference to loudness of murmurs it is well known that in mitral stenosis the murmur is louder in an earlier than in a later stage of the affection. In other words, the narrower the button-hole contraction of this form of valve lesion, the fainter is the sound to which it gives rise. The specimen I now show you is an extreme example of mitral stenosis. The left auriculo-ventricular orifice has been, as you perceive, converted into a mere slit, and this condition has doubtless been of long duration. Nevertheless, at no time during the two years in which the man was in the hospital was the valvular murmur a loud one. The consequence was that there was much difference of opinion concerning the precise nature of this case. For my part I never felt any doubt about it, because five years before his admission to the Philadelphia Hospital he had been under my care at the Episcopal Hospital, so that I had the great advantage of being able to recall to mind his case in its comparatively early stages.

I have used the word "cure" in connection with valvular heart disease. I propounded the question whether there was any prospect of a cure of this much-dreaded malady. It is easily answered. A number of undoubted cures have been reported by the most competent observers, but the prospect of cure, in the sense in which I am using the word, is infinitesimal. By cure I mean the disappearance not only of all the symptoms, but also of all the signs of heart disease. Such cases are on record, and a number of them have been collected by Professor Leyden, of Berlin, in his valuable paper to which I have alluded.

The question of the disappearance of a cardiac murmur is a delicate one, its presence or absence being, as a matter of course, largely dependent on the existing degree of blood pressure. It is a matter of almost daily observation that the intensity of a murmur may vary within wide limits, so that these instances of reported cures will always be open to criticism. The fact, however, remains that, notwithstanding the presence of a well-marked murmur indicative of serious functional impairment of a valve, an individual may enjoy a very fair degree of health. I recall the case of a physician, about sixty years of age, who, a few years ago, was a prominent member of the Philadelphia County Medical Society. I met him one day at a committee meeting, and in order, I suppose, to pass the time while waiting for the indispensable quorum, he asked me to examine his heart. I did so and was amazed at hearing a loud, rasping, mitral regurgitant murmur. I could not dissemble my surprise, and, fortunately, there was no occasion for me to do so, for my patient, if I may so call him, knew all about it. "Why, doctor," said he, "I have had that murmur for ten years." He was actually proud of it. He died about two years after the time I speak of, but whether or not from failing cardiac action I am unable to state.

As long as there is perfect compensation for the lesion, the patient with valvular heart disease is conscious of no bodily imperfection. It is a great mistake, however, to encourage such a person in any attempt to compete, whether in the way of business or amusement, with individuals in perfect condition—*i. e.*, if such attempts are attended with physical exertion. The inevitable medical tendency to pass from one extreme to another is nowhere more marked than in the prognosis of heart disease. It is not long since the belief was prevalent that valvular heart disease doomed the patient to a speedy death, in spite of the fact that the individual in whom the diagnosis was made, perhaps by mere accident, was conscious of no cardiac trouble. Such views were definitely disproved by Sir Andrew Clark, who reported six hundred and eighty-four cases of valvular disease which had been in existence for at least five years without leading to any serious impairment of health. A complete reaction from the old pessimistic views at once set in, and, instead of immuring such patients in their homes and condemning them to a life of inactivity, they are now often encouraged to exert themselves to the utmost of their limited capacities. In my opinion, the present tendency is to encourage patients with heart disease to over-exertion. They are not sound, vigorous individuals, and, although they should, as far as possible, keep themselves from brooding over their ailment, they should also never completely forget its existence. The only exercise in which they should indulge to any great extent is walking. Any exertion which involves much use of the arms, such as rowing, is injurious, and tennis, base-ball, or swimming is suicidal. The latter is true of cold bathing, and probably the most injurious combination of exercise possible is swimming in cold water.

In the foregoing remarks I have given you nothing more than the barest outline of the subject chosen for this evening's discussion, and here and there have wandered from it to throw out a therapeutic hint. I trust I have at least succeeded in impressing on your minds the practical importance of the study of prognosis in valvular heart disease.

Original Communications.

EXPERIENCE WITH EARLY OPERATIVE INTERFERENCE IN CASES OF DISEASE OF THE VERMIFORM APPENDIX.*

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I VENTURE to introduce once more a subject that has been so ably treated by numerous writers, because I have for some time been devoting my attention in suitable cases to a particular line of treatment, and because I have been fortunate enough to have had recently a considerable number of cases of disease of the appendix under my care. Nearly two years ago the account of a case of successful laparotomy for perforation of the vermiform appendix was read before this society by our much-lamented colleague, Dr. Henry B. Sands. The case was a most brilliant one throughout, and illustrated particularly well the cleverness of diagnosis and the rapidity of successful action which we all remember as so characteristic of the reader of that paper. It should not be forgotten that at that time such action was a very bold step into ground that was almost unknown. We did not all agree with Dr. Sands in the views which he expressed in regard to the pathology of perityphlitis, but these views did not prevent him, when the proper case occurred, from making, in regard to treatment, a brilliant stride in advance of others. This case gave an impulse to the study of inflammatory affections of the vermiform appendix from which we shall not recover for a long time. During the following months Dr. Sands devoted much attention to this study, and it was my privilege to assist him in a number of successful operations for the removal of the appendix at an early stage of disease. It seemed to me that each one of these operations shed a flood of light upon the pathology of the so-called pericæcal inflammations, and during the summer following, while discussing this subject, he expressed to me views which were far in advance of most surgeons and very different from those which he entertained at the time when he wrote his last paper. If he were here to-night he would, by the results of his own last year's original work, enlighten us upon many points respecting the pathology of perityphlitis. I feel it a pleasure and a duty to thus refer to Dr. Sands, because, unfortunately, no special record has been kept of his last year's brilliant work, and his sudden death prevented him from telling us himself what would have been so valuable. Certainly no other surgeon ever did so much to improve the treatment of a very fatal disease. Beginning with the first suggestions of Dr. Willard Parker, which taught surgeons how to save many lives, although by a slow and often unsatisfactory process, Dr. Sands ended his work in this direction by showing us how we might cut short at its very inception a disease that is even to-day responsible for many deaths.

It is not my intention in this paper to attempt to present the subject of pericæcal inflammations in a systematic manner. That has already been done, and very recently, by a large number of writers. I have chosen rather to dwell upon some points in the pathology and treatment of these inflammations, which are beginning to be better understood and which especially interest us all. The fact that inflammatory affections of the vermiform appendix give rise to a considerable number of the so-called pericæcal inflammations is now accepted in every part of the medical and surgical world, although one still reads of perityphlitis and paratyphlitis, and of intraperitoneal and extraperitoneal abscesses. Certainly all of these terms are misleading, inasmuch as each of them, when used without explanation, implies that the particular disease to which it refers is a disease by itself, and fundamentally different from the others. The usual term perityphlitis means, strictly speaking, nothing more than an inflammation of the peritonæum surrounding the cæcum, but it is understood by many to mean often a localized and harmless peritonitis arising from impaction of fæces, by others a fatal septic disease originating in perforation of the appendix. Now it is unquestionably true that every case of inflammation of the appendix is sooner or later accompanied by inflammation of the neighboring peritonæum, either on the cæcum or mesentery or ileum, etc., but if from the whole list of acute inflammatory affections occurring in the right iliac fossa we set aside those originating in the appendix, how many shall we have left? Very rarely will occur a perforation of the cæcum by ulcer or foreign body, giving rise to a local peritonitis at this point, and traumatisms from without may accomplish the same result. For all of such causes as compared with inflammations of the appendix, let me hazard the proportion one in one hundred.

How many cases of localized peritonitis or periphlitis arise from impaction of fæces in the cæcum? Some writers would lead us to believe that this is a frequent cause, and not long ago it was looked upon as the *most* frequent cause. Is there a *single* observation brought from the dead-house or from the operating-table to support this idea? I have never heard or read of such observation, and I do not believe that any such case ever occurred. Clinically we meet with cases of pain in the right iliac fossa, accompanied by some rise of temperature, and not infrequently in these cases we may detect masses of fæces in the cæcum, but no peritonitis exists, and it is no more likely to arise from this cause than from ordinary constipation, which often causes pain and rise of temperature. Correctly speaking, then, peritonitis localized in the immediate neighborhood of the cæcum and characterized by the well-known symptoms may, with the rare exceptions referred to, be attributed to an inflammation of the vermiform appendix in some one of its numerous stages. This inflammation may be a comparatively mild catarrhal one, affecting little more than the mucous membrane, or it may have rapidly passed through various stages to complete gangrene of the organ. I must therefore prefer to use the term inflammation of the appendix, or appendicitis, and give up, once and for all, the terms perityphlitis, paratyphlitis, extraperitoneal abscess, etc., as misleading and not valuable except in explanation of sec-

* Read before the New York Surgical Society, November 13, 1889.

ondary pathological processes. In regard to the so-called extraperitoneal abscess as a result of inflammation of the appendix, there remains nothing to be said to any one who has read Dr. Weir's admirable paper in the "Medical News" for April 27th of this year. The statements and observations which Dr. Weir there makes are perfectly convincing, and I have often confirmed many of them during an operation. As a late result of a much-neglected case, pus may force its way through the lateral or posterior peritoneal lining of the abdomen, but even in very old cases this must be a rare condition, and I have myself never met with such a one. All of these abscesses originating in inflammation of the appendix are intraperitoneal. Inflammatory adhesions, which glue together the adjacent coils of intestine, prevent the contents of the abscess from flowing into the pelvis or among the intestinal folds. At every point the pus is bounded by peritonæum. All of the operations done by the Willard Parker method require section of the peritonæum which forms the anterior wall of the abscess. I have dwelt upon this point because it is a very important one, and one's views in regard to it will determine his operative methods. In this connection I must refer to two other terms—extraperitoneal abscess and extraperitoneal incision for the opening of such abscesses. These again are very misleading, and imply that uninflamed peritonæum can be pushed away from the iliac fossa, the connective tissue broken through, and the abscess evacuated. If these abscesses are, as I have stated, *all* (with possibly a very rare exception) intraperitoneal, then, of course, these terms are false and misleading. The peritonæum may be pushed back and the abscess incised deep in the iliac fossa by a roundabout and unsurgical method, but when incised the peritonæum will be cut. In the present state of surgical opinion, it remains with those who claim that they meet with extraperitoneal abscesses and make extraperitoneal explorations to prove their point. In not a single one of the early operations for appendicitis which I have done and seen done has there been the slightest doubt as to the fact that the incipient abscess was entirely within the peritoneal cavity. I mean that this fact has always been demonstrable to the satisfaction of every one present. This one must consider as a valuable piece of evidence, for the observations were made at a period in the disease when there could be no obscurity as to the actual condition present. Weir has clearly shown also, in the paper already referred to, by carefully analyzing the reports of one hundred autopsies, that in no one of them did the abscess originate in the extraperitoneal tissue, and that in only four was pus found there at all. Weir also states, when referring to the difficulty of demonstrating the intraperitoneal origin of these abscesses after a considerable abscess has formed, that in only eight out of twenty-six abscesses opened by him could he "recognize that the inner wall of the abscess was made up of loops of intestine bound together by adhesions." But, as I have already said, *no difficulty* is found in making this demonstration when an operation is done at an early stage of the disease.

In these early operations I have found a very varied condition of the appendix and its surroundings, from a mild catarrhal condition of the mucous membrane accompanied by some infiltration and thickening of the submucous and other tissues, to the state of complete gangrene of the whole organ, with more or less extensive peritonitis.

In one instance I removed the appendix from a young lady who in the course of little over a year had had no less than twelve attacks of so-called perityphlitis. These attacks had been severe, giving rise to great pain with rise of temperature, and causing alarm not only to the members of her family, but to her medical attendants, two of these at least being as careful observers as exist in New York. The operation was done during a period of complete health and after careful consultation, to prevent recurrence. The appendix was found rigid and swollen, the mucous membrane mildly inflamed, the other tissues of its walls greatly thickened. Not the slightest evidence of peritoneal inflammation or adhesion existed. The appendix was readily removed and the patient made a rapid recovery. The operation was done nine months ago. Since that time the patient has enjoyed unbroken health, has resumed active exercise, and has gained twenty pounds in weight. In another case, also a young lady, attacks of abdominal pain, accompanied by vomiting, exquisite tenderness in the right iliac fossa, and considerable elevations of temperature, had occurred on four different occasions. This patient had also been taken care of by the most competent men. Curiously enough, just at the time of this patient's last attack her sister died without operation from a violent purulent peritonitis caused by perforation of the appendix. Subsequently to this last attack and during a period of complete health I removed the appendix after careful consultation with her physician, Dr. J. W. McLane, to prevent recurrence. A condition of disease somewhat in advance of the case already narrated existed. The appendix was quite firmly bound by old adhesions to the under surface of the intestinal mesentery and to the cæcum. The mesentery of the appendix had been nearly obliterated; the organ itself was dark-colored, considerably swollen, but soft. The mucous membrane was very dark-colored and swollen, and inclosed some fine fæcal grains. Two partial strictures of caliber existed which produced retention of a dirty brown fluid. The evidences of former limited peritonitis existed on the neighboring portion of the cæcum. This patient also made a rapid recovery, being out of bed at the end of two weeks, with a wound completely healed. The operation was done over four months ago, and the patient has remained in perfect health, having gained largely in weight and having resumed active exercise from which she had been entirely debarred. These two cases are quoted at this point to show that comparatively slight conditions of inflammatory disease in the appendix may give rise to threatening illness, which by some would be described as resolving perityphlitis without further explanation. There can be little doubt that both of these cases were preparing for abscess or general peritonitis.

In other cases—all in an acute stage of inflammation—and which will be quoted later, the conditions found have been these: In one the appendix formed a considerable cyst containing nearly an ounce of dark-brown pus. No communication with the cæcum existed.

In several the appendix was swollen, discolored, diseased throughout, but gangrenous only at one or two points where perforation had occurred, and in these cases one or more fæcal concretions existed, either within or just outside of the appendix.

In several the appendix was in general only moderately diseased, but perforation had occurred, and quite firm recent adhesions had tied the appendix to some adjacent part, doubling it upon itself and so inclosing a small collection of pus with or without concretion.

In two cases the appendix was thick, but flattened so as to be with difficulty recognized, and very firmly bound to the under side of the cæcum, and in two cases the appendix was completely gangrenous. In all of these acute cases peritonitis existed—usually a plastic peritonitis of greater or less extent—always involving the cæcum and generally the adjacent intestinal coils and abdominal walls. In one case the omentum was quite extensively involved, partly enveloping the appendix. In *no* case was the appendix more than lightly attached by adhesion to the peritonæum covering the iliac muscles, and in none was *extra*peritoneal inflammation observed, excepting sometimes in the anterior abdominal wall. In most cases some pus was found more or less confined by adhesions within a limited area, and in one absolutely no adhesion of any kind existed, though the appendix was perforated by concretion, and very foul pus filled the pelvis and ran freely upward beside the colon.

The pathological conditions of the appendix, as compared with the symptoms in my own cases, most positively show that one can not with accuracy determine from the symptoms the extent and severity of the disease. I therefore doubt the safety of the advice given by several recent writers, to watch the symptoms and to be guided by their violence in determining the method of treatment. This will appear more clearly in the histories of the cases. I should like now to refer to some of the special symptoms *the weight and value of which have been subsequently determined by an immediate operation*, for it is in this manner that we shall mostly advance our knowledge of the pathology of appendicitis. By autopsy we can not learn very much more in this direction, if one may judge by the length of time it required to learn the important single fact that abscesses originating in the appendix are almost invariably intraperitoneal. Pain to a greater or less extent is present in all cases of appendicitis, but many a mistake has been made and a golden opportunity lost by looking for pain in the iliac fossa and an *absence* of pain in other parts of the abdomen. General abdominal pain is often all that the patient will complain of during the first few hours of his attack, and in many cases it requires a careful and pointed examination to determine that the cause of the pain is situated in the iliac fossa. But after the first few hours it becomes more and more evident that the chief seat of pain is at that point, and the general pain then usually subsides. The epigastric region is frequently the point first complained of. One patient, who died on the third day from violent septic peritonitis from perforation, complained of comparatively little pain even when the iliac fossa was firmly compressed. The *exact* locality of the greatest sensitiveness to pressure has seemed to me to be usually one of importance. Whatever may be the position of the healthy appendix as found in the dead-house—and I am well aware that its position when uninflamed varies greatly—I have found in all of my operations that it lay, either thickened, shortened, or adherent, very close to its point of attachment to the cæcum. This, of course, must, in early stages of the disease, determine the seat of greatest pain *on pressure*. And I believe that in every case the seat of greatest pain, *determined by the pressure of one finger*, has been very exactly between an inch and a half and two inches from the anterior spinous process of the ilium on a straight line drawn from that process to the umbilicus. This may appear to be an affectation of accuracy, but, so far as my experience goes, the observation is correct.*

Chill and vomiting are frequent, but so often absent as to be in no sense of much diagnostic value. Fever to some extent is present in all cases, but very different in degree, some severe cases having a temperature on the first day of less than 100·5°, others rapidly reaching a temperature of 103·5°. But, as nearly excluding non-inflammatory pains, the presence of this symptom is certainly of importance. Rigidity in the abdominal muscles, generally much more marked on the affected side than on the other, I have found very constant, and I believe it to be a sign of value.

Abdominal distension by tympanites varies greatly, and its degree by no means measures the severity of the diseased process. It may be very decided during the very first hours of a mild case, and also entirely absent in the worst form of sudden perforation. It must, of course, be influenced greatly by the condition of the patient's bowels, the ease with which the intestine in each individual is brought to a state of paresis, and by many other causes. But when the gut has been found during the operation to be overdistended, the portion of gut so affected has always been the large intestine. Probably paresis from the local peritonitis is here a large factor.

Tumor of greater or less size I have usually been able to detect at a very early stage, but the composition of this tumor, as shown during operation, has varied greatly. In one case the tumor consisted of the distended unruptured appendix, which was partly wrapped in an inflamed and thickened omentum. In another it was formed of a mass of intestinal coils swollen and glued together by recent plastic exudation. This tumor was large, quite firm, and gave one the impression that a large quantity of pus was present; but only a very minute abscess was found, and that was situated quite beneath the cæcum. But under ether some tumor can invariably be detected; and this agent will, I think, be found to be a valuable help to diagnosis in some doubtful cases. The tumor may be dull on percussion, as when pus has formed and lies against the anterior abdominal wall; but I have more than once found a small deep tumor containing pus, which was so com-

* Since reading this paper I have carefully observed three other cases. In two the point of pain shown by pressure with one finger was two inches, and in the other an inch and seven eighths from the anterior spine.

pletely covered in front by intestines that the percussion note, before ether was given, was purely tympanitic. The pulse during the onset of appendicitis is usually rapid and irritable. The patient prefers to have the right thigh elevated, and objects to its overextension. Rectal examination at the onset I have not found of any value.

The combination of symptoms present will usually render a correct diagnosis as to the seat of the disease quite easy, but in reference to the stage which the disease has reached—that is, whether pus has formed or not, whether the appendix is already perforated or not, even sometimes whether already general septic peritonitis exists or not—the diagnosis is often very doubtful. I remember one case where Dr. Sands performed a beautiful operation and saved the patient's life. At the consultation held before operation four gentlemen were present. Three of them had certainly seen many cases of appendicitis. Three quite different opinions were expressed. Dr. Sands thought that the appendix was perforated, and that pus had formed. One of the others thought there was probably appendicitis, but advised an extraperitoneal incision. Another thought the case so mild that it should be treated without operation. Dr. Sands operated by an incision along the right edge of the rectus muscle, opened an intraperitoneal abscess just in the middle of his incision, and removed a perforated and sloughing appendix. The patient rapidly recovered. This case occurred very shortly after Dr. Sands read his last paper before this society. I mention it simply to show that the diagnosis of the exact condition in such cases is not easy. A means of diagnosis lauded by some, permitted by others, and totally condemned by a few, is the exploring needle. I believe that the use of this instrument will become less and less frequent as we know more of the disease. While perhaps occasionally permissible at a late stage of the disease, it is certainly totally to be condemned at its beginning. The discovery of pus with the syringe is, to be sure, gratifying to a hesitating operator, but the withdrawal of an injected needle through several layers of peritonæum, which it may have passed during its introduction, can totally nullify a good subsequent operation. And, if the needle does *not* discover pus, which has often happened even when that fluid has been present in considerable quantity, then the man who pinned his faith on a needle is induced to underestimate the importance of the case and its mode of treatment.

Some years ago I went a long distance into the country prepared to operate upon a nine-days-old abscess, the result of appendicitis. There existed a large fluctuating tumor, and the case was plain and needed just one cut. But the family physician was very conservative, and said the time had not come, and that there was no pus. I was in despair, for the journey took many hours. Fortunately, I had a good hypodermic syringe with me. The doctor said rather superciliously that that thing was harmless anywhere. So he permitted its introduction; and when the barrel filled with pus he yielded to an operation, and treated me afterward with great respect. But to search for pus with a needle, first in one direction and then in another, at the risk of doing harm, and with no certainty of acquiring any real information, is a practice as unsurgical as it is unnecessary.

I think that there is still much misapprehension in the minds of many practitioners as to the symptoms produced by perforation of the appendix. Many associate with this condition, and with no other, a very violent onset of the disease with quite well-marked symptoms, as compared with the less severe commencement of a slowly forming abscess. The truth is that, in the early stage, no accurate diagnosis can be made as to whether the appendix is perforated or not, excepting in those cases where comparatively mild symptoms *suddenly* become much aggravated, when perforation or the rupture of an abscess may be inferred. Perforation often occurs with but few symptoms at the very beginning of the disease, but, being preceded by the formation of more or less plastic adhesion of the appendix, no sudden increase in the severity of the disease occurs at all. An abscess slowly forms, which may increase to a considerable size without being discovered, and then force its way, or proceed by infection, in the most dangerous directions. The comment might fairly be made upon this description of the early symptoms of appendicitis that the diagnosis of the disease is very obscure and uncertain. To the careful observer it is not difficult, however, to determine as to the existence of the disease. The only real difficulty lies in determining within the first few hours what the future progress of the disease is to be in deciding whether firm adhe sions are forming, which will effectually exclude pus from the general peritoneal cavity, and so provide for subsequent safe evacuation of abscess, or whether no such protecting wall exists, and an overdistended appendix threatens to instantly set up a fatal peritonitis. If this difficulty could be set aside by a more careful study of symptoms, and without losing valuable time, our course would be clear, and we should no longer helplessly hesitate as to when to operate and when to stand aside. There is no reason to think, however, that diagnosis from symptoms alone will ever reach that perfection. We need some further aid to diagnosis; some positive and rapid means of determining what method of treatment we are to adopt. We have reached a point where we can never be satisfied with the mortality that attends an expectant treatment. What we wish to accomplish in the treatment of appendicitis is, not to save half of our cases, nor four cases out of five, but *all of them;* and how is this end to be attained except by improved methods of diagnosis at the very earliest stage of the disease? I hope that I may never again go every day to visit a threatening case, waiting bashfully for the authority of a clearly defined general peritonitis before I dare take action. I do not mean to deny that many very ugly-looking cases of appendicitis go on to the formation of abscess which may be safely opened and end in complete recovery; we have all of us seen many such. I am well aware that numerous cases have presented all the symptoms of the disease, have become very ill, and have finally recovered without any operation. Within two years I have seen two cases, in one of which the patient was so ill that I refused to operate, and in the other case I strongly urged operation and was refused permission. Both of these patients recovered after long illness without

operation of any kind. Probably the abscesses emptied themselves at some point into the intestine. But such unexpected recoveries, and the frequent formation of abscesses which can be opened safely at a later stage, even the many cases which quite rapidly terminate, at least temporarily, without suppuration, do not console us for the heavy mortality caused by appendicitis. What this mortality has been we shall of course never know. We do know that the cases which are recognized and which die are numerous, and it is safe to assert that a very large number of fatal cases of peritonitis commence with an unrecognized inflammation of the vermiform appendix. No one will dispute that if we could so improve our methods of diagnosis that we could recognize within the first few hours the serious nature of many cases, we would operate in these cases at once, willingly preferring to incur the risks of an operation rather than face the certainty of death that septic peritonitis implies. How may we improve our methods of diagnosis? At present I see no clearer road than the exploratory incision permitting a direct inspection of the parts and a complete study of the disease. If it can be shown by future experience with improved methods of operation, and with more perfect antiseptic precautions, that the exploratory incision for inspection of the diseased appendix is much more free from danger than the expectant treatment, then there could be but one answer to the question, What is the best treatment? The firm conviction that very early operation for the cure of appendicitis can, with proper care, be done with very slight risk, has induced me to subject a considerable number of these cases to the earliest operation possible, and my chief purpose to-night is to present to you the results of my work in this direction. It is proper to state that no case of appendicitis has been refused operation, and that all the cases operated upon in the early stage of the disease are here reported:

Case I.—E. M. P., a young gentleman nineteen years of age, complained of general abdominal pain at 11 A. M. on May 21, 1888. The pain was regarded as due to indigestion, and was treated with family remedies. In the afternoon the patient fainted, and by four o'clock his pain had greatly increased in severity. He received a little morphine and hot applications were applied. At 5 P. M. his mouth temperature was 98·4°, his pulse 100. During the night and the following day the patient complained sometimes of severe pain, and occasionally felt much better; he took a considerable quantity of milk, and at 8 P. M. his temperature was only 100°. During the second night he suffered much pain, and at 5 A. M. on the 23d it was noted that his pain was chiefly in the right iliac fossa. At 5.30 he had a severe chill and his temperature rose to 103°, his pulse to 120. At this time he was visited by his physicians, Dr. Fessenden N. Otis and Dr. William K. Otis, who diagnosticated at once acute appendicitis, and requested me to see the patient. This I did at about 8.30. I found the pulse and temperature as stated, and the following condition: Great rigidity of right abdominal muscles; exquisite tenderness on pressure at a point just two inches internal to the anterior spine of the ilium, in the direction of the umbilicus. Beneath the finger at this point could be felt a small resisting mass, less than one inch in diameter. No dullness on percussion anywhere. General appearance excellent. The diagnosis of appendicitis already made by Dr. Otis was confirmed by myself, and an hour later by Dr. Sands. Immediate operation advised and accepted.

General appearance of patient excellent. It should be noted that at 11.30 the temperature had fallen to 101°.

Operation at 12 o'clock, just forty-nine hours from the first pain. Present, Dr. F. N. Otis, Dr. William K. Otis, Dr. L. R. Morris, and Dr. Tuttle.

Ether anæsthesia. A slightly oblique incision four inches and a half long, the center of this incision being two inches from the anterior iliac spine toward the umbilicus. Tissues of abdominal wall quite markedly œdematous, particularly near the peritonæum. On opening the peritonæum freely, the appendix came at once into view. It was larger than a man's thumb, dark-brown in color, tense, evidently full of fluid, and at no point gangrenous, but its wall evidently nearly as thin as paper. A tail of omentum partly enveloped it, and this was much inflamed and freshly adherent. Everywhere else the peritonæum was healthy, and not an indication of the formation of any bounding wall of adhesions existed. Coils of small intestine surrounded this full-to-bursting sac. The omentum was gently separated and the inflamed portion ligated and cut away. The mesentery of the appendix was carefully tied in sections, and the base of the appendix dislodged from an inverted pouch of cæcum, ligated at its base, and cut away. It proved to contain at least half an ounce of very foul brown pus, but no concretion. Its communication with the cæcum was closed by stricture, so that the unbroken, purulent, acutely inflamed cyst was removed entire. The stump was disinfected with 1-to-1,000 bichloride solution. Two silver-wire sutures passing through the whole thickness of the abdominal walls closed the upper part of the wound, and one similar suture the lower part. The central portion was loosely packed with iodoform gauze down to the ligated stump. Dressing of iodoform and bichloride gauze over all.

At 6.40 P. M., less than six hours after the operation, patient's temperature was 99·8° and pulse 80. A small quantity of morphine was given for wound pain. The dressings were changed on the third day, and a perfectly aseptic condition of wound found. This patient made a rapid and absolutely unbroken recovery, and is to-day perfectly well.

This is, I believe, the first recorded case where an acutely inflamed unruptured appendix has been removed full of pus. Who can doubt what the result would have been in this particular case had the cyst ruptured, and the operation been delayed a few hours? Would not the opportunity for recovery have been lost had the advice so often and so recently given been followed—to delay operation until symptoms of spreading peritonitis appeared?

Case II.—John S., ten years of age, was admitted to my care at the Roosevelt Hospital on August 19, 1889. He gave no history of previous attacks. A week ago he became ill, and complained of general abdominal pain. He went to bed, and says that since that time he has been feverish and has not been free from pain. Four days ago the chief seat of pain is said to have been in the right side and low down. On admission his pulse was 110, his temperature 103·4°, and he was nauseated. Between the umbilicus and the right iliac spine was noted a considerable tumor, which was markedly tender on pressure. The percussion note over the tumor was dull. No tympanites existed. The general appearance of the patient was that of severe illness. I operated on the same day. The usual incision was made, and the tissues found in a normal condition down to the peritonæum. The anterior peritonæum itself was perfectly uninflamed, and uninflamed small intestine covered the anterior face of the tumor. When these were drawn toward the median

line, a mass of adherent intestines was disclosed, which inclosed a small indurated tumor.

The intestinal coils were gently separated on the anterior face of the tumor, and several drachms of fæcal pus at once escaped, emptying a cavity somewhat tubular in shape and large enough to admit the finger. The appendix lay in this cavity, congested, much swollen, and infiltrated with pus. No perforation existed, and no concretions were found. The appendix was tied off with silk and removed. A rubber drain was introduced, the cavity packed with iodoform gauze beside the drain, and a full antiseptic dressing applied.

On the following day, August 20th, the boy's temperature was 99·6° as against 103·4° of the day before, a reduction in less than twenty-four hours of nearly four degrees. This patient recovered rapidly and completely, and on September 25th his wound was entirely healed.

Case III.—W. K., a male, sixteen years of age, was admitted to my care at the Roosevelt Hospital on July 26, 1889. Previous history negative. Forty-eight hours before admission first felt pain in the right iliac fossa. On the next day diarrhœa set in; abdominal pain was quite general, though more distinctly localized in the right iliac fossa than elsewhere, and this increased up to the time of admission to the hospital. The patient's temperature was then 102°, his pulse 110. The abdomen was slightly distended and tympanitic. In the right iliac fossa was found a small, very tender non-fluctuating tumor, which lay just inside of the anterior iliac spine. Diagnosis, acute appendicitis.

Operation at 3.30, July 26th. The usual incision was made. Beneath the incision were found normal non-inflamed intestines. These were drawn toward the median line, when the appendix was found projecting stiffly forward and slightly upward by the inner side of the caput coli.

It curled around the end of the cæcum and then turned upward and forward. Slight recent adhesions tied the appendix at its base only to the cæcum. At other points it floated freely among non-inflamed intestines. The adhesions were broken down and the appendix ligated at its base and removed. It was six inches and a quarter long, œdematous, and much thickened and inflamed throughout. Minute foci of pus were scattered through its substance, but there was no concretion and no perforation. On its removal the seat of operation was left perfectly clean, but, to insure safety, a rubber drain was passed through the loin directly to the base of the stump, and the anterior wound was partly closed and partly packed with iodoform gauze. The next day patient's temperature was 100°. His wound was inspected, but not dressed completely until July 30th. No pus was found. This patient made an unbroken recovery without incident, and his wounds were completely healed on August 19th.

Case IV.—Annie O., eighteen years of age, was admitted to the medical wards of the Roosevelt Hospital on May 29, 1888. Six years ago she had an attack similar to the present one from which she entirely recovered without operation. Two days ago she was seized with severe epigastric pain accompanied by fever and headache, and tenderness on pressure in the right iliac fossa. On admission, the abdomen was tense, tympanitic, tender on pressure at all points, but more especially in the right iliac fossa. Here a small tumor is distinctly felt. I saw this patient for the first time on May 30th, and, having expressed the opinion that she should be operated upon at once, she was transferred to my care. At this time her symptoms had become much more threatening; abdominal distension was extreme. Her temperature was low, 100·4°, pulse 100, respiration 36. I operated at once, making the usual incision. The tissues of the abdominal wall were œdematous and the deeper ones much fused together. Beneath the center of the incision the distal end of the appendix was readily found. It was much enlarged and thickened, and greatly discolored. At first no pus was seen, but, on gently separating the end of the appendix from adjacent parts, a small cavity was found beneath it containing less than one ounce of pus. The cavity was cleansed with hot water, and it was then seen that the appendix was perforated at about its middle and lying in the perforation was a large fæcal concretion. The whole appendix was then removed after ligating the base, the cavity was swabbed with 1-to-1,000 bichloride solution, two rubber drains introduced, and the cavity packed with iodoform gauze. A complete antiseptic dressing was applied. On June 1st the patient's temperature was 99°, pulse 100, respiration 18. Abdomen free from pain or distension.

This patient made an unbroken recovery, being out of bed on June 23d, with a small, superficial, flat ulcer still to heal.

Case V.—Charles E. A., twenty-five years of age, was admitted to the Roosevelt Hospital on September 1, 1889. Patient gives a history of probable appendicitis occurring five months ago.

Two days ago, after several weeks of abdominal discomfort, the patient was seized with severe abdominal pain, nausea, vomiting, and fever.

On admission, his temperature was 102°. Internal to the anterior iliac spine, on the right side, some resistance and tenderness on pressure were noted. Diagnosis, appendicitis.

On September 2d, under ether narcosis, the usual incision was made, the tissues of the abdominal wall being found very œdematous. Marked adhesions and thickening of the peritonæum were found over a large area, indicating clearly the existence at some previous time of a quite extensive peritonitis. This probably occurred during the attack referred to above. The appendix was found, after some difficulty, hanging over the edge of the pelvis, greatly thickened and hardened. After being freed from adhesions, it was ligated close to its base and removed. The immediate neighborhood of the stump was cleansed and the space packed with iodoform gauze. The upper portion of the abdominal wound was closed by suture. With the exception that a slight superficial abscess developed beneath the suture line, this patient made an easy recovery, and was discharged, with a wound completely healed, on October 17th. This patient was operated upon by Dr. Frank Hartley, my first assistant at the hospital.

Case VI.—Miss E. C., twenty-five years of age, a patient of Dr. W. T. Alexander, of this city, had complained of a sense of uneasiness and discomfort in the right abdominal region, low down, for two or three weeks. She had, however, gone about as usual, and walked several miles daily. On June 18, 1889, in the evening, she was seized with severe general abdominal pain, most severe in the epigastrium, and was nauseated. She went to bed, and was then first seen by Dr. Alexander, who diagnosticated appendicitis, and ordered hot applications and a little morphine, with complete rest in bed. On the following day Dr. Alexander asked me to visit the patient. This I did in the afternoon. The patient's temperature was then 101°, and her pulse 100. She had a very ill look, and complained bitterly of the slightest pressure over the right iliac fossa and of some tenderness all over the abdomen. I advised immediate operation. There were present at the operation Dr. W. T. Alexander, Dr. G. T. Jackson, and Dr. R. P. O'Neill, and these gentlemen assisted me.

I made the usual incision. The tissues of the abdominal wall were normal, and within the peritoneal cavity scarcely the slightest trace of adhesions was found. The appendix, nearly completely gangrenous, as large as one's middle finger, lay just outside of the caput coli, not perforated, but containing two large fæcal concretions, just ready to escape through very soft

gangrenous tissue. A little purulent fibrin lay beneath the appendix. No limiting wall of any kind existed, and reddened small intestine lay above and below. The mesentery of the appendix was carefully and with some difficulty tied off, the appendix ligated at its base and removed. The immediate neighborhood was then thoroughly cleansed with 1-to-1,000 bichloride solution, dusted with iodoform, and packed with gauze. A rubber drainage-tube was introduced beside the gauze down to the stump. The upper part of the incision was closed with two sutures. The patient suffered from nausea and tympanites for two or three days, when her temperature fell to normal and remained so. On the seventh day the wound discharges were decidedly fæcal, and continued to have this character for about a week. The wound then became perfectly healthy and rapidly healed. This patient has gained greatly in health and weight, and has been, up to date, perfectly well.

Case VII.—Edgar C. B., a stalwart young man, twenty-one years old, complained of pain in the lower part of the abdomen during the evening of January 13, 1889. The next morning, when he had gone to work, this pain spread through the whole abdominal cavity and became very severe. He reached home with difficulty and went to bed. During the afternoon of the 14th—that is, at the end of about twenty hours—the pain localized itself chiefly in the right iliac and lumbar regions. At noon on the 15th he had a chill, and, feeling very ill, came to the Roosevelt Hospital in the evening. His temperature was then 101·6°, pulse and respiration about normal. The abdominal muscles on the right abdominal half were rigid, and very acute tenderness was complained of when pressure was made over the right iliac fossa about two inches inside of the anterior iliac spine. No tumor could be felt. The diagnosis of acute appendicitis was made, and I determined on an immediate operation. This was done at 11 P. M., as nearly as possible forty-eight hours after the first symptom. The usual incision was made. The tissues of abdominal wall were found in a normal condition. Beneath the line of incision were coils of non-inflammed small intestine. These were pushed inward, exposing a mass of small intestines matted together by adhesions and quite free from the iliac fascia. After a short search, and after breaking down some of these adhesions, the appendix was found, passing backward and inward from the cæcum, then doubling back upon itself. It was closely tied by adhesion to the cæcum and adjacent mesentery. The adhesions were broken down, the mesentery of the appendix tied off in sections, and the appendix itself ligated at its base with catgut and removed. The appendix was much diseased, thickened, and distorted, but not ruptured. On section I found within it some black, semi-fluid material. The mucous membrane was gangrenous throughout, and the wall of the appendix at one point gangrenous *as far as the peritoneal coat.* The stump was sponged with 1-to-1,000 bichloride solution. The upper part of the wound was closed with silver stitches, a rubber drainage-tube passed down to the stump, and the open wound packed with iodoform gauze. During the next twenty-four hours considerable pain was experienced, and for a few days constipation was obstinate. On the morning of the 17th the temperature became normal and remained so throughout convalescence, which was unbroken and entirely completed by February 11th. A small superficial ulcer was completely healed on February 21st.

Case VIII.—C. G. McK., a young gentleman twenty-three years old. First attack of pain in right iliac fossa two years ago. Second attack in May last, when he was confined to bed five days with fever and severe pain and tenderness in the same region. On Thursday morning, October 17th, he had a sudden attack of severe pain in region of appendix, went to bed, and his temperature was noted to be 99°. In the evening his temperature rose to 100°. Pain and tenderness steadily increased. Friday he remained in the same condition, and was seen by me, at the request of Dr. E. E. Swift, later at night. The patient was haggard and looked ill. Tenderness on pressure about two inches inside of the iliac spine was very marked. An ill-defined tumor existed, and decided distension of abdomen. Operation was advised, but the circumstances were such that it was postponed until twelve o'clock on the following day.

Operation October 19, 1889. Ether anæsthesia. The usual incision was made. On opening the peritonæum, an enormously distended caput coli filled the wound and rendered the search for the appendix extremely difficult, forcing me to handle the intestines far more than was to be desired. The appendix was at last found, flat, wide, and so firmly adherent to the under surface of the cæcum as to be identified with great difficulty, and numerous firm old adhesions prevented the free movement of intestines and at one point formed a nearly constricting band. An indurated mass beneath the center of the appendix was opened with the finger by separating adhesions which, however, were very strong, and many of them evidently old. From this mass about a drachm of foul fæcal pus escaped and was sponged away. The difficulty of dissecting away the appendix was so great that I was finally obliged to desist and to be satisfied with removing only that portion of it which formed the wall of the abscess. The cavity was very thoroughly cleansed, and an attempt made to return the prolapsed large intestine and close the wound. This was found to be exceedingly difficult, owing to the very excessive distention of the gut, and much time was expended and much handling of gut necessitated. Finally the wound was closed as in other cases, the lower part being packed and drained. The patient recovered well from the effects of the operation, but at the end of twenty-four hours his temperature rose to 102°, and the abdominal distension increased. He was bright and looked fairly well, however, and I did not expect serious illness. His temperature, however, continued to rise, symptoms of peritonitis developed, complete paresis of bowel persisted, and the patient died at the end of four days, of peritonitis. No autopsy could be obtained.

Whether the difficult and unusual handling of the intestines was the chief cause of peritonitis, or whether constricting bands, formed by old adhesions, caused actual obstruction, I am unable to say. No movement of the bowels could be obtained and no flatus passed after the operation excepting by the aid of a long rectal tube. Certainly the peritonitis was not septic, and such was the opinion of Dr. Delafield and Dr. Swift, who visited the patient with me. Moreover, when, on the second day, I removed the packing, I found a perfectly healthy wound, without the slightest sign of infection. One thing is clear—that, had the operation been done during the patient's first attack two years ago, none of the great difficulties which I met with would have been encountered.

I stated at the beginning of this paper that I did not here intend to review the treatment of appendicitis in a systematic manner, but I should not do justice to the real subject of this writing were I to drop the matter at this point. I must, in the first place, as accurately as possible, define the class of cases of appendicitis to which I have applied the method of treatment described; and then I wish to devote a few minutes to a description of the technique of the operations. I have presented eight cases of appendicitis operated upon at an early stage of *acute* inflammatory process. These eight cases include *all* of those

operated upon since May 20, 1888, to date. Previous to May 20, 1888, I had never operated upon a case except by the older methods. During this period of eighteen months I have seen and operated upon a much larger number of cases of appendicitis at late stages in the disease—that is, when extensive abscess has existed, and in some cases of early general septic peritonitis due to appendicitis. Such cases are excluded from the list given, as belonging to an entirely different category. I have measured the stage of the disease, not by the number of hours or even days that it has existed, but by the character and extent of the inflammatory process, all cases being included in the list excepting those where it was clear that large, comparatively safe abscess was forming, or where general septic peritonitis was already established. I should, moreover, state that in every case operation has been done as soon as possible after being seen, excepting that in the fatal case various circumstances, contrary to my wish, necessitated a delay of about twelve hours. In no case has a diagnosis of appendicitis been made which has been subsequently proved by operation to be incorrect. To those who have been in doubt as to whether the operation or the disease carries with it the most danger, I think these cases, although limited in number, must be convincing in favor of the operation. All will acknowledge that every case of appendicitis may, so far as the cleverest observer can tell, have to pass by many very dangerous obstacles before reaching the smooth water of a comfortable abscess. For my part, I would endeavor to insure safety early, before reaching the rapids, rather than trust to finding my way with my eyes blindfolded through a dangerous passage. I am familiar with the good-natured jest that the surgeon is now ready to cut every one who has a stomach-ache. The death-rate from appendicitis within the professional circle of New York alone is a sufficient answer to that criticism.

But I should be much misunderstood if I should give the impression that, while I believe the operation to be less dangerous than the disease, I also believe the operation to be simple and easy of execution. I look upon it as often an exceedingly difficult one, and one which requires as much care and patience and attention to detail as any with which I am familiar. Moreover, I have never seen two cases of appendicitis operated upon in which the pathological conditions, the position of adhesions, the relation of surrounding parts, etc., were very nearly alike. Every case presents some new problem, and in every case there is large opportunity for the exercise of careful judgment as to how best to meet this or that difficulty. Of course there must be pioneers, as Sands was, and such may be the most successful, but my strong feeling is that it is well worth while for any one who may have to do this operation to see it done, at least once, first.

Before describing the steps of the operation, I refer again to the important aid to diagnosis of which I have already spoken—namely, the ascertaining, by the pressure of a single finger-tip, that the point of greatest tenderness is, in the average adult, almost exactly two inches from the anterior iliac spine, on a line drawn from this process through the umbilicus. Much greater tenderness at this point than at others, taken in connection with the history of the case and the other well-known signs, I look upon as almost pathognomonic of appendicitis. This point indicates the situation of the base of the appendix, where it arises from the cæcum, but does not by any means demonstrate, as one might conclude, that the chief point of disease is there. The abscess, or concretion, or cyst may be at quite a little distance, but the greatest pain, on pressure with one finger, will be felt at the point described.

The incision should be a liberal one, for much room may be required, and a five-inch cut in the adult is not too much. It should follow as nearly as possible the right edge of the rectus muscle, and the center of the incision should lie opposite to or a little below the anterior iliac spine, on a line drawn to the umbilicus. When the external oblique aponeurosis is cut through by this incision, the aponeurotic structure, in which the other abdominal muscles end, comes into view, and is easily divided without cutting muscular fiber. Then the fascia transversalis, the subperitoneal fat, and the peritonæum are cut in succession. If pus has formed close against the anterior abdominal wall, these last-mentioned tissues will be found infiltrated with serum, and even thickened so as to look like cheesy tubercle. Otherwise these parts may appear perfectly normal. On opening the peritonæum the appendix may at once be seen, or adhesions and inflammatory exudations may have so distorted the parts that a careful and difficult search may be required to find the appendix at all. It may be flattened out and glued firmly to the inflamed surface of the cæcum by old and recent adhesions, or it may be coiled upon itself and buried out of view in a mass of lymph. The finger is often quicker than the eye to detect the appendix in these conditions, as it is very certain to be found where the greatest thickening, as felt by the finger, exists. More than once I have had to turn the cæcum out of the wound and examine carefully the usual region of origin of the appendix before I could identify it. Usually then with the finger or a dull-pointed instrument the adhesions can be broken down or tied off, as may seem required by vascularity. If the appendix has been thus separated, I have usually tied it off with silk or catgut close to the cæcum and cut it away, and generally between two ligatures. Careful disinfection of the stump should be made. I have scraped its interior and disinfected with 1-to-1,000 bichloride solution, and then rubbed in iodoform. Once, where it looked dangerous, I tied with silver wire, and then used the fine-pointed cautery to disinfect. If thoroughly cleansed, it seems to be unnecessary to lose time in sewing the peritonæum over the stump, as recommended by Treves. When the appendix has been removed nothing remains to be done but to disinfect the whole neighborhood, insert a drain, and pack the small space with iodoform gauze. The upper half of the wound may perfectly well be tightly closed with stout sutures, which should include the whole thickness of the abdominal wall—peritonæum as well. In some cases I believe it to be good practice to introduce a large drain by a separate opening well above and behind the iliac spine, for in some cases the region of disease may extend especially in that direction.

But the question may fairly arise in any case as to whether it is wise to attempt to dissect out the appendix and remove it. If the difficulties of dissection would evidently be very great, I think it is better to open the abscess if there is one, cleanse the cavity, and, leaving the appendix *in situ*, pack and drain the wound.* The packing I have usually removed on the third day and replaced it with less, and the cavity has rapidly granulated. If, at the time of operation, one introduces sutures throughout the whole length of the wound, leaving the central and lower ones loose, these can subsequently, after one or two dressings, be tied, and the wound thus rapidly narrowed. Over the whole wound, of course, a complete dressing is applied, and good bandaging is better than any binder, to prevent the possibility of extrusion of gut by ether vomiting or intestinal distension. None of my patients have developed a hernia at the site of operation. I have kept them all in bed for four weeks or more. None have had any recurrence of inflammatory action of any kind.

A few more words, Mr. President, and I have finished. Are there any contra-indications to this operation in a clear case of appendicitis? I think there are. Very great abdominal distension, which might in a given case probably be relieved by a few hours' treatment, would lead me to delay the operation, for expulsion of intestine is a very serious obstacle to the proper completion of the operation without risk. Unusual obesity I should regard as a good reason for a more expectant method of treatment. But the most important contra-indication of all is the absence of any one of the necessary safeguards and aids, such as the best assistance, the best light, and the best appliances for performing a perfectly aseptic operation.

Note.—Since writing the foregoing paper, I have operated in three other cases of acute appendicitis. One of them was that of a lad, fifteen years old, a patient of Dr. G. A. Spalding's. The operation was done at the fortieth hour of the disease, the temperature being high and the symptoms very threatening. The appendix, much diseased and containing two large concretions, was removed. The temperature fell on the following day to 99°, and has been normal ever since that time. The patient is now safely convalescent.

The second case was that of a patient of Dr. Jarecky's, fifteen years old. The operation was done at the beginning of the fifth day. The appendix, gangrenous at two points as far as the peritoneal coat, was still not perforated even at this late date. It was removed, and the patient is now safely convalescent.

The third patient, already referred to in a note, is nearly well. None others have been operated on in an acute stage of inflammation up to date. The number of operations is, therefore, eleven. Of these, one proved fatal, probably from obstruction by a band not discovered.

The Health of Connecticut.—According to the State Board of Health's "Monthly Bulletin," the total number of deaths reported from 168 towns during the month of November was 896, including 8 from scarlet fever, 13 from cerebro-spinal meningitis, 77 from diphtheria and croup, 5 from whooping-cough, 1 from erysipelas, 26 from typhoid fever, 7 from malarial fever, and 5 from typho-malarial fever. There were also 121 deaths from consumption, 58 from pneumonia, and 28 from bronchitis.

* In a case operated upon since writing this paper, it would have been a dangerous proceeding to remove the deeply seated and strongly adherent appendix. I broke its wall at one point, and then drained through the loin and packed in front. The treatment was completely successful, and the patient is safely convalescent.

PERITYPHLITIS.*

By FRANK HARTLEY, M. D.

Mr. President: The case I present this evening is one of perityphlitis with suppurative peritonitis. Though it does not strictly belong to the class of cases reported by Dr. McBurney, it is nevertheless interesting, as I think it shows us that, no matter what the condition within the peritoneal cavity, we may now and then succeed in giving material benefit.

This patient, Louis E., fifteen years of age, was admitted to the Roosevelt Hospital, June 1, 1889, under my care. His family history was good. He had never been sick but once, and that sickness was probably pleurisy. He had never before his present illness suffered from pain in the right iliac fossa, nor was he subject to constipation or diarrhœa. His present illness began fourteen days before admission, with a sudden and intermittent pain in the abdomen about its midline. This was increased after each meal and upon any exertion. For eight days he had no other symptoms than this pain. At the end of the seventh day his physician administered a rectal enema without effect. On the eighth day the pain was felt in the right iliac fossa for the first time, and at this time it became continuous and of a "dragging" character. Headache and weakness were now present, but no fever. On the eleventh day there were added to the symptoms already present repeated severe chills, increased sleeplessness, cold sweats, and complete anorexia. On the morning of the fourteenth day the pain became more general and more severe, though in the right iliac fossa the tenderness was more marked than elsewhere. He had been treated up to the present time for typhoid fever.

On admission he was of slender build, emaciated, features pinched, and showing a distinct septicæmic cachexia. Heart normal. Lungs, a few friction râles at base. Abdomen moderately distended; tender in every portion. The right iliac fossa presented no distinct tumor, but the examination was unsatisfactory on account of the pain and tympanites. Slight dullness in iliac fossa. Resistance to pressure was more marked here than elsewhere. Rectal examination showed a tender, slightly bulging spot on the right side. Respiration, 26, thoracic; pulse, 120, weak; temperature, 101° F. He was very restless, and lay in bed with his knees drawn up.

Patient was stimulated with whisky and Magendie's solution, five minims, before operation. Disinfection of skin over abdomen. Incision, on outer border of rectus muscle, six inches. Peritonæum was seen to be, before incision, thickened, œdematous, and inflamed. When opened, a large amount of fœtid gas escaped, and a general suppurative peritonitis was disclosed. This consisted of purulent foci, of fibrino-purulent exudate, and, in places far removed from the iliac fossa—upon the small intestines and the mesentery—of a catarrhal exudate. The greater portion of the intestines were not agglutinated, but where the purulent collections were found they were agglutinated by recent fibrino-purulent exudation. These coils of intestines presenting were quickly turned aside to allow an exposure of the vermiform process; it was found lying in a cavity containing fully half an ounce of foul-smelling and greenish pus and formed by a dome of agglutinated intestines and a floor of what appeared to be peritonæum and iliac fascia, which was very œdematous, infiltrated, and gangrenous. The cavity of the abscess was wiped out with sponges soaked in a solution of bichloride of mercury (1 to 1,000), and the peritoneal cavity was

* Read before the New York Surgical Society, November 13, 1889.

itself protected by sponges from the contents of this abscess. The appendix, two inches and a half in length, lay behind the caput coli and firmly adherent to the iliac fascia. The iliac fascia, at the point of attachment of the vermiform process, was gangrenous. The vermiform process was perforated at its point of attachment and upon its median surface. No concrement was found within it, but several loose fæcal concretions were found loose within this cavity. The whole appendix was frail and sloughy, its surface being covered by a fibrino-pus. The appendix was removed, its base ligated with silk, and its end cauterized with Paquelin's thermo-cautery. The whole abscess cavity was carefully sponged out with a solution of bichloride of mercury (1 to 2,500), and iodoform powder rubbed into it. The suppurative peritonitis was now traced up, and all the intestines covered with pus and fibrin were in succession brought out of the wound and sponged off with a solution of bichloride of mercury (1 to 2,500). Beyond the immediate neighborhood of the abscess cavity adhesions had not occurred. The intestines were coated with pus and fibrin. This extended along the mesentery to its attachment, and into Douglas's *cul-de-sac* and the small intestines lying upon the opposite side. These were all similarly treated—irrigation, Thiersch's solution. Counter-opening made in the lumbar region, above the crest of the ilium and to the outside and below the kidney leading to the bottom of the abscess. Rubber drainage. Abdominal incision closed above and below with silk sutures, passing through skin and peritonæum. Middle left open. Abscess cavity packed with iodoform gauze. Iodoform gauze packing also carried to the coils of intestines in its immediate neighborhood in small strips, each end coming into the wound, and the rest lying upon and between the infected intestines. Occlusive dressing.

The patient bore the operation fairly well. Abundantly stimulated.

June 2d.—The patient weak. Temperature, 100°; pulse, 80. Small voluntary movement.

3d.—Temperature, 99°; pulse, 80. Very weak, but seems better. Dressed. Packing soaked with pus. Tube working well. Irrigated with Thiersch's solution. Packing replaced in part where soaked with pus (*i. e.*, in the abscess cavity). Tympanites still present. Five movements to-day.

5th.—Second dressing. Gauze filled with pus removed. Irrigated. Packing replaced.

6th.—No thorough irrigation can be made. Tube plugged. Gauze removed. Tube washed out. There is now a distinct cavity leading to the former situation of the appendix. Iliac fascia has separated as a slough. Gauze over the intestines beyond the abscess removed in part. Irrigated, and again packed slightly.

8th.—Dressed again; looks well; all gauze removed from the abdominal cavity. Abscess cavity lightly packed. General condition good.

From present time on till his dismissal, July 17th, nothing more than several sloughs, coming away through the posterior drainage, was observed. It steadily healed, and now, November 22d, he presents himself with a firm cicatrix and no tendency to hernia.

Abscess of the Antrum.—"A new diagnostic sign of abscess of the antrum was brought forward by Dr. T. Heryng, of Warsaw, at the Congress of Otology and Laryngology, held at Paris during September. The patient is placed in a dark room and his mouth lit up with a small electric lamp, placed above the tongue. Two bright-red spots will then appear below the lower eyelids. If the cavities are filled up with pus, or occupied by a tumor, these red spots will not appear, but, as soon as the pus escapes or the cavity is washed out, the spots again become visible."—*Medical and Surgical Reporter.*

COMPLICATIONS OCCURRING IN THE CLINICAL HISTORY OF OVARIAN CYSTS.*

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In the natural history and growth of an ovarian cyst there are impending accidents and complications occurring, rendering diagnosis doubtful and operation questionable, permissible, or imperative.

The development of a cyst is in itself so pronounced a pathological process that it is but reasonable to anticipate danger. To distinguish the symptoms so arising from those of other peritoneal diseases, and to relieve the pain and immediate distress, are questions of material concern to the general practitioner. The eminently practical surgeon may rest content with a surgical diagnosis—that is, that an operation is demanded—but the truly scientific will prefer to thoroughly analyze the clinical features of the case, deduce his pathological problem, and, if an operation is undertaken, his chances of "being surprised" or "meeting with unexpected conditions" are reduced to a minimum. Upon the other hand, by prompt action or judicious conservatism we save the life of our patient.

Experience shows that general and subjective symptoms are almost valueless in the diagnosis of ovarian cysts. The entire group of rational and associate symptoms may be negatived by the physical signs. Having determined by physical methods the existence of a cyst, there are events and complications occurring in which, to distinguish the clinical phenomena, we are forced to rely almost entirely upon rational symptoms. In former times, ere yet the eager and expert laparotomist was rife within the land, it was no unusual thing to meet with an ovarian cyst that had seen its days of activity, and for years had remained in a stationary and quiescent state. Such lethargy is unheard of now. Even if Nature were disposed to provide accommodation, the zealous surgeon would break in upon its repose and, like Macbeth, "murder sleep."

The behavior of an ovarian cyst is not governed by any arbitrary pathological law. From the incipiency of its growth, while yet we may mistake it for hydrops follicularis, to its termination it is liable to certain accidents, attributable to the characteristics of the tumor and the peculiarities of the patient.

We may thus divide the complications into two classes: First, those affecting the tumor itself—viz., adhesions, twisting of the pedicle, inflammation, suppuration, rupture, calcification, and others of minor importance. The second class, complications due to the presence of the tumor, but not affecting materially the growth itself. Under this head we have ascites, albuminuria, marasmus, and intestinal obstructions. Other diseases may be met with, but they are so infrequent that they do not merit consideration. Pregnancy is a decided complication, but neither a disease nor the result of the tumor.

* Read before the Southern Surgical and Gynæcological Association, November 13, 1889.

Adhesions.—With the development of a tumor and its infringement upon the limited space of the peritoneal cavity, as a natural consequence, more or less adhesions are formed. We are told by the most acceptable authorities that there are certain outward signs to which we may attach much reliance in the detection and diagnosis of adhesions. The strongest, broadest, longest adhesion presented to us in any given case of ovarian cystoma is that which binds the tumor to the uterus—that is, the pedicle. We are yet incapable of forming any idea of the length and character of the pedicle. Therefore it is not presumable that we can apply the rules given by Frederick Bird and Spencer Wells for the diagnosis of adhesions. The clinical history is, in some measure, a guide, yet I well recall in my own experience a small cyst in a woman who had passed through three distinct attacks of peritonitis. The operation was undertaken with apprehension of formidable adhesions, yet the entire sac came away without the severance of a single band.

Small dermoid cysts are more liable to inflammation, and therefore readily contract adhesions. After tapping, adhesive bands form at the site of operation.

Strangulation of the pedicle, from torsion or otherwise, causes venous stagnation. Mortification would quickly supervene, were it not that adhesions are promptly formed.

Adhesion to a viscus may be in direct apposition. The "immediate" form of Tait, or quite a lengthy, broad, flat, or round band, the "mediate" variety, may attach the cyst. Omental adhesions are by far the most frequent. I have seen the greater omentum attached to the anterior surface, and spread out and universally attached, like a "monk's cowl," over the entire surface of the tumor. While it is not the purpose of this paper to deal with the technique of ovariotomy, I may be pardoned if I emphasize some well-known facts in the management of adhesions. All omental attachments must be ligatured, grasped with pressure forceps on the distal side, and omentum cut through between, care being taken to suture or tie and divide all holes in the omentum; it is obvious such openings are but snares for intestinal obstruction. The freeing of a fettered cyst from a viscus is often a most difficult procedure. Such attachments are usually soft and highly vascular. In their separation, nothing is better than a sponge (Smith), our aim being to sponge or peal the viscus from the tumor, and not the tumor from the viscus.

The hæmorrhage attendant upon the separation of these firm adhesions may be controlled by pressure. If that does not check it, and it is inexpedient to ligate, the salt of iron may be employed. Of course, when practicable, nothing is so secure as a No. ½ silk ligature. Accessible adhesions, even though very extensive, are not considered as seriously complicating the case. It is very much to the contrary when the adhesions are deep down in the pelvis. In their separation we are in constant danger of injuring bowel, bladder, ureter, or some of the large blood-vessels coursing just beneath the peritonæum.

Another accident that may befall an ovarian cyst is rotation of the tumor or torsion of the pedicle.

The "American Journal of the Medical Sciences," October, 1888, contains a truly classical article on "Rotation of Ovarian Tumors," by Mr. Knowsley Thornton.

From this, and the discussion in the British Gynæcological Society on the report of R. T. Smith's rather celebrated case, and from two cases under my own observation, I chiefly gather my information. This accident is met with in every variety of tumors. The only physical condition necessary is a tumor free of adhesions and a pedicle of sufficient length. Rotation of ovarian tumors is found in patients of all ages, yet far more frequently in young women, and quite sufficiently often at the time of menstruation for us to associate that circulatory phenomenon as an active ætiological factor in its production. Many observers have met with a twisted pedicle during pregnancy. Barnes mentions three cases in which rotation was caused by the gravid uterus, which, growing from below, impinged upon the tumor, exerting leverage upon the side, thus causing it to turn around. This explanation is quite satisfactory for those cases associated with pregnancy. Tait very ingeniously accounts for rotation by the passage of fæces causing each time a slight rotation of the tumor. From an analysis of many reported cases, it appears that rotation occurs just as often on the left side. Mr. Tait's theory will answer only for tumors of the right side.

Doran thus explains the accident in one case: "A little artificial distension of the intestine caused it to press against the tumor so as to push its left side backward, stretching and twisting the pedicle." The same author further says: "Still I believe that, as a rule, the twisting of a pedicle is to be explained by the simpler doctrine. The tumor, comparatively free laterally and anteriorly, rotates on its own axis every time that the patient, after walking or lying upon her back, turns around and rests on her side."

Peristaltic action of the bowels has been suggested as a cause of rotation (Stephens).

When strangulation of the circulation takes place in consequence of the twisting of the pedicle, symptoms of varying severity follow. The intensity of the symptoms is governed to a great extent by the degree of strangulation. When there is complete arrest of circulation the symptoms are those of localized peritoneal irritation, abdominal pain and tenderness, quick pulse, fever, and vomiting, and in all cases of sudden strangulation there are grave local and constitutional symptoms described as abdominal shock. Schurnoff considers suddenly developing ascites as indicative of torsion of the pedicle. The tumor itself undergoes certain changes. Generally it enlarges, becomes tense, hard, more elastic, and less fluctuating.

An ovarian tumor with twisted pedicle may be confounded with a ruptured ectopic gestation sac. In the one case we have to guide us the usual symptoms and signs of pregnancy; in the other they are wanting. In one there was a well-defined tumor, which, with the onset of the symptoms, became more distinct and even more tense than before. In rupture of the tube from pregnancy the tumor is ill-defined and even less distinct than before rupture. In tubal rupture the collapse is decidedly more marked than we meet with in twisted pedicle. The shock from rupture may pass off, but to recur again with the renew l of the hæmorrhage.

If a patient survives the first shock attendant upon rotation of the tumor, the subsequent history is inflammatory. Twisting of the pedicle has been mistaken for intestinal obstruction. The presence of a tumor and symptoms occurring therein, together with the readiness with which the bowels respond to mild laxatives, should eliminate this as a possible error. In consequence of twisting of the pedicle, there is, of course, interference with the circulation, venous stagnation occurs first, arterial pressure continues to force blood into the tumor, rupture of an overcharged vessel follows, and we have hæmorrhage into the cyst. In this way we may account for the clinical phenomena of enlargement and tension of the tumor, and no doubt the great shock observed in these cases is largely, if not entirely, due to the hæmorrhage which generally follows in consequence of the rotation. This question received liberal notice before the British Gynæcological Society. The theory of hæmorrhage as the cause of shock was more acceptable to me than the twisting of a functionless pedicle. With rotation of the cyst and absolute strangulation of the pedicle, as we all have seen, inflammation and gangrene would be looked for as a natural consequence. "It is," says Barnes, "the most common and immediate effect certainly in some cases to lead to gangrene." This is not the opinion of that conscientious observer and eminent ovarian pathologist, Doran, nor does it accord with the experience of operators.

"The steps of the process seem to be gradual rotation without symptoms or serious pathological change, then sudden serious symptoms, with rapid increase in the tumor, then decrease or complete cessation of the growth, followed sooner or later by renewed activity" (Thornton).

The full explanation of all this is, that rotation is a gradual process. When suddenly becoming acute, strangulation with all its clinical phenomena is developed. Now, gangrene does not inevitably occur, as Barnes seems to think, but, as the result of the peritoneal inflammation, adhesions quickly form, and it is now through this adventitious connection that nourishment is to be obtained. The supply of blood being at first only limited in amount, the tumor naturally decreases in size from sheer starvation, and, as we well know from indisputable cases, atrophy and spontaneous cure may in this way take place. Usually, however, adhesions become more numerous, and, later on, the tumor again springs into activity. Under these circumstances the pedicle may atrophy, and even disappear. Such a case would prove highly perplexing to the operator. Bantock, with the voice of an enormous experience, said that a tumor so strangulated would contract adhesions; that he had never seen nor heard of a patient dying from twisted pedicle.

Now, to the practical question, What are we to do when we meet with a twisted pedicle? If we submit our patient to immediate operation, we are compelled to operate with her in the condition of shock, if not collapse. This is a disadvantage no operator cares willingly to take upon himself. Knowing that it is exceptional for the patient to die in the primary stage, is it not prudent to adopt the recommendation of Bantock—that it is unwise to operate during shock? Let us wait for reaction, which we are assured will be established.

In consequence of torsion of the pedicle, we have shown, hæmorrhage frequently occurs. This bleeding is within the cavity of the cyst, due to rupture of a vessel on the inner surface; the strong peritoneal covering is more resistant, and does not yield so readily to blood pressure. Hæmorrhage into the cyst may be due to other causes than twisting of the pedicle. It is unusual for a patient to die from this cause.

In addition to the hæmorrhage and acute symptoms attendant upon strangulation of the pedicle, we may have a condition of equal gravity arising from inflammation and suppuration of the cyst. Peritonitis may assume such an active form that immediate operation would commend itself to us as the only alternative. Suppuration of an ovarian tumor may be due to torsion of the pedicle, to careless and useless tapping, and from traumatisms. In suppuration of ovarian cysts the circumstances are desperate, and fully warrant prompt operative interference.

Rupture of the Sac.—This accident sometimes occurs in consequence of over-distension, suppuration, weakening by papillomatous degeneration, or as the result of violence. The symptoms attendant upon this accident depend upon the size, character, and seat of rupture, the nature of the escaping fluid, and the amount of hæmorrhage. If the fluid is non-irritating, and the opening permitting slow leakage, little, if any, reaction may follow. Cysts that have undergone colloid degeneration are prone to rupture. Dr. Mann, in his excellent article on this subject, says: "This colloid material is generally very irritating." The only two cases of ruptured cysts I have seen contained colloid material. In neither of these was rupture attended by symptoms sufficient for diagnosis. One of the cases occurred in the service of Mr. Meredith at the Samaritan Hospital, London. The omentum, intestines, liver, and spleen were all completely covered with colloid. The cyst had evidently ruptured some time before, yet there were no symptoms of peritonitis. The case was an exceedingly ugly one to manage. An abundance of the colloid matter was left behind, though thorough irrigation was employed. A drainage-tube was not used. The patient recovered without a symptom.

Papillomatous growths are favorable sites for rupture. The immediate danger in such cases is not great, because the villi prevent free flow of the fluid. The remote danger is in the infection of the peritonæum. For obvious reasons a monocystic tumor is more liable to rupture than the proliferating, glandular, or multilocular variety. Some authorities maintain that an interligamentary cyst is more liable to rupture than one of true ovarian origin. Any degenerative change in the sac may cause rupture. Dr. Anna Broomall reports at some length a case of rupture due to the violent action of a cathartic. Acute pain, evidences of collapse, and marked change in the form of enlargement are the symptoms pointing to rupture. If the patient does not succumb to the shock of the accident, she is in imminent danger of septic peritonitis. Immediate operation with thorough irrigation and drainage are imperatively demanded.

Calcification.—Calcification is sometimes met with in operations. It is scarcely probable that the condition could be even supposed in differential diagnosis.

Ascites.—At some time in the history of an ovarian cyst it is not unusual to have quite an accumulation of ascitic fluid. It then becomes our duty to "establish direct causal relation between the ascites and the abdominal tumor" (Coe). We must bear in mind that there are other causes of free fluid in the cavity than mere irritation of the peritonæum by malignant growths, or pressure from an abdominal tumor; cardiac, renal, and hepatic diseases all give rise to ascites. We are prone to treat this complication lightly. It is of vital importance and of immense prognostic value that we eliminate every other possible cause of ascites before we attribute it to the pressure of the tumor. Some effort at a differential diagnosis by examination of the fluid has been made. Having excluded the usual causes of ascites, we must bear in mind that it sometimes is an associate symptom of other complications occurring in the cyst. Torsion of the pedicle, as we have shown, setting up peritoneal inflammation, may give rise to a rapid accumulation of ascitic fluid. Rupture of an ovarian cyst would give us a sudden and rapid ascites, in which a diagnosis might prove, under the circumstances, quite bewildering. An exploratory operation would be our only means of definitely determining the origin of the fluid.

Papillary cystomas irritate the peritonæum, consequently their growth is nearly always attended by ascites. Colloid carcinoma and sarcoma, and in fact all forms of malignant ovarian growths, are so generally associated with ascites that it is considered a leading symptom in their diagnosis. A small tumor with ascites appearing early is strongly presumptive of malignancy. If the ascites is from obstructed circulation, the liquid will be a limpid fluid resembling water, perhaps slightly colored, containing a little albumin but no fibrin, and giving no sediment. If the ascites is from peritoneal inflammation, the liquid will be thinner but never transparent, always cloudy, looking like buttermilk, and smelling like decayed cheese. If the effusion is from simple serous irritation, the liquid will be albuminous, rather clear, though sometimes colored like bile. In the sediment will be found elements of great importance. Large irregular cells may be seen, having a central nucleus, surrounded by a quantity of granulations. The presence of these cells is usually taken as a sign of malignant growth ("Medical Times," November, 1885).

Before a body of so distinguished specialists as I have the honor of addressing, it would be a consumption of valuable time to enter into the diagnostic methods for the detection of ascites. Its presence as an accompaniment of a tumor does not interfere with operation, provided we may assure ourselves that it is not due to malignant disease (Mann). It is the observation of Coe that in such cases the patients rapidly decline after operation. If ascites is due to cardiac, hepatic, or renal diseases, drainage will be required, the cause still existing. The tax to the patient's vitality will be very trying.

Albuminuria.—Albuminuria is a frequent complication of cystoma. The mere presence of albumin in the urine is no uncommon thing, especially when associated with high specific gravity. In such cases the pressure of the tumor is the cause of the disease, and with its removal the albuminuria also disappears, like, for instance, the albuminuria of pregnancy (Bantock). Albumin in urine of low specific gravity is presumptive evidence of advanced kidney disease, and such patients do not bear an operation well. The function of the kidneys should always be carefully considered before operation.

Correspondence.

LETTER FROM LONDON.

A Successful Case of Cholecystenterostomy.—Myxœdema in a Child.—Electrolysis in Stricture of the Urethra.

London, *December 7, 1889.*

At the last meeting of the Medico-chirurgical Society Mr. Mayo Robson brought under the notice of the society a successful case of cholecystenterostomy. His patient was a married woman who, in April, 1887, had one ovary removed for pyosalpinx, and in the following January came under his care with acute peritonitis and a swelling in the region of the gall-bladder. Laparotomy was performed, and about eight ounces of fœtid pus were removed from the gall-bladder; no gall-stones could be detected. The gall-bladder was stitched to the abdominal wound and drained, and the patient made a good recovery, with a biliary fistula. Although she retained good health during the fifteen months when the fistula was open and discharging the whole of the bile, her condition was a very miserable one, since no apparatus could be made to catch the overflowing fluid when she was walking about. On March 2, 1889, the abdomen was reopened through the old scar in the linea semilunaris. The viscera in the neighborhood were found to be so matted together that it seemed to be impossible to fix the gall-bladder to the duodenum, and, as the hepatic flexure of the colon was conveniently near, the gall-bladder was fixed to it by a double row of chromicized catgut sutures, a free communication being made between the two viscera; and the outer opening (the old fistula) of the gall-bladder was stitched up. In order to guard against accident, a glass drainage-tube was placed in the right kidney pouch and brought out at the lower end of the wound. The outer surface of the gall-bladder evidently gave way to some extent, for bile appeared through the drainage-tube within a few days of the operation, followed shortly by a fæcal discharge. The wound granulated, and after a few weeks completely healed, the motions toward the end becoming more and more bile-stained, until in appearance they became quite normal. This is believed to be the first case in which this operation has been undertaken for the cure of biliary fistula. Curiously enough, the only successful case hitherto recorded was also in a woman. It is too early yet to feel any confidence as to the final result in this case, but one can not help feeling a considerable degree of curiosity as to the ultimate effect of pouring the bile into the large intestine. So far as the processes of assimilation and absorption are concerned, one would think the bile would be of no more use than if it were still draining away through a fistula, and yet the patient has remained in a fairly satisfactory condition for six months from the operation.

At a meeting of the Clinical Society lately held, Dr. Abercrombie showed a case of great interest—viz., that of a little girl of fifteen with myxœdema. The case seemed to be just the connecting link between myxœdema and sporadic cretinism, a demonstration of which was much needed. The report of the committee of this society some two years ago expressed the

opinion that sporadic cretinism did not differ in any essential feature from myxœdema, and this case seemed to afford just the proof of this that was required. According to the mother's statement—and there seemed no reason for disbelieving her—the child was quite healthy until about eight years of age, and she then had an illness which lasted for three years, for which she kept her bed nearly the whole of that time. What the symptoms were the mother could not say, but the doctor had called it Bright's disease, and it was an interesting point that whenever the child was asked what the matter was she said "dropsy of the face." Nothing referable to the throat was noticed during the illness. Since then, the mother stated, the child had not grown and had deteriorated mentally, and, from being quick at her lessons, could now learn nothing and had a very indifferent memory. The mother was most positive that before this illness the child's intellect had been good, and that she had had pretty features and soft silky hair. The child was very stunted, but thick-set, of about the height of a child of nine. Her face was decidedly puffy, especially under the eyes, and her complexion was quite characteristic of myxœdema. The isthmus of the thyreoid could not be felt, but the rings of the trachea were easily palpated. Her hands were square and spade-like, and her skin was rough and her hair coarse. The case was generally accepted by those who examined her at the meeting as an undoubted instance of myxœdema, and it is to be presumed that the primary illness was really some inflammatory condition of the thyreoid gland leading to its atrophy.

Electrolysis as a mode of treating disease does not make rapid progress in public favor over here, but Dr. Steavenson, of St. Bartholomew's Hospital, is one of the few exceptions to the general rule, and has given it an extended trial in cases of stricture of the urethra with Mr. Bruce Clarke. The latter has lately placed on record the results, as far as they are known, in fifty cases; of these, twenty-three patients were known to be well at periods after the operation varying from a year and a half to three years, in two cases no relapse had taken place at the end of four years, while only nine had required subsequent treatment. These results must be considered excellent, but the difficulty is that all persons are not equally competent to undertake the treatment, a fact which probably accounts for the failures of many operators and the consequent disfavor with which this treatment is mostly regarded.

Jaborandi and the Hair.—"Some discussion has taken place as to the use of jaborandi in connection with the hair. The senior surgeon to the London Skin Hospital states that it is a valuable drug in the treatment of diseases of the hair; promotes the growth in certain cases and influences the color in others. He deprecates its use, however, except under medical advice. The President of the British Trichological Association declares that jaborandi, when used with care and discretion externally for certain hair diseases, is undoubtedly a very useful drug, and, in cases which have not submitted to other treatment, must prove beneficial in every respect. Dr. Gurney, of the Hair and Skin Hospital, speaks highly of the drug both as an external and an internal remedy." *British and Colonial Druggist.*

The Native Egyptian as a Subject for Surgical Operation.—"The native Egyptian is an extremely good subject for surgical operation. Clot Bey, the founder of modern medicine in Egypt, has it that 'it requires as much surgery to kill one Egyptian as seven Europeans. In the native hospitals, the man whose thigh has been amputated at two o'clock is sitting up and lively at six.' Shock is almost entirely unknown, and dread of an impending operation quite an exception. In explanation may be noted the resignation inculcated by their religion; the very small proportion of meat in, and the total absence of alcohol from, their diet; and in general their regular, abstemious, out-of-door life."—*Medical and Surgical Reporter.*

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THE EPIDEMIC OF INFLUENZA.

A FORTNIGHT ago it was reported that an epidemic of influenza was prevailing in St. Petersburg and causing great inconvenience to business, especially in factories and other places where manual labor was carried on. On the 12th of December the cable announced that the disease, after having attacked Berlin, had made its appearance in Paris, and that over six hundred of the shopmen in the Magasin du Louvre were suffering from it. London will next be heard from, and then doubtless we shall have it ourselves. It is well to know what to expect.

Epidemic catarrhal fever made its last appearance in England in the winter of 1847–'48, a fact now entirely forgotten, and any correct information as to its characters and the course it took would be most difficult to obtain were it not for the history of the epidemic carefully recorded by the late Dr. Peacock, of St. Thomas's Hospital, London, whose clinical studies in connection with disease of the heart have given him a place among the first of English physicians.*

In the introductory chapters Dr. Peacock informs his readers that there are records from the thirteenth century of the visitations of influenza as an epidemic about ten times in a century. In large towns about half the inhabitants escape the attack, and in London during the last epidemic the mortality was increased by 5,000 deaths in six weeks. Various names have been given to the disease. The name influenza was given to it in Venice and Milan in 1741. In France it is called *grippe*. Old English writers call it *pose*, which signifies a running from the nose, and the word is used in that sense by Chaucer.

The meteorological conditions preceding epidemic visitations are mentioned in vague terms, but sudden and great alternations of temperature have generally been recorded. The disease is described as consisting of three varieties, viz.: Simple catarrhal fever, catarrhal fever with pulmonary complications, and catarrhal fever with abdominal complications. Passing over the simple catarrhal form, we come to Dr. Peacock's severer cases, twenty-eight of which fell under his observation. In eleven cases there was acute or subacute capillary bronchitis, in four bronchitis supervened on tuberculous disease of the lungs, in six there was bronchitis complicated by disease of the heart or aorta, and in seven attacks of pneumonia occurred. Of these, the most serious complication was the capillary bronchitis, which in some of his patients proved fatal. The mortality, placing together all the forms of pulmonary complication

* "On the Influenza or Epidemic Catarrhal Fever of 1847–'48," by Thomas Bevill Peacock, M. D., Physician to the Royal Free Hospital and to the City of London Hospital for Diseases of the Chest. London: Churchill, 1848, pp. 182.

cause to nine deaths in forty-eight cases. These were all hospital cases and necessarily of a severe character, the patients having, before admission, been in a low state of health. Dr. Peacock considered that the mortality of the epidemic did not exceed three or four per cent. of the whole number of persons attacked, a very serious mortality, if he is correct in his estimate.

Abdominal complications were present in thirty-one cases out of the seventy-nine. These may be divided into, first, cases characterized by disorder of the gastro-enteric mucous membrane; secondly, those in which the enteric affection was combined with hepatic derangement and a tendency to relapse or to assume a remittent character; and, thirdly, those complicated with rheumatic symptoms. There were only five deaths in the thirty-one abdominal cases.

Dr. Peacock lived long enough to present in a condensed form the result of his observations made forty years ago, in the shape of the article "Influenza" in Quain's "Dictionary of Medicine," which under the present circumstances will be read with great interest.

MINOR PARAGRAPHS.

THE RIVAL FRENCH CANADIAN UNIVERSITIES.

For many years the Victoria College has been the principal center for medical education among the French inhabitants of Lower Canada. It has had an honorable career of some forty years and has turned out many graduates. Unfortunately, however, for its religious tone, in the Province of Quebec, where religion and medicine are closely mixed, its degrees have been presented by a university of Protestant tendencies, that of Victoria in Cobourg. To counteract this noxious influence and to enable the faithful to be certain that their doctors prescribed medicines of the proper ecclesiastical flavor, a rival school was established which granted degrees from the fine old Catholic University of Laval in Quebec. A bitter struggle ensued and many were dragged into the strife without any knowledge of the questions at issue. Politics has crept in; one school is tainted with liberalism, the other leans toward the old Tory party. The unprejudiced looker-on would find it hard to say what it was all about. A few months ago an amalgamation was arranged and conflicting interests were duly regarded. But the feelings of the students had not been considered. Since the session opened a continuous state of war has existed, and, according to a daily paper, one of the professors recently felt called upon to illustrate his lecture with a loaded revolver. Among the teachers there is no better feeling than among the students. After bitter fighting among themselves an appeal to Rome has been decided upon, and all parties have agreed to abide by the arbitration of His Holiness. In the mean time the students, who have paid their fees, complain with some justice that while all the squabbling is going on there is no teaching done. A number of them, at a meeting recently held, have decided upon asking the law courts to issue a mandamus to compel the faculty to give the instruction set forth in the annual announcement.

HOW "FAITH-CURE" MAY SPREAD DISEASE.

Certain ignorant Scandinavians in Brooklyn and vicinity have adopted, in a very fatalistic way, a doctrine of healing by faith and prayer. They do not believe in medicine or physicians, and they will not call in the aid of the latter, except in cases where death is impending. One of them said recently: "I want a physician to come and see my child in order to comply with the law, which says that a physician should see the case within twenty-four hours before death; the law gives me a certificate of death if I do this." The women who have adopted this strange fanaticism have united themselves into an order which they call the "Lodge of Faith," which nurses the sick free of charge and abjures the employment of any medicines. It is believed that these nursing sisters have been the means of spreading scarlet fever and diphtheria, going as they do, with a perfect abandon and disregard of earthly consequences, from one house to another.

CYANIDE OF ZINC AND MERCURY AS AN ANTISEPTIC DRESSING.

In the "Lancet" for November 9th Sir Joseph Lister publishes a paper describing his efforts to obtain a more suitable antiseptic application than bichloride of mercury. He first employed a gauze charged with a solution of corrosive sublimate in blood-serum; but serum was not always obtainable, and the gauze was harsh and not very absorbent. Next, sal alembroth (chloride of ammonium and bichloride of mercury) dissolved in serum was employed; this seemed more efficient as an antiseptic than the bichloride of mercury alone, and was less irritating; but the salt was so soluble that the serous discharge from the wound would wash it out, concentrating it near the edge of the dressing and irritating the skin by the presence of the large amount of the salt. Cyanide of mercury was next employed, at the suggestion of Mr. Martindale. Mr. Cheyne found that while its germicidal effect was small, its inhibitory power was about 1 in 10,000. This salt was very irritating, however, so the less soluble cyanide of mercury and zinc was tried; in the proportion of 1 to 800 it prevented putrefaction, but it seemed to be an irritating application, and was used with the cyanide of mercury. Biniodide of mercury was an efficient antiseptic, especially if associated with starch; but, like the sal alembroth, it was too irritating. The cyanide of zinc and mercury was again tried, this time unmixed with the cyanide of mercury, the gauze being moistened with a corrosive-sublimate solution of 1 to 4,000, and with starch as a medium for incorporating the salt with gauze, a small quantity of sulphate of potassium being employed to prevent pastiness of the mixture. An antiseptic dressing was thus obtained that has proved very effective in the surgical wards of King's College Hospital. Before using gauze prepared in this way it should be moistened with a 1-to-4,000 bichloride-of-mercury solution.

THE "NEW EVANGELISTS."

The faith-healing believers who style themselves the "New Evangelists," and profess to be willing to let their children, sick with scarlet fever or other contagious diseases, go without medical attendance, and to avoid all sanitary precautions, are found to be amenable to law. Three different acts appear to meet the case of this kind of cruelty; first, there are the special enactments for the protection of minors; secondly, the Penal Code has an "omnibus section" which makes it a misdemeanor to fail to provide food and medicine for a sick dependent person; and, thirdly, a sanitary ordinance, also of an "omnibus" character, against those who through negligence contribute to the spread of communicable disease. The second of these legal provisions, that of the Penal Code, is that which the prosecuting officers will prefer to try under in most cases. These facts were brought out by Dr. J. C. Bierwirth, physician to the Brooklyn Society for the Prevention of Cruelty to Chil-

dren, in a paper read before the Kings County Medical Association on December 13th. The "New Evangelists" seem to be ignorant and misguided rather than lawless, and as soon as they have been convinced that the law requires that their children shall have medical attendance and that seclusion must be observed in scarlet fever and the like, they will cease to be troublesome.

THE CHARITY HOSPITAL ALUMNI SOCIETY.

At the meeting of the Medical Society of the Alumni of Charity Hospital, held on the evening of December 10th, Dr. A. T. Muzzy read a very interesting paper on "The Prevention of Ophthalmia Neonatorum." Dr. Joseph O'Dwyer presented some new laryngeal tubes, which are shorter than his former models and of much larger caliber—in fact, giving a passage very little smaller than the trachea itself, thus facilitating the removal of membrane, mucus, etc. Another modification consists in having the collar at the top of the tube hinged to the shaft in front, so that removal is easily performed with the finger. The collar, which is held in place by springs, may be lifted readily, forming a ring into which the tip of the finger is inserted and the tube readily withdrawn without the use of instruments.

PRIVATE LUNATIC ASYLUMS.

The New York State Commission in Lunacy has taken a very commendable step in the adoption of the following: "*Resolved*, That hereafter no license for the establishment and keeping of an asylum or institution for the care, treatment, or custody of the insane or persons of unsound mind, for compensation or hire, shall be granted except to a duly qualified medical practitioner of recognized professional skill and standing, who is a graduate of a legally incorporated medical college and has had actual experience in the care and treatment of the insane."

ONE OF THE DANGERS OF THE NURSING-BOTTLE.

An infant, four months old, was lately reported to have been choked to death by swallowing the rubber nipple of a nursing-bottle. The insecure way in which nipples are often attached to the bottle, as well as the custom of leaving the infant alone with a bottle to quiet it, gives grounds for expecting the greater frequency of such accidents.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending December 17, 1889:

DISEASES.	Week ending Dec. 10.		Week ending Dec. 1	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	17	5	21	5
Scarlet fever	71	6	71	5
Cerebro-spinal meningitis	2	2	1	1
Measles	46	5	70	2
Diphtheria	94	26	109	30
Varicella	5	0	1	0

A New Hospital for Pittsburgh.—By the will of the recently deceased John A. Shoenberger, an iron-master of Pittsburgh, a bequest of $800,000 is made for a Shoenberger Memorial Hospital, that will occupy a site of eight acres of land next to the Alleghany Cemetery.

An Epidemic of Scarlet Fever in an Orphan Asylum.—The secretary of the Ohio State Board of Health has just investigated an epidemic of scarlet fever in the Soldiers' and Sailors' Orphans Home at Xenia, and he reports that the hospital is unfit for use, its wards are crowded, and diphtheria and scarlet-fever patients are kept in rooms adjacent to wards occupied by persons with minor ailments. His report was condemnatory of the management.

The Hoagland Laboratory.—In the winter course at this laboratory, beginning on December 20th, the three departments of bacteriology, physiology, and histology will be in operation. A fee of $15.00 will be charged in each of the two former and $20.00 in the last. The charge for animals is not included in the fee. The library will receive over thirty standard foreign journals.

Virchow's "Cellular Pathology."—The "British Medical Journal" states that Professor Virchow continues to work diligently upon the new edition of his "Cellular Pathology," and that he expects to have it completed by the time that the International Congress meets at Berlin.

Change of Address.—Dr. O. J. D. Hughes (Meriden, Conn.), to No. 88 East Main Street.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from December 1 to December 14, 1889:*

Wolverton, William D., Major and Surgeon, Fort Douglas, Utah. Leave of absence for one month, to take effect on or about December 18, 1889, is hereby granted, with permission to apply at Headquarters, Division of the Missouri, for an extension of seven days. Par. 2, S. O. 114, Department of the Platte, November 30, 1889.

Gardiner, John de B. W., Captain and Assistant Surgeon, will, by direction of the Secretary of War, be relieved from duty at Fort Reno, Indian Territory, upon the arrival at that post of James C. Merrill, Captain and Assistant Surgeon, and will report in person to the commanding officer, Fort Supply, Indian Territory, for duty at that post. Par. 8, S. O. 279, A. G. O., November 30, 1889.

McCaw, Walter D., Captain and Assistant Surgeon, Fort McPherson, Georgia. Leave of absence for fifteen days is hereby granted. Par. 3, S. O. 276, Division of the Atlantic, December 3, 1889.

Hall, John D., Major and Surgeon. Leave of absence for ten days, to take effect upon being relieved from duty at Fort Niagara, N. Y., is granted. Par. 11, S. O. 285, A. G. O., Washington, December 7, 1889.

Carter, Edward C., Captain and Assistant Surgeon, will, by direction of the Secretary of War, be relieved from duty at Willett's Point, N. Y., upon the arrival at that station of Ewen, Clarence, Major and Surgeon, and will then proceed to Fort Walla Walla, Washington, and report in person to the commanding officer of that post for duty, reporting also by letter to the commanding general, Department of the Columbia.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the two weeks ending December 14, 1889:*

Neilson, J. L., Surgeon. Detached from the U. S. Steamer New Hampshire and ordered to the U. S. Steamer Portsmouth.

Beyer, H. G., Passed Assistant Surgeon. Detached from the U. S. Steamer Portsmouth and placed on waiting orders.

Siegfried, C. A., Surgeon. Detached from the Naval Station, New London, Conn., and ordered to the New Hampshire.

Hall, John H., Passed Assistant Surgeon. Ordered to the Naval Station, New London, Conn.

Kite, I. W., Assistant Surgeon. Detached from the Naval Hospital, Philadelphia, Pa., and ordered to the Naval Hospital, Pensacola, Fla.

Ross, J. W., Surgeon. Detached from the Naval Hospital, Pensacola, Fla., and placed on waiting orders.

Ross, J. W., Surgeon. Detached from the Navy Yard, Pensacola, Fla., and placed on waiting orders.

Kite, I. W., Assistant Surgeon. Detached from Naval Hospital, Philadelphia, Pa., and ordered to the Navy Yard, Pensacola, Fla.

Rogers, B. F., Surgeon. Ordered to special duty at Norfolk, Va.

Leach, Philip, Passed Assistant Surgeon. Ordered to duty at the Naval Academy, Annapolis, Md.

Society Meetings for the Coming Week:

Monday, *December 23d:* Medical Society of the County of New York; Boston Society for Medical Improvement; Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement; Baltimore Medical Association.

Tuesday, *December 24th:* New York Academy of Medicine (Section in Laryngology and Rhinology); New York Dermatological Society (private); Buffalo Obstetrical Society (private); Medical Society of the County of Lewis (quarterly), N. Y.

Wednesday, *December 25th:* New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medical Society of the County of Albany; Philadelphia County Medical Society.

Thursday, *December 26th:* New York Academy of Medicine (Section in Obstetrics and Diseases of Women and Children); New York Orthopædic Society; Brooklyn Pathological Society; Roxbury, Mass., Society for Medical Improvement (private).

Friday, *December 27th:* Yorkville Medical Association (private); New York Society of German Physicians; New York Clinical Society (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

Saturday, *December 28th:* New York Medical and Surgical Society (private).

Obituaries.

Charles Henry Nichols, M. D., LL. D.—On Monday, December 16th, Dr. Nichols, the superintendent of the Bloomingdale Asylum, died at his post in that institution, in the sixtieth year of his age. His malady was malignant disease of the liver, with secondary involvement of the peritonæum.

Dr. Nichols was a native of Maine, and received his medical education in New York and Philadelphia, taking his degree from the University of Pennsylvania in 1843. He began his asylum service in 1847, at Utica, N. Y., and was appointed physician to the Bloomingdale Asylum in 1849, but resigned the office in 1852. Under appointment by President Fillmore he superintended the construction of the Government Hospital for the Insane, at Washington, and took charge of the institution when it was ready for the reception of patients. After many years of devotion to the Washington asylum he was recalled to Bloomingdale as medical superintendent. In both asylums, and in all the affairs of his life, his course was marked by intelligent and zealous devotion to the progress of his art and to the most judicious conduct of the work committed to him. Personally, Dr. Nichols was plain and ardent of speech, but gentle and genial to a degree that impressed everybody with the purity and loyalty of his character.

Thomas B. Harvey, M. D., LL. D., of Indianapolis, dean of the faculty of the Indiana Medical College, died on Thursday, the 5th inst., within a few hours after an attack of apoplexy that overwhelmed him while he was delivering a lecture to the class. The deceased, who was in his sixty-third year, was a native of Ohio and a graduate of the Medical College of Ohio. Most of his professional life was spent in Indiana, and a great part of it in Indianapolis, where he acquired a wide reputation as a physician and as a teacher of medicine.

Letters to the Editor.

DANGER IN THE RHEOSTAT.

1706 Walnut Street, Philadelphia, *December 12, 1889.*

To the Editor of the New York Medical Journal:

Sir: Dr. Tod Gilliam's letter in the last number of the Journal contains a most timely warning, now that the use of relatively heavy currents in medical work is so common, but the terrifying and mortifying accident of unwillingly shocking a patient with three hundred and fifty milliampères when but seventy were desired should not condemn the *form* of this controller. I do not know who made the "hydro-aluminium" rheostat used by him, but whoever was responsible for it made a grave error. It is essential that a water-current controller should have plates that are non-corrodible under the continuous use of heavy currents, as electrolysis always occurs in it, and the small space between the upper portions of the plates is an invitation to such accidents. To select aluminium as possessing such properties is sheer nonsense. A single use of the contrivance with two hundred milliampères would coat the positive plate with oxide to be added to by each subsequent use. The carbon controller possesses no such disadvantage, and, if the upper portions of the plates are made impervious to water by boiling in paraffin, their action is perfect and constant. Some complaints of a slight shock of five or ten milliampères at the start, after repeated use, are doubtless due to upward creeping of the water in the absence of this coating.

My own controller, constructed of graphite on a porcelain disc, needs only slow movement to insure against any kind of shock. It has been given to the profession without restriction or patents, and I still warmly recommend its use in preference to cell-selectors. G. Betton Massey, M. D.

144 Main Street, West, Jackson, Mich., *December 14, 1889.*

To the Editor of the New York Medical Journal:

Sir: The "Danger in the Rheostat," as reported by Dr. Gilliam, in your issue of December 7th, is undoubtedly of more frequent occurrence than is reported in the journals. It is true that the accidents that occur are not always quite so bad as the one that happened in Dr. Gilliam's experience, but, nevertheless, the numerous unpleasant shocks that patients are continually receiving because we can not always control the current of electricity makes this one therapeutic agent less frequently used than it would be otherwise. The "collector" is denounced for its want of a nicety of gradation of current. The hydro-aluminium rheostat supplies the gradation of current, but, on account of the electrolytic action on the plates, this style of graduate is not safe to use for fear of an experience more or less like that referred to.

But, in this connection, I am glad of the opportunity to call attention to a little device which gives me *absolute* and *perfect* control of the current at all times and under all circumstances. This device can be used either with a battery or on any incandescent-light circuit with perfect safety. You are *never* in the direct circuit; but it is so arranged that you can shunt any fractional part or number of milliampères without shock to your patient. From the same device you can operate your cauteries and have the faradaic current. The "Gish ideal rheostat," to which I refer, is a handsome little box, about eight inches square, and contains but one continuous bare wire, so arranged that it gives us absolute control of the current. The rheostat must be seen to be appreciated. F. W. Main, M. D.

Proceedings of Societies.

NEW YORK SURGICAL SOCIETY.

Meeting of November 13, 1889.

The President, Dr. Lewis A. Stimson, in the Chair.

Fracture of the Skull.—Dr. B. Farquhar Curtis presented a boy, nine years of age, upon whom he had operated for very extensive fracture of the skull. The patient, while leaning over a railing, had lost his balance and had plunged head foremost down two flights of stairs, a distance of twenty-five or thirty feet. The fall had been unbroken until near the floor, when the patient's head had struck the back of a bench, splitting off the woodwork. The accident occurred on September 10, 1889, at 10.30 A. M. The boy was picked up unconscious and carried to the hospital. There was profound shock, the pupils were dilated, the surface was cold, the pulse feeble and very variable in rapidity, averaging about 120, respirations 33, temperature 98·4° F. in the rectum; there was also a "cephalic cry" at frequent intervals. Stimulants were administered subcutaneously and by enemata. It was deemed advisable to wait for reaction before operating. About 1.15 P. M. the patient began to show signs of reaction, but at 8 P. M. he was still in a condition of coma. Examination of the head when the boy was received at the hospital showed an area, extending from the right side of the occipital protuberance to within an inch of the left eyebrow and about three fourths of an inch in width, in which the soft tissues seemed to have lost their support, and there was a decided depression at each end of this area. Bony crepitus was obtained in several places throughout this area. On September 11th, at 9 A. M., the patient's general condition was good, but he was still entirely unconscious. The pupils were contracted, but disturbing the patient dilated them. Every few minutes there came short periods of restlessness and the cephalic cry. Muscular movements were less active on the left side than on the right, but there was disease of the left hip joint. It was decided to operate first on the posterior depression on the right side of the head. The scalp having been shaved and carefully cleansed, the patient was anæsthetized with chloroform. A curved incision was made from a point two inches above the root of the right ear and carried with the convexity upward to about an inch and a quarter from the sagittal suture, then downward two inches and a half to the right of the occipital protuberance. The tissues were divided down to the bone, the flap being reflected downward. As the dissection had only disclosed the lower part of the depressed fragment, a second incision was made running from the highest point of the former incision transversely toward the left parietal eminence for a distance of two inches.

It was evident that there were two main fissures, one running transversely across the vertex from ear to ear, the other obliquely from the right parietal eminence to the left frontal eminence, both gaping about an eighth of an inch. There were numerous shorter fissures, so that every portion of the bone of the vertex was easily movable. Under the flap there was an oval piece of bone, two inches by three, lying behind the transverse fissure just mentioned and a little to the left of the median line. The anterior edge of this fragment was driven under the bone just in front. A groove was made along the border of overlapping bone with a Hey's saw and the bone removed with a rongeur up to this groove. The depressed bone was then pried up and removed. The dura pulsated so feebly that a clot was suspected and an exploratory incision was made, but no clot was found, and the incision was closed with a single suture. Two small pieces of bone were replaced on the dura, and the scalp flap was then brought into position and sutured, a small drainage-tube being used. On account of the magnitude of the operation already performed and the condition of the patient, it was decided to defer exploration of the anterior depression. The periods of restlessness occurred at longer intervals, and the cephalic cry disappeared after the operation. Muscular co-ordination was perfectly re-established. On the third day the patient had become quiet and tried to talk, but was unable to articulate. On the fifth day there were three very severe syncopal attacks, probably from over-stimulation. On the ninth day after the operation the patient was very much improved and was able to play with toys. He still had periods of restlessness and was unable to articulate distinctly. The wound had healed by first intention except at the point of junction of the transverse with the curved incision, where it had a sloughy appearance, with some sero-purulent discharge. On the eleventh day a second operation was done. The patient was etherized, and Broca's center was located as follows: A line was indicated from the tip of the mastoid process of the left temporal bone to the alveolar process of the superior maxillary. Parallel to this another line was indicated from the external angle of the orbit to a point 5 cm. posteriorly. The greater depression lay just above this point, and around this as a center a horse-shoe-shaped incision was made with its convexity upward, one end of the incision being behind and above the external angle of the orbit, the other end two inches and a half posterior to this. The incision was carried down to the bone and the flap dissected downward. A fissure was found corresponding nearly to the coronal suture and gaping an eighth of an inch. The entire frontal bone was found depressed, so that it lay below the level of the parietal bone. The depressed edge was removed with the rongeur, increasing the space between the bones to a third of an inch for two inches This was done because the frontal bone could not be elevated, for it returned to its former position immediately. In this area a clot was found of about the size of a 25-cent piece lying over Broca's center, which was cleaned away, and the dura was found slightly pulsating. The dura was not opened. The wound was closed and an antiseptic dressing applied. Improvement in speech was noted on the day after the operation, and the patient's condition had since been one of continued improvement. At the present time the wound presented four narrow granulating surfaces of varying sizes; in the posterior one there was a sinus leading down to dead bone—the last fragment of the grafts, which did not take. The patient talked fairly well, his intelligence was fair, and co-ordination was perfect.

The Surgical Treatment of Appendicitis.—Dr. Charles McBurney read a paper on this subject (see page 676). He also

presented four patients from whom he had removed the vermiform appendix.

Dr. A. G. Gerster said that he had listened with a great deal of pleasure to Dr. McBurney's extremely interesting report of the excellent work which he had done in a heretofore dark region of surgery. Just such observations and results were necessary to demonstrate incontestably those views which had been contested by the speaker and others for a long time. He had, however, been thoroughly converted to the views expressed in the paper. He believed that a great deal of light had been shed on the subject which was extremely valuable and stimulating to further efforts in this special field. The thanks of the profession and of humanity were due to the men who achieved such results in spite of professional opinion in opposition to the feasibility of the procedure.

Dr. Robert Abbe said that, in reference to the case cited in which there had been a fall of temperature while the inflammatory process was progressing, it had occurred to him, and he presumed to others, that there was often a lull in the severity of the symptoms on the second or third day which was rapidly succeeded by progressive peritonitis, and that these were almost uniformly fatal cases. This lull was often misleading as to the real condition of the patient and the progress of the attack, and was, in his opinion, the opportunity for safe surgical interference.

Dr. Gerster said that there was a symptom observed in other cases where pus or septic material was causing high tension. High fever existed, and when rupture occurred there was a simultaneous lull in the symptoms. In osteomyelitis, where the periosteum was subject to great tension, high temperature and serious symptoms existed while this tension lasted. When perforation of the periosteum took place there was a lull, the symptoms reappearing when an extra-osseous abscess formed.

The President showed an appendix removed in a case of recurrent appendicitis which had come under his notice some two weeks before. The patient was a sailor, twenty-six years of age, who had been admitted to the Chambers Street Hospital on the 25th of October. He had had at that time a great deal of pain in the right iliac fossa and had required morphine. The speaker saw him the day after, when his temperature was 100·5°; there was some rigidity of the abdominal muscles of the right side with tympanitic resonance, but no tumor could be felt. There was marked tenderness on pressure midway between the umbilicus and the right superior spine of the ilium. There had been a previous attack fourteen months before, and another at some period about two years before that. The man at first declined operative interference, but the next day consented to it, although his symptoms then seemed less marked. The speaker was assisted at the operation by Dr. McBurney. After the incision was made the intestine was drawn aside and the caput coli raised, but there was no sign of the appendix. On handling the lower end of the ileum and its mesentery, close to its attachment, some thickening was found. On tearing apart some tissues of new formation on the lower side of the mesentery, the appendix was exposed. The appendix, which was closely adherent to the mesentery, was then detached and tied off at its base with a catgut ligature and removed. The microscopical examination had shown the tissues of the organ to be studded with small round cells, the structure proper of the mucous membrane being entirely lost. Within the organ there were only two or three small concretions. No pus was found and the adhesions which bound the appendix down were evidently such as had resulted from previous attacks.

Dr. R. F. Weir thought that Dr. McBurney had confirmed a statement that had been made previously—namely, that the danger of the disease was greater in many instances than the danger from the operation. Among the eleven cases in which he had operated during the past year he had encountered three in which the abscess was deeply situated in the abdomen, and in which the parietal peritonæum was not involved—in other words, where the general peritoneal cavity had to be opened before the pent-up pus could be liberated. All the others had been met with later in the course of the disease, with the general abdominal cavity shut off by more or less parietal adhesion. After touching briefly on the history of several of these latter cases of appendicitis, the speaker narrated the details of the case of a young medical man who had been seized on a Saturday evening with pain in the iliac fossa and sent for him on the next morning. He found tenderness in the right iliac region which was severe enough to prevent manipulation and examination. Opiates were administered. The temperature, which had been 102°, began to fall, and by the evening of the second day it was only a little above 100°. This led to the hope that delay might be safe, but during the night the patient suffered excessive pain with elevation of temperature, although the next morning the temperature had fallen again. The patient was now considered to be in a critical condition, and an operation was performed fifty-two hours after the beginning of the pain. It was difficult to keep the bowels within the cavity during the operation. When the omentum was raised and the appendix exposed, three or four ounces of pus escaped. The organ was found to be perforated and to contain one solid fæcal concretion. The peritoneal cavity, which had become somewhat smeared with the pus of the abscess, was washed out with a salicylic-acid solution and everything possible was done, but the end was a fatal one.

Two other cases were described, in one of which laparotomy with ablation of the appendix had been performed with success within fifteen hours of the inception of the disease. The third patient, operated on at the end of fifty hours, was relieved, but succumbed on the fifth day, from uræmic convulsions. Another case, which had made a profound impression upon him at a time when he had formulated the opinion that it was well to operate early in this disease, was that of a nervous and impressible young woman who was suffering from pain in the right iliac fossa. He had made, under ether, prior to an intended operation, a thorough examination, and, although the belly was unusually lax, had found nothing but some thickening of the right broad ligament. The patient had then, on the speaker's withdrawal from the case, passed into the hands of a gynæcologist, who diagnosticated an inflammatory process in the right broad ligament. Under treatment this young woman had recovered. He had also seen three cases in which the origin of the tumor might have led to its being considered perityphlitic, although it was from a lesion of the gall-bladder. In two of them the disease had been proved to exist, and in the third it could fairly be assumed to have existed. In the first instance the incision, just above the ilium, had given vent to a quantity of orange-colored pus. The patient's condition forbade an extended operation, and no surprise was excited when the post-mortem showed a rupture of the gall-bladder from multiple calculi. The second case was that of a man who had suffered attacks of hepatic colic, but in whom the tumor was found below the umbilicus and to its right, in the situation of a perityphlitic abscess. This was incised about the third day, letting out about three or four ounces of laudable pus. In this case the appendix had not been found, and really no attempt had been made to find it, for fear of disturbing the limiting adhesions. The fatal result of what was apparently a promising case showed a rupture of the gall-bladder. In the third case the tumor had been higher up and close to the gall-bladder, but this patient had recovered.

Dr. F. Lange said that he had experienced considerable difficulty with one case in finding the appendix. After some tedious search he had found it lying across the cæcum and to the right. The patient had been presented at a previous meeting.

Dr. Weir said that, though the appendix was occasionally found bound down by a webbing of adhesions after repeated inflammatory attacks, yet it was in the majority of cases found free and swollen, looking somewhat like the erect penis of an infant.

Dr. C. K. Briddon had seen many cases in which the organ was found lying over the upper part of the pelvis, and one in which it occupied the floor of the cavity. He should consider the region just above Poupart's ligament as rather low. He thought that, from the fact of its being often found over the brim of the pelvis, an examination *per rectum* would throw some light on the cases.

Dr. McBurney said that it seemed to him a matter of small moment in what direction the appendix pointed, or how long it was. What was really important was to locate, if possible, the situation of the inflamed portion, and, as this was almost invariably near the point of attachment of the appendix to the cæcum, and the perforation generally occurred within an inch of this point, examination *per rectum* was of little value. But by the method of examination of which he had spoken it would always be possible to discriminate these cases from peritonitis due to other causes and from inflammatory conditions of the pelvic organs in women.

Dr. Briddon said that, whether the method he had suggested revealed the trouble or not, it would not influence him in regard to operating.

Dr. Frank Hartley presented a patient and reported the history of his case. (See p. 684.)

Officers for the Ensuing Year were elected as follows: President, Dr. C. K. Briddon; vice-president, Dr. Robert Abbe; secretary, Dr. Frank Hartley.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION IN MEDICINE.

Meeting of November 15, 1889.

The President, Dr. Lombe Atthill, in the Chair.

Morphinism.—Dr. Foot drew attention to the increasing prevalence of the use of the hypodermic syringe as a medium for the vicious introduction of morphine into the system. Morphinism (a word introduced by Levinstein) was, in some parts of Europe, at present almost a matter of fashion, gifts of handsome syringes in silver cases were exchanged on festive occasions, and reciprocal injections of morphine made on favorable opportunities. The subject was one of special interest to medical men, because of the number of their colleagues who had fallen victims to it. Some said this was a just retribution upon those who were responsible for the practice. Dr. Foot thought it more charitable to attribute the habit to (1) the relief of pain, (2) insomnia, (3) melancholia, (4) curiosity, or (5) imitation. A receptivity for morphine was not possessed by every one; all its effects were unpleasant to many. Few morphinists were satisfied with less than three grains in the twenty-four hours; many used more than ten times that amount. The diagnosis or detection of the morphine habit was discussed, and stress laid upon the peculiar untrustworthiness of the patient's own statements as to the amount or frequency of the dose. The prognosis in morphinism was not at all favorable; the probability of a cure might be estimated by attention to the following points: the duration of the habit, the persistence or not of the exciting cause, the physical and nervous constitution of the patient. Relapses were very frequent; successful treatment, unless under the most favorable circumstances, was hardly possible in the patient's home.

As to the treatment, emancipation from morphine slavery was unattainable by voluntary effort. The process of cure, or of demorphinization, required more moral and physical courage than was at the disposal of a morphine habitué. The treatment was considered under the heads of the *deceptive* plan, the *substitution* plan, the *tapering-off* plan, and the *abrupt withdrawal* plan. The two first methods were not to be seriously considered in the treatment of confirmed morphinism. The tapering-off plan involved prolonged misery during the weaning process. The abrupt plan was frequently followed by the dangerous group of *Abstinenzsymptome*. A modification of the two latter methods might be adopted—the complete withdrawal of the morphine, not abruptly, but in from six to twelve days. The fœtus *in utero* felt the demorphinization of the mother, and also, when separated by birth from a morphinist mother, exhibited reactionary symptoms such as prolonged insomnia. In some cases morphinism need not be interfered with, in others it was even beneficial to acquire the habit. Allusion was made to the occurrence of morphinomania in animals.

Dr. MacSwiney recalled a case recorded in Anthony Todd Thompson's text-book on materia medica, a laudanum-drinker who, though he was in the habit of taking a wineglassful at a time, was cured by the gradual elimination or deprivation process. A quart-bottleful was procured, and for every glass of the drug taken out a glass of water was substituted, with complete success.

Dr. Falkiner mentioned the case of a school-teacher whom he had seen take five ounces of laudanum at a draught, and who afterward gave up the habit.

Dr. Eustace advocated the abrupt and sudden total withdrawal of the drug in morphinism, and of the spirits in alcoholism, as the best and most scientific treatment. As a rule, only a partial cure was effected, for sooner or later temptation led to a relapse.

The President's experience led him to advocate gradually diminishing doses.

Dr. Walter G. Smith said it was difficult, in regarding the action of drugs of a certain class on the higher parts of our nervous system, to restrict consideration to any particular drug, such as morphine, without bringing into consideration also the effects of other drugs of allied action. Thus there were two groups which might be arranged in the ascending scale of action—one, the alkaloids, and the other the members of the fatty series, including chloral, ether, alcohol, etc. Dr. Foot had adverted to this class distinction, indicating that the prolonged use of one of the members of the fatty series was liable to induce general tissue change and lead to death, whereas members of the alkaloid series affected chiefly the higher or psychical, emotional, and intellectual nerve centers, causing death by their action on the respiratory and cardiac centers. With regard to treatment, he did not think any amount of discomfort entailed on the patient was a good reason for objecting to the sudden total withdrawal of the drug.

Dr. James Little thought that Dr. Eustace had sufficiently answered his own recommendation by giving an account of his own sufferings. Even though the ultimate good of the patient was in view, he did not believe in disregarding the horrible torture, the intolerable suffering produced by sudden total withdrawal; and, on the contrary, he thought the nervous system of the patient never recovered entirely from the wreck of misery and wretchedness produced by such treatment. For his own part, he had seen patients get on very well by gradually stopping the drug.

Dr. Foor said he thought Dr. Eustace had given the keynote to the discussion. There were two classes of cases to be considered. Thus, Charcot drew a distinction between what he called morphinism and morphinomania, the former being the state of a person who had recently acquired a taste for morphine, whether from temptation, imitation, curiosity, or for relief of pain; and the latter the condition of mental deterioration only known to exist in those with such a craving, insufferable hunger that destroyed body and soul, they would jump into hell to get their morphine. The morphinomaniac in his periods of satisfaction would bewail his condition, but would otherwise have no real desire to be cured, and would seize the first opportunity of getting morphine. He must therefore accordingly be treated as a lunatic. On the other hand, the morphinist wished to be cured and would assist in carrying out the graduated, or tapering-off plan, which was the advisable treatment in such a case, for experience showed that total withdrawal was followed by what the Germans called "*Abstinenz-symptome*," or reactionary effects, which had sometimes proved fatal.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION IN SURGERY.

Meeting of November 8, 1889.

The President, Mr. Austin Meldon, in the Chair.

The Operative Treatment of Tubercular Disease of the Knee Joint.—Mr. Thomson read a paper on the operative treatment of tubercular disease of the knee joint. Having referred specially to the infective character of tuberculosis, he pointed out that where the condition of the synovial membrane demanded operation the disease was rarely so limited as to be removed by simple erasion. In some cases where the cartilages were apparently quite healthy, the bone was found on section to be diseased, and yet this was the sort of case which the thoroughgoing eraser would regard as typical for his treatment. The securing of movement after erasion was being abandoned, and that being so, ankylosis could be more surely and quickly secured between two level bone surfaces, as in excision, than by the opposition of two irregular cartilage-covered surfaces. Shortening sometimes occurred where no operation was done, so that this objection could not be fairly argued as a result of excision. If the disease was extensive enough to lead them to the epiphysary line, they must go there even at the risk of shortening. He maintained that excision was safer and more satisfactory than erasion. He had excised the knee seventeen times without a death; but in two of his cases, before adopting the combined methods of fixing by Thornley Stoker's dowels, and the use of his own hoop-iron splint, he had to amputate. In his hospital in fifty successive cases of excision of the knee joint there had only been one death—a result which left little to be desired.

Mr. Tobin thought that Mr. Thomson had not indicated clearly what cases ought to be submitted to operation, nor had he suggested an answer to the difficult question, "Shall I operate at once, or wait, and, if I wait, how long?" It was important to determine whether an operation should be performed at once in every case diagnosed as tubercular synovitis, or whether it would be desirable to wait till the bones were attacked, or still longer, till suppuration had set in. For his own part, he would wait longer than Mr. Thomson seemed to approve, having regard to the fact that by the use of Thomas's splint, complete rest, and change of air, he had seen great cures effected. Moreover, he did not see that a resected knee had much advantage over an amputated leg supported by the modern improved artificial appliances. He sometimes found that while a straight limb was obtained for three or four years, it afterward got crooked.

Sir W. Stokes indorsed Mr. Thomson's views as to the superiority of excision of the knee over the operation of erasion or arthrectomy. As to the time for operation, it was impossible to lay down a rule, but, speaking from his own tolerably large experience of the operation, he held that as soon as the surgeon satisfied himself he had to deal with tuberculous disease of the joint, the earlier the operation was performed the better was likely to be the result. He repudiated the statement put forward in more than one hand-book of operative surgery that knee-joint resection would soon be an operation merely of history. On the contrary, the operation never enjoyed a greater reputation than at present, and he believed its reputation was likely to increase. He preferred a splint which he himself had devised to Mr. Thomson's, as insuring absolute fixation and rigidity of the limb, and also as rendering unnecessary the doweling as recommended by Mr. Thornley Stoker.

Mr. J. K. Barton, referring to the question raised by Mr. Tobin of the general advisability of the operation, mentioned the case of a housemaid upon whom excision had been performed, and who discharged her duties a whole year without her mistress being aware that there had been anything the matter with her, while he submitted that had she suffered amputation, the mistress could not possibly have remained ignorant of the fact.

Mr. Tobin intervened to deny that he had questioned the advisability of excision, an operation which he frequently practiced himself, and said his point was as to the cases suitable for that operation.

Mr. Barton said the real point was as to the procedure, and he had no doubt there were cases of disease of the synovial membrane in which erasion might be profitably performed instead of excision; but erasion could not be favorably compared with, or take the place of, excision in cases of tubercular disease.

Mr. Lentaigne concurred with Sir W. Stokes that excision was the best treatment for tubercular disease of the knee joint, and ought to be performed as soon as the disease was recognized; and if the limb became crooked afterward it was the fault either of the surgeon or the patient, and very often of both.

Mr. Bennett questioned the dictum that excision was the proper and right treatment once the diagnosis was tubercular disease, and contended that Mr. Thomson had not committed himself to such a proposition once he admitted that he dealt with excision in reference to hospital patients and not the treatment of patients of the upper classes. Indeed, Mr. Holmes's challenge had never been accepted as to any case of excision having been done in private practice. (Mr. Thomson: "I have had one.") The vast majority of such cases in the upper classes were treated without excision. Patients had recovered from white swelling of the knee with all the due care and rest that could be given in private practice. But where tubercular disease was running riot there was no longer the alternative of palliative treatment, and it then became a choice between excision and amputation. At the same time he had seen cases of recovery take place even after suppuration had set in.

Mr. Swan remarked that the spontaneous cure alluded to by Mr. Bennett was the established practice of a great many eminent London surgeons, including Howard Marsh and Owen, the latter of whom had extensive practice with children, and believed in letting the joint suppurate; but the average period of cure was three years—a longer time than could be afforded for hospital patients.

Mr. Franks took up Mr. Holmes's challenge and said he had

himself operated by excision for tubercular disease of the joint in the case of a female patient with success. Patients could not be kept in hospitals for years awaiting the result of spontaneous cure when, probably, as good a result could be had in a few months.

Mr. THORNLEY STOKER held that, whereas excision was an operation of established repute, that of erasion was on its trial, and accordingly no decisive opinion could be expressed about it. For the past two years he had been anxiously watching to get a suitable case for erasion, but in every instance where he commenced the operation he had been obliged to complete it by carrying out excision.

Mr. CORLEY said, as regarded when to operate and what cases to operate on, there was no test but experience, nor could the surgeon tell, until after the joint was opened and a prepared section placed under the microscope, whether the disease was tuberculous or not.

Mr. WHEELER held that where excision was necessary it should be done early. The bones should be always cut. He had himself performed the operation of excision of the knee joint in two private cases, and now one of the patients was able to walk nine miles at a stretch.

Mr. THOMSON had advisedly narrowed the scope of his communication by omitting conditions anterior or preliminary to the question of excision *versus* erasion, two operations which he found pitted against each other. As to the time to operate, the sooner the better, once the surgeon saw distinct pulpy degeneration of the synovial membrane.

Miscellany.

Report of the Sanitary Committee on the Manure Question, with Recommendations.*—It is only necessary, we trust, in order to emphasize the sanitary importance of the manure question in this city, to invite the attention of the commissioners to the large number of complaints that are made by the people of all stations of life, calling the attention of this department to the annoyance to them from the foul odors caused by the present method of handling manure. All of these people assert that they are seriously annoyed by the odors—some, of course, more so than others. It is maintained by many that these odors enter their living, sleeping, and eating rooms, interfering with rest, causing nausea, loss of appetite, and consequently leading to depreciation of the vital forces that depend for their proper vigor on physical and mental rest, good appetite, and good digestion. Reputable physicians complain frequently in similar terms in behalf of patients, not infrequently using vigorous methods of expression as indicative of disgust or distrust on their part with the seeming indifference of the sanitary authorities of the city. While it is true that much has been done already to lessen the burden of the people in this respect, still complaints of a similar tenor are made continually, and therefore it appears to be high time for the department to take such action as will give to the people, if it be possible, freedom from the annoyances and ill results caused by the foul and offensive odors that arise from the present method of handling stable manure. The foul and offensive odors resulting from other classes of business carried on in the city are subjected to rigid control and strict surveillance by the department when their source is ascertained. In the manure business, however, in which no question can arise as to the genuine cause of foul odors, or that their effects on the human system are parallel with the results of foul odors from other causes, no such comparatively decisive steps have yet been taken to abate or abolish them.

For the practical consideration of the problems that arise in connection with the disposal of the manure made within the city of New York, and the relief of the people of the city from the foul and offensive odors arising from it, it seems well to divide the interests directly associated with the production of it into three distinct classes—viz., (1) the producers of manure; (2) the manure merchants, or "riders" of manure; (3) the consumers of manure.

The direct producers of this product are horses, of course. Of these there are in round numbers about 60,000 below One Hundred and Thirty-fifth Street. It is estimated that a horse will drop about 15 pounds of manure *per diem* on the stable premises, which will make the entire daily product of manure about 900,000 pounds, or 450 tons. Estimating each load of manure "ridden" from the stables at about 1,000 pounds weight, we find that on this basis about 900 loads daily are removed from the city. The fact is, however, that the nearer amount is about 1,200 loads daily, irrespective of the weight of a single load.

The close association of the owners of horses with these animals is the excuse for making now a change of statement by considering the owners themselves as the practical producers of this product. The owners of these animals can be separated into certain definite and well-recognized divisions, for the purposes of the remarks that are to follow: (1) Persons of leisure, to whom the horses are but another means of pleasure and enjoyment; (2) persons engaged in business in which these animals are employed as an aid, convenience, or necessity; (3) the poor men who, by thrift alone, secure to themselves the ownership of one or two horses, upon the proceeds of the direct use of which they themselves and their families depend for livelihood and support. The horses of the first class are kept in private stables and in first-class boarding-stables, the expense in the latter instance being from twenty-five to thirty-five dollars a month for each horse. Those of the second class are also kept, as a rule, in boarding-stables, but of a less pretentious character than the former. In this instance the expense varies from twenty to thirty dollars a month for each horse. The horses of the third class are kept either on the premises occupied by the owners and their families for living purposes, or in stables of a humbler class, opening into alleys, lanes, and yards. From fourteen to twenty dollars a month for each horse is a fair estimate of the cost of stabling in the places last mentioned. The manure is removed from all the stables in the same manner—that is, in carts, at specified intervals, for a stipulated compensation. The stipulation prices for removal vary from one to twelve dollars *per annum* for each horse. In a fair percentage of instances (twenty-five) the manure produced by the humblest class of owners is removed by the manure "riders" without charge.

It is of special interest at this time to note the fact that, when the horses are stabled on the living premises of the owner, the wagons, carts, etc., are commonly parked in the street in front of the premises; but when the horses are aggregated in a common stable located elsewhere, the vehicles are then parked in the stable-yard and in the lane or alley adjoining the stable; sometimes, of course, in the street, as before. The sanitary advantages of the aggregation method of stabling horses are obvious at a glance, for by this plan the number of stables in the city are lessened, and their proximity to dwellings is reduced to a minimum; the parking of vehicles in the streets in front of human habitations is much diminished, together with the nuisances dependent on their presence in the streets.

The manure merchants or "riders" of manure are, as a rule, most estimable and law-abiding citizens. In many instances the amount of money invested, as well as the energy and enterprise displayed by these men, is calculated to entitle them to the respect of those engaged in other and more fastidious occupations. It is the custom of those engaged in riding manure to make such terms with the producer as are mutual, as is elsewhere shown. The frequency of the removal of manure depends on the amount made and the ability to properly store it on the premises, etc., together with the interruptions dependent on the exigencies of the weather. It is important to notice the manner of removal. It is forked from the manure vault or pit to the floor of the stable, or the sidewalk, or into the cart, as best suits the convenience or fancy of the laborer engaged in the work. The time occupied in the transfer from the pit to the cart is from thirty to forty-five minutes for each load. Always one and sometimes two laborers are engaged with each cart, the number depending, of course, on the difficulties of load-

* Read before the Section in Public Health and Hygiene of the New York Academy of Medicine, December 6, 1889.

ing, as modified by the size, shape, and situation of the manure vault. The loads of manure are drawn through the streets to a "dump" at the river front, where the manure is transferred, directly or indirectly, to a scow for removal from the city.

The markedly unsavory nuisances that are unavoidably associated now with this branch of the business are caused, first, by the storage and handling of loose manure on the premises, causing odors in and about the stable building which taint the textile fabrics of the carriages and of the occupants of the stables, and it is asserted by some that even the varnish of the carriages is tarnished and often permanently disfigured. The escape of these offensive odors into the external air annoys the passers-by and also the occupants of the contiguous dwellings. Second, the streets are littered by the falling of manure and straw from the carts while *en route* to the "dump," and often the offensive odors of manure are plainly discernible in the streets through which the loaded carts are passing. Third, the dumping or unloading of the manure at the docks is complained of by many as being offensive to the sense of smell and by all as offensive to sight. The collection and the removal of manure to the scows that transport it from the city requires, as before remarked, a considerable outlay of money, together with much energy and enterprise. Thus employment is furnished to about four hundred laborers (396). These men receive each about $1.75 *per diem* for services. Nearly three hundred carts (296) of all sizes, mostly single, are employed for the purpose. Each horse and cart hauls from two to six loads a day, the number depending on the distance drawn and the convenience of handling. The great majority (226) of the carts haul five loads in a day. It now becomes a comparatively easy matter to estimate approximately the amount invested in this business directly, together with the amount paid for labor to establish the practical application of it. The four hundred (396) laborers earn about $1.75 each *per diem*, which earning (about $207,900 *per annum*) forms the principal item, no doubt, of the annual support of three times that number of persons. The three hundred (292) horses can be safely estimated as costing $200 each, or a total of $60,000. The carts (296) cost about $113 each, making a total of $33,448 for these vehicles. Three hundred (292) sets of harness, estimated at $38 per set, add $11,400 more to the outlay. The expense of shoeing the horses, wear and tear of the vehicles and harness, etc., can not be less than $7,500 or $8,000 per annum additional—making a grand total of about $320,000, including the yearly wages paid for help. If to this amount be now added the yearly expense incurred for the leases of premises for "dumps" and for emergency storage, this total will be increased much more. The expense of scows, if they be owned by the manure merchants, or the expense of the hire of them if they be not, becomes a fixed matter under any system of action, since they are loaded to the fullest capacity at all times. It is reported that from twenty-four to forty-eight hours elapse from the time of the removal of the manure from the stables of the city before it is sold by the "rider," or stored by him outside the city limits for the purpose of "ripening" for sale. Long Island, New Jersey, and Westchester County furnish the principal markets of disposal.

The consumers of this manure are those who till the soil, and they reside principally in the parts of the country contiguous to the city, as just indicated. They receive the product in the form of bales, or in the loose state, as the occasion demands or their fancy directs. As yet, but a comparatively small amount of manure is baled.

In considering the question of the policy of baling manure, it seems proper that the subject should be divided into three distinct parts: 1, the baling itself; 2, the handling after baling; 3, the effect of baling on the fertilizing qualities of manure. The last of these divisions will be considered first. This division directly interests the consumers of manure. They will naturally inquire as to the effect of baling on the fertilizing powers of the product. If it shall appear that manure, when baled, is as serviceable as when unbaled, then, certainly, no reasonable objections to baling can be urged by the tillers of the soil; on the contrary, they should welcome the change as one that facilitates their labor, and consequently adds to their personal comfort. As to the effects of baling on the fertilizing properties, it is not necessary to theorize at all, since the science of chemistry can settle the fact beyond dispute.

The following report of the comparative analysis of baled and unbaled manure, made by Mr. E. W. Martin, Chemist of the Board, speaks not only for itself, but also for the committee, regarding the matter:

New York, *June 15, 1889.*

E. H. Janes, M. D., *Assistant Sanitary Superintendent:*

Sir: I have the honor to make the following report with regard to changes in the commercial value of horse manure through baling the same. The method of analysis employed was that recommended by the Association of Official Agricultural Chemists, Washington, 1888.

First Set of Experiments.—One bale of manure, put up at the stable of the New York Cab Company, Forty-fifth Street and Fifth Avenue, and a quantity of the same manure, unbaled, were sent to the disinfecting station at the foot of East Sixteenth Street on March 28, 1889, and kept under cover.

Samples of the above specified manure were taken, and analyzed by Assistant Chemist Beebe on May 3, 1889, with the following results:

Analysis number.	Character of sample.	Ammonia on dry basis.	Total phosphoric acid on dry basis.	Insoluble phosphoric acid on dry basis.	Moisture.	Remarks.
		Per ct.	Per ct.	Per ct.	Per ct.	
5,867	Unbaled manure.	2·55	1·54	0·26	51·73	Very slightly molded.
5,869	Baled manure...	2·41	1·40	0·25	50·82	Completely molded; "fire-fanged."

Second Set of Experiments.—Two bales of manure, put up at the same place as in the first experiment, together with loose manure, were taken to the disinfecting station on May 8, 1889, and treated as follows:

Loose manure inside.

One bale exposed to weather outside.

One bale inside.

Samples of the above specified manure were taken, and analyzed by Assistant Chemist Beebe on June 4, 1889, with the following results:

Analysis number.	Character of sample.	Ammonia on dry basis.	Total phosphoric acid on dry basis.	Insoluble phosphoric acid on dry basis.	Moisture.	Remarks.
		Per ct.	Per ct.	Per ct.	Per ct.	
5,891	Loose manure inside.	2·72	1·68	0·21	49·64	Molded.
5,892	Bale exposed outside.	3·10	1·83	0·21	44·80	Molded completely from center out—still warm.
5,893	Bale inside.	3·07	1·64	0·17	31·17	Molded completely; cold.

From the above-given results, I am of the opinion that the baling of horse manure and keeping in bales for thirty days does not injure its commercial value, nor is there reason to believe that baling for a longer period than this will lessen the commercial value.

Respectfully submitted,

[Signed.] Edward W. Martin,
Chemist.

This report has been examined by so eminent an authority on chemical and sanitary matters as Professor Charles F. Chandler, of Columbia College, and a former president of this department. In a communication to me regarding this report, Professor Chandler says:

School of Mines, Columbia College,
Corner Forty-ninth Street and Fourth Avenue,
New York, *August 22, 1889.*

Dear Dr. Bryant: The manure question has always been one which has been a source of a great deal of discussion and difficulty. It came up every year while I was connected with the Health Department, and no plan was ever proposed that gave satisfaction to all concerned. When the subject of baling manure was first suggested it struck me favorably, and I visited the yard on the East River where the process was being carried on, and it seemed to leave nothing to be desired in the way of simplifying the handling of the material. It was suggested by some parties that the fertilizing properties of the manure would be injured by the process, but I was satisfied at once, without making any analysis, that this could not be true. The manure was not wet enough to have anything squeezed out of it in the process of baling, consequently it could lose nothing in this way, and there was no more reason

for its losing valuable fertilizing constituents in baling than in rotting. I am glad to find that the very complete analyses which have been made by Mr. Edward W. Martin, your chemist, and his assistant, Mr. Beebe, entirely confirm this opinion, and show that the manure suffers no loss by the baling process. There is no reason why it should. I can not think of any suggestion to make beyond what I have said in favor of baling. I hope you will insist upon this process; it is the only radical improvement that I can think of in this connection.

Very respectfully yours,

[Signed.] C. F. CHANDLER.

Professor Maurice Perkins, Professor of Chemistry of Union College at Schenectady, a member of the State Board of Health, in a verbal communication to me, confirms all the above-named gentlemen have said. It is surely a supererogation to seek further facts in the matter in face of the positive statements of these eminent and distinguished scientific gentlemen.

The molded or "fire-fanged" appearance of baled manure naturally excites doubt in the minds of the consumers as to the integrity of the fertilizing qualities. This doubt, too, is settled by the analysis of "fire-fanged" manure made by Mr. Martin, as will be seen in his report. It is the opinion of the Committee that no good reason exists why the consumers of manure should object more to the baling of manure than the consumers of hay object to the baling of that product. In fact, it appears to the Committee that the consumers ought to hail such a measure with delight for the following reasons: 1. Baled manure is more easily and rapidly handled than the unbaled, and the handling is attended with no offensive odors or defilement of vehicles. 2. The fertilizing properties are not impaired by baling (see Martin's report), and, if necessary, it can be unbaled and "ripened" or combined with other fertilizing agents more quickly, conveniently, and economically than when in the loose state. 3. Farmers who market their produce in the city can return home with a load of baled manure without causing any offense, and with a practical financial advantage to themselves.

Second: Handling after Baling.—This division of the subject directly concerns the manure merchants or "riders" of manure. It is perfectly fair to assume that these people, like other business people, will be pleased with a proposition that will enable them to attend to their business in a shorter time, and at less expense to themselves, than is now done, provided the market value of their labor be not impaired by the method adopted. That the fertilizing properties of manure are not impaired by baling is already irrevocably proved; and that the market value depends almost entirely on these properties can not be denied. If, now, the properties be preserved, and at the same time the manure be presented to the consumer in a convenient, practical, and inoffensive form, then indeed should the market value be increased; certainly it can not be diminished.

The business can be done in a shorter time for the following reasons: 1. A given amount of baled manure can be handled more quickly than the same amount of unbaled manure, and without any offense. The same is true, also, of baled and unbaled hay. 2. Heavier loads of baled manure can be drawn during the same length of time than of unbaled manure. Twice as much (weight) baled as unbaled hay can be easily drawn at a load; and there is no good reason for the belief that practically the same relation will not hold good in connection with manure. 3. As no offense is created by the drawing of baled manure, the time of drawing can be modified to conform to the recognized customs of other businesses.

Less Expense to Themselves.—1. If it be true that a greater amount of baled than unbaled manure can be handled in the same length of time, it follows logically that a lesser number of horses, carts, etc., will be required to accomplish the given purpose; consequently the expense of handling will be proportionately reduced. 2. If it be true that heavier loads of baled than unbaled manure can be drawn in the same length of time, then it follows undeniably that the expense of hauling is lessened proportionately to the amount drawn. 3. If the relation between baled and unbaled hay, as regards the amount drawn in a given time, exists also between baled and unbaled manure, the expense of "riding" manure will be reduced at least one half by the baling process.

If, now, attention be directed to the amount invested by the manure merchants in horses, carts, harness, wear and tear, etc., it is apparent that the gain for them, even with a less favorable estimate, will be immense, if compared with the amount now invested. It is well to notice also the probable fact that with this system bales of manure, like those of hay, can be marketed directly, thus doing away with the special cars, scows, sloops, dumps, etc., which are necessary on account of the offensive nature of the product while in the loose or unbaled state. These results will lessen the outlay of the manure merchants, thereby enabling them in turn to lighten the expense of it, as related to the producer and the consumer.

The baling itself affects those engaged in all phases of the manure business, and concerns indirectly also all classes of the community. It directly affects the pockets of the former, and indirectly concerns the senses of the latter, and, as a rule, the effect on the pockets is productive of the more potent results of the two. The securing of the apparatus to bale manure properly can not in any way seriously incommode the first two divisions of persons mentioned in the beginning of this report, viz.:

"Persons of leisure and of business, who own horses as aids to pleasure and profit." I will not, therefore, question the sincerity of their good citizenship by a further consideration of themselves in connection with this point; they should be staunch supporters of whatever plan is shown to be productive of the greatest good to the greatest number.

How will the persons of the third division be affected by baling manure? It will be remembered that to this class belong:

"The poor men, to whom the proceeds of the use of one or two horses are the principal means of support of themselves and families." To expect each of them to make the outlay necessary to bale the manure of the horse or horses that belong to each is absurd and impossible of accomplishment; and, if it were possible, the requirement of it would be as unwise and unjust as it is burdensome, and as inconsistent as it is unnecessary. These persons should be permitted to put the manure in cheap barrels or other proper receptacles, in which it should be removed to the dump by the manure merchants, and the receptacles returned by them to the producer. The cost to this class of producers need be but little, if any, in excess for each horse of the price of the barrels—about $3.65 *per annum*, or one cent each day. It may be said that the manure merchant will not take the manure thus barreled and return the barrels without extra expense to the producer. Let us look for a moment at this phase of the subject. The producer will purchase and fill the barrels. A barrel will cost not to exceed ten cents; it will contain the "droppings" of one horse for from seven to ten days, equal to about 100 to 150 pounds, according to the size of the barrel, including the stable straw that will naturally enter into it. The producer will willingly give the manure to the "rider" and will pay him from five to ten cents for the barrel when returned. It is shown that the average number of loads of unbaled manure drawn daily is five, each weighing from 1,000 to 1,500 pounds. We will select the lesser estimate. Each load will then represent ten barrels of manure, each barrel containing 100 pounds. At this figure the "rider" receives 5,000 pounds of manure daily from the producers for nothing, and is paid for returned barrels $2.50 to $5 each day.

It is estimated that the gain in time of loading barreled manure over forking loose manure into the cart will be substantially offset by the greater length of time taken to empty the manure from the barrels at the dump. Surely the manure merchants, who will gain so much from handling baled manure, can well afford to remove the barreled manure, even if they themselves furnished the barrels and return them. It is an enterprise, surely, that many, independent of the manure merchants, would grasp at once, to say nothing of the farmers, who would return from the city with manure after having marketed their products. There is no doubt that many worthy and enterprising persons would appear at once who would gladly accept the opportunity to remove the manure inoffensively for the modest remuneration that would follow. Not a thing is wasted in this city, except by those who do not need it, or those who do not appreciate its value. The same enterprise that gathers rags from the gutters will satisfactorily solve this element of the subject. In view of these facts, and the demand of the people of this city for relief from the foul and offensive odors that constantly

arise as the result of the present method of handling, the committee respectfully recommend that the Sanitary Code be so amended as to conform to the spirit and purpose of the following resolution:

Resolved, That on and after the fifteenth day of May, 1890, it shall not be lawful to remove stable manure from any stable or premises in the built-up portion of the city of New York, or to cart the same within the city limits, without a permit from the Health Department, unless the manure be pressed and baled as required by the Board of Health, and be properly covered while being removed and carted, or be inclosed in tightly-covered barrels or receptacles approved by the Board of Health, so as to prevent the escape of all offensive odors and liquid matter. Respectfully submitted,

[Signed.] Joseph D. Bryant, M. D., *Chairman*,
William M. Smith, M. D.

Mortality in Cities in the United States.—The following table represents the mortality in the cities named, as reported to Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, and published in the abstract of sanitary reports received by him during the week ending December 13th:

Cities.	Week ending—	Estimated population.	Total deaths from all causes.	Deaths from— Cholera.	Yellow fever.	Small-pox.	Varicloid.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y.	Dec. 7.	1,591,955	661	..	..	..	..	..	..	7	6	19	5	11
Chicago, Ill.	Oct. 5.	1,100,000	356	..	..	..	..	..	..	9	1	26	..	2
Chicago, Ill.	Oct. 12.	1,100,000	334	..	..	..	..	..	..	10	3	24	..	1
Chicago, Ill.	Oct. 19.	1,100,000	309	..	..	..	..	..	..	14	3	28	1	1
Chicago, Ill.	Oct. 26.	1,100,000	300	..	..	..	..	..	..	21	3	24	..	2
Chicago, Ill.	Nov. 2.	1,100,000	284	..	..	..	..	..	..	14	3	30	..	1
Chicago, Ill.	Nov. 9.	1,100,000	340	..	..	..	..	..	..	24	..	27	..	....
Chicago, Ill.	Nov. 16.	1,100,000	286	..	..	..	..	..	..	16	4	22	..	....
Chicago, Ill.	Nov. 23.	1,100,000	.....	..	..	..	..	..	..	10	1	26	..	1
Chicago, Ill.	Nov. 30.	1,100,000	256	..	..	..	..	..	..	4	3	20	..	2
Chicago, Ill.	Dec. 7.	1,100,000	325	..	..	..	..	..	..	8	4	30	1	2
Philadelphia, Pa.	Dec. 7.	1,040,245	352	..	..	..	..	..	..	14	5	20	2	2
Brooklyn, N. Y.	Dec. 7.	843,602	310	..	..	..	..	..	..	3	4	28	1	4
Baltimore, Md.	Dec. 7.	500,343	182	..	..	..	..	..	..	7	1	4	..	3
St. Louis, Mo	Nov. 30.	450,000	118	..	..	..	..	..	..	3	4	3	..	....
St Louis, Mo.	Dec. 7.	450,000	130	..	..	..	..	..	..	8	4	8	..	....
Cincinnati, Ohio.	Dec. 7.	325,000	110	..	..	..	..	..	..	1	..	6	2	1
San Francisco, Cal.	Dec. 1.	300,000	117	..	..	..	..	..	..	3	..	1	..	....
New Orleans, La.	Nov. 30.	254,000	121	..	..	..	..	..	..	3	..	2	..	....
Detroit, Mich.	Nov. 30.	250,000	73	..	..	..	..	..	..	2	1	7	1	....
Pittsburgh, Pa.	Dec. 7.	230,000	66	..	..	..	..	..	..	2	2	6	..	....
Louisville, Ky.	Nov. 30.	227,000	50	..	..	..	..	..	..	2	1	1	..	....
Kansas City, Mo.	Dec. 7.	180,000	30	..	..	..	..	..	..	..	..	3	..	....
Denver, Col.	Nov. 29.	135,000	43	..	..	..	..	..	..	3	..	2	..	....
Denver, Col.	Dec. 6.	135,000	33	..	..	..	..	..	..	4	1	1	..	....
Providence, R. I.	Dec. 7.	127,000	55	..	..	..	..	..	..	2	..	2	..	....
Indianapolis, Ind.	Dec. 6.	124,450	25	..	..	..	..	..	..	1	..	5	..	....
Richmond, Va.	Dec. 2.	100,000	31	..	..	..	..	..	..	..	..	..	..	....
Richmond, Va.	Dec. 9.	100,000	36	..	..	..	..	..	..	2	..	2	..	....
Toledo, Ohio	Dec. 6.	89,000	23	..	..	..	..	..	..	1	..	5	..	....
Fall River, Mass.	Dec. 7.	69,000	30	..	..	..	..	..	..	1	..	..	..	1
Nashville, Tenn.	Dec. 7.	68,531	25	..	..	..	..	..	..	1	..	..	..	....
Charleston, S. C.	Dec. 7.	60,145	27	..	..	..	..	..	..	..	..	..	..	....
Lynn, Mass.	Dec. 7.	53,000	12	..	..	..	..	..	..	..	..	..	..	....
Manchester, N. H.	Dec. 7.	42,000	10	..	..	..	..	..	..	1	..	1	..	....
Portland, Me.	Dec. 7.	42,000	16	..	..	..	..	..	..	1	..	1	..	....
Galveston, Texas.	Nov. 22.	40,000	16	..	..	..	..	..	..	1	..	..	..	....
San Diego, Cal.	Nov. 27.	32,000	5	..	..	..	..	..	..	..	..	..	..	....
Yonkers, N. Y.	Dec. 6.	31,000	5	..	..	..	..	..	..	..	..	..	..	....
Altoona, Pa.	Nov. 30.	30,000	3	..	..	..	..	..	..	1	..	..	..	....
Altoona, Pa.	Dec. 7.	30,000	4	..	..	..	..	..	..	1	..	..	..	....
Binghamton, N. Y.	Dec. 7.	30,000	3	..	..	..	..	..	..	..	..	..	..	....
Canton, Ohio	Nov. 29.	30,000	4	..	..	..	..	..	..	..	..	..	..	....
Auburn, N. Y.	Dec. 7.	26,000	15	..	..	..	..	..	..	..	..	2	..	..
Newport, R. I.	Dec. 5.	22,000	2	..	..	..	..	..	..	..	..	..	..	....
Newton, Mass.	Dec. 7.	21,553	7	..	..	..	..	..	..	1	..	..	..	....
Rock Island, Ill.	Dec. 1.	16,000	2	..	..	..	..	..	..	..	..	..	..	....
Rock Island, Ill.	Dec. 8.	16,000	3	..	..	..	..	..	..	..	..	1	..	....
Pensacola, Fla.	Dec. 7.	15,000	6	..	..	..	..	..	..	..	..	1	..	....

The New York Academy of Medicine.—At the next meeting of the Section in Obstetrics and Gynæcology, on Thursday evening, the 26th inst., Dr. A. Brothers will read a paper on "The Subsequent Behavior of Cases of Extra-uterine Pregnancy treated by Electricity."

At the next meeting of the Section in Laryngology and Rhinology, on Friday evening, the 27th inst., Dr. W. H. Daly, of Pittsburgh, Pa., will read a paper on "The Relation of Naso-pharyngeal Disorders to Deafness."

California Tokay Wine.—In the discussion of an interesting and suggestive paper on "Infantile Therapeutics," by Dr. John A. Larrabee, of Louisville, read at the recent meeting of the Mississippi Valley Medical Association, and published in the December number of the "New England Medical Monthly," Dr. Love, of St. Louis, said: "In the matter of stimulation I have found Tokay wine, or Hungarian Tokay wine, to be very valuable, but it has been high-priced—from $3 to $5 a bottle—so high as to be almost prohibitory, and beyond the reach of the majority of families. There was presented to me within the last year a bottle of Royal Tokay wine, a California production, bottled by the California Vintage Company, of 21 Park Place, New York city, at $1.50 a bottle, which gives exceptionally satisfactory results, and is just as good as any Tokay I ever used; therefore I think it is sheer nonsense to give families who can not afford it a prescription for a three- or five-dollar wine."

ANSWERS TO CORRESPONDENTS.

No. 304.—From the facts given in your letter, it is not likely that the trouble is due to the psoriasis; it probably depends on some affection of the central nervous system. Treatment is not very promising. A course of general tonics, especially the use of arsenic, seems indicated. It would be well to protect the nails with rubber or leather cots, and to apply to them some stimulating ointment, such as one of tar or of sulphur.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

THE RADICAL CURE OF VARICOSE VEINS OF THE LEG BY MULTIPLE LIGATION.*

BY CHARLES PHELPS, M. D.,
ATTENDING SURGEON TO ST. VINCENT'S AND TO BELLEVUE HOSPITALS.

SOME years ago my attention was specially directed to the dangers and inconveniences of varicose veins of the leg. In the course of examinations for civil appointment I had been very frequently compelled to reject candidates for this form of disease who were in every other respect physically well fitted for the position to which they aspired, and often when the varicosities were comparatively unimportant from any other point of view than this.

The frequency of crural varices has not, so far as I know, been made the subject of statistical research. That it is of great frequency is evident, not only to those who have had occasion to submit large bodies of men to physical examination, but to all those who have had under observation the inmates of alms-houses and hospitals for the care of chronic diseases. Perhaps no surgical disability will be found to exist more frequently unless it be chronic ulcer or hæmorrhoidal tumors. They are of acknowledged frequency in women and in those whose circulation is enfeebled by age or general debility. In my own experience they have occurred even oftener in young men, and especially in those of vigorous physique. No cause is more frequently operative than occupations like those of carrying-porters, truck-drivers, or car-drivers, which involve prolonged and severe strain upon the crural muscles by which the blood from the intermuscular veins is constantly forced into the superficial vessels. Car-drivers, I am told, habitually suffer from this condition, and the statement is confirmed by my own observation.

Contrary to the opinion of Mr. Callender,† that these varices are "not serious in their consequences," I have found that they do often involve the patient in serious and even fatal danger. How serious and dangerous these ordinary varicose veins may become is unhappily exemplified in more than exceptional instances. Since January, 1888, within less than two years, five cases of hæmorrhage from rupture of crural veins have occurred within my immediate knowledge or observation. One of these patients died in the ambulance upon arrival at St. Vincent's Hospital; another was brought into the ward at Bellevue in a moribund condition, and was resuscitated by transfusion, which resulted subsequently in gangrene and amputation of the arm. Two others reached the hospital in a condition of collapse, and could only be restored by hypodermic injections of digitalis and whisky. In the fifth case, occurring in the practice of Dr. S. G. Cook, profuse and repeated hæmorrhages were controlled with the greatest difficulty. And these were all varices of ordinary size. Within the same length of time I have operated in some score of cases where varices were so large and the tegumentary coverings so thin that, beyond the danger of practically spontaneous rupture, the patient was in constant and imminent danger of profuse or even fatal hæmorrhage from any trivial wound or contusion to which every person is at any moment liable. In several cases in which great pools of blood existed, formed by the aggregation of largely dilated and tortuous subcutaneous veins, I doubt not that death would result from a wound almost as speedily as from opening an artery of the first class. The profusion and force of the hæmorrhage may be estimated from that which often occurs from pricking some small vein in the course of the operation to be hereafter described; and it is to be remembered that neither prompt nor intelligent aid can be expected in a majority of cases of accidental hæmorrhage. The statement repeatedly made in surgical text-books, that placing the patient on his back and raising his leg will stop the flow of blood, is untrue and misleading, and liable to occasion a fatal result.

Aside from this consideration of actual danger to life, there are numerous cases in which the inconveniences from ulcer, eczema, œdema, or weakness of a varicose limb seriously embarrass the patient. Every practitioner is familiar with them. I may mention as an extreme instance a case at Bellevue when I was *interne* in which recurrent and intractable ulcerations, confining the patient to bed and hospital during years of the best portion of his life, finally led him to beg for amputation. This was eventually conceded, and, in the hands of a careful and accomplished surgeon, death resulted from septicæmia. But, short of such despair and lamentable result, patients suffering from varices are often enough absolutely unfitted for the active pursuits of life.

It seems, therefore, that the cure of this condition is more important than we have been taught to believe. I have also found it quite practicable when sufficiently thorough and effective measures are employed.

In cases where radical cure has been heretofore attempted the operative methods resorted to have been sometimes objectionable and almost always ineffective. Operation by ligature, if done at all, has been infrequent, and the ligatures have been placed at few and distant points. As in all other forms of operation recommended for radical cure, the design has been, even in the longest veins, only to effect obliteration at one or two selected points. There has been an apparent fear of purulent phlebitis, although veins have always been freely ligatured whenever their incidental division has made it necessary. Even when pyæmia was regarded as a legitimate accident of surgical interference it was not often directly chargeable to ligature applied to the veins themselves. With usual antiseptic precautions or without them, there seems no good reason why free ligature of veins should involve more danger when made with a direct purpose than when made incidentally in the course of other operations—*e. g.*, in the removal of large and vascular tumors where a great number of venous ligatures have always to be applied.

* Read before the Society of the Alumni of Bellevue Hospital, November 6, 1889.

† Holmes's "Surgery," vol. iii, p. 384.

The frequent anastomoses of superficial veins, not only among themselves, but with others situated in the deeper structures, and often imperceptible even upon careful examination, is the fact upon which I have based my opinion of the necessity of occluding the vein not only at occasional points, but throughout the whole length of every trunk involved. If there were no such anastomoses, obliteration of the vein at a single point high up in its course would serve to close it in its whole length below, and, whether excision, chemical coagulation, pressure, or the ligature were resorted to, would be a mere matter of convenience, modified by the operator's view of their comparative safety and efficiency. But, with constant intervenal communications, and many of unknown size and importance, it seems obvious that occlusion must be made at many points to insure probable stability of clot. In this view excision and chemical coagulation are, of course, impracticable. Aside from any question of purulent phlebitis, here, as elsewhere, the ligature is undoubtedly the most efficient agent of permanent occlusion, and, applied at sufficiently frequent intervals, the indication ought to be fulfilled and radical cure attained or at least approximated.

The result of numerous operations which I have since undertaken has fully justified this anticipation.

I selected at first very simple cases, where only a short length of vein was enlarged and only a few ligatures were required. In my first operation, which was at Bellevue Hospital in November, 1886, only two ligatures were used—one immediately above and one immediately below a single varicosity. In this and in the next half-dozen cases the vein was exposed by incision at each point and the ligature applied in the wound, which was then closed by a single suture. In these cases the wound usually suppurated to a trifling extent. Since that time the ligations I have done have all been subcutaneous and the formation of a single drop of pus has occurred only here and there in exceptional instances. I except three cases in which suppuration resulted at each point of ligature from the use of septic catgut.

In the ligation of varicose veins, as in all other operations, antiseptic methods and precautions in preparing the limb, in operating, and in dressing should be scrupulously observed. If, however, by neglect of these, some suppuration occurs, I have not found it to do serious harm beyond the trouble it occasions in multiplying dressings and detaining the patient in bed. The distance between the ligatures should vary in accordance with the size and varicosity of the vein and its apparent or probable anastomoses. In long stretches of large but comparatively straight veins the intervals should be not greater than from one to two inches. Where there are masses of dilated and convoluted veins forming a tumor, it is impossible to include it in the ligatures, and they must be applied all around it and as closely as possible to it, embracing every immergent and emergent vein that can be discovered. I use a catgut suture taken directly from the juniper oil and as small in size as possible consistent with necessary strength. The ligature should be carried by a straight needle, preferably the Keyes-Reverdin, immediately behind the vein, and the needle unthreaded and withdrawn. The needle is then carried immediately in front of the vein, through the openings which it has previously made, and the end of the ligature caught up and brought back. The vein is thus subcutaneously included in the ligature, which is then tied and cut short, and, if the catgut is fine enough, the knot pushed back beneath the skin. If, however, the vein is larger and coarser catgut has to be used, no trouble results from leaving the knot in the orifice of the wound; in fact, I prefer it. It occasionally happens that a large anastomotic vein, passing vertically inward to the intermuscular vessels, will prevent occlusion of a superficial vein at a given point, leaving a globular varix. In that case it may be necessary to tie the anastomotic branch. This may be done in the manner devised by Dr. E. W. Clarke, house surgeon at the New York Hospital, for approximating the fragments of a fractured patella. The ligature is carried deeply along one side of the vein; the needle is re-entered at the point of exit and with the ligature carried at right angles to the first line of puncture; it is then re-entered at the second point of exit and carried at right angles to the second line of puncture; it is again re-entered at the last point of exit and brought out at the original point of entrance, thus surrounding the vein.

After the dressings have been applied, the limb should be placed upon a posterior splint and the patient kept in bed for about ten days or two weeks, after which he should wear a roller bandage for two months.

The number of ligatures necessary to be applied is a matter of absolute indifference. The patient will recover just as rapidly whether he has few or many. I have often used from twenty to thirty upon a single limb. In one case forty-two were applied upon the two legs at one time, and sixteen more in a secondary operation. Few cases require less than ten or twelve, and the average number is greater. Usually both legs are involved, but one is always much less seriously affected than the other, and will require comparatively few ligatures and perhaps none.

I am unable to state with precision the number of cases in which I have operated. I can recall upward of one hundred in hospital and private practice, and, including those operated upon by gentlemen of the house staff, the whole number is probably upward of one hundred and fifty and the number of ligatures applied from two to three thousand.

For a time I did this operation in many instances for the simple purpose of observing results, and I still believe it justifiable in any case of crural varix where no special contra-indication exists. I now restrict it to those cases in which there is some direct purpose to accomplish, and which may be very well classified as follows:

1. Cases where this condition constitutes disability in physical examination—as for admission to the army or navy, or for appointment in a municipal department.

2. Cases where the size of the veins, the formation of venous tumor, or the attenuation of the coats or tegumentary coverings threaten hæmorrhage.

3. Cases where chronic ulceration or eczema exists.

4. Cases where circulation has been so far impaired as to occasion swelling of the feet or loss of power in the limb.

I have already said directly or by implication that this

procedure is devoid of danger, and the number of successful operations reported seems to warrant the statement. Sometimes, in passing the needle deeply, profuse hæmorrhage follows, from puncturing some neighboring vein, but this usually ceases when the ligature is tightened; if not, the next ligature applied immediately below always controls it. In the first of those cases, in which the veins were excessively large and the ligatures at the same time numerous, I feared some difficulty in the re-establishment of the return circulation, but it did not occur, nor has it occurred in any subsequent case. The elevation of temperature is moderate and the pain inconsiderable. In but five cases has there been any retardation of recovery. In one there was partial anæsthesia with paralysis, as I believed, from implication of a nerve in the popliteal region. These symptoms gradually disappeared after the solution of the catgut. There need be no danger of including a nerve of any considerable size, and if by chance some smaller filament be implicated, the effect is likely to be transitory and relieved as in this case mentioned. In three other operations, to which reference has been made, every point of ligature suppurated. I was able to trace this accident to the use of defective gut, by careful observation of other operations done at about the same time and in the same wards, with the same material. In another case occurring very recently, suppuration also took place at each point of ligature. It was at first attributed to an existent ulcer of fourteen years' standing, and to a considerable extent of surrounding unhealthy tissues. But in a few days each ulcerated point assumed an exact circular outline, clean cut as by a punch, suggesting another possible explanation. Everything healed, however, including the original ulcer, and the patient was discharged from the hospital, cured, four weeks from the time of operation. In some instances I have thought trivial suppuration, with some diffused inflammation of the leg, to be due to sepsis from an ulcer which ordinary antiseptic treatment had failed to cleanse. In others, where one or two points of ligature out of many have afforded a drop of pus, I have been quite unable to account for the fact. I have never had occasion to suspect pyæmic poisoning, and I can see no sufficient reason for its occurrence.

It has been suggested that a special danger is incurred in this operation from the formation of thrombosis, and that excision is therefore a safer procedure. It has not been my intention to compare multiple ligation with other methods of operation except in regard of efficiency and certainty of cure. I may say, however, that, while relying upon so great a number of cases without accident to support my belief in its safety, I can see no reason why thrombosis should be more to be feared in this than in any other method of securing occlusion. Even excision requires two or more ligatures, and in using a greater number of ligatures, however many, the danger, whatever it may be, inheres only in one, the proximal one. In excision of large varices, moreover, a serious and bloody operation replaces a simple one and involving much greater liability to suppuration and infection.

I have operated upon patients of various ages and in various conditions of health, and, while the simple nature of the procedure makes only ordinary caution necessary, there are, of course, constitutional conditions which should preclude any form of surgical interference. There are also local conditions and causes of which these superficial venous enlargements and varicosities are only symptomatic and which exclude them from the class of ordinary crural varices that have been considered.

Finally, this operation in its results, immediate and remote, has proved generally successful. The cure is complete in proportion to the completeness of the operation, and, so far as can be judged at the expiration of two or three years, the cure is radical. In some cases where the veins to be treated are numerous and not of great size, some points at which ligation is required may be overlooked on account of the completeness with which the vessels are often unloaded and collapsed when the patient assumes the recumbent position for operation. This may be avoided by tying in the erect position when an anæsthetic is not employed; or by marking with nitrate of silver or iodine before the patient is put upon the operating table. Even then such marks may be washed away by the irrigating fluid, and a secondary operation becomes necessary. In some other cases, where the varices form a considerable tumor, secondary operation will always be required to effect entire obliteration. In each of four such cases which I have had, the tumor, though in one instance originally as large as a lemon, had become after a few weeks small enough to be included directly in the ligatures.

I have never observed a collateral venous circulation set up and afterward becoming varicose, such as has been asserted to always follow any attempt at radical cure. It is probable that the excess of blood from the intermuscular veins—which, from being forced into the superficial vessels, has dilated them—is now directed into the still deeper veins, and by them continues to be returned. I have sometimes seen after operation in severe cases one or more veins still moderately dilated, and not infrequently those upon the feet, which I have not been accustomed to ligate. These are not likely to occasion any inconvenience, and it is better to abstain from interference. If, however, any of these vessels continue to enlarge, a few additional ligatures will suffice to make the cure practically complete.

The obliteration of the veins is attended by corresponding relief of the morbid conditions which the varices have occasioned. Eczema disappears and intractable ulcers heal often under the primary dressings applied after operation, as ought to happen if these conditions are produced or maintained by the sluggish circulation. When the varicose condition has lasted long and the structure of the tissues has been profoundly altered, it can not be expected that chronic ulcer and eczema will be instantly and permanently cured; but they are at least soon relieved, and if, after healing, they recur, they cease to be intractable, and, so far as we have yet had opportunity for observation, they are eventually permanently healed, which they never are while the varicosity persists. It goes without saying that obliterated vessels will not bleed, and that limbs enfeebled by lack of nutrition will grow strong as the movement of the blood is restored.

I have only maintained for this operation that it effects a cure which seems radical within the limits of two or three years. Whether such cases will eventually relapse and again require surgical attention is, of course, conjectural. Should such prove to be the case, the operation is sufficiently simple, safe, economical of the patient's time, and productive of relief, to have fully justified itself and to warrant its repetition. Not more can be said of many of the more pretentious and accepted efforts of conservative surgery.

I trust I have made plain the intent and principle of the treatment of crural varices which I have advocated. The essential point in this operation, as I have tried to describe it, is not in the use of the ligature or in its subcutaneous method of application, but in the complete obliteration of the whole length of the veins affected. The ligature was long since used in the treatment of crural varices and subcutaneously employed elsewhere. I have resorted to the subcutaneous ligature here simply as the most convenient and effective means of accomplishing the principal object in view.

Note.—I observe in the report of the proceedings of the Alumni Association of Bellevue Hospital, published in the "New York Medical Journal" of December 14th, that I am credited with saying, at the close of the discussion which followed the reading of this paper, that I "considered the method by excision about as good (as multiple ligation) except that it was very tedious." This is an entire misapprehension of what I did say. I reiterated the statement that the essential point of the operation which I advocated was the entire occlusion of the whole length of the affected vein, and that any operation which would accomplish this purpose was adequate. I know of no other method which will do this except multiple ligation with catgut. As a matter of fact, I believe excision, where the varices are large, to be not only tedious but often dangerous, and to cut out portions of vein at sufficiently frequent intervals to effect the continuous obliteration which I have indicated would be so formidable an operation as to be obviously impracticable. Excision would be more properly comparable with ligation at a single point.

BACTERIOLOGICAL INVESTIGATIONS OF A CASE OF YELLOW FEVER

TREATED AT ST. JOHN'S HOSPITAL, BROOKLYN, IN 1888, WITH REMARKS ON YELLOW FEVER AT KEY WEST, FLA., IN 1862.*

By ARNOLD STUB, M. D.,
BROOKLYN.

I will preface the few short remarks I am able to make upon the micro-organisms I found in the liver and black vomit of a case of yellow fever treated at St. John's Hospital, Brooklyn, with a history of the epidemic of yellow fever as observed by me personally at Key West, Fla., in the year 1862.

The literature on the micro-organisms of yellow fever is so scanty, the results of the investigations still so obscure, and my own researches narrowed down to the limit of a single case, that for the present it will be almost impossible to place any value upon the revelations by the microscope in the study of this disease.

Whatever organism you may find upon the slides I present to you this evening, I make no pretension of showing you something that has never been seen before by others; neither do I pretend to have discovered the yellow-fever microbe.

Although I am convinced that such an organism exists, the discovery of the right one I naturally must leave to later and more able investigators.

I also beg leave to state that in 1862, when I had the misfortune to witness an epidemic of yellow fever, carbolic and salicylic acid as well as jaborandi were not in use, and Professor Wunderlich had not yet written his work on the thermometer as a means of diagnosis and prognosis.

The following history of the fever is collated from notes written during and immediately after the subsidence of the fever, and consequently some of the physiological views expressed will not altogether coincide with the views of to-day.

The geographical situation and the climatic circumstances of the island of Key West are so well known that I need only state that the island has a slight elevation toward its center of about ten feet above the level of the sea, and lies in 24° 30″ latitude and 80° 40′ 30″ longitude.

The command stationed at the island consisted of four hundred and forty-eight enlisted men of the Ninetieth N. Y. V. and several detailed men of other regiments, who enjoyed, previous to the 27th of July, 1862, comparatively good health. The thermometer during the month of July averaged 85°, and the hygrometer 82°, an excess of heat which in itself is sufficient to harbor and regenerate the yellow-fever poison, if once brought there. Key West, though situated in a near vicinity to Havana, has always had the name of a healthy locality, and fever has only seldom, and after long intervals of healthy seasons, extended its devastating power to the island. During the year 1861 the difference between the height of the thermometer and hygrometer, also the average temperature, had been the same as in 1862. A number of unacclimated men (several hundred) arrived in the spring of 1861, and remained during the summer, but no case of yellow fever occurred. As in 1862, the wind blew nearly constantly from a southern direction, and the fever was, as usual, severe in Havana. The winter of 1861–'62 had been unusually mild, which caused a partial postponement of the decay of the vegetation until this summer. Large tracts of land, overgrown with brush and underwood, had been cleared during the spring and early part of summer for military purposes, which, though the most part of the vegetable matter had been burned up, left still a large quantity of rubbish to spontaneous decay. Portions of land of smaller dimensions in the neighborhood of the Marine Hospital and the buildings erected for a machine shop by the navy were fenced in by the owners, and the ground had been broken for gardening purposes. The United States Engineer Department, on the other side of the island, caused the resurrection of the corpses of Africans buried on the south beach two or three years previous, being obliged to use that portion of ground for military purposes. The graves were opened and the bodies transferred to another locality. I have been told

* Read before the Medical Microscopical Society of Brooklyn, December, 1888.

that the removal of the corpses caused an almost insupportable stench, which infested the locality for some time. The work was done by laborers, mostly composed of Irish lately arrived from Europe. The wind, constantly blowing from the south or southeast, had caused the sea on the south beach of the island to deposit large quantities of decomposing vegetable and animal matter, which constantly exhaled miasmata.

On the 21st day of July, six days before the first case of yellow fever occurred among the troops stationed at Fort Taylor, Key West, Fla., two cases of fever were admitted to the Marine Hospital from the bark Adventure, coming directly from Havana. One of the patients died on the 22d of July with black vomit.

At the commencement of the epidemic I was in charge of the General Hospital, Key West, Fla. The fever, beginning on the 27th of July, reached its height in the latter part of August and commencement of September. Seven deaths occurred in my hospital on the 4th of September, four deaths on the 6th, and five deaths on the 8th. From this day the fever abated, and gradually assumed a milder type. The number of patients treated by myself amounted to two hundred and seventy-eight; of these, I lost fifty-seven. (This record takes in the time from July 27th to September 30th; after the latter date I was taken sick with the fever myself, and kept no private record.)

The first case, as already stated, occurred among the troops at Fort Taylor, Sunday, July 27, 1862.

The man, Private W. C., Co. K, Ninetieth Regiment N. Y. V., reported himself sick early in the morning at sick call, and the physician in charge sent him to the General Hospital at Key West Barracks, Florida. He arrived July 27, 1862, at 2 P. M. Early in the morning of the 28th I was called to his bedside; found him almost pulseless, skin cold, lying on his back, and throwing up black vomit with such a force that it soiled the ceiling above him. He died in the afternoon of the same day. No private record of his treatment kept.

The next patient was found on the morning of the 30th of July in his tent with black vomit, and died in the evening.

On August 2d two more cases occurred, and one of the patients died August 9th. Another reported sick August 3d and died August 6th. From the 3d of August until the 15th the fever made a pause, and though a good many, from want of experience, not knowing the treacherous character of the enemy they had to deal with, exulted in the belief of its entire disappearance and pronounced the fever of a mild type, on the 15th of August two new cases occurred, and from that date until the 8th of September I had an increase of from five to ten fever cases per diem—some mild, others of the worst type.

(From a sanitary point of view it will be of interest to relate that the regimental quartermaster occupied for his office a small block-house situated near the regimental *stables*, and seven men, detailed in succession as quartermaster sergeants or clerks, took the fever, and, with the exception of one, died.)

The almost daily prostration of my nurses convinced me at once that colored persons born on the island would be the only ones fitted to act in such capacity, and, upon my urgent request, the commanding officer ordered the employment of negroes as nurses in our hospital.

Throughout the whole of the epidemic premonitory symptoms were generally absent. In a few single cases the patient complained, for days previous to the attack, of pain in the head and constipation. In two cases diarrhœa ushered in the black vomit without previous fever. The same matter was discharged from the bowels, and death by coma soon closed the scene.

Nearly every case presented throughout the whole of the epidemic a different series of symptoms, much influenced by the constitution, temperament, and idiosyncrasies of the patient. In opposition to observations made by others in almost all other epidemics of yellow fever, there was no particular time during the twenty-four hours of the day when the attack occurred. Men were seized at all hours—some early in the morning or evening, others during midday or at night. In most of the cases the attack came on suddenly. The victim was seized with a severe pain in the head, mostly across the supra-orbital region, often preceded by a regular chill, sometimes merely by a feeling of cold. The pain soon extended to the eyeballs, and was combined with intolerance of light.

Pain in the back and neck and across the knees caused extreme restlessness. In a few cases the brain symptoms reached a high degree in the beginning, and delirium soon commenced; but I found that these yielded easier to treatment than others where meningitis manifested itself in a later period. The adnata of the eye was generally watery, and gave to the patient the peculiar appearance of being inebriated. The skin was generally hot and dry; sometimes, and particularly in those cases which speedily terminated fatally, I found the skin cold and covered with a clammy perspiration. The pulse varied from 85 to 109, and was full and incompressible, except in those cases whose skin was cold and clammy, where I found the pulse small and gaseous. The tongue was almost always covered with a white fur, with red tip and edges. The latter, I mean the red tip and edges, corresponded exactly with the pulse and febrile excitement. The higher the pulse, the stronger the fever, the redder the tip of the tongue. Only in two cases during the whole epidemic did I meet with a dry tongue; in one case only it had a brown, dirty coating. Almost always the tongue was covered with a white fur and punctated red, on account of the enlarged papillæ. The bowels were sometimes constipated and hard to move; sometimes open, even too loose. The evacuations were generally natural in the beginning of the disease. After the administration of a cathartic, bilious evacuations soon followed; only in one case I observed, after calomel and oil had been given and no evacuation resulted, that an enema caused the discharge of a light-colored fluid, and a whitish-gray looking mass, resembling the stools often seen in icterûs. This patient soon died. In not a few cases the stools after the administration of calomel remained for days of an inky color and very frequent. The urine in most cases in the beginning of the attack was normal, in the severest type scanty, and the little that did pass dark-colored, and threw down a heavy, brick-colored sediment.

Nausea sometimes, but not always in the worst cases, commenced early in the first febrile stage, and the stom-

ach yielded its contents of food occasionally mixed with bile.

These symptoms, as described in the foregoing, continued for a longer or shorter period. Sometimes the fever remained on for twelve, twenty-four, or forty-eight hours, sometimes longer; in a few cases that terminated fatally, seventy-two or seventy-three hours. During the prevalence of the fever, headache, pain in the back and eyes, with insatiable thirst, formed the most distressing symptoms. Generally after the application of hot baths, with warm diaphoretic drinks, perspiration was soon established and continued during the prevalence of the fever.

In some cases, however, all remedies failed to excite the skin to proper action, and perspiration, if momentarily established, soon gave place to a hot and dry skin. This state lasted until the second stage of the disease, which, as above stated, according to the violence of the attack, began at the twelfth, twenty-fourth, or forty-eighth hour. During the beginning of the second stage the patient was free from headache and fever, but generally complained of a slight pain in the back. The stomach was more or less irritable, and often yielded its contents without the least effort; sometimes retching distressed the sufferer. A pain more or less acute, according to the severity of the attack, particularly felt on pressure, manifested itself in the epigastrium. I noticed that men felt comfortable, and expressed themselves willing to leave the bed, but on slight pressure they felt a severe pain in the epigastrium and soon black vomit came on. Generally the worst symptom presented itself after the patient had been for about five or six hours in the second stage. The pain in the epigastrium increased, a severe burning thirst troubled the sufferer, vomiting soon commenced—first of the fluid taken to alleviate the thirst, often clear and transparent, sometimes mixed with bile. This stage lasted for about three or four hours, when the fluid assumed more the color of water, with a brownish-black sediment on the bottom.

On examining it closer, it was a ropy flocculent mass suspended in the fluid; some, of greater specific gravity, sank to the bottom, and with considerable tenacity adhered to the sides and bottom of the vessel. Often the quantity of fluid thrown up increased, the stomach apparently yielded its contents without the least effort, and, throwing the vomitus sometimes several feet away from the bed of the patient, appeared to act like a force-pump.

The matter thrown up resembled now more a thick chocolate, and, after standing, it deposited a coffee-ground-like, grumous mass, which, expressed through filtering paper, lost considerable of its dark color. Bicarbonate of potassium thrown into the fluid gave off carbonic acid with effervescence, and blue litmus-paper dipped into it became at once of a red color. If put into a test tube and heated over a spirit-lamp, the fluid, if previously transparent, became opaque, with masses of albumin floating in it. In those cases where uræmia was present—and in nearly all cases of vomitus niger uræmia existed—the black vomit, first neutralized with bicarbonate of potassium, if heated in a test tube, gave off ammonia; and a glass rod dipped into hydrochloric acid and held over the vapors arising from the heated fluid, developed white cloudy fumes, evidently the chloride of ammonium. The urine, if secreted at all, was invariably albuminous, and sometimes more than one half of it was blood.

Often blood alone was discharged from the bladder. During the whole of the epidemic I observed as one of its characteristics that the matter was not ejected in large quantities at a time from the stomach, and only in a few cases did the matter thrown up at once exceed two quarts. Hiccough troubled the patients considerably. The matter, in consequence of its acrimonious nature, frequently excoriated the tongue, throat, and lips; the stools also, often consisting of a similar matter, caused a painful sensation in the anus, at the same time having a very offensive smell. The time from the commencement of the black vomit until its termination in health, or death, of the patient, differed considerably; sometimes, though seldom, it ended fatally in twenty-four hours; often it lasted longer, and in one case it was protracted for four days; it ended in recovery of the patient. Although I always considered its appearance as a very grave symptom, it has been my fortune in twelve well-marked cases of vomitus niger to restore the patients to health. Out of 278 patients, 69 presented the symptoms of black vomit—57 died and 12 recovered. During the last stage, above described, I found the pulse generally below the natural standard of health. It varied from fifty to sixty-five pulsations in a minute, and was generally small and easily compressed. In two of the cases which terminated fatally the pulse reached one hundred and nine beats in a minute.

The color of the skin differed considerably in the different cases. Sometimes it was natural; seldom it presented the different shades of yellow, but, generally speaking, the yellow color, if it appeared at all, showed itself shortly before death took place. In two patients, who afterward recovered, I noticed a third, or, as some may call it, a fourth stage of the fever. The matter thrown up changed its color; in place of having a tarry appearance, it became mixed with streaks of blood; the tongue in several places became scarified, and blood began to ooze from it, as well as from the gums and lips. Epistaxis and bloody stools made their appearance, and the yellow color of the skin, previously pale, assumed a dark orange-color. The hæmatemesis I succeeded in checking, in the one case with half-drachm doses of tincture of chloride of iron every hour, and in the other case the liquor ferri persulphatis (Squibb's) had an excellent effect. The ten other remaining patients with black vomit passed rapidly, after the vomitus had been checked, into a state of convalescence, and improved faster, and sooner resumed their duties, than others who, from a severe attack of yellow fever, passed from the first stage to convalescence without going through a second and third stage.

In the fatal cases the patients generally died on the fourth or fifth day. The recovery after the yellow fever was usually rapid; ten days after the first attack the patients commonly resumed their duties again.

In five cases endocarditis was the consequence of the yellow fever; three of these patients took the fever twice in the course of five weeks, and the second attack was more violent than the first. One, after the yellow fever, had symp-

toms of phthisis pulmonalis, and died five months afterward. Another the fever left with nyctalopia, and in one case an attack of acute hepatitis followed a severe attack of yellow fever. The rest, as already above stated, recovered rapidly.

I exceedingly regret that throughout the whole of the epidemic I was so constantly employed at the bedside of my patients that I could find no time to make post-mortem examinations.

In the treatment of the yellow fever I followed the theory (1862) that the poison, similar to that of malarial fevers, attacked the ganglionic system. The latter, which penetrates through the whole of the human body, runs in branches throughout the whole of the arterial and venous system, both the ganglionic and arterial system depending upon each other for their vitality. It (the poison) attacks first that portion of the ganglionic system which supplies the external capillaries. These lose their vitality or tone, and cause a concentration of the blood toward the center of the body.

The fever in its first stage I considered caused by the irritation of the capillaries of the external skin. The natural consequence is heat of the body and absence of perspiration. To restore the tone of the external capillary system, and to prevent a concentration of the blood toward the center of the body, seemed to me the first object to attain in the commencement of the treatment; the next, to remove the cause of the evil—I mean, to counteract the morbid influence of the treacherous poison absorbed by the nervous system and causing the results mentioned. To meet the first indication, I found that nothing would answer better than the hot bath and sinapisms. To act as an antidote against the poison, I used large doses of quinine by the mouth, as well as locally by friction all over the body. The quinine acts as an apyretic, as a tonic and stimulant on the ganglionic system, besides combining the properties of a sedative, if administered in large doses, and reducing the palpitation of the heart, which, in yellow fever, often was a prominent symptom.

The same poison which attacks the ganglionic system of the external skin also in many cases involves the capillary system of the intestines, and causes the peristaltic movement to be suspended, and a purgative will be required to clear the alimentary canal and to prepare the system for a prompt absorption of the quinine. In a similar manner are the other organs—the kidney, the liver, and sometimes the spleen—affected, to which I ascribe the local pains often felt in those regions. If the indications above mentioned have been fulfilled, the patient will pass at once into a state of convalescence; if not, the second stage commences. The capillaries, either partially or entirely, according to the more or less severe action of the poisonous influence upon their ganglionic system, have lost their tone, contract, and cause the blood, in leaving them, to concentrate more toward the internal organs. This retrograde movement of the blood is not effected at once, but it takes place gradually, in harmony with the advance of the fever poison on the ganglionic system. It leaves the patient, for a short time at least, comparatively free from pain. This I consider the most critical period of the malady. This is the moment when the physician is to concentrate his attention on the patient, and by judicious measures to prepare the network of capillaries of the lining membrane of the stomach for the shock that awaits it. The poison is now about to center its malignity on the capillary system of the stomach. It excites the organ first to spasmodic action, resulting in vomiting, and causes an abnormal secretion of the gastric juice; eventually the capillaries lose their tone, and in the mildest cases hæmatemesis is the consequence, or, *in extremis*, the vomitus niger.

The latter, I believe, is principally caused by the blood entering the stomach through the walls of the capillaries, meeting there with a fluid which, in regard to some of its constituents, resembles the gastric juice in its normal condition, and by this the fluid is decomposed. I believe that the apparatus producing the gastric juice has suffered by the invasion of the yellow-fever poison to such a degree that its product becomes changed in regard to the proportionate combination of the different materials composing the normal gastric juice; because, if this is not the case, why does not the stomach always in simple hæmatemesis discharge the blood decomposed and transformed into the mass called black vomit, as the stomach at all times contains more or less of gastric juice, which, if it alone in its normal condition were able to decompose the blood, should do it then also? And why, I ask, is it that in a case of black vomit the first sign of hæmatemesis is hailed as a favorable symptom?

J. Baptista Lacerda describes, in No. 4 of the "Annals of the Academy of Rio de Janeiro" of 1887, bacteria which he found in the parenchyma of the liver, in the gall-ducts, the veins and arteries, the lymphatics, and the convoluted tubes of the kidneys of six individuals who had died of yellow fever. He considered them to belong to a different species from any other bacteria before known. He describes them as cylindrical granules, forming among themselves chains, and representing under the microscope the appearance of a tree with three branches—the central branch straight upward, the side branches a little curved. He mentions, however, that sometimes they present a different picture, but under all circumstances they show a decided inclination to ramification.

Professor Sternberg, of Baltimore, found in two cases out of nine the same bacillus described by Lacerda and Baker. Professor Sternberg also found the micrococcus described by Dr. Freire and named *Cryptococcus xanthogenicus*. He states that it fluidifies gelatin very slowly and forms upon the surface of agar-agar a milk-white coating.



Fig. 1.—Cocci found by Dr. Sternberg Drawing copied from the "Centralblatt für Bacteriologie," vol. iv, No. 18.

Its morphology is represented upon the drawing I herewith take the liberty to circulate, which Dr. Sternberg made after a preparation from Dr. Freire's laboratory in Rio de Janeiro. The magnifying

power is about 1,000 diameters. The views of Dr. Sternberg are published in the "Centralblatt für Bacteriologie," etc., No. 18, vol. iv, and his letter is dated September 2, 1888.

A previous article of Dr. Sternberg's, published on page 149 of the "Medical News" of 1888 and entitled "Investigations relating to the Etiology and Prophylaxis of Yellow Fever," disproves the prophylactic utility of inoculating people with the coccus discovered by Dr. Domingo Freire.

Professor Sternberg, however, seems to be of the opinion that our present knowledge of infectious diseases entitles us to the belief that yellow fever is caused by a living micro-organism, and that, if we are able to discover the latter, we shall be able to protect ourselves by inoculation against the fever. I also understand that Professor Sternberg has discovered a coccus heretofore not described in relation to yellow fever. I have seen a cultivation of the same, but, as I have not found anything about it in literature, I do not consider myself justified in entering into a description of it.

The specimens I have the honor to present before the society consist, in the first place, of black vomit stained by Gram's method. If you examine the same you will find a bacillus resembling closely the one described by Lacerda, and perhaps you may find also the cocci which Dr. Freire and Dr. Carmonay Valle describe. The latter, however, you perhaps will find better represented in the specimens of urine I shall endeavor to demonstrate. In these specimens you will find a large number of granular casts, blood casts, blood-corpuscles, and leucocytes all broken up, besides



Fig. 2.—Bacilli and cocci found in the vomitus niger; the former identical with those described by Dr. Lacerda, Dr. Freire, and Dr. Carmonay. Cocci resembling those found by Dr. Sternberg. With Zeiss's homogeneous (oil) immersion, 2 mm., and apochromatic ocular, No. xii.

numberless epithelia from the pelvis of the kidney, also tyrosine and leucine. At least I found them, and if the urine is not entirely decomposed, in spite of my endeavor to keep it, you will find the same that I did. Dr. Thomas, of St. John's Hospital, has kindly furnished me with the specimen of urine from a yellow-fever case. Dr. Bliss has furnished me with a specimen of the black vomit, although I miss some of the features I noticed in the appearance of the fluid I observed in 1862—for instance, the ropy, sticky mass adhering to the sides of the vessel; in the main, it resembles the vomitus niger I have seen before, although it looks blacker. It also was highly acid, and bicarbonate of sodium caused effervescence. I have not examined the fluid unstained, but Dr. Kemp, of the Hoagland Laboratory, has, and I hope he will show us the specimens. I mentioned before that I stained some of the specimens after Gram's method, and found bacilli closely resembling those described by Lacerda. But I also stained some specimens with a solution of methylene blue and aniline water, also with a watery solution of fuchsine. The last I shall not present before you, because I hardly found anything upon the covering glasses. The specimens stained with methylene blue I submit to your inspection, and I am of the opinion that the micro-organisms differ somewhat

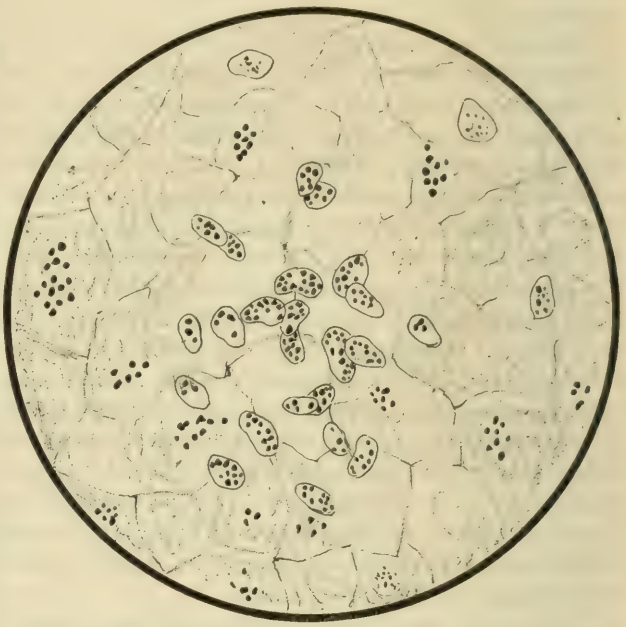


Fig. 3.—Section of liver from the case of yellow fever in St. John's Hospital. With Zeiss's homogeneous (oil) immersion, 2 mm., and apochromatic ocular, No. xii.

from those stained after the method of Gram. Besides the bacilli and cocci already described, you will find in the different fields by moving the slides numberless small cocci, some of them arranged in clusters, also a very peculiar chain coccus. Dr. Bliss sent to Dr. Heitzmann a specimen of the liver, and the latter examined the specimen and reports as follows:

New York, *November 9, 1888.*

The piece of the liver of Captain Fellan, brought for examination by Dr. Bliss, after having been hardened in a tenth-of-one-per-cent. solution of chromic acid, under the microscope exhibits the following features:

With low power a marked swelling of the lobules is discernible, whereby the interstitial connective tissues appear compressed, the portal vein being empty and likewise compressed, the bile-ducts unchanged.

With higher powers (500 to 600 diameters) the liver epithelia appear on a large scale, broken up to lumps of coarse granules,

and medullary or inflammatory corpuscles. Scarcely a single epithelium is found unchanged.

The lumps into which the epithelia are split up exhibit all stages of transition into fat, from the appearance of a yellow, slightly glistening mass up to the presence of highly refracting granules or lumps, or globules of fat. In some places the liver epithelia are entirely transformed into fat globules. The fat, where fully formed, is not visible in my specimen, owing to the treatment with alcohol and ether for imbedding in celloidin. But the transition stages from protoplasm to fat are plainly marked. The hollow spaces, corresponding to previous fat-globules, in many places show needle-shaped crystals of margaric acid.

The intense swelling of the liver epithelia has led to compression of the capillaries between them to such an extent that the walls of the capillaries appear as solid tracts, mostly lacking calibers. The hepatic veins are likewise much reduced in caliber.

The interstitial connective tissue, being reduced in bulk, as mentioned above, is in the condition of a retrograde change into protoplasm and medullary tissue.

Diagnosis.—Intense parenchymatous hepatitis, with intense acute fatty degeneration of the liver.

I have never seen this morbid condition in such a high degree, though similar changes I have observed in the liver of a person that killed himself with phosphorus, and in a liver from a person that died with so-called black vomit or swamp fever of the South, sent to me a few years ago from Charlotte, N. C.

[Signed.] Dr. C. Heitzmann.

Dr. Bliss also handed to me a specimen of the liver for bacteriological investigation. I hardened the pieces in absolute alcohol. The sections were also put into absolute alcohol, and I at once stained them after Gram's method. Some I gave a second stain with eosin. You will observe, gentlemen, particularly upon one of the sections, that the identity of the liver cells is almost completely destroyed, but a large number of round or oval cells are visible, studded with very distinctly marked bluish-black roundish bodies, which I consider to be cocci. I admit that the question if these bodies may not be pigment granules is an open one, but I wish to state now, before the discussion opens, that in all previous cases where I have stained specimens of liver by Gram's method the pigment granules have, of course, been visible and darker than any other substance, but in no case have I seen them take the distinct stain that the cocci do upon these specimens. I also should like to call your attention, gentlemen, to the fact that you find those cells studded with cocci in groups upon these specimens, and by moving the slides you will notice that large fields show no evidence of cocci-like formations. The pigment granules, however, are, in all other specimens of liver I have examined, evenly distributed upon all the cells of the preparation. In some of the specimens you will find occasionally small piles of cocci lying outside of the cells, and evidently belonging to another species. Bacilli I have found none. I have made no cultivations, because I have been told that specimens of the vomitus and of the liver had been sent to the Hoagland Laboratory for that purpose, and, if you are familiar with the laborious task of making cultivations from such specimens as we have under consideration to-day, you will understand the almost insurmountable difficulties a physician in general practice has to conquer if he undertakes it, provided he wants the work to be of real scientific value. A few weeks after the patient with yellow fever died in St. John's Hospital, Dr. Wallace informed me by telephone that he had a patient with black vomit under treatment, and I requested the doctor to send me specimens of the vomitus and of the urine. He did, and when I examined the vomitus I found it of a similar color to the vomitus from the case in St. John's Hospital, but not quite so dark; more of a coffee-brown color where the former was altogether black. The former, if you will please remember, was of acid reaction; Dr. Wallace's specimen, however, was neutral, almost alkaline. Upon inquiry I learned, however, that the patient shortly before he vomited had taken several doses of bicarbonate of potassium. I proceeded to prepare cover-glass preparations and stained after Gram's method, and used for the second stain vesuvin. A few cocci bacilli in rod shape, single and in clusters, was all I found, but nothing like the micro-organisms I found in the vomitus from the St. John's case.

The urine was acid, of the specific gravity of 1·025, of a straw-color, albuminous, and containing hyaline casts, some slightly granulated; no epithelia from the pelvis of the kidney, a few from the urethra and bladder, but a number of leucocytes upon each field. If you remember, gentlemen, I told you that the leucocytes found in the yellow fever case from St. John's Hospital were all broken up and the man died. But in the case of Dr. Wallace I found the white blood-corpuscles normal, only in a few instances a slight tendency to breaking up, and I told the doctor that his patient would get well. What diagnosis may have been made in this case I do not know, but the symptoms described to me by the kindness of the doctor were sufficiently grave to cause alarm; however, from the appearance of the leucocytes, I considered myself sufficiently justified in making a favorable prognosis, and I have learned since that the patient got well. I beg leave, gentlemen, to take this occasion to urge upon you the high practical value to be placed upon the theory of the appearance of the leucocytes found in the blood and in the urine of patients. This theory of Dr. Heitzmann's, who has given in his work on "Microscopical Morphology" a full explanation of his views, is not sufficiently understood and valued by microscopists in general, and I assure you that in various cases already I have been enabled to make a correct prognosis based upon the microscopical examinations of the pus-corpuscles or leucocytes found in the urine of patients suffering from kidney disease.

Antipyrine as a Local Styptic.—"A French physician relates a case in which a boy of fourteen suffered from persistent bleeding after the extraction of a molar tooth. Perchloride of iron was without effect, and so much blood was lost that syncope was induced. On recovery, the hæmorrhage again broke out and perchloride of iron was once more tried, but vainly. The cavity was then plugged with two or three pledgets of lint steeped in solution of antipyrine. The bleeding at once permanently ceased. It was noticed that while the perchloride caused severe pain, the antipyrine was not objected to. It is suggested, not improbably, that the antipyretic action of this and similar drugs may possibly be due to the fact that they diminish the blood-supply by their astringent effect on the blood-vessels."—*Ohio Journal of Dental Science.*

COCILLAÑA; A CLINICAL STUDY.*

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In May of this year there was placed in my hands a supply of the concentrated tincture of cocillaña. My studies of apomorphine, the results of which had modified the treatment of acute bronchitis and given a clearer idea of the characteristics which an expectorant should possess, led me to seek further to find one which should be effectual in doses given at longer intervals and without the addition of a bromide, which is frequently objectionable.

The source of the drug cocillaña is the bark of an undetermined species of *Guarea*, which was discovered in Bolivia in 1886 by the eminent botanist, Professor H. H. Rusby, of the College of Pharmacy, who first brought specimens to New York. This species was first described by Dr. N. L. Britton, of Columbia College, in the "Bulletin of the Torrey Botanical Club," 1887, page 143, under the name of *Sycocarpus Rusbyi*, on the supposition that it was a new genus belonging to the natural order *Anacardiaceæ*. On the subsequent acquisition of complete specimens, Dr. Britton at once recognized the true affinities of the plant as being with the genus *Guarea*, natural order *Meliaceæ*, and referred it with some doubt to the species *Guarea trichilioides* (Linnæus). While it is certainly a *Guarea*, there is much difference of opinion as to the species. Dr. Rusby is quite positive that its characters render it distinct from all known species of that genus, in which, I may remark, nearly all the species are separated by very minute differences of structure. The tree is described as reaching an extreme height of some thirty or forty feet and a trunk diameter of nearly three feet. It is low and broadly spreading in habit, reminding one considerably of a large apple-tree. The bark is thick and ash-colored, becoming rough only with considerable age. The larger branches are horizontal, the ultimate ones somewhat erect and bearing the leaves erect, clustered at their ends. The leaves are pinnate, bearing some resemblance to those of the common sumach, but much larger, being a foot and a half or more in length by two thirds of a foot broad, and bearing from five to ten pairs of oblong, obtuse leaflets, the larger of which are six or eight inches in length. In the axils of these leaves appear the loose racemes of flowers some eight or ten inches in length. The flowers are small, scarcely larger than the head of a small carpet-tack, with the parts in fours, of a dull-greenish color, very inconspicuous, and are succeeded by a somewhat woody, fig-shaped fruit, as large as a walnut. It contains four cells, one or more of which are commonly obliterated as it matures, and one or two erect seeds.

Professor Schrenk described and figured the bark in the "Druggists' Bulletin," 1887, page 222. The characteristic peculiarity, upon microscopical examination, is the appearance of large resin or latex cells containing a peculiar yellow viscous substance, on which the medicinal properties of the bark may perhaps depend.

No adequate chemical investigation has yet been undertaken, so that it is impossible to say with certainty to what constituent its medicinal properties are due.

Its physiological action, when the drug has been given in the crude state—*i. e.*, in the form of the powdered bark—is the production of nausea and a desire to vomit, with a metallic taste in the mouth, within about half an hour after the administration and lasting an hour, the nausea being accompanied by an early discharge of mucus and afterward by dryness of the throat. It may be accompanied by slight dizziness, but not by headache. There is a desire to defecate, which, however, may be restrained. Further, slight perspiration has been observed. Its action, then, may be stated to consist of stimulation for some hours of the vessels and glands of the mucous surfaces, more especially of the respiratory tract, with subsequent diminution of activity (sedation). This action probably takes place because the drug is eliminated by way of these tracts. In the administration of the drug in the form of the concentrated tincture sneezing and discharge of nasal mucus have not been observed, and the effect upon the throat is not so marked as when the powder is used.

The preparation employed was the concentrated tincture of the bark,* the dose varying from half a fluid drachm to two fluid drachms, administered every two to eight hours. This preparation was the one with which the experiments were commenced, and for the sake of uniformity it was continued. I believe, however, that the fluid extract, in doses of from five to twenty-five minims at the above-mentioned intervals, would, on account of the avoidance of alcohol, be more satisfactory in acute and probably also in chronic diseases. Many of the cases reported were demonstrated before my class of matriculates in clinical medicine of the Post-graduate Medical School, who have had abundant opportunity to verify both the physical signs and the results of treatment. The cases are recorded as briefly as possible, and many ordinary symptoms and signs are omitted in the statements.

Cases of Acute Bronchitis.—Case I.—*May 24th.*—A. L., merchant, thirty-five years old, has suffered from repeated colds in the head for the last eight years, and as a result has extensive catarrhal disease of the naso-pharynx and middle ear. For the last three days he has had a teasing cough, inappetence, at times nausea, and constipation. Temperature, 101° F.; pulse, 110, of fair volume; breathing, 26. Cough dry and expectoration scanty. Inspiration and expiration are roughened. Pitch of respiratory act not raised. Many dry and very few moist râles, the latter only in cough. He was ordered to take half a drachm of cocillaña every two hours, to have a mustard foot-bath, and to apply cotton wadding to the chest after rubbing in camphorated oil.

26th.—Great relief from cough. A profuse watery expectoration appeared about six hours after taking first dose. Râles are now chiefly fine and mucous and are few in number.

28th.—Great improvement. This patient has been frequently treated with apomorphine for attacks of bronchitis,

* Read before the Section in Theory and Practice of Medicine of the New York Academy of Medicine, December 17, 1889.

* This preparation is made by Parke, Davis, & Co.

but says that more relief has been obtained in a shorter time than with that drug when begun so late as the third day.

Case II.—*June 6th.*—A. Z., eighteen years old, has had a cough for two days, after exposure to drafts. Temperature, 100·5 F.; pulse, 108, of fair volume; respiration, 24. He complains of loss of appetite, constipation, and soreness in the chest. His cough is without expectoration, frequent, disturbing his rest, and causing headache. He has also pain in the right side, stuffiness in the chest, few mucous but many dry râles distributed over the chest. Respiration harsh and exaggerated. He was directed to take a drachm of cocillaña every three hours and apply cotton batting to the chest.

8th.—Expectoration established at the third dose. The pain in the side remained for twenty-four hours. Chest feels clearer; respiration, 20.

11th.—Complete relief; slightly harsh respiration, with no raising of pitch. Appetite good and bowels moved daily.

Case III.—*June 26th.*—R. N., aged twenty-five. Has always been well, with the exception of occasional colds in the head, until three days ago, when he began to cough incessantly and had chilly sensations in the back. He is of fair muscularity. His tongue is pale and flabby. His bowels are regular. Temperature, 100·5° F.; pulse, good, 110; respiration, 24 and superficial. The cough is teasing, preventing sleep, and without expectoration. The chest is well developed; no abnormal dullness; slightly increased vocal fremitus, with increased resonance and roughened respiration, more particularly in inspiration. Many sibilant, some sonorous, a few fine moist râles. He complains of soreness under the sternum, especially in coughing. He was ordered to take cocillaña, ninety drops every three hours, to partake of hot soups, rub the chest with a liniment of oil of wintergreen, and afterward apply cotton batting.

27th.—Small amount of expectoration. Pulse, 90; temperature, 99° F.; respiration, 22; cough markedly diminished.

28th.—Great improvement; diarrhœa.

July 3d.—Reports that he is well, and that his cold has disappeared more rapidly than ever before in his experience.

Case IV.—*June 28th.*—Miss S. B., seventeen years old, has had a cough for four days, preceded by cold in the head. Now has scanty expectoration, with headache from coughing. Vomited last night. Soreness in the axillary regions, but no distinct pain. Vocal resonance and fremitus are slightly increased; harsh inspiration and expiration, especially inspiration; pitch not raised; has loss of appetite. Was directed to take two drachms of cocillaña thrice daily.

September 30th.—Reported that she was cured in four days, that her appetite returned, and the cough and expectoration disappeared. Iron ordered for her anæmia.

Case V.—*October 25th.*—A. S., sixteen years old, has had a severe cough for the last four days, accompanied by thoracic pains. The respiratory sounds are roughened over all the pulmonary areas except at the bases, and plentiful and fine mucous râles are heard. The cough and dyspnœa are so severe that he is obliged to sit up at night. Has no appetite and is constipated. Ordered cocillaña, half a teaspoonful every three hours.

28th.—Reports that the cough was cured on the second day of treatment and that his dyspnœa is much relieved. The first dose of the cocillaña was followed by emesis.

Case VI.—*October 30th.*—Miss L. F., aged seventeen. Has always been in delicate health. Two weeks ago was taken with a dry, hacking cough, which was severe enough to keep her awake at night and was accompanied by much pain in the chest and headache. Physical examination showed only roughened and exaggerated respiration over both lungs, with sibilant and some fine mucous râles. She was directed to take a teaspoonful of cocillaña every three hours.

November 1st.—Cough much better, appetite greatly improved, expectoration scanty.

Case VII.—*November 2d.*—T. T. B., twenty-four years old, for the last week has suffered from a dry, hacking, painful cough, with a scanty expectoration of clear mucus. Over both lungs it was found that the respiratory sounds were roughened without change of pitch or note, nor was there dullness or change in the vocal resonance. At both bases were heard abundant fine mucous râles. He was directed to take half a drachm of cocillaña every four hours.

4th.—Reports entire relief from cough.

Case VIII.—*November 7th.*—W. F., a school-boy, seven years old. For one day has suffered from soreness in the chest, incessant cough without expectoration, and headache. He has no appetite and his bowels are constipated. On examination, a weak pulse of 120 and a temperature of 102° F. are found. He is an anæmic, nervous boy of fairly good flesh. His chest expands well, there is no abnormal dullness, his respiration is puerile, exaggerated, and harsh. There are no moist, but a few sonorous and many sibilant râles. There is no change in vocal resonance or in fremitus; respiration, 24. He was ordered to take fifteen drops of cocillaña every hour, to remain indoors, and to have cotton batting applied to the chest after inunction with camphorated oil.

8th.—Cough loose; loud, coarse, moist râles on expiration as well as on inspiration; no dry râles; sleeps well at night and his bowels have moved well.

12th.—Much relief, with cure on the 14th. This patient has had repeated attacks of coryza and bronchitis, and usually expectoration is established with difficulty.

Case IX.—*November 13th.*—Mrs. W., twenty-five years old, has suffered from a dry bronchitis for six weeks. The coughing is incessant by day and night, and now has caused much muscular pain. She can not sleep and has lost her appetite. Physical examination reveals a large number of dry and coarse mucous râles over both lungs. She was directed to take two teaspoonfuls of cocillaña every six hours.

15th.—The cough is diminished in frequency and much looser, and the appetite has improved.

25th.—For four days past she has had no medicine and the cough has returned, but not so severely as at its first visit.

In comparing these cases with a similar series treated with apomorphine, it can be said that apomorphine acts more upon the blood-vessels, cocillaña more upon the glands; hence the secretion produced by the latter is more mucoid. So, again, in cases seen before forty-eight hours of the disease have elapsed, apomorphine will relieve more quickly, but in cases seen for the first time at a late period cocillaña should be preferred. While watery secretion is not established usually under three to six hours from the first dose, in place of the half to one hour after apomorphine, yet the effect of a single dose will last at least three times as long as after the use of the latter drug. Consequently the intervals at which cocillaña is given can be prolonged, or expectoration can be quickly established by apomorphine and continued by cocillaña. The rhythm of the respiratory act is affected only so far as freer expectoration lowers the respiratory rate. That the expectorant effect of cocillaña is not the first stage of nausea is shown by the fact that an increase of appetite is usually observed even under the administration of full physiological doses, and under them indeed the fullness of the pulse is not changed.

Cases of Chronic Bronchitis.—In addition to the cases

recorded below, in seven others the patients came complaining of a dry, ineffectual cough, which was doubtless relieved, since they did not return for further treatment.

Case I.—*November 11th.*—Mrs. L., twenty-five years old, has had a dry, hacking cough for two months, especially in the morning, which causes vomiting and pain in the head and chest. Physical examination reveals a large number of dry râles with very few moist ones. Respiration harsh and exaggerated. No change in resonance, fremitus, or percussion note. Is to take two teaspoonfuls of cocillaña every six hours.

15th.—Can only find a few moist râles. Vocal resonance and percussion note normal. Has experienced great relief.

Case II.—*November 18th.*—F. N., twenty-nine years old. Two years ago suffered from a severe attack of acute bronchitis which lasted for two months, and in which expectoration could not be established by apomorphine, ipecac, lobelia, or any other of the so-called expectorants. For the last week has had a severe cough with wheezing, no expectoration, loss of sleep and rest, with pain in the epigastric region. Physical examination shows slight dullness and distant respiration at the right apex, whispering bronchophony and high-pitched inspiration, increased vocal resonance at both apices to the third rib. Respiration is jerky. Many fine, dry râles, with some mucous râles. Ordered to take two teaspoonfuls of cocillaña every four hours.

22d.—Reports great improvement in the amount and character of the cough. Physical signs of infiltration and exudative pleuritis of the right apex remain.

December 13th.—Reports that cocillaña gives him entire relief from the paroxysms of cough.

It is probable that in subacute and chronic dry bronchitis we find the larger field for the use of cocillaña. The facts are that its expectorant effect is surer than that of either apomorphine or ipecacuanha in liquefying bronchial mucus; that it increases the appetite, not because the drug itself acts like a simple bitter or its menstruum (alcohol) irritates the stomach, for the fluid extract is equally reliable in that direction; and that the drug is a laxative, perhaps by stimulation of the intestinal muciparous glands. Further, the expectoration is not so much influenced by warm diluent drinks as that of apomorphine, ipecacuanha, or carbonate of ammonium is, although cocillaña itself will produce a slight perspiration. In chronic bronchitis with viscid expectoration cocillaña will render the sputum liquid somewhat more surely than ipecac, and it has the further advantage of not causing nausea. At times also the formation of mucus seems to be checked.

On the other hand, in cases of senile bronchitis, particularly in cases of calcified costal cartilages, it may so markedly add to the bronchorrhœa that it becomes absolutely dangerous, and particularly because it is not a stimulant to the respiratory center, like belladonna and strychnine. In these cases, then, it is useful only so far as it liquefies secretion. It is in these cases, and particularly those with dilated right heart, that we find strychnine and carbonate of ammonium so useful. Cocillaña is not an antiseptic any more than ipecacuanha, so in cases of foul expectoration neither drug is a complete remedy.

Cases of Chronic Disease of Pulmonary Tissues.—Case I.—*November 15th.*—Mrs. G., thirty-four years old, has suffered from cough, with slight morning expectoration and loss of flesh and appetite, for six months. Physical examination shows a chest contracted in the antero-posterior diameter, dull to the bottom of the second rib at both apices, over which area there is increased vocal resonance, with whispering bronchophony, harsh, prolonged inspiration, and many crepitant râles. The cough is teasing and prevents sleep. Ordered a teaspoonful of cocillaña to be administered every three hours.

20th.—Reports improvement in the cough and appetite. Physical signs unchanged.

Case II.—*May 27th.*—Miss M. D., single, twenty-one years old. Has been ill for three months. She complains of pain in the left side, and cough, which was dry until recently, especially on sitting up. No expectoration except in the morning. Is losing flesh, has a poor appetite, with regular bowels, but occasional headaches. At the right apex there are sibilant and sonorous râles, also over the upper chest to the fourth rib, with roughened, high-pitched respiration. Over the left apex there is roughened inspiration with fewer râles, vocal resonance increased over the right area, in which there is marked dullness, with no increase on the left side. Pain in the left axillary region. Directed to take two drachms of cocillaña three times daily.

June 10th.—Expectoration quite profuse, coughing less, but she feels weak on rising, sometimes nauseated. The dry râles have now disappeared, but we find abundant coarse and fine râles, especially on the right side. The acute exacerbation is apparently relieved.

November 11th.—Reports great improvement. The medicine will relieve the teasing cough, changing it into one which is less frequent and which yields frothy expectoration.

Case III.—*July 3d.*—P. M. K., twenty years old, has had night-sweats for five months, with loss of flesh, but until within two weeks has had no noticeable cough. Complains of lassitude and anorexia. For the last two weeks has had a cough which does not produce expectoration save in the morning, when it is muco-purulent. He is very anæmic. At the right apex, extending to the third rib, there are dullness, normal fremitus, and increased vocal resonance. Quality of respiration not markedly changed. Subcrepitant râles at the right apex. Elsewhere large mucous râles. Temperature, 101° F. at 3 P. M.; pulse, 120. He was ordered to take half a drachm of cocillaña three times daily.

8th.—Cough loose and less frequent; appetite better and night-sweating markedly diminished.

24th.—Appetite is now good. Expectoration markedly increased. No cough. Bowels regular.

Case IV.—*November 11th.*—Mrs. K., thirty-seven years old, has suffered from asthmatic attacks, dyspnœa on exertion, and cough with tenacious expectoration for a year. The physical signs are dullness at the right apex, extending downward as far as the third rib; high-pitched, prolonged inspiration and expiration; increased vocal resonance. A few coarse and many fine râles. Is to take a teaspoonful of cocillaña every two hours.

13th.—Reports considerable relief. Physical examination shows a cavity emptied of pus, the signs being a vesiculo-tympanitic percussion-note over the former area of dullness, amphoric respiration, bronchophony, and coarse mucous râles. The dyspnœa has disappeared with the rapid expectoration of a large amount of pus. The asthma has remained absent.

In these cases cocillaña has almost its only use in liquefying secretion and relieving the acute exacerbations of associated chronic bronchitis. Under its use the cough and expectoration diminish, and the night-sweats, inappetence, and constipation are relieved. In general, for the reasons given above in discussing chronic bronchitis, cocilla-

ña is preferable to ipecacuanha. Naturally, when cough is due to pleuritic exudation or is laryngeal or pharyngeal, cocillaña will fail, as will all the other expectorants. In the latter instances, I doubt if local applications of cocillaña would be effectual.

I believe cocillaña to be superior to apomorphine except in the cases of acute bronchitis when taken within the first forty-eight hours. It is certainly preferable to ipecacuanha in that it does not so readily cause nausea and a metallic taste in the mouth, and assists the regular movement of the bowels. It must yield to carbonate of ammonium in chronic senile bronchitis, although the heart-beat and the pulse become stronger under its use, and it can not stimulate the respiratory center as strychnine does. It is immeasurably safer in any stage of acute bronchitis than pilocarpine, because it does not depress the heart's action.

In conclusion, I believe that it can fully replace ipecacuanha, which is now becoming expensive from exhaustion of the supply, in every sphere of action, and in many cases can be substituted with advantage for apomorphine, carbonate of ammonium, strychnine, and other drugs classed with more or less reason as expectorants.

690 Madison Avenue, *December 14, 1889.*

THE RELATIONS OF THE SO-CALLED "CHRISTIAN SCIENCE CURE" AND "FAITH CURE"

TO PUBLIC HEALTH AND BOARDS OF HEALTH, AND TO THE MEDICAL PROFESSION.*

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The advocates of Christian science cure and of faith cure have existed in all ages and in all countries, and have belonged to all religions. Being the children of superstition, they have kept pace with their parent, and their number has become less as the world has become more and more enlightened. But yet from time to time they seem to increase in strength and numbers, and the daily papers relate the wondrous cures achieved in apparently hopeless cases. Some one of a highly emotional nature imagines himself to have been "cured" by the agency of prayer, and he loudly proclaims the result. This draws others, for the number of real or supposed chronic sufferers is large at all times, and, if then some further "cures" are effected, the sect flourishes for a time, until either the interest dies out or some one "cured" by prayer dies of the original malady. At times also these Christian scientists are made the dupes of some plausible scoundrel, who coins money from their superstitions by the aid of "magnetism," mesmerism, or anything else which tends toward a concentration of the mind. When the fraud is discovered we hear no more of faith-healers for a while.

Within the last ten years the daily papers have contained more recitals than usual of miraculous cures by the aid of prayer, anointing, or laying on of hands. In a few instances, where a fatal result followed, the authorities have stepped in and investigated the circumstances, but I am not aware of any conviction or punishment inflicted.

It is somewhat difficult to define accurately the exact position of these people, but for the purpose of this paper it will suffice to state that they do not believe in physicians and their medicines, relying in case of illness upon faith in the efficacy of prayer to bring about a cure. The different sects and societies vary a good deal with regard to the sincerity of their belief and the degree to which they adhere to it. Some only invoke divine help when there is no danger to life, but they will send for a doctor as soon as there seems to be a real or supposed danger approaching. Others, however, are more consistent. They will refuse medical aid and medicines under all circumstances, preferring death to any help which medical skill might afford them. Their only guide is the Bible, and their only relief from suffering must come through prayer.

Recently, in my official capacity as physician to the Brooklyn Society for the Prevention of Cruelty to Children, I have come in contact with members of a sect of "faith-healers" calling themselves New Evangelists, who hold their meetings on Hamilton Avenue. They are mostly Scandinavians, all belong to the laboring classes, and are of less than average intelligence. Their faith is a most simple one, but in sincerity and strength they rival the religious fanatics of past ages. They do not believe in ministers of the Gospel, nor do they have any leaders. Their meetings are conducted much after the manner of Quakers—*i. e.*, any one who has a communication to make gets up and speaks. They also unite in common prayer and singing. For information on everything they turn to the Bible, whose teachings they interpret to the best of their ability and understanding. They do not believe in medicines and physicians, and positively refuse medical aid. The reason which they assign for this refusal is that all disease is sent by God either as punishment or trial, and it would be a sin to interfere with His will by any attempt to relieve the suffering or cure the illness. If the person afflicted dies they say it was God's will, and should recovery ensue, this again will be regarded as a manifestation of divine Providence. They believe in caring for the sick by looking after their bodily welfare and by keeping them properly fed and clean. Among their number there are a few nurses who go out among the sick and attend them, and who profess to have had experience in hospitals here and at home. For these services they expect no pay, but they receive food and clothing from their "brothers and sisters in Christ." The members of this sect also do not believe in holding property or keeping any money beyond that which they need for their daily wants. All their possessions go into a general fund, out of which all expenses for the society are paid and the poor and sick assisted. One of their number, before he became a member, bought two city lots, on which he paid one hundred and fifty dollars—all his savings. After he joined, as he could no longer consistently hold property, he wished the real-estate agent to take back the land and refund the money; the latter refused to grant his request, and he then told him to keep both the land and the money.

I am of the opinion that these people are entirely sin-

* Read before the Kings County Medical Association, December 13, 1889.

cere and honest in their belief, but I am equally certain that their practices endanger public health and public morals, as will be seen from the histories of the following two cases:

Case I.—On November 29th the Superintendent of the Brooklyn Society for the Prevention of Cruelty to Children consulted me in regard to a case reported to him by the Board of Health, the facts in regard to which were as follows: On November 27th Dr. Prendergast, of Clinton Street, was called upon by O. E. Larsen, of 43 Woodhull Street, to see his child, who had been ill with a sore throat for a week. The doctor went as requested, and found a little girl four years old suffering from diphtheria. He prescribed for the patient, and returned the next morning to find the child much worse in every way. Upon asking whether the medicines ordered had been properly administered, the father informed him that "it was no use to give the child any medicine; she was God's child and in His hands; that if He intended her to recover she would get well without medicine, and if she should die it was His will." He then refused to send for the medicine or administer it. The doctor thereupon left, telling Larsen he would have nothing further to do with the case, and reported it to the Board of Health. The authorities here told him that they had no jurisdiction in the matter and could not force medical attendance upon any one, but they would send word to the Society for the Prevention of Cruelty to Children.

At the request of the society I then went to the residence of Larsen, where I was informed by him that neither he nor his wife would give the child medicine, for the reasons stated to Dr. Prendergast. He furthermore told me that he had called in the latter only to comply with the regulations of the Board of Health, which provide that medical attendance shall have been given at least twenty-four hours before death in order to obtain a death certificate from the physician in charge, and not for the purpose of treating the child. He had no objection to my seeing the child, whom I found very ill indeed; the breathing was labored and stridulous, the voice reduced to a whisper, and the appearance of the little patient certainly alarming. It was evident that the membrane had extended to the larynx, which was not the case when Dr. Prendergast saw the patient the last time. I did not make any examination of the child's throat. The next morning I made inquiries at the Board of Health as to their power of interference, and was informed by the deputy commissioner, Dr. Young, that the department had no jurisdiction in the case. The same answer was obtained at the office of the Commissioners of Charities and Corrections. I next went to the office of the District Attorney, where I was informed that the offenders could be arrested and prosecuted under Sections 288 and 289 of the Penal Code, as had been suggested by the superintendent of the society. On the afternoon of this day, Saturday, November 29th, the father was arrested, but it was thought best to try and keep the mother at the house to look after her other child, an infant twenty months old. I then took forcible possession of the sick child, placing her in charge of two trained nurses, one for the day and one for the night, and assumed medical attendance myself. I prescribed the necessary medicines and instructed the nurses to report to the nearest police precinct any interference on the part of the mother or any one else. Upon my next visit later in the evening, I found that my orders had all been carried out, and had met with no opposition.

The following day I had the first chance to thoroughly examine my little patient, and found a much graver condition of affairs then I had at first supposed. Her tonsils, uvula, palate, both nostrils, and vault of the pharynx were covered with membrane, the breathing was very labored and stridulous, the whole chest and abdomen heaving in the effort to get sufficient air, and the voice was almost entirely lost, making it certain that the membrane had also invaded the larynx. In addition to the diphtheria I also found the child suffering from scarlet fever. Her temperature was 103·5° F.; pulse 138, intermittent and very weak; respirations 58. The mother told me that the patient had received but very little nourishment in the past week—not more than about eight ounces of milk in twenty-four hours, and nothing else; it had been impossible to give her more, because it hurt her so much to swallow. On the second day of my attendance I examined the urine, and found the kidneys also involved. The improvement of the child was evident after the first twenty-four hours of treatment, and, I am happy to say, has continued uninterruptedly up to the present writing. All evidences of diphtheria have disappeared, the temperature and pulse are normal, the condition of the kidneys is steadily improving, and, barring accidents and complications, I think she will make a good recovery from the scarlet fever and the accompanying kidney lesion.

On December 7th, a week after my first visit, the baby, a girl twenty months old, was also taken ill; temperature 103·5°, pulse 160. Upon examining the throat, I found her also suffering from diphtheria, and placed her at once under the care of the nurses without meeting with a protest from the mother. In this case the tonsils only are involved, and she is much improved to-day (December 12th); temperature 98·5°, pulse 120, and the membrane looks as if it would be shed in a day or two.

Case II.—A man by the name of Jansen called at my office, Saturday, December 7th, and asked me to call and see his sick baby, who he thought was suffering from scarlet fever, telling me, however, that he did not believe in medicines. When I asked him if he would give the medicines prescribed, he said he would not, nor would his wife, who was also sick with a sore throat. He furthermore stated that he only called me in because I had charge of the cases at Larsen's, and in order to satisfy the regulations of the Health Board in regard to a death certificate in case this should be needed. I called his attention to the existing laws, which he was violating by refusing medical aid to his child, and pointed out the probable punishment in store for him. But, of course, this all had no influence upon him, and he gave the same answer to all my objections—namely, that he was in God's hands, who would take care of him.

I then reported the case to the society and proceeded to the man's house in company with an officer of the society. I found a child, six months old, suffering from scarlet fever, and also from a purulent eruption of the face and scalp. The mother, who submitted to an examination of her throat willingly, was suffering from diphtheria. Nursing these two patients were two women of the same sect, one of whom I had found in charge of the first case. She had been in the family of Jansen for a week, going there directly from Larsen's when I sent her away. It was on the seventh day after her arrival at Jansen's that the disease broke out there, the regular period of incubation in scarlet fever, and there is no doubt in my mind that she conveyed the disease from one to the other. It seemed to me that something should be done to destroy this source of infection, as the nurse might continue to spread the contagion among a large number of people, and with this view I called again upon the health authorities.

I stated my case to Dr. J. Griffin, the commissioner, who told me that I had been misinformed at my former visit, and that the Board of Health had the power to interfere in these cases on the ground that the public health was endangered. I expressed it as my opinion that both mother and child were in a condition to be transferred to the County Hospital at Flatbush, and requested him to do so if it met with his approval. He entirely coincided with my views, and promised to send an

inspector to the place at once, with instructions to remove the patients to Flatbush in case he found the conditions as represented by me, and the husband and wife still persisting in their refusal to accept medical aid. The inspector corroborated my statements, and removed both patients to the hospital late in the evening. He also placed the floor where the cases occurred under quarantine, and forbade Jansen and the two nurses to leave the house until the quarantine was raised. The next morning these three disobeyed this order by going to their place of meeting, which was crowded with adults and children, and consequently were arrested on the charge of endangering the public health.

These cases are of interest chiefly from their medico-legal aspect. The sections of the Penal Code under which the offenders will be prosecuted are as follows:

SECTION 288. A person who willfully omits, without lawful excuse, to perform a duty by law imposed upon him, to furnish food, clothing, shelter, or medical attendance to a minor, is guilty of a misdemeanor.

SEC. 289. A person who, having the custody of a minor, either—

1. Willfully causes or permits the minor's life to be endangered, or its health to be injured, or its morals to become depraved; or—

2. Willfully causes or permits the minor to be placed in such an occupation that its life is endangered, or its health is likely to be injured, or its morals likely to be impaired;

Is guilty of a misdemeanor.

SEC. 675. A person who willfully and wrongfully commits any act which seriously injures the person or property of another, or which seriously disturbs or endangers the public peace or health, or which openly outrages public decency, for which no other punishment is expressly prescribed by this code, is guilty of a misdemeanor.

Among the city ordinances relating to the Department of Health the following two sections are also applicable to the cases under consideration:

SECTION 8. That no person shall carelessly or negligently do, or advise, or contribute to the doing of any act or thing dangerous or detrimental to the health of any human being; nor shall any person knowingly do, or advise, or contribute to the doing of any such act or thing not actually authorized by law except with justifiable motives and for adequate reasons; nor shall any person omit to do any act, or to take any precaution reasonable and proper, to prevent or remove danger or detriment to the life or health of any human being.

SEC. 140. That no person shall within the built-up portions of the city, without the permit of this board, carry or remove from one building to another, or from any vessel to the shore, any person sick of any contagious disease. Nor shall any person, by any exposure of any individual sick of any contagious disease, or of the body of such person, or by any negligent act connected therewith, or in respect of the care or custody thereof, or by a needless exposure of himself, cause or contribute to or promote the spread of disease from any such person, or from any dead body.

Any one violating these sections of the Penal Code and of the city ordinances is guilty of a misdemeanor, the extreme penalty for which is imprisonment for one year and a fine of five hundred dollars.

In the event of a fatal termination resulting in the case of a child the parents are guilty of manslaughter. The English courts in the case *Reg. vs. Downes*, 13 "Cox's Cr. Ca.," 111, held that "It is no answer to the charge of manslaughter that the parent so neglected from a conscientious religious belief that it was wrong to call in medical aid, and that medical aid was not required, and not from any intention to disobey the law."

From these quotations it will be seen that the provisions of the law are ample to reach at least some of the wrongdoings of these religious fanatics. In every case where a child is concerned, the Sections 288 and 289 are sufficient to bring the offenders within the reach of the law, and when the case is one of a contagious disease in either a child or an adult the boards of health of this State have the power to interfere and compel medical care and attendance. If all the cases belonging to these two classes, which may come to any one's notice, are reported to the proper authorities, the believers in faith and prayer as a panacea for all ails will receive a wholesome check. I believe it is useless to attempt a reform in the present adherents to the faith cure; they are deaf to all reason and logic, and will continue to be guided only by their superstitions. But the legal interference in their practices and a few severe punishments will frighten off new-comers, and thus we may hope to prevent an increase in their number. Those who may be punished will be strengthened in their belief and regard themselves as martyrs of their cause, as were Christ and His apostles, whose lives these fatalists try to emulate. As I stated before, I believe they are honest and sincere in their belief. Most of them are kind and peaceful, and it may seem that the punishments for their offenses are harsh and too severe. But, as they refuse to be taught, they must be treated as children and punished when they do wrong. The penalties inflicted can not be considered too severe when we regard for a moment the seriousness of their offense. Their practices create hot-beds for two of the most dangerous and fatal diseases of childhood, and add to the already too large number of cases of contagious diseases which are constantly occurring among the poorer classes and which are never attended by a physician. Many of the poorer people never think of sending for a physician in a case of measles or of sore throat (diphtheria), and not even in a case of scarlet fever; and I think in this fact is found, to a great extent, the explanation of the large number of cases of these diseases annually occurring. The members of families in which cases of contagious diseases exist mingle in the course of the day with a large number of people, both at school, in public conveyances, and in their crowded tenements, and thus they may produce a large number of new cases.

The cases cited here have pointed significantly to the good work that is being done by the societies for the prevention of cruelty to children. Had it not been for the existence of our local society, these cases would have passed unnoticed, as has been shown by the difficulties experienced to find the proper authorities who would take action in the matter. The chief trouble was that no precedent existed, but now that this has been established, future cases, if discovered, will encounter no difficulties.

From this recital it appears that medical men will

be called in only to furnish death certificates, when these seem likely to be needed, and it will be only in this way that cases will come to public notice. I would suggest to the members of this association to disseminate widely the facts presented in this communication, and to report to the proper authorities any cases which may come to their notice. They will thus not only promote public health, but aid greatly in preventing the spread of harmful superstitions and fanatical beliefs.

Note.—Since the reading of this paper the cases have come up for trial before Police Justice J. G. Tighe, who found all the defendants guilty, and imposed the following sentences: Larsen, to pay a fine of $500 or stand committed one day for each dollar; Jansen, $200 fine or imprisonment; Maria Peterson, $100 fine or imprisonment; Anna Jensen (the nurse who was first at Larsen's), $150 fine or imprisonment.

A CASE OF ACTINOMYCOSIS IN MAN.*

By J. M. BYRON, M. D.,
DIRECTORY OF THE BACTERIOLOGICAL LABORATORY OF THE UNIVERSITY OF THE CITY OF NEW YORK.

The case which I present to the society to-day is one of actinomycosis in man. I am unable to relate a complete history of it, for I understood its importance rather late. When I first saw the patient my diagnosis was different from that made later—after I had examined the pus and found the characteristic fungus—the *Actinomyces bovis*.

This disease is not so rare as was once supposed. If relatively few cases have been observed, it is principally due to the difficulty of diagnosis and a symptomatology that makes it resemble a great deal other diseases, principally peripleuritis and empyema.

The *Actinomyces bovis* was first described by Böllinger, in 1876, who described it as the cause of a special disease in the bovine species. Israel, in 1878, found it in man. After Israel, Bizzozero, of Italy, made a very accurate study of the disease, and in a very short time had the opportunity of observing thirteen cases.

The fungus was successfully cultivated for the first time by Oscar Israel, in coagulated blood serum, and afterward by others and by myself in different media—such as potatoes, sweet agar-agar, etc. The growth is very slow, and from four to seven weeks elapse before any noticeable portion of it can be seen. The best temperature is about 37° C. It forms on potatoes small, round lumps, of a yellowish-white color, resembling very much colonies of tubercle bacilli on the same media. It is inoculable, and the animals inoculated are fatally attacked by the disease.

The lesions produced by the actinomyces vary a great deal, from the production of pus to the formation of a neoplasm; but all of them bear a striking resemblance to those of tuberculosis.

The symptomatology is variable, according to localization. It may produce exactly the same lesions and symptoms of an ordinary tuberculosis of the lung as a prevertebral abscess, an empyema, or a cold abscess, etc. In all cases a careful microscopical examination of the products offers the only means of formulating a correct diagnosis and directing a proper treatment.

The patient whose case is presented in this paper came to me about the last days of last June, complaining of a pain in his right side. He was a young man of twenty-eight, strong, and had always been healthy. No family history either of syphilis or of any other diathetic condition. About a month before coming to me he had chills and after-fever, symptoms that have ever since continued. On percussion I found a limited dullness extending for about four inches square, from the fifth to the seventh rib, between the anterior and the posterior axillary lines. There was no deformity of the chest. Auscultation showed diminished vesicular murmur, a few very fine râles, and a pleuritic friction. My diagnosis was that of lobular pneumonia and pleurisy. I ordered him to bed, and gave him some stimulants. I did not hear from him for more than two weeks, when I found his condition worse. In the place of dullness I could see now the intercostal spaces rather prominent and œdematous. I made a puncture and obtained pus. When the patient heard that an operation had to be performed in order to extract the pus, he refused and went away for another fortnight, to return again. He had been to several other physicians, who pronounced it a case of empyema. Examining the pus which I extracted with an aspirator, my suspicions were awakened by its peculiar appearance; it contained very minute lumps, like grains of sand, which made me immediately think it a case of actinomycosis or, better, a case of *peripleuritis actinomycotica*, and the microscope confirmed my suspicions. The pus contained millions of the fungi. The treatment had to be changed accordingly. I proposed an operation, which was permitted, and performed on the 23d or 24th of July last. I extracted a piece of the seventh rib, and then scraped and drained the cavity; but, notwithstanding this, the suppuration continued, and the man, fearing his end was near, sailed to his native country, hoping to find there better opportunities of recovery.

As I stated when beginning, this is not a complete clinical history of such an important case, but I confess it was due to my mistake in diagnosis. Had I examined the pus at first, as I usually do in every case that comes under treatment, I should have to-day the pleasure of submitting to you something worth your attention.

Actinomycosis is a new disease and is an infectious disease, the symptoms of which are, as I have stated, similar to those of other diseases, and probably a great many cases of it pass under other names.

When localized it is not difficult to treat it with success, but if the internal organs are invaded by the germs it is as fatal as tuberculosis. The only way to avoid its spreading is to destroy all animals that are diseased. An examination of the slaughter-houses by intelligent men, who will report every case of actinomycosis in the cattle, is absolutely necessary in this and other diseases that seem to have been transferred to man from the lower animals.

* Read before the Society of the Alumni of Bellevue Hospital, October 2, 1889.

Transmission of Disease by Brushes and Dental Instruments.—"A discussion recently took place at the Conseil d'hygiène concerning the transmission of certain diseases by hair-dressers and dentists, the brushes and instruments being used in common for all their clients. M. Lancereaux wished to have stringent measures enforced, and cited a case of phthisis which Dr. Cochrane, an American dentist, alleged was transmitted by a dentist's instrument. M. Dujardin-Beaumetz and others declared that there were great difficulties in the way, but recommended great care in schools and public institutions."—*Brit. Med. Jour.*

THE
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Edited by FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, DECEMBER 28, 1889.

ELECTRIC CATAPHORESIS AS A THERAPEUTIC MEASURE.

In an article with this title published in our issue for April 27, 1889, one of our contributors, Dr. Frederick Peterson, described some of the results obtained by him in the use of cocaine, aconitine, chloroform, and helleborin, in varying solutions, with the galvanic anode. His experiments demonstrated the value of the cataphoretic method for the production of local anæsthesia and for the relief of pain in neuralgias of the superficial nerves. He suggested its employment with other drugs, such as iodine, whenever it was desirable to use them topically, or where they were to be introduced into the system for general purposes.

The growing recognition of this method is illustrated by two recent contributions to the literature of the subject. One is a preliminary report made by Dr. Gärtner and Dr. Ehrmann to the Imperial-Royal Society of Physicians of Vienna, on November 22, 1889 ("Wiener med. Blätter, Nov. 28, 1889), upon the cataphoretic use of corrosive sublimate. An electric bath-tub with two compartments, invented by Dr. Gärtner, was employed for the purpose. From four to six grammes of corrosive sublimate were dissolved in the water of the bath and a current of 100 milliampères was passed through the person experimented upon for from fifteen to twenty minutes. The urine of the patient was examined both before and after the bath. It was shown that, while previously entirely free from mercury, the urine subsequently contained this metal in as large a quantity as 1·3 milligramme, and, furthermore, that the mercury was to be detected for even so long as from four to six days after the bath. The authors expect good results on the grounds that it is an efficacious method of cutaneous mercurial medication, that the receptive surface presented to the drug is much larger than by any other means, that mercury may thus be made to influence localized morbid foci, and that exact dosage is possible, since the introduction of the medicament is in exact proportion to the current strength and duration of contact.

At a meeting of the Harveian Society in London, on November 7, 1889 ("Brit. Med. Journal," Nov. 16, 1889), Dr. Cagney read a paper on the administration of certain drugs by electricity. He had made use of iodide of potassium in this way for the treatment of labyrinthine deafness and lead palsy. He speaks of the method as best adapted to the treatment of local disease of the skin and mucous membranes and subjacent tissues, and believes that iodine and the potassic iodide will be of particular value employed in this way. Cataphoresis had proved useful in syphilitic and other affections of the throat, and especially in chronic pharyngitis.

This method, therefore, seems to present many advantages in the way of medication, and is perhaps destined to take a very important position in the therapeutic procedures of the future. It opens a way not otherwise attainable for influencing tissue metabolism and for changing morbid nutritive processes by sending the drugs into direct and immediate contact with diseased parts through a force which in itself must greatly enhance their active medicinal properties.

MINOR PARAGRAPHS.

THE PRESBYTERIAN HOSPITAL.

The accident that lately happened to this institution, whereby one of its buildings was partly destroyed by fire, seems likely to prove a blessing in disguise, for it is bringing before the public the resources and energy of the governing body, and it has demonstrated the intrepidity of the gentlemen of the house staff as well as their humanity and faithfulness to duty. When a citizen arrived in haste, under the supposition that he was the first to acquaint the house officers with the fact that a fire was in progress, he found them engaged in providing for the safety of the inmates, a task which, we are glad to be able to say, was accomplished without the slightest accident and with no approach to a panic. The very sensible course pursued by the medical house officers has met with due appreciation on the part of the governing body, and they, for their own part, have shown such energy that it was evident some days ago that comfortable quarters in the institution would be ready for a great number of patients by Thursday of this week. In short, the excellent management of the hospital has been made so manifest to the community that certain important additions in the way of new buildings are sure to be accomplished more speedily than they might have been without the occurrence of the fire, for it has been the means of bringing in notable additions to the funds.

THE VAGINAL SPECULUM AMONG THE ANCIENTS.

According to the "British Medical Journal," Dr. Ali Cohen describes a passage in the Talmudic treatise called the Niddah, in which the physician is instructed to introduce a "siphopheroth" when in doubt whether a hæmorrhage is from the uterus or from the vagina. It is said that, on passing in a "mechul" (long wooden rod) covered with "mouch" (a preparation like charpie), the latter will be covered with blood if the hæmorrhage is uterine. The "siphopheroth" was a leaden cone, its orifice bent inward, in order not to wound the vagina. The name of the instrument is manifestly of Greek origin, but the evidence is inconclusive that it was actually employed to inspect the cervix.

RICORD'S MEMOIRS.

The memoirs of Ricord's life and professional career are said to have been left in a good state of preparation for the printer. They will bear the striking title of "The Nineteenth Century seen with the Speculum."

"ACCIDENTAL DEATH" BY FOOTBALL.

The "British Medical Journal" insists that new rules should be framed for the game of football. In the "Journal" for December 7th the death of a theological student from fracture of the spine is recorded as consequent upon a scrimmage in that game, and it is stated that a coroner's jury returned a verdict of "accidental death." About the same time a man had his leg

broken and was otherwise injured in the course of regular play. He escaped an "accidental death," but he has probably played his last game. The reports of football matches in England are continually affording fresh evidence that the existing rules of play must be amended.

"JUMPERS" IN SOUTH AFRICA.

Dr. Bennett, of Griqualand, writes to the "South African Journal" that a nervous affection is met with among the natives closely resembling that which the late Dr. G. M. Beard described as observed among the French Canadians who are known as "jumpers." The involuntary activity in the African victims to this affection is incited by the sharp word of command or sudden exclamation by some one near at hand, very much as in the case of those among the Canadians. All the cases observed by Dr. Bennett were in males.

SEXUAL DEBAUCHERY AND SEXUAL PERVERSION.

An esteemed correspondent, who desires that his name should not be mentioned in the matter, expresses his appreciation of Dr. Holder's article on "The Bote," lately published by us, but points out the injustice of including sexual perverts with sexual debauchees, for the former are born with defects that impel them to repulsive practices, while the latter adopt them deliberately. Our correspondent expects to be able some time to publish some autobiographical notes by a pervert whom he describes as "a cultivated gentleman," and he thinks they will be of much literary and professional interest.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending December 24, 1889:

DISEASES.	Week ending Dec. 17.		Week ending Dec. 24.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	21	5	14	2
Scarlet fever	71	5	57	6
Cerebro-spinal meningitis	1	1	0	0
Measles	70	2	43	6
Diphtheria	109	30	99	16
Varicella	1	0	8	0
Influenza	0	0	7	0

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from December 15 to December 21, 1889:*

Alexander, Charles T., Lieutenant-Colonel and Surgeon, will be relieved from duty as medical director, Department of the Columbia, on receipt of this order at the headquarters of that department, by direction of the Secretary of War, and will report in person to the commanding general, Division of the Atlantic, for the purpose of preparing for and becoming familiar with the duties of attending surgeon in New York city. He will also, upon his arrival in New York, assume the duties of examiner of recruits in that city.

Waters, William E., Major and Surgeon, will take temporary charge of the office of medical director, Department of the Columbia, upon the relief of Lieutenant-Colonel Alexander, and perform the duties pertaining thereto. S. O. 291, A. G. O., Washington, December 14, 1889.

Macauley, C. N. B., Captain and Assistant Surgeon. With the approval of the Secretary of War, the leave of absence granted in S. O. 166, November 8th, Department of the Missouri, is extended one month. Par. 10, S. O. 294, A. G. O., December 18, 1889.

Robinson, Samuel Q., Captain and Assistant Surgeon (Fort Hamilton, New York Harbor), will proceed without delay to Fort Warren, Massachusetts, and report to the post commander for temporary duty. Par. 5, S. O. 289, Division of the Atlantic, December 18, 1889.

McCreery, George, Captain and Assistant Surgeon (Fort Warren, Massachusetts), is granted leave of absence for one month, to take effect upon the arrival at that post for temporary duty of Captain Samuel Q. Robinson, Assistant Surgeon. Par. 6, S. O. 289, Division of the Atlantic, December 18, 1889.

Ball, R. R., First Lieutenant and Assistant Surgeon, is relieved from temporary duty at Fort Sill, Indian Territory, and will return to his proper station, Fort Riley, Kansas. S. O. 182, Head-quarters Department of the Missouri, Fort Leavenworth, Kansas, December 12, 1889.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending December 21, 1889:*

Kite, I. W., Assistant Surgeon. Promoted to be a passed assistant surgeon.

Stone, E. P., Assistant Surgeon. Promoted to be a passed assistant surgeon.

Norton, O. D., Assistant Surgeon. Promoted to be a passed assistant surgeon.

Henry, Charles P., Assistant Surgeon. Placed on the retired list.

Pickerell, George McC., Assistant Surgeon. Ordered to Navy Yard, Washington, D. C., for temporary duty.

Letters to the Editor.

A SWINDLER.

230 West 135th Street, New York, *December 20, 1889.*

To the Editor of the New York Medical Journal:

Sir: It may be of service to some of the profession if you would print a notice warning them of the rascal who visited my office to-day. Pretending to represent his brother, who he said was a patient of mine whom I had advised to go south, he requested a receipt and tendered a check for $35, the supposed bill amounting to $20. Now, he had evidently posted himself in regard to some of my affairs, and watched the house to be sure of my absence, when the only members of the family in were females. I learned afterward that he had been seen loitering around during the early part of the day. Having only ladies to deal with, and pretending to be very anxious to settle the bill before they left the city, he very nearly accomplished his purpose. He is tall, thin, middle-aged; hair very dark and very slightly tinged with gray, and thin almost to baldness on the top of the head; face long and thin; eyes black; a grayish mustache, whiskers, and beard which is parted in the middle and brushed to either side; wore a pepper-and salt business suit, no overcoat, and a black Derby hat.

H. Schroeder, M. D.

POISONING BY ILLUMINATING GAS.

1519 John Street, Baltimore, *December 17, 1889.*

To the Editor of the New York Medical Journal:

Sir: I scarcely know whether to notice the obscure imputations in the article on "Poisoning by Illuminating Gas," by a Dr. Crossland, in your issue of the 14th inst., or to let them pass.

The doctor speaks of "false impressions contained in Dr. Kloman's article," the meaning of which I am too obtuse to decipher. A writer may want to create false impressions, but how they can be "contained in an article" is too much for me. Again, the doctor accepts my statement in regard to the percentage of carbon monoxide in one paragraph, and in the very next says the "comparative amounts do not seem in accord." Nor does he define his meaning of these, to me, obscure observations. However, the doctor agrees with my idea that treatment by nitroglycerin is "the remedy par excellence." The idea just now occurs to me that perhaps the doctor may wish to state that I was not the first person to suggest or use this treatment. This may be so, but, if so, I am unaware who mentioned or used it earlier, and shall be very glad to be informed. The doctor seems to have had a very unreliable preparation of nitroglycerin on hand, judging by the effect. Tablets for hypodermic use are far more reliable than solutions.

WILLIAM C. KLOMAN, M. D.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN LARYNGOLOGY AND RHINOLOGY.

Meeting of November 26, 1889.

Dr. CLARENCE C. RICE in the Chair.

A Laryngeal Growth.—Dr. J. H. BILLINGS referred to the case of laryngeal growth presented at the previous meeting. The patient, three days afterward, had been taken to the hospital. It would be remembered that much uncertainty had surrounded the case and a diagnosis had been withheld pending treatment for an assumed specific origin to the growth. It would also be recollected that the growth had already threatened the patient's life. At the hospital he had been put upon large doses of iodide of potassium. The stenosis had become so great that tracheotomy was resorted to. After the tube was inserted the iodide was vigorously pushed. The neoplasm had then begun to get smaller and the patient was again present, so that those who had examined him previously might observe the result of the specific treatment.

Papilloma of the Vocal Cord.—Dr. S. SHERWELL, of Brooklyn, cited the case of a young girl with papilloma of the left vocal cord. She had been put under treatment which had proved more or less ineffective. The tumor had commenced to grow larger. Spasm had occurred now and then. Treatment by insufflation of salicylic acid and sugar of milk, though it did not reduce the bulk of the tumor, had seemed to render it softer. Another physician, who was attending to the above-named treatment, had happened one day last week to pass a closed forceps into the throat. Spasm had immediately resulted with the apparent effect of drawing the tumor down until suffocation became imminent. The speaker was hurriedly summoned and had found the child *in articulo mortis*. Though no time was lost in making an incision into the trachea, the patient was to all intents and purposes dead. Ten minutes elapsed after the tube was inserted before any perceptible breathing occurred. A few days later thyreotomy was performed and the tumor removed. In bulk it was about one cubic inch. The patient had so far progressed nicely. Her vocal cords were open and there was a good lumen, with a fairly hoarse whisper. He had not removed the tracheotomy tube, but had withdrawn the inner tube to allow all the ingress of air possible.

A New Inhaling Apparatus.—Dr. J. W. GLEITSMANN demonstrated the working of a new inhaling apparatus, invented by Dr. Jahr, of Europe. The apparatus had been used during the past year in Bavaria. The principal point made in favor of the contrivance was that its internal arrangements were such as would allow of the delivery of a spray or vapor at any desired temperature. It could also be used for medicated solutions and volatile substances, and dry or moist air.

Dr. B. ROBINSON said that the apparatus seemed to fill all possible requirements. His experience had led him to think that warm-air inhalations, though of undoubted advantage, should be used with extreme caution from the liability of the patients to suffer from subsequent atmospheric changes. He thought that the profession at large should be made aware of this danger, and patients, after receiving vapor inhalations, should be warned to be extremely careful.

Dr. J. M. W. KITCHEN said that he could corroborate what Dr. Robinson had said as to the danger following warm inhalations. He was in the habit of following these up immediately by cold water spray, and this obviated the difficulty and enabled patients to go out without danger from the atmospheric change.

The Indiscriminate Use of Cocaine.—Dr. H. HOLBROOK CURTIS read a paper on this subject. He said that the long-predicted reaction against cocaine had finally assumed definite proportions, and the journals were plentifully supplied with cases of cocaine habit and cocaine poisoning. Little stress had, however, been laid upon the more important question as to the responsibility involved in prescribing small doses of cocaine for acute coryzas and for the relief of conditions of nose and throat in which the discomfort was but slight and other remedies nearly as efficacious. Two years had elapsed since the writer had reported several cases of stoppage of the nostrils due to the continued use of a cocaine spray, and the consequent alteration of nasal function and nutrition. Such conditions, then a rarity, had been so frequently encountered of late that he was prompted to sound a note of warning to the profession in general and join in the hue and cry against a drug so insidious in its captivating allurements, so instantly relieving, but from whose bondage it was so difficult to become freed. The cocaine habit had already a full literature, but the number of cases in which poisonous symptoms had occurred from even minute doses would be surprising to many who had become overconfident in their estimation of the drug. In a paper read before the Ninth International Medical Congress, the writer believed that he was the first to recognize that the continued use of the drug by nasal atomization in very small quantity would produce a nasal stenosis and over-stimulation and contraction of the erectile plexus giving place eventually to permanent dilatation due to vaso-motor paresis. In this condition the nasal mucous membrane became dull-gray in color and presented an œdematous appearance; or it might, on the other hand, retain its normal color, but become tumefied, no longer contracting even upon the application of cocaine crystals, suggesting a transition to true hypertrophy by increase of the connective-tissue elements at the expense of the vascular. This was the picture now constantly presented to the rhinologist. Besides this, the constitutional symptoms deserved also special consideration. As regarded dose, there existed the greatest difference as to individual susceptibility. Some patients became affected with giddiness, exhilaration, and loss of muscular co-ordination when less than a grain of the drug had been absorbed in the nasal cavities. Other patients might tolerate ten grains without a symptom other than local anæsthesia. Toleration of the drug increased with use; one patient under the writer's observation had used three ounces of a ten-per-cent. solution daily, with results as

below stated. As to how little of the drug we might employ and not produce harmful results, he was unprepared to say. Many persons were advised by their physicians to employ a two per-cent. solution of cocaine, perhaps with camphor-water, for the relief of an acute coryza, or to overcome the feeling of oppression caused by congested turbinated bodies. The effect was immediate, and the feeling of relief was attributed entirely to the free passage of air through the nose by reason of contraction of the erectile tissue. Unfortunately, this was but the smallest element of their satisfaction, for the increased mental activity, the elevation of spirits, the quickening of circulation, and general exhilaration were due directly to the effect of the drug itself, and a continuance of the custom would inevitably lead to the dire results that we were to-day becoming too well acquainted with. The profession could not become too quickly impressed with the fact that the indiscriminate use of cocaine among the laity threatened to introduce, and he might say already had introduced, a condition which might be designated as *cocaine heart*, the symptoms of which were a feeling of fullness in the præcordial region on rising in the morning, flashes of pain, and consciousness of the possession of a heart. This paræsthetic condition persisted almost constantly, but was accentuated directly after using the drug. Then followed in a short time palpitation and enfeebled action, the result of enervation of the sympathetic nervous system. Aside from this cardiac complication there were observed great restlessness and increasing prostration; the patient became pale, sallow, and mentally dejected; to remedy this condition the dose of the drug was increased, and alcohol and tobacco were usually indulged in to excess. This condition, together with the resulting nasal stenosis, generally brought the patient to the office of the specialist. He had encountered many such patients recently in whom the habit had been the outcome of using a spray of a weak cocaine solution to relieve an acute coryza or a passive hyperæmia of the nostrils. In the cases, some seventy of which had been collected as typical, he had endeavored to show the symptomatology, and more especially to demonstrate the peculiar susceptibility of certain individuals to poisonous effects from small doses of cocaine, as well as to cite instances of marked toleration of the drug. In a history of over five hundred cases in which he had used cocaine in the nasal cavities—an average of three grains left *in situ* on a pledget of absorbent cotton for ten minutes previous to operation—he had observed faintness in about one in five; but it was difficult to distinguish the cocaine symptoms from those of shock from the operative procedures. The speaker then cited a large number of cases in illustration of the theories he had advanced.

Dr. H. Koller, the discoverer of the anæsthetic properties of cocaine, who was present by invitation, was then asked if he would give the Section the benefit of any experience he might have had as to the possible dangers of the drug. He said that he had made it a rule never to give cocaine into the hands of patients, and indeed he never prescribed it, but always used it himself upon his patients. One did not, he said, give chloroform and ether to patients to be used by them indiscriminately, and why make cocaine an exception? Then, again, cocaine should, he thought, not be used in the nostrils in greater strength than a five-per-cent. solution. He knew he could produce with this just as useful effects as with a twenty-per-cent. solution—it was only a question of taking a little more time. The effect of the first application of a weak solution to the mucous membrane of the nose was a superficial anæsthesia, with contraction of the smaller blood-vessels. The circulation of the part became more or less limited and the blood was not carried away. By several subsequent applications of the same solution an effect was then produced exceeding that of a single application of a twenty-per-cent. solution. He had found it advisable when making subcutaneous injections of the drug to discriminate between the strength of the solution used in the limbs and that employed upon other parts of the body, the latter calling for the weaker solution, for the avoidance of intoxicating effects. For making plastic or skin operations he never used a solution stronger than two per cent. As an instance of the deleterious effects of the persistent use of the drug he narrated the case of an eminent professional man in Vienna. This gentleman had become addicted to the use of morphine, and a friend of the speaker's had endeavored to break the habit by the administration of cocaine. One of the symptoms produced had been very marked. The patient had had the hallucination that all over his skin were pimples out of which little animals were creeping. This seemed the only mental disturbance produced, but no reasoning could shake the patient's conviction in this respect. In another case, treated heroically by the drug, the same symptom had been produced. The speaker contributed this experience, as he believed it might not be generally known.

Dr. M. J. Asch said that his experience differed from that of Dr. Curtis. While using the drug freely in a large outdoor clinic and in private practice he had seen but very few cases in which any bad effects had resulted from local applications, and these had been cases of nervous, hysterical women. He was in the habit of using a ten-per-cent. solution in treating the larynx and in endolaryngeal operations, and had found it perfectly harmless.

The Chairman said that his experience would substantiate the conclusions of Dr. Asch rather than those of Dr. Curtis. He used cocaine in a solution of about ten per cent. for the nose, putting in two or three pledgets of cotton wet with the solution, and allowing them to remain in the nostrils for ten or fifteen minutes. While he had never given the matter very careful attention, and had never questioned patients as to sensations produced about the limbs, head, or body, he certainly had never heard them complain. He had, however, seen it produce irritability of the nostrils. It caused a sort of vaso-motor paralysis, and set up a condition very much resembling hay fever.

Dr. Robinson thought that there was no evidence to show that cocaine exercised anything like a toxic influence when it was used locally. There might be some slight exhilaration for a short time after the cocaine spray. When it was given internally, however—for instance, as a cardiac stimulant—decided and endurable effects were observable. The very weak solutions seemed in some instances to exercise a more poisonous effect than the strong ones.

After the question had elicited some general discussion, Dr. Curtis remarked that he seemed to have been misunderstood by some of the speakers. He was an enthusiastic believer in the therapeutical properties of cocaine, and had a profound respect for its discoverer, to whom he felt in a manner personally indebted in that he had honored the meeting with his presence. All he wished to elucidate was that, indiscriminately used, the drug possessed properties which, if not fully recognized, might cause undesirable and deleterious results.

Lupus Erythematosus of the Face and Oral Cavity.—The history of a case was reported by Dr. George H. Fox, who said that it was one of considerable interest, and had been under observation for eighteen months. When the patient was first seen the condition was diagnosticated as being eczematous in character, and was believed to be such for several months. But the surprising obstinacy of the eruption and the frequent occurrence of erysipelatous inflammation, with a dry, pitted appearance of the cheeks, had finally led to the conclusion that it was one of lupus erythematosus of the acute disseminate type. Upon sending recently for the patient, with a view to making a more

careful examination of the oral cavity, as the basis of a report upon the case, the speaker had learned from the family physician that she had suffered from acute pulmonary disease, which had in a few days proved fatal. It might be remarked that the relation of lupus erythematosus to lupus vulgaris had long been an unsettled question in dermatology. Although a certain kinship might exist between them, it was generally admitted that they were clinically distinct affections. The application of the term lupus to both was to be regretted, as it had led many into the erroneous belief that the two affections were simply varieties of one disease. Whereas lupus vulgaris—*i. e.*, the ordinary tubercular form of lupus—was not infrequently observed upon mucous surfaces, a case of lupus erythematosus of a mucous membrane had never been reported in this country to the speaker's knowledge. The cases reported by European observers were extremely few. Kaposi, in an excellent chapter on erythematous lupus, spoke of having seen three cases in which the eruption upon the face had been accompanied by an analogous condition of the oral cavity. The termination of these cases was not mentioned, but reference was made to eight cases of the disseminate form of the disease accompanied with erysipelatous inflammation, of which four of the patients had died of pneumonia.

Dr. Sherwell then presented a girl aged fifteen who he said had first appeared at the clinic of the Eye and Ear Hospital, Brooklyn, in 1887, asking for relief from long-continued aphonia and some pain in her throat. On examination of the throat, the tonsils of both sides had been found to be tumefied and infiltrated; the same condition had existed in the pharynx, but more marked on the left side. Laryngoscopic examination had shown signs of irritative tumefaction and erosions of the larynx and epiglottis, this condition being more marked on the left side, with ulceration of the tip of the free border of the epiglottis. There had been paresis of the left vocal cord, the ventricular band on that side being swollen and infiltrated and presenting a worm-eaten looking erosion. The family history had been good. In spite of this, the patient had presented protean characteristics, which had inclined to the belief that the condition was due to latent specific disease. The patient had for a time been put upon tentative treatment, but with negative results. The disease had progressed slowly, without increasing in intensity, until the upper part of the pharynx and the palatine arch had become involved. The diagnosis of lupus of the milder type (lupus erythematosus) had been made, and afterward established. The patient had been kept under observation, and was doing well without treatment. The infiltration had now left the side of the larynx first attacked and had gone over to the right side, which now presented pretty much the same conditions as the left side had done four years ago. The slight and characteristic scarring left by the trouble could easily be seen over the whole extent of the pharynx and hard palate. The patient's general health was much better than when she had first presented herself. No treatment was being given.

A brief discussion on Dr. Fox's paper closed the proceedings.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN OBSTETRICS AND GYNÆCOLOGY.

Meeting of November 27, 1889.

Dr. J. E. Janvrin in the Chair.

General Observations on the Use of Electricity in Gynæcology.—A paper with this title was read by Dr. A. D. Rockwell. He said that until a recent period the advances in the therapeutic uses of electricity had been more especially along the line of those destructively nervous affections that were neither specific nor structural in their nature. Cases of the latter type had always yielded but meager results under electrical treatment, and the speaker did not know of any competent authority who seriously alleged for electricity, in most cases of structural diseases of the central or peripheral nervous system, more than temporary and palliative effect. The statement that as a therapeutic agent "the effects of electricity are limited" must indeed seem a rash observation to those who had had repeated evidence of the wide range of its influence in the relief of nervous symptoms, and especially to those who had witnessed the really remarkable relief so often afforded by intra-uterine applications of the galvanic current. The speaker did not propose so much to give the results of his own experience in gynæcological electro therapeutics as to allude to some points in the rationale of its effects. He called attention first to the faradaic current. Its effects were mainly mechanical, and according to the construction of the helix, the length and thickness of the wire, did we measure its action on the muscular tissues of the uterus. Applied directly to the uterus of an animal in physiological experiments, the organ visibly contracted, although not to such an extent as the intestines, which, on application of the electrodes, could be seen to gradually draw up, very much after the manner of a woman's work-bag. Its action on the smooth muscular fibers of the human uterus, when applied therapeutically, was analogous to that of ergot, although manifestly more prompt and energetic, especially under the influence of the positive pole, which possessed a far greater power over the involuntary muscles than the negative. By this action a veritable interstitial massage was obtained. It was potent in overcoming the primary inertia of the uterus and in preventing an arrest of retrograde metamorphosis, through which came subinvolution and its inevitable and persistent sequelæ. When the processes that went to make up the graver and more chronic diseases of the uterine parenchyma and its lining membrane had continued a long time, as was usually the case when medical interference was sought, the simple mechanical effects of the faradaic current would be altogether misdirected. Here we resorted to the electrolytic influence of the galvanic current, or rather to what might be more fitly termed its galvano-chemical cauterizing effects, through which were destroyed the granulations and fungoid growths of the diseased mucous membrane. By the interpolar influence of the current we corrected a languid nutrition and hastened the absorption of exudation. Just as the positive pole of the faradaic current had an action of its own superior in effect to the negative in causing uterine contractions, so the positive pole of the galvanic current had an action peculiar to itself. Here oxygen was generated and acids accumulated which rendered this pole directly hæmostatic. It was therefore indicated in all hæmorrhagic conditions as well as where there existed an excess of the natural secretions. At the negative pole the alkalies were precipitated, imparting caustic properties and causing effects fluidifying rather than hæmostatic. The absorptive process was undoubtedly more active under this pole than under the positive, and was especially indicated in indurated chronic metritis and for the resolution of fibroids. That the galvanic current often completely dissipated fibroid tumors of the uterus few would, the speaker believed, affirm. The symptoms could be relieved to a greater or less extent by electrolysis, and sometimes so completely relieved as to lead to the belief, so far as the patient was concerned, that the tumor had entirely disappeared. He was a firm believer in the great utility of the galvanic current in the absorption of the thickenings and infiltrations resulting from inflammation of the pelvic cellular tissue. He had seen the treatment, persistently carried out, result not only in the absorption of large pelvic

deposits, but in the cure of the most obstinate and severe sciatica, and in the restoration of power to partially paralyzed limbs. There were two methods of action through which we obtained results from electrolysis. The first and most apparent was the absolute destruction of tissue which took place at the time of treatment. Some suppuration might follow, and thus, by an actual loss of substance apparent to the sight, the tumor decreased in size. The electrolysis of organic substances started a process that continued long after the current had ceased to flow, and induced various important changes beyond and beneath the eschar. These combined agencies did far more in many cases to diminish the size of morbid growths and prevent further development than an actual destruction of a limited area. The effect of either current in dissipating the uterine and ovarian pains was sometimes remarkable. The speaker related a case in which the patient had suffered intensely from dysmenorrhœa for six or seven years, and had finally resorted to extirpation of the ovaries for the relief of it. The flow had gradually diminished, but the pains had increased in severity. Under the internal applications of the galvanic current, ranging from 25 to 50 milliampères in strength, the paroxysms had yielded rapidly and in a few months recovery was complete. If an agent like the galvanic current possessed such marked influence over so many forms of pain of obscure origin, why should not this treatment precede rather than follow severe operative procedures for their relief?

The Treatment of Certain Pelvic Tumors by Galvano-puncture and Drainage by the Vagina, and Intra-uterine Galvanization.—A paper on this subject was read by Dr. Augustin H. Goelet. The speaker desired to be understood as referring only to such tumors as were easily accessible by the vagina for galvano-puncture, and those which were so intimately associated or connected with the uterus as to be influenced by the chemical galvano-caustic application to the endometrium. He also included under this caption pyosalpinx and hydrosalpinx. The speaker then exhibited the instruments that he used in these operations, and briefly described the methods of their application. For the galvano-puncture, a fine silver cannula, size No. 4 of the French scale, with a steel trocar, was used. The trocar was covered with a slide of insulating material which could be fixed by a screw to the shaft of the cannula, so as to limit the degree of penetration. It was also arranged for connection with the battery. The cannula was so made that it could easily be attached to an aspirator. The method of application was simple; after deciding upon the degree of penetration necessary, the slide was fixed, and the trocar point drawn within the cannula. The vagina and the vulva being douched thoroughly with a solution of bichloride, the index finger was introduced, and, taking care to avoid any pulsating vessel, the most dependent point was selected. Then the cannula, with the point of the trocar concealed, was passed along the finger until it impinged against the spot selected. The trocar was pushed down into place, and the cannula was made to penetrate to the limit fixed by the slide. The trocar being withdrawn, if no fluid escaped, the slide was readjusted lower down and the cannula, without the trocar, was introduced a little farther. When the fluid was evacuated the trocar was partially reintroduced and connected with the battery, the circuit being completed by a large clay electrode on the abdomen or back. In hydrosalpinx the negative pole was used through the cannula, with not more than fifty milliampères for five minutes. In pyosalpinx the cavity must be washed out with an antiseptic solution, as an extra precaution. The positive pole was to be preferred because it was less irritating, and was believed to be more antiseptic. When applied, a cannula made of platinum should be used, as the silver would be acted upon and unnecessary irritation provoked. The cauterization of the track of the puncture by the current shut it off from the surrounding tissues and rendered the absorption of septic material through that channel impossible. If a dressing of iodoform gauze was kept constantly renewed in the vagina there was nothing to be apprehended from that source. Resolution in the diseased tube was promoted by the influence of the current and was still further favored subsequently by mild positive galvanism of the endometrium. The speaker limited this treatment by aspiration to such tubes as were close to the vaginal wall, and where fluctuation might be distinctly felt. These tubes were usually fixed by a mass of exudation. This treatment of hydrosalpinx was suggested to the speaker by observations of three cases of radical cure of hydrocele, which had been accomplished by this method. The hydrocele had repeatedly refilled after ordinary tapping, but had never refilled after using negative galvanism through the cannula. Small cysts close to the vaginal wall were also successfully treated in this way. The fibro-cyst was sometimes more obstinate in yielding to this treatment, especially those lined with a secreting membrane. Some cases yielded to one tapping, and negative galvano-caustic application of one hundred milliampères through the cannula, but in other cases it had been necessary to make the application directly to the cavity. This was done by enlarging the opening with gradually increasing sizes of conical electrodes connected with the negative pole until it would admit a bulb electrode into the cavity. This bulb was fixed upon a small insulated shaft which was flexible, and through it a current of one hundred and fifty to two hundred milliampères was concentrated within the sac. If drainage was not perfect through the opening, a rubber drainage tube was inserted and fastened in position. A dressing of iodoform gauze was kept constantly renewed in the vagina. The speaker related the history of a case of fibroid tumor that had been successfully treated by galvano-puncture. The patient had suffered with very severe periodical pains, which had compelled her to keep her bed for ten days or two weeks out of every month for about eight years. The tumor as found by the speaker was situated to the left of the uterus, to which it was attached near the cervico-vaginal junction and close to the vaginal wall, and was of about the size of a quart bowl. The treatment was commenced with galvanism, but this was not well borne. At the first galvano-puncture through the vagina, the negative pole, with two hundred and fifty milliampères for five minutes, was used. This puncture was followed immediately by a discharge of an ounce and a half of yellow fluid. As this did not continue, it was concluded that a small cyst had existed on the surface of the tumor which had been emptied. Eight days afterward the second negative galvano-puncture was made with two hundred milliampères of five minutes' duration, and no discharge followed. Menstruation appeared two days later with much less pain than before. At the third treatment, the positive pole was used with three hundred milliampères for five minutes. A week after the sixth puncture a copious watery discharge came suddenly from the vagina, and continued to flow away in gushes. Investigation showed that it came from the last puncture tract. The opening was enlarged and the sound passed up four inches into a cavity. All of the fluid was drawn off, but the discharge continued for two weeks as much as a pint a day. A bulb electrode was introduced and one hundred and fifty milliampères of negative galvanism applied to the cavity for eight minutes. Three days later all discharge had ceased. At present, six months since the last application, the patient presented every evidence of perfect health. She had no pain, and menstruation was normal. What remained of the tumor was of about

the size of a hen's egg. It gave her no inconvenience whatever. Dermoid cysts might be treated in the same way, when they contained only sebaceous matter. The condition known as chronic pelvic cellulitis, which was usually manifested by a mass of exudation in one or both broad ligaments, including the tube and ovary, and associated with salpingitis and endometritis, yielded very satisfactorily to galvanization of the endometrium. It was important to begin the treatment always with a small dose, from twenty to thirty milliampères for three to five minutes every second or third day, using the positive pole. It was sometimes even better to begin with vaginal applications. The dose might be increased to fifty milliampères as tolerance was established. Later in the course it might become necessary to substitute the negative pole or vaginal puncture to hasten absorption. This condition doomed the patient to a life of misery, and she was constantly threatened with peritonitis. Laparotomy did not cure; it mutilated. By galvanism she could be promptly relieved of pain, the deposits were softened and absorbed, the inflammatory complications were removed, and she was eventually restored to health with her ovaries and tubes intact, and with a chance of conception. Thomas Keith had truly said: "Apostoli's method, though slow, requiring much patience, tenderness of manipulation, and thought, is still sure in its results." This same writer had added also of electricity: "My confidence in its power to relieve disturbing symptoms of uterine fibroids, and to cure many chronic inflammatory conditions in the pelvis, continues to increase, and I have no fears for the future of electricity." He had said also: "Hysterectomy, remember, which is performed every day for a complaint that rarely of itself shortens life, kills every fourth or fifth woman that is subjected to it. This mortality must cease; it is not a question of surgery; it is a question of humanity. Every time that any disease can be cured without resorting to a bloody and dangerous operation, such as hysterectomy, progress is made in our art, and there is gain to humanity, while surgery is the better for being purged of a deadly operation. Even the fact that in my cases of hysterectomy the removal of the uterus and ovaries was sooner or later followed by insanity in ten per cent. of the whole number, is enough for me to condemn any operation that removes these organs." This was the mature opinion of a most successful surgeon—one who had been the first to lower the mortality of abdominal surgery. The speaker closed his remarks by paying a high tribute to Apostoli, and said that he did not think any one should attempt to pass judgment, in condemnation, on that gentleman's work until he had visited his clinic and witnessed it and its results.

The Galvanic Treatment of Uterine Fibromata.—A paper with this title was read by Dr. E. L. H. McGinnis. The speaker described Apostoli's methods in detail, and also fully described galvano-puncture as practiced by himself at the Woman's Hospital. The speaker's methods did differ materially from those of Dr. Goelet. The negative pole was used in non-bleeding fibroids, the positive as a hæmostatic. The speaker had had the satisfaction of stopping hæmorrhage in several patients that had come to the hospital nearly exsanguinated. He not only had stopped the dangerous bleeding, but had prevented a return of it. He believed that the most obstinate hæmorrhage could be controlled, provided a sufficiently strong current was used and every part of the endometrium brought in contact with the electrode. This was sometimes very difficult, as the canal might be tortuous, and the stiff electrode then failed to touch some spot where there was bleeding. This might be provided for by using a flexible electrode which was insulated to its platinum tip. Should there be fungosities present they would be destroyed at the same time, thus answering the purpose of curetting without leaving a fresh bleeding surface within the uterus. The speaker gave the history of a case at present under his care. He had first seen the patient last February. Her history revealed the fact that she had first noticed the enlargement in her abdomen four years before; she had had all the usual symptoms, including several severe hæmorrhages, which had left her nearly bloodless. She was emaciated to an alarming extent, her pulse was weak, and she felt perfectly certain that her next hæmorrhage would be her last, and that she could not recover from the effects of a hysterectomy. The tumor was situated in the fundus, and extended to the ensiform cartilage. Her waist measured forty-four inches in circumference. The depth of the uterus was five inches and a half. Fortunately, the canal was straight, and there was little trouble in introducing the electrode and thoroughly cauterizing the endometrium. This treatment was continued at intervals of two weeks. The patient was obliged to leave town, and the speaker lost sight of her for some months. She reported in October that she had had no return of the hæmorrhage. The tumor was now down to the umbilicus, was not tender, and gave her no pain. The canal was three inches and a quarter long, and the patient could walk to the speaker's office, which was nine blocks from her home, three times weekly for her treatments. The experience of the speaker with Dr. Apostoli's methods had been more than satisfactory. In conclusion, he urged that the method be given a proper and thorough trial before taking patients to the operating-room, there to undergo the dangers of the knife.

Notes regarding the Treatment of Fibromata by Electricity.—Dr. A. H. Buckmaster, of Brooklyn, in a paper on this subject gave the results of some practical experiments for testing the direct effect of electricity on various tissues. He said that it was desirable to know how these growths were affected by the current. As fibro-myomata were made up for the most part of non-striated muscular fiber, and as it was difficult to obtain an animal with this exact pathological condition, he had selected the heart of the dog as the nearest approach to the tissue required. While the dog was living the heart was exposed, and a current passed through it. Then the portion in the direct line of the current was excised and carefully examined microscopically. At the same time portions a little distance from the track of the current were also removed. In those portions exposed to the full extent of the current the striæ had become markedly granular. Outside this line but little effect was noticed. In the non-striated muscular tissue a marked interpolar change could be demonstrated, consisting in the destruction of the cell elements, a sort of retrograde metamorphosis of a degenerative character. A high current would develop changes in tissue, though its efficacy in this respect was still denied by some observers.

The Value of Bipolar Faradization in Gynæcology.—By Dr. A. Lapthorn Smith, of Montreal. This paper, in the absence of Dr. Smith, was read by Dr. J. R. Goffe. The author said that as they were aware it was Faraday who discovered that an induced current of electricity was set up in a conducting wire which was placed near to but did not touch another wire through which a current was passing, they were also aware that the appreciable effects of the passage of a current of electricity, either direct or indirect, were greatly increased by the interruption of the current. Thus, a continuous current of one hundred milliampères could be easily borne, while if the same current were interrupted it would promptly knock one down. They were also aware that by making the primary wire into the form of a coil and placing a piece of soft iron in it as a core, the iron became magnetic whenever the current passed, and this body of magnetized metal in turn intensified the current in the primary coil. The latter should be made of medium

coarse wire, so as not to offer too great a resistance for the battery to overcome. The battery, which might best consist of two closed cells in a separate portable case, must have sufficient electro-motive force to push through the coil. The secondary or induced coil deserved special attention, because it would depend entirely upon the shortness and coarseness, or the length and fineness, of the wire, whether they would obtain those almost magical effects which were alleged for it. There were many who could not believe that these differences were of any real consequence, and yet there was no fact in medicine of which Dr. Smith was more certain than that the results of these two wires were totally different. The coils used by the writer were wound as follows: The short wire coil, which was about twenty-five yards long, No. 14 or 16 in diameter, was insulated with silk, and varnished between the layers. The fine wire was No. 40, and about a mile long. The short, thick wire gave out nearly the whole quantity of current which was induced in it, and was therefore called the current of quantity. The long, fine wire offered a tremendous friction or resistance to the passage of the current, and was therefore called the current of tension. The current of quantity from the coarse wire coil had long been known to be an excellent tonic to muscular fiber. While it should be placed very high up on the list of tonics, the writer did not think that it possessed any miraculous virtues which were not to be found, to a greater or less extent, in gymnastics, regular exercise, strychnine, quinine, ergot, hydrastin, and cold and hot water. This much could be said for it, however, that in relaxation of muscles the tonic effect could be applied directly to the muscles or group of muscles which were mostly at fault. By means of Apostoli's bipolar electrode it was especially adaptable to the muscular organs in the pelvis. In post-partum hæmorrhage prompt and permanent contraction of the uterus could be brought about by introducing the bipolar electrode and turning on the coarse wire current. Subinvolution, due to defective contraction of the uterus, yielded readily to the bipolar method. The advantages of this were: 1. It was less painful than the old method, because it did not require the current to pass through the skin, which was much more sensitive than the vagina. 2. It was easier to apply and precluded the need of an assistant. 3. It allowed a much stronger current to be tolerated. 4. It was consequently more effective, because the higher the intensity of the dose the more marked the effects. Bipolar electrodes were made with one pole at the extremity and the other separated from it by an interval of an inch or so of insulated material, so that the current had to go through the tissues to get from one pole to the other. In doing so it seemed to set up circles of induction in the neighboring structures, as proved by the following observation: When the current was started with a moderate strength from the fine wire coil, the patient, if asked what she felt, would say that there was a numbness of an area of about the size of a walnut. As the secondary wire was passed over the primary one more and more she would say that the area had increased to the size of an orange, and, finally, when the whole strength was on, the numbness would have invaded the whole pelvis, including the area of pain. The element of pain played an important part in the diseases of women, and very often existed where no organic lesion could be found. More especially was this the case with ovarian pain, a great many cases of which had been completely cured with fewer than a dozen applications of the fine-wire faradism. There were three kinds of cases in which the fine-wire bipolar faradization produced remarkable results: 1. In ovarian pain, where no organic disease could be found. The writer did not pretend for a moment that it would be of any use in even small ovarian cysts; the sooner they were removed by operation the better, and when he saw these presented at society meetings he felt no regret that they had been removed. But when some of our surgeons took two or three pairs of healthy ovaries from their vest-pockets which had been removed on account of pain, he felt sorry that they were not aware how easily that pain could have been relieved by fine-wire faradism. 2. In cases of abdominal pain due to hysteria it acted very promptly, not only in rendering the abdomen insensible to pressure, but also in calming the general nervous crisis within a few minutes. 3. There were many women about the age of thirty who, though fleshy and apparently well supplied with blood, did not menstruate at all or only very slightly. These women felt very uncomfortable; their *embonpoint* made them weak, and they had many nervous symptoms, which placed them in the category of hypochondriacs. Anything that would bring on a full return of the menstrual flow gave them relief. This object would be accomplished by using the current of tension three times a week to the inside of the uterus. 4. In vaginismus it was remarkably effective. The worst case of vaginismus the writer had ever treated was cured in three applications, and the woman became pregnant at the next ovulation. There were some troublesome conditions of the bladder in which the bipolar faradization could be used with advantage. In conclusion, the writer disclaimed any intention of considering bipolar faradism as the only remedy in gynæcology. While we were calming a woman's pain with electricity, we should at the same time be removing the unhealthy conditions of the body generally, on which most often the local disorder depended. All that he wished to say for it was that it was a valuable addition to our therapeutic resources, especially in those diseases of women in which all other methods of treatment often failed.

Dr. P. F. Mundé said that he had been for a number of years much interested in this subject of electrical treatment, and believed he had had ample opportunity to become acquainted with its practical working. He could speak most decidedly in favor of electricity as a therapeutical agent in gynæcology, and had published his convictions on this subject some few years ago. He had seen more benefit derived from galvanism than from faradism in gynæcological practice. He had also found that mild currents used for a long time were more efficacious than strong currents employed for a short time. He used a Leclanché battery of forty cells. For ordinary purposes he used a small meter registering only twenty milliampères. He had another which registered five hundred milliampères. This he had tried only a few days ago in treating a fibroid and had found it faulty. Using galvanism and placing the positive electrode next the sensitive spot in the pelvis, or on the abdominal wall, he had been able to obtain very efficacious results in relieving the pain incident to chronic pelvic peritonitis. In old cases of inflammation with adhesions, with more or less pain in the ovaries and tubes, he had found that the tri-weekly administration of electricity, with the positive current internally, was of decided benefit after some few months of treatment. On the other hand, quite a number of patients, after several months of such treatment, had complained of receiving no benefit whatever, and laparotomy had had to be resorted to. This proved that electrical treatment was not suited to these particular cases. Still he deemed it proper in all circumstances to give the patients every opportunity for possible benefit from electricity before submitting them to a radical operation, which, let it be done by whom it might, could never be without an element of danger. In obscure pelvic pain, due to some inflammatory deposit unrecognizable by digital examination, extending down the sciatic or crural nerves, he had seen instant relief follow the use of electricity when other treatment had failed. While he relied on this treatment, and had found it of great benefit, especially in relieving pain, he thought one might go too far. Very

often the radical operation was the only thing to do. He considered the length of time necessary to achieve palpable results a great drawback to the use of electricity. If it was clear that some good was being done, the time was, of course, not lost. He had been pretty severely criticised some four years ago about the milliampèremeter. At that time this instrument was not used to any great extent—at any rate, he had not been able then to obtain a good one in New York. Even now, though he had two, he was by no means satisfied that it was at all necessary, and was inclined to look upon it as a sort of plaything. When using galvanism for the removal of pain the sensations of the patients would be sufficient guide as to the strength employed. When it came to using the galvanic current on patients under an anæsthetic or for the employment of the galvano-puncture, of course it was necessary to know what the battery was doing. The faradaic current he had found do a great deal of good in curing amenorrhœa by intra-uterine faradization three times a week. He had used electricity only once in extra-uterine pregnancy, in which he had employed the interrupted galvanic current. He had cured his patient after nearly killing her by the shock. In pyosalpinx and pelvic abscesses laparotomy and drainage were to be preferred to galvano-puncture. As to fibroids, he had very decided views. He considered that operative treatment of fibroids of the uterus and ovaries was overestimated. Out of one hundred and twenty-three cases under his observation, about fifty per cent. had required no treatment whatever, sixty-two had required treatment, but only eight of this number, in his opinion, had required Apostoli's method, and four others had called for galvano puncture. Apostoli's method of treatment covered only the intra-uterine use of galvanism with the clay electrode on the abdomen, the galvano-puncture not being strictly his method. He had employed Apostoli's plan eight times in three years, and had also written about it. He could honestly say that, while he believed in it for the removal of pain and in hæmorrhage, and admitted that the patients felt better for its use, not a single tumor had come under his notice that had been much reduced in size.

A Portable Galvanic Battery.—Dr. Franklin H. Martin, of Chicago, exhibited a portable galvanic battery, upon the reliability and effectiveness of which he spoke at some length. He also went into the question of the treatment of inflammatory exudates in the female pelvis by galvanism, giving some of the results of his own cases and his methods of carefully noting the subsidence of these formations by measurement while under treatment.

Dr. G. Betton Massey, of Philadelphia, said that, in regard to this new electrical treatment of the diseases of women, he was of the opinion that a forward movement of great importance had been initiated. So positive and striking was this progress that its degeneration into a fad was to be feared. But the fear of this should not blind us to important facts. During the last few years electricity had itself been revolutionized, and it would be strange indeed if our better knowledge of it did not lead to the better application of this force to the medical arts. There was one class of conditions in which the galvanic current possessed a value unique; that was chronic inflammation of the uterus or of the endometrium. This agent would act as an alterative to the diseased membrane, and at the same time reduce interstitial hypertrophy by promoting both absorption and contraction. In simple endometritis or uterine catarrh the galvanic current locally applied was practically infallible. The current need not exceed ten to thirty-five milliampères, using the bare intra-uterine electrode and an external indifferent pole of proper size. The choice of currents was governed by the presence or absence of menorrhagia, the positive being always used with this complication. When the endometritis was associated with slight cervical lacerations it would usually be found unnecessary to operate for repair, as all symptoms disappeared under this treatment. The speaker reported the result of treatment in twenty-six cases of fibroid tumors. Two had been cured anatomically and symptomatically, seven had been cured symptomatically and anatomically reduced, eleven had been greatly improved, four slightly improved, one unchanged, and in one death had occurred.

Some Remarks on the Value of Electricity in the Treatment of Fibromata. By Dr. Alexander J. C. Skene. As this gentleman was prevented from being present, his notes were read by Dr. Buckmaster. In estimating the value of electricity in the treatment of fibromata, Dr. Skene said that he had of necessity been guided by the opinions of others more than by his own observations. Owing to the extremely conflicting testimony of those who had expressed themselves, it had been very difficult to get anything definite. One class of men had condemned the treatment without mercy. Another class had obtained the most perfect results. There was another class who had had an intermediate experience. They had been able to relieve their patients of most or all of their symptoms, and had diminished the size of the tumors or retarded their growth. The writer had accepted the testimony of this latter class, because it appeared to have more truth in it and because it agreed with the results of his own practice. Perhaps the most important question in the whole discussion was as to the relative merits of this and other methods of treatment. The writer had hoped to get records to show that more patients had died from removal of the uterus and ovaries for the cure of fibromata than had died from fibromata without treatment of any kind. Up to the present time electro-therapeutics in its immature state had been competing with surgery, that had the advantage of being perfected by long experience. Great progress had been made in a short time. In a recent discussion in the Academy of Medicine of Paris, it had been shown that strong currents were not called for, and that it was necessary to puncture the tumor to get good results.

Dr. H. J. Boldt, after going into the theory of the bipolar action of the current in the tissues, went on to say that those gentlemen who in no wise accepted electricity as efficacious were those who had never given it an honest trial. They had no right to operate on any patient until electricity had been given a thorough test. That it would not in every instance even alleviate the symptoms he thought he could vouch. As to pyosalpinx, he thought these cases were cured when the tubes were cut out. When the tubes were distended and the uterine extremities were closed, or where the tubes were agglutinated, what could be expected from electricity? All that could be done was to remove the tubes. But as long as the caliber of the tubes remained patent it was well to try everything, and a great many of the patients got well. Many mistakes in diagnosis were made, and it was not advisable to be too enthusiastic.

Dr. Goelet said that he had cured at least thirteen patients by galvano-puncture who could not have been relieved otherwise, except by laparotomy. That was to say, the patients would otherwise have been mutilated. He thought it only right to try to cure these patients before mutilating them. By emptying the tubes and the use of the current subsequently the tubes might be rendered patent. He thought that the pus could be first emptied and then the removal of the cause of the accumulation of that pus effected. The resolution of the proximal end of the tube could be produced by galvanism of the endometrium. He did not think we ought to say that the removal of the tubes was a cure of pyosalpinx. In many instances, indeed, the patient's condition was more harassing after the op-

eration than before. He thought that Dr. Mundé's failures with electricity, when they occurred, were to be laid to the fact of his having used his currents too weak. Then, again, he thought the doctor had made a mistake in ignoring the milliampèremeter as a plaything. Many women would bear intense pain and say nothing about it, and electricity might be thus administered in dangerous doses. It was impossible to estimate the particular resistance of the tissues in every case, and for these reasons the meter was always an important auxiliary.

The Chairman asked whether Dr. Goelet's experience of intra-uterine galvanism had demonstrated to him that an occluded tube had become patulous again and was performing its function like the other one which was assumed to be healthy. Of course the fact of fecundation occurring did not imply that both tubes were functionally competent.

Dr. Goelet replied that he could only assume that complete recovery had ensued from the fact that all symptoms had been completely removed, that menstruation had become normal, and that there had been no reaccumulation in the affected tube.

Book Notices.

Ophthalmology and Ophthalmoscopy for Practitioners and Students of Medicine. By Dr. Hermann Schmidt-Rimpler, Professor of Ophthalmology and Director of the Ophthalmological Clinic in Marburg. Translated from the Third German Revised Edition. Edited by D. B. St. John Roosa, M. D., LL. D., Professor of Diseases of the Eye and Ear in the New York Post-graduate Medical School, etc. One Hundred and Eighty-three Woodcuts and Three Colored Plates. New York: William Wood & Company, 1889. Pp. xv–3 to 571.

One of the most popular of German text-books on ophthalmology is here presented for the first time in an English dress in a handsomely printed volume. It is divided into four parts and twenty chapters. The first part treats of the general examination of the eye, of errors of refraction and accommodation, and of amblyopia and amaurosis. We think it unfortunate that the author has retained the terms amblyopia and amaurosis as descriptive of diseases, since they are merely symptoms and at the best but ill-defined. The second part treats of ophthalmoscopy and diseases of the optic nerve, the retina, the choroid, and the vitreous humor. The third part considers the subjects of glaucoma and diseases of the lens, conjunctiva, cornea, sclera, iris, and ciliary body, including ophthalmomalacia and sympathetic ophthalmia. The fourth part treats of diseases of the ocular muscles, the orbit, the eyelids, and the lacrymal apparatus.

The illustrations are all good and sufficient for the purpose for which the book is intended. There is a very good index, and the book is a very favorable specimen of the printer's art. The translator, whose name is not mentioned, has done his work well, and the editor has made numerous additions throughout the entire volume, which enhance the value of the work.

A System of Obstetrics. By American Authors. Volume I. Edited by Barton Cooke Hirst, M. D., Assistant Professor of Obstetrics in the University of Pennsylvania. Illustrated. Philadelphia: Lea Brothers & Co.

The contributors to this volume are Dr. Samuel C. Busey, Dr. George J. Engelmann, Dr. Barton Cooke Hirst, Dr. William Wright Jaggard, Dr. H. Newell Martin, Dr. Theophilus Parvin, Dr. R. A. F. Penrose, and Dr. J. C. Reeve. It is safe to affirm that this contribution to obstetric literature contains the last word of science upon the subject of which it treats. Each division is complete in itself, interesting as historical reading, admirable as instruction, and valuable in point of clearness and for direct conclusions that are easy to find when in hurried search of enlightenment and advice. The special divisions of the subject, in their regular order, contained in the present volume are the history of obstetrics; the physiology and histology of ovulation, menstruation, and fertilization; the development of the embryo; the fœtus: development, anomalies, etc.; pregnancy: its physiology, pathology, differential diagnosis, and premature expulsion; the conduct of labor and management of the puerperal state; the mechanism of labor and the treatment of labor based on the mechanism; the use of anæsthetics in labor; and the anomalies of the forces in labor. There are three hundred and nine wood engravings and one colored plate—the areola in pregnancy (after Spiegelberg)—that add greatly to the attraction and usefulness of the book. The work gives promise of being a reference library in itself that every physician can secure without too great outlay of money, and with great satisfaction to himself.

Lehrbuch der allgemeinen und speciellen pathologischen Anatomie für Aerzte und Studirende. Von Dr. Ernst Ziegler, Professor der pathologischen Anatomie und der allgemeinen Pathologie an der Universität Freiburg in Baden. Zwei Bände. Sechste verbesserte und theilweise neu bearbeitete Auflage. Erster Band. Allgemeine pathologische Anatomie und Pathogenese. Mit 343 theils schwarzen, theils farbigen Abbildungen und einer Tafel in Chromolithographie. Jena: Gustav Fischer, 1889. Pp. xiv–567.

An English edition of this excellent work was noticed by us a few years ago and approved of unqualifiedly. What the popularity of the work must be in Germany, where similar works of the highest merit abound, may be judged from the fact that it has so quickly reached a sixth edition. There is no science in which new facts accumulate with such rapidity as in pathological anatomy, and, we may add, this accumulation is nowhere greater than in Germany. The present edition has rigorously followed the development of the science. The pictures of the stained microscope preparations and bacterial cultures are especially beautiful and throw a light upon the subjects treated of which is afforded by no similar work with which we are acquainted. It is to be hoped that we may have an English reproduction of this edition.

The Cerebral Palsies of Children. A Clinical Study from the Infirmary for Nervous Diseases, Philadelphia. By William Osler, M. D., Fellow of the Royal College of Physicians, London; Professor of Clinical Medicine in the University of Pennsylvania, etc. Philadelphia: P. Blakiston, Son, & Co., 1889. Pp. 103. [Price, $2.]

This book is based upon the records of 151 cases of cerebral palsy. Of these, 120 were those of children with hemiplegia, 20 with bilateral hemiplegia, and 11 with paraplegia. From a study of these and a careful digest of the best work upon the same subject in English, French, and German literature, the author deduces some valuable conclusions. He finds hæmorrhage to be the most frequent cause of all congenital forms, whether diplegia or hemiplegia; and he discusses judiciously the conflicting theories as to the origin of the more common variety of cerebral palsy—viz., the hemiplegias occurring during the first few years of life. The paralysis disappeared under

treatment in only two of the 120 cases of hemiplegia. Massage with sweet oil and faradism he regards as of great value to prevent atrophy and improve the nutrition of the paralyzed parts. Dr. Osler's brochure is without doubt the most complete summary of existing knowledge upon this as yet not entirely understood subject.

BOOKS AND PAMPHLETS RECEIVED.

A Hand-book of Pathological Anatomy and Histology. With an Introductory Section on Post-mortem Examinations and the Methods of preserving and examining Diseased Tissues. By Frances Delafield, M. D., Professor of Pathology and Practical Medicine, College of Physicians and Surgeons, New York, and T. Mitchell Prudden, M. D., Director of the Laboratory of the Alumni Association of the College of Physicians and Surgeons, New York. Third Edition. Illustrated by Two Hundred and Twenty-four Wood Engravings printed in Black and Colors. New York: William Wood & Company, 1889. Pp. xv–609.

A Treatise on Materia Medica, Pharmacology, and Therapeutics. By John V. Shoemaker, A. M., M. D., Professor of Materia Medica, Pharmacology, and Therapeutics in the Medico-chirurgical College of Philadelphia, and John Aulde, M. D., Demonstrator of Clinical Medicine and of Physical Diagnosis in the Medico-chirurgical College of Philadelphia. In Two Volumes. Vol. I. Devoted to Pharmacy, General Pharmacology, and Therapeutics, and Remedial Agents not properly classed as Drugs. Philadelphia: F. A. Davis, 1889. Pp. xii–5 to 353. [Price, $2.50.]

Contributions to the Surgical Treatment of Tumors of the Abdomen. Part II. Electricity in the Treatment of Uterine Tumors. By Thomas Keith, M. D., LL. D. Edin., and Skene Keith, F. R. C. S. Edin., Edinburgh: Oliver & Boyd, 1889. Pp. viii–255. [Price, six shillings and sixpence.]

Transactions of the American Otological Society, Twenty-second Annual Meeting, Pequot House, New London, Conn., July 16, 1889. Vol. iv, Part III.

A Hand-book of Diseases of Women. Including Diseases of the Bladder and Urethra. By F. Winckel, Professor of Gynæcology, and Director of the Royal University Clinic for Women, in Munich. Authorized Translation. Edited by Theophilus Parvin, M. D., Professor of Obstetrics and Diseases of Women and Children in Jefferson Medical College, Philadelphia. Second edition, revised and enlarged, with One Hundred and Fifty Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1889. Pp. xxiii–17 to 766.

Hand-book of Obstetrical Nursing, for Nurses, Students, and Mothers. Comprising the Course of Instruction in Obstetrical Nursing given to the Pupils of the Training School connected with the Woman's Hospital of Philadelphia. By Anna M. Fullerton, M. D., etc. Philadelphia: P. Blakiston, Son, & Co., 1890. Pp. viii–16 to 214. [Price, $1.25.]

Outlines of the History of Medicine and the Medical Profession. By Joh. Hermann Baas, M. D. Translated, and in conjunction with the author revised and enlarged, by H. E. Handerson, M. A., M. D. New York: J. H. Vail & Co., 1889. Pp. 10–13 to 1172.

Concealed Pregnancy: its Relations to Abdominal Surgery. By Albert Vander Veer, M. D., Albany. [Reprinted from the "American Journal of Obstetrics and Diseases of Women and Children."]

The Treatment of Internal Derangements of the Knee Joint by Operation. By Herbert Wm. Allingham, F. R. C. S., Surgeon to the Great Northern Central Hospital, etc. London: J. & A. Churchill, 1889. Pp. viii–165.

Massage. Kort Framställning af Douglas Graham, Medicine Doktor, ledamont af Massachusetts Medicinska Sällskap. Bemyndigad öfversättning af Nils Posse, Sjukgymnast Föreståndare för Gymnastikskolan I Boston, Nord-Amerika. Lund: C. W. K. Gleerups.

Severe Continuous Cephalalgia as an Early Secondary in Syphilis. By William Browning, M. D. [Reprinted from the "Brooklyn Medical Journal."]

Case of Tuberculosis Papillomatosa Cutis, with Remarks on the Relation of Papilloma to Syphilis, Lupus, etc. Illustrated with Chromo-lithographic Plate. By Prince A. Morrow, A. M., M. D. [Reprinted from the "Journal of Cutaneous and Genito-urinary Diseases."]

New York Society for the Relief of Widows and Orphans of Medical Men. Incorporated 1843. Constitution and By-laws, to which is annexed a Brief History of the Society, and a Complete List of the Officers, Members, and Benefactors.

Introductory Address delivered at the Opening of the Fifty-seventh Session of the Medical Faculty of McGill University, October 1, 1889. By R. L. MacDonnell, B. A., M. D. [Reprinted from the "Montreal Medical Journal."]

Sixty-sixth Annual Report of the Managers of the New York Asylum for Lying-in Women. Presented April 18, 1889.

Prospectus of the Brooklyn Dispensary for the Treatment of the Nose, Throat, and Lungs.

First Annual Report of the New Amsterdam Eye and Ear Hospital. For the Year ending May 14, 1889.

First Annual Report of the Health Department of the City of Mansfield, Ohio. For the Year commencing March 1, 1888, and ending February 28, 1889. By R. Harvey Reed, M. D., Health Officer.

Third Annual Report of the Training School for Nurses connected with the Post-graduate Medical School and Hospital. May 31, 1889.

The Therapeutic Value of Motion. By G. H. Patchen, M. D., of New York. [Reprinted from the "Medical Advance."]

New Inventions, etc.

A SINUS CURETTE.

By H. Beeckman Delatour,
Brooklyn.

A number of cases in which I desired to curette have come under my care, but none of the curettes at command were small enough. Cases in which a small curette is of use are a whitlow, for instance, in which after incision considerable broken-down tissue is found. The old way of applying a poultice after incision required weeks to obtain a cure, while now, after incision and curetting away the necrotic tissue and applying a wet dressing, the parts will promptly heal in less than a week. A sinus may remain open for some time after a drainage-tube has been removed, as the granulations which line it are slow to close in. In such a case as this, if the granulations are removed and external pressure is applied along the line of the sinus, immediate union of its walls will take place. There are also cases of necrosis of small areas having narrow sinuses leading to the surface. These sinuses are so small that they will little more than admit a probe, and yet a comparatively large wound would have to be made in order to remove this bone with an ordinary curette.

It was for a case like that just mentioned that I had made for me by Messrs. Tiemann & Co. the small curette which I have named a sinus curette.



It consists of a sharp spoon, fenestrated, a quarter of an inch long and three sixteenths of an inch wide, mounted on a metallic handle five inches and three quarters long. The peculiar shape of the spoon renders it possible to pass it through an opening which will hardly more than admit a probe. When I began to use this little instrument I was much surprised to find the amount of work that it would do and the number of cases in which it was of use. In the case for which it was made I succeeded in removing a considerable area of necrosed bone from the femur through the sinus that existed, and was much gratified at having the sinus heal immediately.

This little instrument has served me so well in many cases that I feel justified in bringing it before the profession, and hope that others may find in it as faithful a companion as I have.

Miscellany.

A Case of Diabetes benefited by Phosphorus.—In the "British Medical Journal" for November 30th Dr. Balmanno Squire says: "As new therapeutical results are probably more often the result of chance than of design on the part of the investigator, I may perhaps be held excused in communicating to you what, so far as I know, is a new and somewhat important therapeutical fact, but which, whatever it may be worth, is as certainly not the result of any premeditated design on my part.

"A gentleman, aged sixty, was brought to me on October 9th by Dr. Williams Jones, of Manchester, who wished my advice as to his patient, who for a long time had been affected somewhat severely with eczema of his face, neck, and upper limbs, including his hands. Dr. Jones had previously consulted two or three other practitioners as to his patient's condition, and informed me that his patient, who had become much worn out from want of sleep, was now willing to do whatever might be required of him. Dr. Jones also informed me that his patient had for long been affected with diabetes, for which he had treated him.

"I suggested to Dr. Jones that, in addition to the local remedies which we agreed on, the patient should take phosphorus 'perles' for the improvement of the eczema. To this Dr. Jones saw no objection. I accordingly proposed to him that the patient should take one 'perle' three times a day for three days; and that, should no nausea result from their use by the end of that time, the dose should then be increased to two 'perles' three times a day. Owing to some difficulty in obtaining the 'perles,' the patient did not commence taking them until November 1st, and, after the expiration of three days, Dr. Jones put his patient on the double dose.

"To-day (November 11th) the patient visited me at Dr. Jones's request, and certainly as to his eczema he is nearly quite well, and he tells me that he now enjoys sound sleep at night. Thus much I was quite prepared to hear. But I was a little astonished when he informed me that these were by no means the only benefits that he had derived. He was also greatly better of his diabetes, very suddenly and very markedly so. He says that for the last four or five days he has been far better in this latter respect than he has been for many months. He had been used to being obliged to get out of bed four or five times in the night to pass water; but, for the last four or five days, he had not had any call of the kind at night. The quantity that he passed in the twenty-four hours had for long been a very considerable quantity, but it had suddenly diminished in amount very notably. The urine has until quite recently been very pale in color, but now it presents a fairly natural degree of color. He suffered from constant thirst, which he was compelled to assuage frequently. He is now no longer troubled with thirst. He traveled this time from Manchester to London without wanting anything to drink on the journey, and required to get out at Bedford only to pass water. He assured me that his first journey to me was by no means so free of incidents either as to incomings or outgoings of liquid. He stated that he felt now very much better in health altogether. I requested him to pass water just before he left, but he felt so little inclination that he doubted whether he could. However, he passed about six fluid ounces.

"Although I had no reason to doubt Dr. Jones's diagnosis, I thought I would, before writing this note, obtain independent confirmation of the fact that the patient's complaint was beyond doubt diabetes. I accordingly asked my neighbor, Dr. Goodhart, to examine the urine for me. Dr. Goodhart, after remarking that the color of the urine was somewhat exceptionally good for a diabetic, found that its specific gravity was 1·032, and that it contained plenty of sugar and no albumin. He has kindly permitted me to use his name for the purposes of this note so far as concerns these facts respecting the quality of the specimen of urine that I submitted to him.

"The quantity of phosphorus that the patient took may be estimated from the basis that each of the 'perles' contained one thirtieth of a grain of phosphorus dissolved in oil. So that, for the first three days of his phosphorus treatment, he took a tenth of a grain a day, and for the remaining seven days he took a fifth of a grain daily. From such experience as I have in the administration of phosphorus internally I should be disposed to say that he was fairly under the influence of phosphorus; moreover, he has just begun to experience a slight but decided degree of nausea from its use.

"In what manner the phosphorus has acted in controlling the diabetes, as it seems to me it unquestionably has acted, I am not prepared to offer any kind of opinion. That the administration of phosphorus acts most decidedly on the liver is well known, because, in undue and over-prolonged doses, phosphorus is capable of producing fatty degeneration of the liver. This circumstance would seem to afford the clew to its marked action in this case in controlling diabetes; but I am not prepared to assert that this is the correct explanation. It is possible that the effect of the phosphorus may be due to its action on the nervous system.

"In any case, the circumstance seems to me well worthy of record in the columns of the 'Journal,' because I venture to think that, when the question comes to be sifted by observers more competent than myself, it will be found that phosphorus exerts a very potent action in the control of diabetes."

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

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